ASSESSING THE LEARNING THAT MATTERS MOST

BRIGHT POINTS OF LIGHT

CHALLENGES

TAKING IT FORWARD

INSTITUTE FOR
THE **FUTURE**
OF **LEARNING**

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Dear Jeremias,

It has been an incredible journey over these past few months interviewing thought leaders in transformative K-12 assessment! Thank you for your support and for your generous funding of this work. I am very grateful and excited by what we have learned from the interviewees.

By way of recap, the scope of the research is as follows:

Purpose
The purpose of this first phase of work is to research and inventory current leading practices in *'deeper learning'* and *'whole child'* assessment, to identify gaps, and highlight exemplary practices. Each phase of work will lay the foundation for the next stage (i.e., a database prototype of leading assessment practices).

First Phase Outcomes
Phase One outcomes are as follows:
• Inventory of schools assessing learning from a *'whole child'*, human developmental, deeper learning perspective (public, private, charter).
• Distillation of the skills, knowledge and habits of mind which are being assessed.
• Listing of *'key players'* in assessing this kind of learning, (i.e. leading thinkers, scholars, practitioners).
• Examples of how the learning is being assessed.
• Distillation of gaps and domains in which assessing learning is most challenging.
• Draft listing of features for an assessment database prototype.

Methodology
The original methodology cited reaching out to approximately 15 thought leaders in the area of deeper learning and whole child assessment, and conducting 30- to 60-minute interviews. Fifteen interviews became 28 interviews as the interviewees made recommendations of additional individuals to interview. I would like to take this opportunity to note and to thank each of the interviewees for being so generous with their time, advice, and insights:

• **Bo Adams**: Chief Learning and Innovation Officer, Mount Vernon Presbyterian School
• **Jim Bellanca**: Executive Director, Illinois Consortium for 21st Century Skills, and Editor-in-chief for P21's blog: Connecting the 21st Century Dots - From Policy to Practice
• **Ron Berger**: Chief Academic Officer, Expeditionary Learning and Co-Founder, Center for Student Work
• **Barnett Berry**: Founder, Partner, and CEO at the Center for Teaching Quality (CTQ)
• **Marc Chun**: Education Program Officer, Hewlett Foundation
• **Jared A. Cotton**: Superintendent, Henry County Schools
• **Theo L. Dawson**: Executive Director, Lectica

- **Nick Donohue**: President and CEO, Nellie Mae Foundation
- **Todd Blake Finley**: Blogger on assessment at Edutopia, and Professor of English Education at East Carolina University
- **Dan French**: Executive Director, Center for Collaborative Education
- **Ted Fujimoto**: President, Landmark Consulting Group
- **Valerie Greenhill**: Chief Learning Officer, EdLeader21
- **Christer Holger**: Founder and Headmaster, Skapaskolan
- **Chris Jackson**: Chief Communications Officer, Big Picture Learning, and former Director, College and Work Readiness Assessment (CWRA)
- **Grant Lichtman**: Author, Speaker, Consultant, *'Chief Provocateur'*
- **Jonathan Martin**: Author, Speaker, Consultant
- **Mark A McDaniel**: Professor of Psychology, with a joint appointment in Education, at Washington University in St. Louis
- **Allison Ohle**: Executive Director, KIPP San Diego
- **Tim Presiado**: Chief Operating Officer, New Tech Network
- **Lisa Pullman**: Executive Director, INDEX Mission Skills Assessment
- **Justin Reich**: Richard L. Menschel HarvardX Research Fellow, and Founder, EdTechTeacher
- **Conall Ryan**: CEO Muzzylane Game Based Learning
- **William Sedlacek**: Professor Emeritus of Education at the University of Maryland, College Park, Author, *'Beyond the Big Test'*
- **Rick Stiggins**: Founder, Assessment Training Institute
- **Elliott Washor**: Co-Founder, Big Picture Learning, Author *'Leaving to Learn'*
- **Glenn Whitman:** Director, Center for Transformative Teaching and Learning, St Andrew's Episcopal School
- **Dylan Wiliam**: Emeritus Professor of Educational Assessment
- **Dan Wise**: Educator in Residence, Tufts University CEEO, and Teaching Fellow, Harvard Graduate School of Education

This report synthesizes interview themes and my reflections, and includes an appendix of assessment related reports, white papers, and websites which I have been clipping for the past year or so.

In addition, I would like to take this opportunity to thank the team who made this work possible. Susan Reinecke who profiled in detail the schools and districts highlighted, Helen Riegle for her beautiful work on the graphic design and formatting of this report, Jonathan Martin for his thought leadership and feedback on the initial draft, and William McMillian, High School senior at Montgomery Blair High School, for his passion, insights, and for reminding me of the need for students to participate in this work.

I look forward to your feedback when we meet in Stockholm at the end of the month.

Julie Wilson
Founder & Executive Director

Institute for the Future of Learning www.the-ifl.org

1 EXECUTIVE SUMMARY

Our education system was designed in the nineteenth century to meet the demands of the industrialized economy. For too many communities, school still looks, sounds, and feels much as it did back in the early nineteenth century.

However, there are more and more schools, districts, and networks of schools shifting from the *'one size fits all'* model, and who are doing incredible work to prepare students for the challenges and opportunities of the 21st century. These schools focus on *'deeper learning'*[1] and the development of the *'whole child.'*[2] Schools where students engage in rich, real-world projects, develop critical thinking skills, hone their creativity, and learn a greater sense of agency and possibility; and, most importantly, where students'

innate love of learning is nurtured and supported.

The purpose of this report is to identify schools where great work in assessing the learning that matters most is underway, to provide an overview of the challenges of the work, and to begin exploring the possibility of an open source database of deeper learning/whole child assessment great practices – all with a view to impacting the broader system.

We interviewed 28 thought leaders and synthesized their thinking. The interviews yielded the following insights:

INVENTORY OF SCHOOLS ASSESSING LEARNING FROM A DEEPER LEARNING/ *'WHOLE CHILD'* PERSPECTIVE:

Public Schools and Districts: Catalina Foothills District, Virginia Beach District, Albemarle District,

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[1] http://deeperlearning4all.org/about-deeper-learning
[2] http://www.wholechildeducation.org/

Douglas County District, Henry County District, Fairfax District, North Salem District, School of the Future, Tech Valley High School

Charter Schools and Charter Management Organizations: High Tech High, Envision Schools, Science Leadership Academy, KIPP (KIPP Character Report Card), Edvisions, Summit Public Schools, Francis Parker Charter Essential School, MC2 Charter School

School Development Organizations: New Tech Network, Big Picture Learning, Expeditionary Learning, Asia Society International Studies School Network, New Visions for Public Schools

State Intermediary: ConnectEd California

Independent/Private Schools: Mount Vernon Presbyterian School, Meridian Academy, Wildwood School, Brightworks, Hawken School, Sabot at Stony Point, Choate Rosemary Hall, Poughkeepsie

Day School, The Lawrenceville School, Skapaskolan

In addition to the above schools, districts, and charter networks, interviewees highlighted leading work at the state level, specifically New Hampshire, Rhode Island, Maine, Vermont, Kentucky, Ohio, and the New York Performance Standards Consortium.

DISTILLATION OF THE SKILLS, KNOWLEDGE AND HABITS OF MIND BEING ASSESSED AND HOW THEY ARE BEING ASSESSED:

Interviewees cited **critical thinking**, **communication**, **collaboration** and **creativity** (the Four Cs)[3]. Additional skills and habits of mind cited can be categorized under the *'Social and Emotional Learning'*[4] umbrella: self-regulation, curiosity, drive, prudence, grit, self-control, social intelligence, ethical decision-making, time management, agency, self-direction, personal responsibility.

The above skills and habits of mind are being assessed predominantly by interdisciplinary

performance-based assessments (i.e., active demonstration of knowledge mastery, skills acquisition, and habits of mind development).

The majority of these assessments are grounded in tailored rubrics which have been designed and customized by educators, and around which teachers and students have rich conversations regarding skill building and knowledge acquisition progression.

Several interviewees noted that EdLeader21's rubrics on the *'Four Cs'* are a helpful jumping off point for schools and districts to tailor their own rubrics, and that the Buck Institute has an excellent *'rubric for rubrics.'* Bill Sedlacek's 8 Dimensions provided a framework and jumping off point for Big Picture Learning's approach to assessment.

In addition to tailored rubrics, schools and districts are also using external assessments and surveys such as the College Work Readiness Assessment (CWRA), PISA Test for Schools, Mission Skills

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[3] http://www.p21.org/about-us/p21-framework
[4] http://www.casel.org/social-and-emotional-learning/

Assessment, and the HOPE, HSSSE, YouthTruth, LASSI, and Panorama surveys.

Innovations include Christer Holger's work tagging the learning process at Skapaskolan and Lectica's Dynamic Skill Scale.

To provide a deeper insight into the specifics of how leading schools and districts are assessing learning, nine programs are explained in detail. These exemplars vary in size and scope and help articulate the diversity and commonalities in assessing the learning that matters most.

- Science Leadership Academy, Philadelphia PA
- Mount Vernon Presbyterian School, Atlanta GA
- High Tech High, San Diego CA
- KIPP, Nationwide
- Expeditionary Learning, Global
- New Tech Network, Global
- Catalina Foothills Unified School District, Tucson AZ
- Virginia Beach City Public Schools, Virginia Beach, VA
- Sanborn Regional School District, Kingston, NH

These leading schools, districts, and networks have a community-held vision for the school's work, an explicit, shared articulation of the organizing principles of pedagogy, and high levels of autonomy for, and support of, teachers.

DISTILLATION OF GAPS AND DOMAINS IN WHICH ASSESSING LEARNING IS MOST CHALLENGING:

The most commonly noted challenging domain was **Collaboration**, followed closely by **Creativity**, with **Communication** in third place. Critical thinking was also highlighted as a theme; additional (non-thematic) items included: *Metacognition, Engagement, Empathy, Literacy, Resiliency, Mindsets, Dispositions, Reasoning, Affective Domain, Character, Work Ethic, Agency, Grit, Design Thinking, Reflection*, and *Effort*.

Interviewees noted the following insights with regards to why these domains are so challenging to assess:

- Constraints of the factory model system
- Lack of support, trust in, and development of teachers to build assessment literacy into their practices
- Lack of agreement in, and clear definitions of proficiency
- Short-term vs. long-term thinking and support
- Complexity of valid, reliable measurement
- Impact of assessment being used as a ranking device and/or high stakes assessment method
- Lack of student voice
- Diversity of student population

Whilst not underestimating the difficulty and complexity of this work, several interviewees remain hopeful and optimistic about making real progress. Interviewees offered advice on how to overcome these challenges and gaps:

- [The work] needs to be led by teachers
- Common Core Standards can be used as a lever
- Make the learning regarding assessment open source, available at no cost, and available to all
- Use game-based learning and assessment as a lever
- Use multiple measures when assessing learning
- Conduct outreach within communities to discuss *"What's worth learning and how do we assess it?"*

LISTING OF *'KEY PLAYERS'* IN ASSESSING THIS KIND OF LEARNING (I.E. LEADING THINKERS, SCHOLARS, PRACTITIONERS):

Interviewees highlighted seventy-five *'key players'* in assessing this kind of learning and noted the following collaborative efforts to move deeper learning assessment forward:

- Hewlett Foundation's Deeper Learning Network
- The Council for Chief State School Officers (CCSSO) – Innovation Lab Network (ILN)
- Center for Curriculum Redesign (CCR)
- The Center for Student Work
- Assessment and Teaching of 21st Century Skills (ATC21S)
- New Pedagogies for Deep Learning (NPDL)

DRAFT LISTING OF FEATURES FOR AN ASSESSMENT DATABASE PROTOTYPE:

Interviewees noted the key features which they would like to see in an open source database:

- Examples of great practices
- Research backing it up and evidence
- User experience is important
- Help, advice, and community for teachers to support the application of their learning
- Help, support, and guidance with assessment literacy in general for teachers
- Linked to standards

Interviewees noted the following cautions and advice:

- System needs to change to be able to use the tools
- Challenge of evaluating quality
- Students need to be partners in the process
- Database might be premature and could be used for quick fixes
- Challenge of designing a tool that is not overwhelming for users
- Determining how the database will be used and how its impact will be measured

Interviewees noted Stan Weinberg's *'Beyond the Bubble,'* Ron Berger's Center for Student Work, and The Literacy Design Collaborative as great examples of well-supported databases.

REFLECTIONS AND NEXT STEPS:

Reflecting on the interviewees' input and advice, the following will be key moving forward with the database prototype:

- The community building around the database will be as important as the database itself and will require just as much, if not more, thought and

design. What might a national and regional support structure look like? How might the tenants of Social Physics[5] inform our thinking on this?

- To gain maximum traction, the database should be open source, with all tools, documents, and resources available in editable format (e.g., Word, Excel, GoogleDocs, etc.). What might the collaborative Linux-type opportunities be with this work?

- A cross-section of disparate and complementary skillsets will yield additional insights into the database design, for example, user experience, online community/tribe building, etc. What would the skillset be of the database dream team?

How might we expand the thinking further, include diverse viewpoints, and rapidly prototype the database?

An immediate next step is to make this report available, under a Creative Commons license, and seek reactions, input, and feedback – all with a view to, as one interviewee noted, *"interrogate our thinking"* regarding the database and its purpose.

Assessment goes to the *"belly of the beast"* of the education system. It automatically invites us to question *"What's worth learning"* and *"How is it best learned?"* There is enough discontent with the outcomes of the factory system and enough collective will for change. None of us can do this alone; however, I have faith that when we gather the right team around this work, we will make an impact. This is the work.

[5] http://socialphysics.media.mit.edu/

"It is time to start a nationwide conversation about 'what works' when assessing the learning that matters most."

2 BACKGROUND AND CONTEXT

Our education system was designed in the nineteenth century to meet the demands of the industrialized economy. For too many communities, school still looks, sounds, and feels much as it did back in the early nineteenth century.

A growing body of research, and common sense, tell us that today's graduates need a much more advanced skill set than one originally conceived of in the nineteenth century. According to the 2011 Harvard Graduate School of Education report, Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century, approximately half of all Americans reach their mid-20s without the skills necessary to thrive in today's global, digital economy. There is growing consensus regarding the skills that matter most[6] and there are more and more schools, districts, and networks of schools shifting from the 'one size fits all' model, and who are doing incredible work to prepare students for the challenges and opportunities of the 21st century.

These schools focus on 'deeper learning'[7] and the development of the 'whole child.'[8] They are redesigning the entire concept of school so that students learn the knowledge, skills, and habits of mind which will enable them to become lifelong learners; schools where students engage in rich, real-world projects, develop critical thinking skills, hone their creativity, and learn a greater sense of agency and possibility; and, most importantly, where students' innate love of learning is nurtured and flourishes.

[6] http://iacee2014.stanford.edu/free-webinars/skills-students-need-for-their-future.php
http://www.p21.org/our-work/p21-framework, http://www.iftf.org/futureworkskills/
[7] http://deeperlearning4all.org/about-deeper-learning
[8] http://www.wholechildeducation.org/

The work of these educators shows us what is possible. We now have over a decade's worth of evidence and data[9] uncovering what makes this learning effective. We find ourselves at a very exciting juncture where I am asking myself, "What can the Institute for the Future of Learning do to help? How might we spread the word, support this work, and help accelerate its adoption across the broader system?"

Assessing these skills is critical. The nineteenth century system of education will not change until we change what we assess; and we need to assess the learning that matters most, not that which has historically been 'easy' to assess. There is a growing backlash against standardized testing and growing recognition that it is a blunt measure of capabilities and potential. Moreover, research tells us that high stakes tests can actively decrease a student's intrinsic motivation to learn,[10] reducing the conversation from the much more holistic, "What's worth learning?", to the reductionist "What's on the test?". There is a better way, and there are many pioneering exemplars from which we can learn.

It is time to start a nationwide conversation about 'what works' when assessing the learning that matters most. How are schools designing the learning environment to promote and support this kind of learning? What are the means by which they are assessing? Which schools are leading the way? How can we learn from them? What help do they need? We hope to shine a bright light on assessment practices which support the process of deeper learning — assessment that assesses the skills, knowledge, and habits of mind which matter most, and assessment as a formative, GPS tool, rather than a blunt, high stakes hammer.

The purpose of this report is to begin shining that light by identifying schools where great work in assessing the learning that matters most is underway, to provide an overview of the challenges of the work, and to begin exploring the possibility of an open source database of deeper learning/whole child assessment great practices – all with a view to impacting the broader system.

9 http://bie.org/objects/cat/research http://www.air.org/sites/default/files/downloads/report/Report%201%20The%20Shape%20of%20Deeper%20Learning_9-23-14v2.pdf
10 http://www.mcdowellfoundation.ca/main_mcdowell/current/janet_mcvittie.htm

"We have a lot of work to do,
but we are on the right path."

3 INVENTORY OF SCHOOLS ASSESSING LEARNING FROM A DEEPER LEARNING/ 'WHOLE CHILD' PERSPECTIVE

When we asked interviewees, *"Which schools/ districts/charter networks are leading the way with how they assess learning?"*, several interviewees noted that they did not think any entire school system is knocking this out of the park just yet:

"What you find is there are individual schools doing this work – I have not heard of a district who is leading."

"My cynical answer is that no-one is leading the way – (districts) are being pulled by the nose by disincentives from the state down. There is a gap between what they are mandated to do and what they would like to do – the one that takes precedence is getting kids ready for summative assessments."

"There aren't legions of schools on my list of people who are doing a great job of assessment."

"I don't think I have found a whole system that is knocking this out of the ball park – which speaks to how difficult it is to assess learning. I have seen some really encouraging things out there around working with teachers to establish clear criteria for success – where (teachers) are supported in thinking deeply about rating and assessment and where there are concrete procedures in place and a culture of looking at student work."

However, over the course of 28 interviews, clear themes emerged regarding *'bright points of light,'* where great work is happening and being led by educators:

"A lot of folks doing this work early on come from the State of Virginia – mostly Virginia Beach and Albemarle – they have been doing performance assessment-based work for seven years."

"We have a lot of work to do, but we are on the right path."

"Big Picture Learning is very creative – they have all kinds of schools and they are somewhat different. Their idea is that they want to stress experiential learning, there have been some great outcomes."

"People doing great assessment work are the best PBL (Project-Based Learning) schools, for example, Science Leadership Academy, High Tech High, New Tech Network. They use rich performance assessment where students get to meaningfully demonstrate their understanding."

The most frequently mentioned schools, districts, and charter networks, in rank order (by number of mentions) are as follows:

Public Schools and Districts:

- Catalina Foothills District, AZ
- Virginia Beach District, CA
- Albemarle District, VA
- Douglas County District, CO
- Henry County District, VA
- Fairfax District, VA
- North Salem District, NY
- School of the Future, NY
- Tech Valley High School, NY

Charter Schools and Charter Management Organizations:

- High Tech High, San Diego, CA
- Envision Schools, Oakland, San Francisco and Hayward, CA
- Science Leadership Academy, Philadelphia PA
- KIPP (interviewees referenced the KIPP Character Report Card), 183 schools in 20 states and the District of Columbia
- Edvisions, 37 schools in 11 states
- Summit Public Schools, 9 schools in CA and WA
- Francis Parker Charter Essential School, Devens, MA
- MC2 Charter School, Manchester NH

School Development Organizations:

- New Tech Network, approximately 180 schools in 28 states, China and Australia
- Big Picture Learning, approximately 85 schools in the US, Australia, Netherlands and Canada
- Expeditionary Learning, 165 schools in 33 states
- Asia Society International Studies School Network (in 10 cities across North America, with a global reach of more than 5 million students)
- New Visions for Public Schools, 70 districts schools and 6 charter management schools in NY

State Intermediary:

- ConnectEd California, 9 California districts participating (also deeply involved in supporting Houston ISD)

Independent/Private Schools:

- Mount Vernon Presbyterian School, Atlanta GA
- Meridian Academy, Boston MA
- Wildwood School, Los Angeles CA

- Brightworks, San Francisco CA
- Hawken School, Cleveland OH
- Sabot at Stony Point, Richmond VA
- Choate Rosemary Hall, Wallingford CT
- Poughkeepsie Day School, Poughkeepsie NY
- The Lawrenceville School, Lawrenceville, NJ
- Skapaskolan, Huddinge, Sweden

In addition to the above schools, districts, and charter networks, interviewees highlighted leading work at the state level, specifically the following states:

New Hampshire

Over 10 years ago, the State of New Hampshire began building a competency-based framework for its schools and eliminated the Carnegie unit in all its high schools.

"The New Hampshire Department of Education (NHDOE) has partnered with the Center for Collaborative Education (CCE) and the National Center for the Improvement of Educational Assessment (NCIEA) to develop capacity in school districts for the use of performance assessment to build and measure student mastery of college and career ready competencies. The NHDOE policy requiring all high school courses to be aligned to local competencies is one step the state has already taken to foster new practices of assessment that promote and assess 'deeper levels of understanding important academic content and skills.'"
[From the New Hampshire Department of Education website]

Rhode Island

Twelve years ago, the Board of Regents' regulations defined new standards for high school graduation. The Center for Collaborative Education partners with schools and districts to develop and use deep performance tasks as per that policy.

"Graduation requirements are set at a level to provide students the skills and knowledge to successfully enter and complete a rigorous post-secondary academic or technical program, join the military, and/or obtain a job that leads to a rewarding and viable career.
[From the Rhode Island Department of Education website]

Maine

Maine passed legislation a year ago that the graduating class of 2018 should pass with a proficiency standard:

"In Maine, academic expectations and 'proficiency' definitions for public-school courses, learning experiences, content areas and grade levels are outlined in the Maine Learning Results *which includes the* Guiding Principles, *expectations for cross-disciplinary skills and life-long learning, and eight sets of content-area standards, including the Common Core State Standards in English language arts and mathematics."*
[From the Maine Department of Education website]

Vermont

As part of a comprehensive approach to assessment, Vermont Transferable Skills Assessment Supports (VTSAS) is currently being developed as part of a multi-year effort. The resources being developed will cut across academic content areas and support assessment of transferable skills as noted in Vermont's Education Quality Standards. These standards include communication standards, reasoning and problem solving standards, and civic and social responsibility standards.

"Vermont public schools must provide students with flexible and personalized pathways for progressing through grade levels and to graduation. Students can only advance when they demonstrate the attainment of skills and knowledge, irrelevant of time spent in a classroom."
[From the Vermont Agency of Education website]

Kentucky

In Kentucky, there is a state-wide initiative to provide teachers and leaders with the assessment literacy and proficiency needed to develop quality assessment and to use the assessment to support student learning.

"The Kentucky Department of Education, working with teacher-led teams, is developing resources to support districts and schools in this (assessment literacy) process. The team is developing professional learning modules, which can be accessed, adapted and used locally in Professional Learning Communities. Purpose Statement: Performance-based assessments inform the instruction of skills not measured by other formats, making these critical abilities central to the experiences of students working towards life-readiness."
[From the Kentucky Department of Education website]

Ohio

Ohio is building on the foundation of the Common Core Standards to support students graduating college and career-ready:

"Ohio's New Learning Standards are designed to challenge and motivate our students, preparing them for success in college, on the job, and in life. Starting in the 2014-2015 school year, all Ohio's classrooms will be using the new Standards . . . . These more rigorous standards, geared to college and career readiness, will drive learning in Ohio classrooms by 2014-2015."
[From the Ohio Department of Education website]

- and supporting teacher's capacity to select and design high quality assessments, including performance measures and rubrics, as well as involving students in the design of assessments.

New York Performance Standards Consortium

The New York Performance Standards Consortium was
formed in 1997, representing 28 schools across New
York State, and opposes high stakes testing arguing
that *"one size does not fit all."*

*"Without being selective, these schools beat the odds
in New York City and the nation in rates for student
graduation, college going and college persistence
for working class and poor youth. Designed with
intentionality toward intellectual inquiry and performance,
the schools challenge both high achieving students
and those students who are most educationally
vulnerable – English language learners, students
receiving special education services, minority males."*
[From the data report on the New York Performance
Standards Consortium]

4 DISTILLATION OF THE SKILLS, KNOWLEDGE, AND HABITS OF MIND BEING ASSESSED AND HOW THEY ARE BEING ASSESSED

When asked to describe the skills, knowledge and habits of mind which are being assessed, the clear themes which emerged are often referred to as the "*Four Cs*":

- Critical Thinking ("*problem solving, convergent and divergent thinking, systems thinking, inquiry, creative problem solving*")
- Communication ("*presentation of work, effective written communication*")
- Collaboration ("*collaborating with others, teamwork*")
- Creativity ("*creativity and innovation*")

Many additional skills and habits of mind, noted by the interviewees, can be categorized under the umbrella of *'Social Emotional Learning'* (SEL). The Collaborative for Academic, Social, and Emotional Learning (CASEL) defines the elements of SEL as follows:

- Self Management

- Self Awareness
- Social Awareness
- Relationship Skills
- Responsible Decision Making

Skills and habits of mind highlighted by interviewees and falling under the SEL umbrella include:

"Self-regulation, curiosity, drive, prudence, grit, self-control, social intelligence, ethical decision-making, time management, agency, self-direction, personally responsible"

The above skills and habits of mind are being assessed predominantly by interdisciplinary performance-based assessments (i.e., active demonstration of knowledge mastery, skills acquisition, and habits of mind development). These performance-based assessments can take many forms and, in leading practices, are grounded

in real-world projects with increasing complexity of standards being scaffolded over time. These schools and districts rely heavily on formative assessment. They view assessment not only as an opportunity to assess what has been learned (summative assessment), but also as a means to help teachers make inferences regarding student progress which will inform their teaching (assessment **for** learning), and as a means for students to reflect on their learning and future goals (assessment **as** learning).

The majority of these assessments are grounded in tailored rubrics which have been designed and customized by educators, and around which teachers and students have rich conversations regarding skill building and knowledge acquisition progression. As the schools build alternative assessment literacy over time, students begin identifying learning targets and designing rubrics in partnership with teachers.

Several interviewees noted that EdLeader21's rubrics on the *'Four Cs'* are a helpful jumping off point for schools and districts to tailor their own rubrics, and that the Buck Institute has an excellent *'rubric for rubrics*.' Bill Sedlacek's 8 Dimensions provided a framework and jumping off point for Big Picture Learning's approach to assessment.

In addition to tailored rubrics, schools and districts are also using external assessments and surveys such as the College Work Readiness Assessment (CWRA), PISA Test for Schools, Mission Skills Assessment ,and the HOPE, HSSSE, YouthTruth, LASSI, and Panorama surveys.

One of the most innovative methods of assessment I encountered is Christer Holger's work at Skapaskolan. Christer's work in tagging the process of learning has the potential to re-imagine the work of assessment. Christer's process 'catches' student learning via digital tools and documents by which

students are learning; and collects evidence which is diagnostic for the next level of learning. This is the most significant example I came across in the interviews which breaks out of traditional thinking regarding assessment tools. I am looking forward to visiting the school to see this work in action.

An additional innovation is Lectica. Lectica's mission is to *"develop standardized and educative developmental assessments of the skills and concepts students and workers need to meet the challenges of the 21st century. Not only do our assessments ask what people know, they ask how well people understand and think about what they know, and make suggestions about what they are likely to benefit from learning next."*

Lectica's work is grounded in Kurt Fischer's Dynamic Skill Scale theory of learning progression, and is grounded in a deep understanding of how relevant concepts and skills develop over time. This paper

describes the assessment infrastructure in detail and how it supports both learners and educators in the dynamism of learning progression.

To provide a deeper insight into the specifics of how leading schools and districts are assessing learning, nine programs are explained in detail below. These nine exemplars vary in size and scope and help articulate the diversity and commonalities in assessing the learning that matters most.

- Science Leadership Academy, Philadelphia, PA
- Mount Vernon Presbyterian School, Atlanta, GA
- High Tech High, San Diego, CA
- KIPP, Nationwide
- Expeditionary Learning, Global
- New Tech Network, Global
- Catalina Foothills Unified School District #16, Tucson, AZ
- Virginia Beach City Public Schools, Virginia Beach, VA
- Sanborn Regional School District, Kingston, NH

In order to bring the complexity and richness of this work to life, we have provided a snapshot of the demographics of each school/district as well as each school's mission and pedagogy. Pedagogy and assessment are inextricably linked, and the pedagogical overview provides additional context to the *"How are they assessing learning?"* question.

It is important to note that these leading schools, districts, and networks have a community-held vision for the school's work, an explicit, shared articulation of the organizing principles of pedagogy, and high levels of autonomy for, and support of teachers.

Name of School: Science Leadership Academy (SLA)

School Website: www.scienceleadership.org

School Snapshot: Science Leadership Academy is a selective admission public high school located in Philadelphia, PA. The Academy comprises two campuses, each serving grades 9–12. The first, SLA Center City, opened in 2006 followed by SLA Beeber in 2013. Both campuses are partnered with The Franklin Institute. Among their many awards, SLA has been lauded as *"One of the Best Schools in Philadelphia"* (Philadelphia magazine, 2012). According to the Great Philly Schools website, there are 462 students enrolled, with a wait list of 100 students. Approximately 26% of their students are eligible for free or reduced lunch, with 44.3% of the students identifying as Black, 33.1% White, 8.8% Asian, 9.9% Hispanic, and 4% other. Of the school population, 54.4% are female and 8.1% of the total population are designated as Special Ed. There are 125 students per grade with the exception of the recent 87-member senior class.

Students are grouped heterogeneously in their courses and no designated honors courses exist. In addition, there is a 1:1 laptop program that ensures that each student has equal access to computers.

School Mission, Values, and Approach to Pedagogy: The school mission, as posted on the website, reads: *"SLA is built on the notion that inquiry is the very first step in the process of learning. Developed in partnership with The Franklin Institute and its commitment to inquiry-based science, SLA provides a vigorous, college-preparatory curriculum with a focus on science, technology, mathematics and entrepreneurship. Students at SLA learn in a project-based environment where the core value of inquiry, research, collaboration, presentation and reflection are emphasized in all classes."*

Instruction at the school is based on the following three questions:
"How do we learn?"
"What can we create?"
"What does it mean to lead?"

The school schedule includes 65-minute classes that students attend on a rotating schedule four days a week. Each Wednesday afternoon is structured with outside of school learning opportunities for students: 9th graders participate in The Franklin Institute Course and 10th–12th graders are either involved in internships or working on independent learning projects. Teachers attend faculty workshops during this time.

Skills/Knowledge/Habits of Mind Being Assessed: Students are assessed based on the core values of inquiry, research, collaboration, presentation, and reflection. A focus on project-based learning, while described by science teacher, Tim Best, as being more time-consuming, enables students to be agents of their own learning. Students work independently and in groups on real-life projects, such as: *"learning about brain development through developing toys for babies and infants."* Marcie Hull, an SLA technology teacher, describes students who, desperate to *"do a good job,"* try to pry answers from her. Her response? *"I know you want to do a good job, and I'm going to help you do that, but you have to find your own answers now."*

How They Are Being Assessed: Assessment at SLA is project-based and students do not take the School District of Philadelphia benchmark exams. School district reports cards are supplemented twice a year (after 1st and 3rd quarter) with narrative report cards for each course that include skill specific feedback on a 1-4 scale (from 1- Not meeting expectations to 4- Exceeding Expectations). Teachers collaborate within their departments to develop course and discipline specific standards that are assessed continuously throughout the year. These formative assessments include projects, in-class assignments, labs, quizzes and student

reflections. Each student has an advisor/advocate and conferences are held with the student advisor, parents and students to examine student progress and skill development.

A universal school-wide standards-based rubric is used to assess students based on the following questions:

- **Design:** Does the student plan and structure the project thoughtfully and purposefully?
- **Knowledge:** Does the student demonstrate an understanding of ideas through inquiry, research, analysis, or experience?
- **Application:** Does the student use a variety of skills and strategies to apply knowledge to the problem or project?
- **Process:** Does the student take the necessary steps to fully realize the project goals?
- **Presentation:** Does the student effectively communicate the central ideas of the project?

See Appendix pages 84-88 for a sample rubric and examples of how teachers have modified the rubric for specific courses.

Name of School: Mount Vernon Presbyterian School (MVP)

School Website: www.mountvernonschool.org

School Snapshot: Mount Vernon Presbyterian is a selective admission independent school with students from the age of 6 weeks through grade 12. Founded in 1972 and located roughly 15 miles outside of Atlanta, the school resides on 37 acres in Sandy Springs, GA. The 2014–2015 (i) discover report posted on the school website lists enrollment at 932 students. The ratio of students to faculty is 10:1 with a 100% student to laptop ratio. Approximately 16% of school attendees are described as being of color and 24% of the students receive financial assistance.

In 2010, in partnership with the d.School of Stanford University, the school opened the Center for Design Thinking, creating opportunities for students to research and test solutions to real-world problems. The Center for Design Thinking is supported by the Mount Vernon Institute for Innovation, which also includes the Center for Global Competitiveness and the Center for Citizen Leadership. The Institute provides information on 21st century learning, and connects local and global communities through outreach, professional development workshops, and international exchanges.

Often celebrated in the press, the MVP approach to learning has been featured in articles published by the *Huffington Post*, *Atlanta Magazine*, and *Education Weekly*.

Mount Vernon Presbyterian is the first school in Georgia to be named an Ashoka Changemaker school. In May 2015, MVP was awarded a $500,000 grant by the Goizueta Foundation for continued development of their 'idesign' design thinking program.

School Mission, Values and Approach to Pedagogy: The mission of MVP reads: *"We are a school of inquiry, innovation and impact. Grounded in Christian values we prepare all students to be college ready, globally competitive, and engaged citizen leaders."* Instruction at MVP is driven by design-thinking focused on the following four principles: discover, empathize, experiment, and produce (DEEP). Coupled with developing academic skills, the Lower School utilizes visible thinking documentation to help students learn how to be active listeners and critical thinkers. The Middle School promotes professional development in their teachers through instructional rounds, observation, and feedback to ensure that students learn how be innovative, ethical, and creative. Each middle school student is equipped with a

Chromebook for use in the classroom. The [Upper School](#) features project-based and team-based learning, merging academic rigor with 21st century skills. An interdisciplinary Capstone project allows students to delve deeply into a topic of choice, and present their findings and proposed solutions to contemporary issues.

The Mount Vernon Continuum as found on page 89 in the Appendix illustrates the school's process-based commitment.

Skills/Knowledge/Habits of Mind Being Assessed:

According to Kelly Fitzgerald, a first grade teacher at MVP, *"We create experiences and lessons each day that cause our students to question what they know and to reach for something higher. We foster an environment of encouragement in our classrooms, and we always want our students to leave knowing they have incredible worth and value."* Coupled with a focus on academic mastery, each student is charged with developing the Mount Vernon Mindsets: becoming skilled creative thinkers, ethical decision-makers, innovators, solution seekers, collaborators, and communicators.

The Mount Vernon mindset is also part of the assessment of new applicants to the school and external recommendation forms have been modified so teachers of students not yet at MVP can comment on non-academic skills and personal qualities. Potential students go through a rigorous interview in which they respond to questions that identify their design-thinking capabilities. In addition, applicants are asked to respond to an open-ended student questionnaire that allows students to represent themselves creatively.

From the 2014 *"Report from the Field"* posted on the [SSATB – The Admission Organization website](#):

How They Are Being Assessed: An [article](#) posted by

the National Association for Independent Schools (NAIS) describes the collaborative approach the faculty at Mt. Vernon Presbyterian take in developing learning goals for each grade level. Rubrics developed by [EdLeader21](#) are used as a basis for assessing student progress and eportfolios are used to document learning in relation to the Mount Vernon Mindsets (Taylor, 2014). These rubrics align with many Common Core Standards and follow a [4C model](#) of assessing critical thinking, communication, collaboration, and creativity.

See Appendix pages 90-92 for examples.

Name of School: High Tech High (HTH)

School Website: www.hightechhigh.org

School Snapshot: In 2000, a group of educators and business leaders in San Diego opened a charter school designed to inspire a passion for learning and the development of work and citizenship skills. Fifteen years later, High Tech High consists of four elementary schools, four middle schools, and five high schools located in San Diego County in California. Students are selected through a zip code-based lottery system. Students are grouped heterogeneously, instead of being tracked, based on estimations of academic ability. While demographics vary within schools, each school hosts a diverse student population. Within the approximately 5,000 total students, 60% of students are described as students of color and 42% are eligible for free or reduced lunch.

High Tech High has a teacher preparation program that certifies new teachers, and experienced educators can pursue a master's degree at the High Tech High Graduate School of Education.

School Mission, Values and Approach: *"High Tech High's mission is to develop and support innovative public schools where all students develop the academic, workplace, and citizenship skills for*

postsecondary success." As explained on their [website](#), the schools operate under five basic strategies:

- **Enact** change by directly establishing and managing excellent schools.
- **Inspire** others to implement HTH design principles by encouraging outsiders to visit the schools, speak with the students and teacher, and observe its design principles in practice.
- **Enable** others to establish schools based on the HTH design.
- **Develop** teachers and leaders in its school network and beyond. HTH's Teacher Credentialing Program guides scores of HTH teachers through the credentialing process each year. The HTH Graduate School of Education opened its doors in the fall of 2007 and expands upon HTH's professional development offerings through its Master's of Education programs.
- **Influence** policy makers and thought leaders to change public education policy.

High Tech High is dedicated to preparing students for the challenges of the *"adult world."* In doing so, they have focused on four [design principles](#) that are reflected throughout the school.

- Personalization: In addition to maintaining a low student to teacher ratio, classrooms have inclusion support coaches who provide individualized instruction and facilitate small group work.

Advisory groups of 15 students pair each student with a faculty member who conducts weekly check-ins and is the primary point of contact with families.

- Adult World Connection: Students participate in field studies, internships, and community service, and publicly share their work with audiences outside of the school. There are many examples of the [project-based work](#) students have completed available online.
- Common Intellectual Mission: As a full inclusion school, non-tracking classes reflect the diversity within the school. All students are required to complete academic internships and a senior project. They also develop individual digital portfolios. Modes of instruction address the multiple needs of student learners.
- Teacher as Designer: Working in interdisciplinary teams, teachers design the curriculum and assessment. Planning time is built into the school schedule and teachers work in teams and action groups and share in the responsibilities of decision making for the school.

Skills/Knowledge, Habits of Mind Being Assessed: [Assessments at High Tech High](#) are carried out in various ways. The classroom curriculum provides multiple opportunities for performance-based assessments. As learning is primarily project-based,

assessment is often focused in three areas: **process**, **product**, and **content**. Homework, classroom work, and the timeliness in which students meet deadlines are evaluated as part of the **process**. The **product** assessment includes self- and peer-assessments of completed work, in addition to teacher evaluations of the overall quality of the work. In addition, students are encouraged to be reflective thinkers by actively documenting their learning process in portfolios and journals. Because teachers are asked to avoid giving group grades, the students' self-assessments provide an opportunity for teachers to understand individual contributions and learning. Weekly tests and quizzes may be administered to assess **content** understanding.

How they are being assessed: High Tech High schools balance formative and summative assessments and weigh final product grades (summative) at 50% or less of the term grade. Formal assessments may be based on rubrics that have been designed in class by students and teachers or built by a team of teachers for shared use. Informal assessments include nonverbal communication such as thumbs up, thumbs down signaling. Videos with examples of student assessments are available on their [website](#).

Name of Network: KIPP
(Knowledge is Power Program)

Website: www.kipp.org

Network Snapshot: In 1994, Mike Feinberg and Dave Levin came together in the hopes of developing educational opportunities that would give all children the tools they need to succeed in college and in life. KIPP began as two middle schools, located in Houston, TX and New York City, and today, 183 KIPP schools can be found in 20 states and the District of Columbia. Close to 70,000 students attend KIPP schools, with African American and Latino students making up 96% of the schools' populations. Of these, over 87% of the students are eligible for free or reduced-lunch. The KIPP network currently has 71 elementary schools, 90 middle schools, and 22 high schools.

KIPP schools are open enrollment and tuition free. Acceptance is on a first come, first served basis and a lottery system is used when demand exceeds available space.

Mission, Values and Approach: As posted on their website, *"The mission of KIPP is to create a respected, influential, and national network of public schools that are successful in helping students from educationally underserved communities develop the knowledge, skills, character and habits needed to succeed in college and the competitive world beyond. Our vision is that, one day, all public schools will help children develop the knowledge, skills, character, and habits necessary to achieve their dreams while making the world a better place."*

KIPP schools share the following operating principles, referred to as the Five Pillars:

- High Expectations for academic achievement and conduct: A *"no excuses"* approach is taken with both consequences and support.
- Choice and Commitment: Attendance at KIPP is seen as a choice and all parents, students, and teachers are required to sign a Commitment to Excellence form.
- More Time: The standard KIPP school day runs from 7:15-5 pm with some KIPP schools implementing Saturday classes. With the school year extending into the summer, KIPP students attend school for approximately 600 hours more than traditional public school students. A 2010 article in the *Washington Post* cited KIPP's extended schedule as the reason why KIPP students have been shown to outperform traditional public school students on standardized assessments.
- Power to Lead: KIPP Principals are responsible for making staffing and budget decisions for the school.

- Focus on Results: Student growth and achievement, measured objectively, is a primary driver of instruction.

KIPP's Framework for Excellent Teaching is centered on the KIPP goal of student growth and the beliefs and character that all KIPP teachers share.

Skills and knowledge and habits of mind being assessed: In addition to academic achievement, KIPP students are assessed on their development of seven character strengths: zest, grit, optimism, self-control, gratitude, social intelligence, and curiosity. These strengths are *"correlated to leading engaged, happy and successful lives."*

How they are being assessed: KIPP schools administer the standardized tests that are offered in their respective districts. In 2013, KIPP joined with Measured Progress to develop Common Core assessment tools including quarterly assessment tests and *"testlets,"* quizzes that measure proficiency in math and reading. Within this partnership, teachers are also able to develop their own tests and computer-based assessments in alignment with the Common Core Standards. Many teacher-developed rubrics are available on the Edutopia website. See Appendix pages 93-94 for examples.

Character is assessed through character report

cards in which teachers score character strengths on a 1–5 scale (1 = very much unlike the student, 5 = very much like the student). An example of a Character Report Card is found in Appendix pages 95-98.

Dave Levin, Co-Founder of KIPP, is partnering with Angela Duckworth as co-founder of the Character Lab. The Character Lab's mission is to "*develop, disseminate, and support research-based approaches to character that enable kids to learn and flourish*".

Name of Network: Expeditionary Learning (EL)

Website: http://elschools.org/

Network Snapshot: In 1991, Outward Bound and the Harvard Graduate School of Education partnered to create Expeditionary Learning. With a grant from New American Schools Development Corporation and assistance from Facing History and Ourselves, Project Adventure, and the Technical Education Research Center, 10 EL demonstration schools opened in 1993. Currently, the Expeditionary Learning network is partnered with more than 160 schools, districts, and charter management organizations, serving 53,000 students in 33 states. Student demographics vary per school. The Expeditionary Learning Grades 3–8 English Language Arts curriculum has been downloaded more than 3 million times, and in 2014, Ron Berger (Chief Program Officer for EL) and 27 EL teachers shared additional practices in a book titled Leaders of Their Own Learning: Transforming Schools Through Student-Engaged Assessment. An open resource, Center for Student Work, showcases exemplary work done by students in grades pre-K–12.

Mission, Values and Approach: The overarching mission of Expeditionary Learning is to "*partner with schools, districts, charter management organizations,*

and states to build teacher capacity in service of a more ambitious vision of student achievement: one that joins academic challenge and scholarship to critical skills like perseverance, critical thinking, and an ethic of contribution to prepare students for success in college, career, and citizenship." EL offers continuous professional development opportunities through coaching, and on- and off-site training. School designers form one-on-one relationships with individual teachers to aid in the development and delivery of instruction. Expeditionary Learning is modeled on the following 10 design principles:

- The Primacy of Self-Discovery
- The Having of Wonderful Ideas
- The Responsibility for Learning
- Empathy and Caring
- Success and Failure
- Collaboration and Competition
- Diversity and Inclusion
- The Natural World
- Solitude and Reflection
- Service and Compassion

Skills and knowledge and habits of mind being assessed: Through a process of differentiated instruction, teachers deliver standards-based instruction with continual awareness of student readiness, learning profiles, and interest. Lessons are scaffolded and employ multiple strategies to

deliver content. Students are expected to become critical thinkers who can enact positive change. To achieve these goals, many classroom projects engage students in their local communities. An example: After interviewing homeless people and social service providers, third and fourth graders from the Capital City Public Charter School in Washington, DC developed an ABC book for young readers designed to increase their capacity to understand the challenges of being homeless.

How they are being assessed: Assessment is ongoing, with summative and formative methods of charting student progress. EL schools employ student-engaged assessment and share daily and long-term learning targets with their students. Students are active participants in the assessment process, learning how to critique their work and understand the assessment data that reflects their learning. Students also learn how to give and receive peer critiques. Eight interrelated practices "position students as leaders of their own learning":
1. Models, Critique, and Descriptive Feedback
2. Using Data with Students
3. Student-Led Conferences
4. Celebrations of Learning
5. Portfolios and Passage Presentations
6. Standards-Based Grading
7. Learning Targets
8. Checking for Understanding During Daily Lessons

Multiple assessment models are readily available to all educators, and new forms of assessment are continually being developed and shared in an online open access Best Practices blog found on the Expeditionary Learning website.

See Appendix pages 99-104 for an example of a learning targets rubric and performance task.

Name of Network: New Tech Network (NTN)

Website: http://www.newtechnetwork.org/

Network Snapshot: New Tech Network began in 1996 in Napa, CA. According to their 2015 Student Outcomes Report, the network currently serves 53,500 students, with 159 elementary, middle, and high schools located in 26 states and Australia. Of the entire student population, 22% are identified as Hispanic, 20% are African American, 5% are Asian and Pacific Islander, and 5% have multiple ethnicities. In addition, 52% of the students qualify for free or reduced lunch and 11% are qualified to receive special education services.

Mission, Values and Approach: As described on their website, "New Tech Network (NTN) is a non-profit organization that helps students gain the knowledge and deeper learning skills they need to succeed in life college and the careers of tomorrow. We work nationwide with schools, districts, and communities to provide services and support that enable schools to fundamentally re-imagine teaching and learning." NTN employs both project-based and problem-based learning to engage students with the curriculum. With a goal of student mastery of state-required skills and content, teachers make learning relevant by introducing real-world problems into the curriculum. Technology is fully integrated in

the classroom, with a one-to-one student computer ratio. Using an online collaborative learning system, students become self-directed learners, and by working in teams, they learn the importance of being accountable to their peers. Trust, respect, and responsibility are important components of the school culture, and teachers and students share ownership of the learning process.

Skills and knowledge and habits of mind being assessed:
Assessment focuses on five school-wide learning outcomes:

1. Agency
2. Collaboration
3. Oral Communication
4. Written Communication
5. Knowledge and Thinking

Within these five components, students are assessed on their ability to take control over their learning, to work in groups, to communicate effectively through speech and writing, and to contextualize and apply learned knowledge.

How they are being assessed:
Formative and summative assessments measure content mastery and the students' ability to apply their understanding by solving authentic problems. Non-graded assignments give students valuable feedback and encourage creativity and risk-taking. As explained in a blog written by Paul Curtis, Director of Curriculum for the New Tech Network, students are continually assessed throughout the learning process. At the beginning, teachers evaluate student understanding and look at how students have organized their teams and approach to the work. Midway through the process, teachers examine how well students are contextualizing and applying their developing knowledge. Rubrics are used in the final stages to assess communication, collaboration, and the final product. Students are given time to reflect and comment on what and how they have learned.

The Echo online learning management system offers teachers, parents, and students the opportunity to track student progress in each class through an outcome-based gradebook that includes assessments of professional work ethic, collaboration, written communication, content, and oral communication.

College Readiness Assessments (CRA) are integrated into the curriculum and measure knowledge and thinking, and written communication skills.

In addition, the New Tech Network administers the PISA Test for Schools as part of the AIR deeper learning research.

Sample rubrics may be found in Appendix pages 105-107.

Name of District: Catalina Foothills Unified School District #16 (CFSD16)

Website: http://www.cfsd16.org/public/home.aspx

District Snapshot: Catalina Foothills Unified School District #16 is located in Tucson, AZ and serves over 5,200 students living in the greater Tucson metro area. The district includes a fee-based early learning center, four elementary schools, two middle schools, one high school, and a Community School that offers year-round programming to youths and adults. Under the leadership of Superintendent Mary Kamerzell, Ph.D., the high school graduation rate is 97.5%, and 94% of graduating students are college bound. According to a school data report found on the NICHE website, students identified as white make up 64.3% of the overall school population, with 21.2% Hispanic, 9.0% Asian, 3.0% Multiracial and 1.9% African American. The Arizona Department of Education has named CFSD a top performing school district for four straight years and *U.S. News & World Report* listed Catalina Foothills High School as Arizona's #1 non-selective high school.

Mission, Values and Approach: According to their mission and vision statements, "*Catalina Foothills School District, a caring and collaborative learning community, ensures that each student achieves*

intellectual and personal excellence, and is well prepared for college and career pathways. Learning transfers to life beyond the Catalina Foothills School District experience, enabling each student to flourish as a responsible citizen in the global community." The district has adopted a strategic plan, Envision21: Deep Learning, which supplements the focus on academic subjects with the building of 21st century skills, such as the ability to think critically, apply knowledge, and use technology to effectively obtain, interpret, and communicate information. To achieve these Deep Learning goals the district strives to:

- Reduce the gap between current and desired student academic achievement.
- Raise the engagement of students so they are highly motivated to set and achieve increasingly challenging goals for deep learning.
- Partner with families and community to achieve our strategic priorities.

The district has 13 core values that shape the educational process at each of the district schools: Excellence, Equity, Commitment, Belonging, Compassion, Responsibility, Respect, Integrity, Curiosity, Innovation, Risk Taking, Perseverance, and Resilience.

Skills, Knowledge and Habits of Mind being assessed: In addition to summative, standardized, and curriculum-based assessments, CFSD schools assess what they have designated as Deep Learning Proficiencies. The measured performance areas and the proficiencies within each area are:

- Citizenship: Global Systems and Perspectives, Cultural Literacy, Civic Literacy and Engagement, Self-Regulation and Reflection
- Creativity and Innovation: Idea Generation, Idea Design and Refinement, Openness and Courage to Explore, Work Creatively with Others, Creative Production and Innovation, Self-Regulation and Reflection
- Critical Thinking and Problem Solving: Information and Discovery, Analysis and Interpretation, Reasoning, Problem Solving/ Solution Finding, Self-Regulation and Reflection
- Communication: Within communication, the following qualities are assessed: Engaging in Conversations and Discussions, Using 21st Century Communication Tools, Listening, Conventions of Communication, Self-Regulation and Reflection
- Collaboration: Leadership and Initiative, Cooperation and Flexibility, Responsibility and Productivity, Responsiveness, Self-Regulation and Reflection
- Systems Thinking: (For older learners, intermediate grades – high school) Big Picture, Change over Time, Interdependencies, Consequences, System-as-Cause, Leverage Actions

Classroom projects reflecting engagement with the deep learning proficiencies include a living history Civil War simulation in which fifth graders spent two months conducting research, writing original scripts, and designing the set and props. Each student took on the role of an actual person who experienced war in the 1860s. This work became the subject of a recent documentary, Life in America: A 5th Grader's Civil War.

The CFSD Expert Resource Program provides the opportunity for current students to connect with CFSD alumni who have become experts in their respective fields. These relationships provide deep learning opportunities and allow students to contextualize their learning outside of the school.

How they are being assessed: Student assessment includes the new Arizona statewide achievement test, AzMERIT (Arizona's Measurement of Educational Readiness to Inform Teaching). Other standardized tests include Arizona's Instrument to Measure Standards (AIMS) and the Stanford 10.

In 2006, CFSD formed an advisory group of students, parents, teachers, businesses, and university professionals to identify the necessary

skills for success in the 21st century. This work led to the development of rubrics that address the above mentioned deep learning proficiencies.

Representative examples of these rubrics are found in Appendix pages 108-171.

Name of District: Virginia Beach City Public Schools (VBCPS)

Website: http://www.vbschools.com/

District Snapshot: Virginia Beach City Public Schools, located in Virginia Beach, VA, consist of 55 elementary schools, 15 middle schools, 12 high schools, and a number of secondary/post-secondary specialty centers including an Adult Learning Center and an Advanced Technology Center.

Of the 68,210 students, 23.8% are identified as African American, 50.8% are White, 10.5% Hispanic/Latino, 8.5% Multiracial, and 5.6% Native Hawaiian/Pacific Islander. In addition, 36.3% of students are eligible for free or reduced lunch. In March of 2015, District Administration magazine honored Virginia Beach City Public Schools by naming them a *"District of Distinction"* for their work in designing sustainable environments for 21st century learning. The district graduation rate is 88.5%. According to the district 2014–2015 Fact Pack, *"all 11 VBCPS high schools were ranked in the top 9 percent nationwide by The Washington Post newspaper and is the only division in Hampton Roads to have all of its high schools in the top 9 percent of the near 22,000 public high schools in the nation. Newsweek and The Daily Beast ranked the top 2,000 high schools in the country that best*

prepare students for college and 11 Virginia Beach City Public Schools high schools made the list."

Mission, Values and Approach: District priorities are an integral part of the district's mission to: *"in partnership with the entire community, empower every student to become a life-long learner who is a responsible, productive and engaged citizen within the global community."* Envisioning that *"every student is achieving at his or her maximum potential in an engaging, inspiring and challenging environment,"* the district is committed to equipping all students with the necessary skills to thrive as 21st century learners, workers, and citizens.

The district developed a *Compass to 2015 framework*, followed by a *Compass to 2020 framework* through which the district implements multiple strategies to ensure that students meet high academic expectations, develop social-emotional skills, and are offered diverse pathways to learning in an environment that cultivates growth and excellence. An interactive image outlining the strategies for teaching and learning may be found here.

Skills, Knowledge and Habits of Mind being assessed: As indicated in the Compass to 2020 Graduate Profile, the commitment to graduating students who are ready for college and career requires that students develop the skills to become:

- Problem solvers and Value Creators
- Knowledgeable
- Thinkers and Inquirers
- Cross-Culturally Competent
- Communicators and Collaborators
- Personally and Socially Responsible
- Balanced (physically, emotionally and academically)

How they are being assessed: VBCPS schools utilize multiple assessment tools to measure 21st century learning skills and mastery of academic knowledge. Core knowledge is assessed summatively through state and federal standardized tests such as the National Assessment of Educational Progress (NAEP) and the Virginia Standards of Knowledge (SOL). At the high school level, 21st learning skills are measured through externally developed assessments such as the College and Work Readiness Assessment (CWRA) and the PISA Test for Schools. VBCPS teachers develop rubrics for classroom use based on the principles of Differentiated Instruction and the Virginia Beach Continuum of 21st Century Skills. In addition, teachers at VBCPS schools have designed CWRA-style 'Integrated Performance Task' tests by grade level.

See the VBCPS continuum on pages 172-175.

Name of District: Sanborn Regional School District (SRSD)

Website: http://web.sau17.org/

District Snapshot: The Sanborn Regional School District is located in the two towns of Kingston and Newton, NH. The district comprises two elementary schools, one middle school, and one high school with a total enrollment of approximately 1,950 students. The NICHE school data report describes the school district as having a 92% graduation rate, and 13% eligibility for free and reduced lunch. In addition, 94.5% of students are reported to be White, 2.3% Hispanic, and 1.2% African American. According to the 2013–2014 SRSD Regional Annual Report, of the 182 members of the graduating class of Sanborn Regional High School, 76.4% planned to attend either a four-year (44%) or two-year school (32.4%).

Mission, Values and Approach: As indicated in the Sanborn Regional School District 2010–2015 strategic plan, *"The mission of the Sanborn Regional School District is to work in partnership with the community to educate all learners in a safe environment. Together we are committed to providing these individuals with opportunities to develop the skills necessary to become responsible citizens who are capable of pursuing knowledge independently and making well-informed decisions."* Their vision is to: *"Inspire all by developing a culture of learning that provides rich and challenging pathways to success."*

Among their district goals, SRSD is focused on the following three goals:
- Curriculum: To ensure that all students develop a foundation of knowledge and skills through a rigorous and relevant curriculum that exceeds national, state, and local expectations by addressing the individual needs of all students and helping them realize their full potential.
- Technology: To provide students with the technological skills necessary to compete in a global society and provide the staff with technology tools necessary for efficiency and accountability.
- Culture: To improve and sustain a culture for all community stakeholders that is open to change, driven to excel, embraces measurable achievements, and encourages lifelong learning and the success of all community members within the District.

Sanborn Regional High School Core Values include the following P.R.I.D.E. qualities:
- Personalization: Developing self-identity while respecting differences in others
- Risk-Taking: Challenging individuals academically to develop their character

- Integrity: Demonstrating high standards and moral courage both in and out of the classroom
- Discovery: Inspiring creativity and imagination through exploration and self-expression
- Empowerment: Pursuing excellence with confidence

For the last five years, the Sanborn School District has been working with the New Hampshire Department of Education to develop tools to assess 21st century learning skills in the classroom. As part of this work, they are one of four New Hampshire school districts that will be piloting the U.S. Department of Education approved New Hampshire's Performance Assessment for Competency Education (PACE). Beginning in 2015, these four districts were the only ones in the country piloting this program that reduces standardized testing in favor of daily performance assessments that provide meaningful feedback, and better measure student understanding and their ability to apply their knowledge. For example, *"In math, fourth-graders might design and cost out a new park and write a letter to their board of selectmen arguing their perspective based on their calculations and other evidence."* http://governor.nh.gov/media/news/2015/pr-2015-03-05-pace.htm

Skills, Knowledge and Habits of Mind being assessed: Teachers in the Sanborn Regional School District design their Common Core-based instruction through the utilization of Unit Planning Resources that are accessible through the school website. Multiple templates are provided so that instructors may design their course units and assessments with a focus on standards and competency. These templates provide teachers with the tools to create lesson plans that incorporate differentiated instruction and understanding by design.

In addition to receiving numerical grades in academic subjects, as evidenced on the Sanborn High School Transcript, students are assessed on school-wide, academic, civic, and social expectations for learning. The expectations include the following categories:
- Effectively Communicate
- Creatively Solve Problems
- Responsibly Use Information
- Self-Manage Their Learning
- Produce Quality Work
- Contribute to their Community

Additional information on these core values may be found here.

How they are being assessed: Assessments are formative and summative, standards- and competency-based. As of 2014-2015, Sanborn High School teachers use a rubric scale to determine competency and course grades for students. Rather than using a 100-point grade scale with numerical grades received for each assignment and averaged for a final total, Sanborn rubrics are charts that measure levels of proficiency attained for different criteria. Four levels are used to assess student work on a scale of Exemplary, Proficient, Basic Proficiency, and Limited Proficiency. Teachers design rubrics relevant to the course, skill, or competency they are assessing, and these rubrics are shared with students so they have clear targets to aim for. Teachers meet in Personal Learning Community (PLC) groups and use a Data Team Cycle Template to examine student achievement data and set goals for instruction. Grades are posted and accessible via a Pinnacle Internet Viewer platform.

A more comprehensive explanation of the Sanborn Grading system may be found here.

For examples of rubrics and please see Appendix pages 176-178.

"We need to ask ourselves
'are we measuring what we value?'
if the answer is 'no', how do we?"

5 DISTILLATION OF GAPS AND DOMAINS IN WHICH ASSESSING LEARNING IS MOST CHALLENGING

When asked which domains of deeper learning are most challenging to assess, the most common noted domain was **Collaboration**, followed closely by **Creativity**, with **Communication** in third place. Critical thinking was also highlighted as a theme; additional (non-thematic) items included: *Metacognition, Engagement, Empathy, Literacy, Resiliency, Mindsets, Dispositions, Reasoning, Affective Domain, Character, Work Ethic, Agency, Grit, Design Thinking, Reflection,* and *Effort.*

Why are Collaboration, Creativity, and Communication so challenging to assess? Interviewees provide the following insights:

- **Constraints of the factory model system**
  The 'one size fits all' factory model of education originated in the early nineteenth century and has changed little since then. The constraints of this standardized, silo-ed system are significant when schools and districts begin to shift pedagogy and curriculum towards deeper learning and the assessment thereof. The system is overloaded, overwhelmed, and oriented towards compliance, rather than creativity.

"We have inadvertently strengthened the muscle of compliance, follow the rules, do what you're told. Results in compliant, non-innovative learners or frustration and burnout. We are missing students' ability to fail and learn from it."

"The biggest challenge is that the system is overwhelmed – there is a district in North Carolina where this past year they administered 125 different tests across 12 different grade levels. You can't address these issues of assessment without addressing the larger accountability system."

"Gap of space, time, structure and tools for assessing this kind of learning"

"We have an entire system based on compliance and punitive measures."

"We are trapped in the system we grew up in."

- Lack of support, trust in, and development of teachers to build assessment literacy in their practice
  Shifting to a culture of deeper learning assessment requires trusting our teachers and providing them with the skill development and supports needed to do this work. Teachers need autonomy, time, and structure to collaborate with peers, as well as job-embedded professional development to build skills over time. Skills include designing performance tasks, developing and administering tailored rubrics (with fellow teachers and students), and collaborating with peers across content areas and grade levels.

"The first biggest challenge is teaching teachers how to create value performance tasks (i.e., tasks which do measure the standards). This is the first hurdle. Second is helping teachers to move beyond very simple tasks and those which reflect deeper learning, and which tend to be more extended tasks with greater student choice and voice. Getting to deeper, richer tasks."

"K–12 gaps I see are a whole generation of teachers who do not know how to develop performance tasks, develop and score rubrics. Older teachers do, teachers who (have been in NCLB-era teacher development) don't know how to develop and score a rubric. That was a big aha for me."

"Few people understand 'anchor standards' – one set of standards which increase in complexity of content."

"Not enough small group sharing amongst teachers.

Discrepancies of how rubrics are being used from teacher to teacher."

"Teacher voice is a huge issue. There is a feeling they are assessing what they are being told to assess and having to cave to teaching to the test. There is not enough small group sharing amongst teachers to get the sense that the assessments are being applied rigorously and systematically across classes – vast discrepancies of how rubrics are being used from teacher to teacher 'I am awash in data and bereft of insight.' Lack of time to discuss with fellow teachers, connect insights, and make better instructional decisions."

"The only way to get these assessments of these less tangible outcomes is to give teachers more autonomy – in the US this is seen as 'the fox in the hen house.'"

"Assessment literacy (for both teachers and leaders) is still a chronic problem across the country."

- **Lack of agreement in, and clear definitions of proficiency**

  Within the current system, there is little, if any, definition of what we mean when we say 'creativity,' 'collaboration,' etc. What does it mean to be 'creative'? How do we know what it looks like in practice across content areas in a multiplicity of contexts? Interviewees noted the need to get clarification on learning targets and to start stabilizing definitions into objective standards.

"We don't have standardized DL assessment"

"Foundational definitional difficulties. They are definable. In our training with teachers, we spend major chunks of time helping people grapple with learning targets. We have to be clear about WHAT we are assessing (target) before designing the assessment of the learning."

"We need to get crystal clear on learning targets."

"The difficulty of (deeper learning) assessment is that no one talks about it in the right way – can you test history via multiple tests – some say yes, some say no. The disagreement is not about testing, it's about what's worth learning regarding history. If you think history is about constructing historical arguments, or recall of facts."

"[There is a] lack of agreement with regards to what we're looking for."

"We don't have stable definitions of what 'X' is – we don't have objective standards."

- **Short-term vs. long-term thinking and support**

  Current testing focuses on short-term gains to the detriment of deeper learning pedagogy and assessment. These skills take time to develop and might not manifest in the moment. The system, as it currently exists, typically does not facilitate nor does it support students building explicit learning progressions and mastery over time. Learning

sequences and transitions from one level in the system to another are needed to support skill development.

"Skills might not manifest in the moment – might not manifest until years later and in different contexts. Assessment tends to be short term – we need long term and it's harder to do reliably and consistently in the long term."

"It's possible to teach short term to the test – and kids are not prepared for the next level of progress – there is a real incentive to focus on short term as opposed to long term. We need to get the community to understand that maximizing test scores is not the way forward. We should be very worried when students are getting big short term gains on standardized tests."

"Teaching to the short term – kids not prepared for the next level"

"Agency and grit are difficult to assess because you don't assess on a product - you assess over time."

"Gaps in learning sequence generally"

"There is a lack of smooth transitions from one level in the system to another."

- **Complexity of valid, reliable measurement**
  Valid and reliable assessment of these domains is one of the thorniest challenges. The lack of agreement in definitions of proficiency makes it challenging to develop valid, consistent measures across the system. Variability of context and content renders reliable assessment very challenging indeed.

"It's very, very difficult to do (because) contexts intrude. This is what killed the portfolio movement in VT – students should be assessed with portfolios of work. Extended experiments couldn't deliver the kind of reliability that folks had become used to with the

reliability of standardized tests. There is always a trade off – the reason standardized tests do well – they focus on things that are easy to assess. When you compare the precision of standardized tests – the things that are difficult to assess have been ignored."

"Character education . . . students can game their responses . . . achievement tests work because if you don't know the answer, you can't really game the test."

"It has bedeviled all non-cognitive testing – these assessments are quite easy to game."

"They are soft – we are relying on rubrics and checklists and observation. In order to prove that to get to reliability and validity, you need people looking at specific behaviors. We don't go far enough. Critical thinking is pretty generic – what does it look like and sound like at various stages of a child's development? We are measuring the Four Cs very superficially."

"Dispositional domains are deeply complex and preference oriented."

"Anything not straight up and numeric is not objective."

"Non-cognitive is difficult to apply objectively across large cohorts."

"Collaboration assessment is awfully hard to do because it's bivariable and multivariable – when I'm assessing a student's collaboration skills – these skills will vary differently if she's collaborating with student X or student Y. PISA abandoned their efforts to watch kids solve problems together, now they are doing it with avatars – kids interacting with the computer. It's more psychometrically sound, although more of an artifice."

- **Impact of assessment being used as a ranking device and/or high stakes assessment method**
  If assessment of learning is tied to a high stakes outcome, the learner's intrinsic motivation is

significantly impacted to the detriment of deeper learning outcomes.

"Character education – students can game their responses. Beliefs, perceptions, attitudes – these things are very difficult to assess when stakes are high."

"Harder to assess when high stakes are attached – because will people will lie or inflate if stakes are attached. Stakes for kids, stakes for teachers. Getting to mindsets and self-perceptions – subject to fake-ability."

"We don't need to be ranking most of the time. We should use assessments to clarify what kids are good at and how they can take the next step to get better – school teams assess constantly – watching videos of past performance – that's what an assessment should be – 'formative assessment to get better' – we need more categorical data. We feel compelled to give everyone 81 or an 82, or an A or B+ – to what purpose? The big issue is not how do we develop

rankable measurements of these areas, but how should we change the conversation on how to use assessment (i.e., for student growth instead of ranking teachers and schools). I think all of us in the Deeper Learning network are working towards changing that conversation – the reductionist ways kids, schools, and teachers are being assessed is ridiculous."

- Lack of student voice

  A number of interviewees noted the lack of student voice in the assessment process:

"Self assessment, not allowing students to reflect in their preferred mode."

"Student voice is a real gap"

"Getting the student to take more of a role in his or her education . . . . Writing is the chief way that we understand students' thinking, followed by oral reporting. I think some of the visual literacy work of Dan Roam is incredibly important to helping students

think about their thinking. Seventy-five percent of information-processing neurons respond to visuals. We need to take advantage of that."

- Diversity of student population

  Current assessment practices privilege language and logic and provide limited opportunity for students to demonstrate knowledge and proficiency in a diversity of ways. One interviewee underscored the inherent racism, sexism, and disabilitism in the vast majority of school assessments. Additional interviewees linked current assessment methods to a violation of civil rights, and highlighted the challenges faced by students who speak English as a second language when demonstrating skills.

"There are certain populations of students we don't account for – just because they don't have language skills, does not mean they don't have skills – language is a barrier to assessing the skills."

"It certainly is a civil right that is being violated around equity. We are still denying the right of young people who have incredible talent and skill who will not be recognized in schools."

"We have a lot of racism, sexism, disabilitism, in our assessments. If people are subject to some kind of 'ism,' we need to assess different ways of assessing their learning."

Interviewees offered advice and ideas on how to overcome these challenges and gaps:

While not underestimating the difficulty and complexity of this work, several interviewees remain hopeful and optimistic about making real progress:

"The difficulty of measuring is overestimated."

"The reasoning domain requires that the assessor be crystal clear on the meaning of what they are assessing. The other (challenging arena) is the affective arena - dispositions. Some people say, 'well, that's affect, you can't assess that' – you can if you know how."

"Foundational definitional difficulties. They are definable . . . In our training with teachers – we spend major chunks of time helping people grapple with learning targets. We have to be clear about WHAT we are assessing (target) before designing assessing learning."

"Creativity tends to get housed in the arts, not math – even though math can be highly creative. Doesn't even come up in STEM – it's too bad – North Salem (district) is fostering and assessing convergent and divergent thinking, the core of creativity – it's absolutely definable and measurable. The real challenge is the human change and transformation required to attend to creativity as a competency and integrating it as a core competency. We know how to do it, we choose not to."

"There are lots of great teacher- and school-created assessments – I have a lot of confidence in the work that gets done by High Tech High (HTH) and those folks. I don't think we have figured out how to make that reliable and valid the way we have with other standardized systems."

"I can design assessment for any target."

"Dispositional field needs support – performance assessments are about to flourish (more states moving to competency-based approaches), a big door is opening."

Interviewees noted the need for this work to be led by teachers:

"This work needs to be led by teachers. We need an assessment literacy micro credential which is based on some codified knowledge with teachers building this expertise. Help teachers customize their learning and documentation. Not every teacher has to be the expert

on everything – what if there was a system where teachers could learn with and from each other - instead of a litany of tests which are scored elsewhere?"

"Model of teaching teachers which is the best in the country is the National Writing Project."

"Teachers need time to plan, assess, and collaborate."

– and to use Common Core Standards as a lever:

"Common Core – we as an organization have made a choice to say that the Common Core Standards may not be perfect, but it is a set of math and ELA (English language arts) outcomes that don't define curriculum. Everyone in this movement should step up immediately – if these are the outcomes, how will we develop thoughtful ways to help build these skills and see them as an opportunity to do great work? I don't think the standards are good or bad, they are no worse than the existing standards before them – in many cases better because they support higher order

thinking. They are not a harm, on the other hand – we need to make them our own – it's an opportunity to support high quality student work."

"Jury is out on PARC and SmarterBalance. Common Core has become overly politicized. The benefit though, which we will see for the next five to ten years, is that every state has raised its standards - the new Texas standards look an awful lot like the New Mexico standards – it has raised all the bars. The gap is it's focusing (just) on comprehension and critical thinking skills – the big gap is the other skills that matter in the workforce. I don't think we will have a standardized system for collaboration, but I do think we can have a shared understanding of how to assess student portfolios."

- and to make the learning regarding assessment open source, available at no cost, and available to all:

"How might we assess these higher levels? Let's try to provide assessments for folks to use that stuff. Providing assessment tools that have been tried and provide them at no cost. Here is some stuff you can use for free and resources re: where it came from. Elon Musk opened up all his patents on the electric car and said, 'If I want the electric car industry to develop, I can't hold it back by constraining what I developed – I want other people's ideas – I want to advance the industry.'"

One interviewee noted game-based learning and assessment as a lever:

"Game-based learning and assessment – it's like oxygen for digital natives. Learning by doing and confusion is how I get deeper learning. If we're going to produce capable, confident, thinking on their feet students and we can't write the specs for the jobs which don't exist yet, we need to help

students learn to adapt – and games are a great tool for this – and in ramping up degrees of difficulty and complexity. In a perfect game-based world, you wouldn't need explicit assessment because the game takes care of it through trial and error."

- and additional interviewees noted the importance of multiple measures:

"Assessments should be anywhere, anytime, MANY WAYS, you don't just have to do science that way, English that way, AND you have to prove you know how to do stuff outside of school – otherwise you will have a lot of school-smart students who don't know how to be successful outside of school."

"Multiple measures, there are many ways of being smart."

– with outreach to communities to discuss **"What's worth learning and how do we assess it?":**

"It's so important and when I meet with groups I ask the question, 'What skills do you want your graduates to master by the time they leave your school?' No one says pass the state-wide multiple choice test. They always say problem solving, creativity, etc. Then I say, 'How are you assessing that?' The answer is, 'We are not.' Perhaps written communication. It makes me think that we value what we measure instead of measuring what we value. It seems like a no-brainer, why are you not assessing what you value? It's frustrating, it boggles my mind. We need to ask ourselves 'are we measuring what we value?' If the answer is 'no,' how do we?"

"For me, there is a high road and a low road to educational success. Doing whatever you need to pass the test is the low road, the high road is teaching for understanding. Teaching to the test is worse – you de-skill students. Teaching for understanding is the way to raise test scores."

"An incredible depth and bredth
of talent taking this work forward."

LISTING OF 'KEY PLAYERS' IN ASSESSING THIS KIND OF LEARNING, I.E. LEADING THINKERS, SCHOLARS, PRACTITIONERS.

When asked who the 'key players' are in assessing this kind of learning, interviewees noted the following individuals. A brief bio follows in the Appendix pages 58-78 to give a sense of each individual's background and the scope and context of his or her work. The listing speaks to the incredible depth and breadth of talent – and what might be possible if we begin to map and connect this work via an open source database.

- **Tom Bennett**: Director and Founder, researchEd
- **Ron Berger**: Chief Program Officer, Expeditionary Learning
- **Tina Blythe**: Researcher, Project Zero
- **Aaron Brengard**: Principal, Katherine Smith Elementary School in East San Jose, California
- **Susan Brookhart**: Independent Educational Consultant; ASCD faculty member and Senior Research Associate, Duquesne University School of Education.
- **Anthony Bryk**: President, Carnegie Foundation for the Advancement of Teaching
- **Chuck Cadle**: Global Entrepreneur, Educator and Technology Visionary
- **Kim Carter**: Chief Education Officer, MC2 Charter School
- **Edward P. Clapp**: Research Manager, Agency *by* Design (A*b*D), Project Zero, Harvard Graduate School of Education
- **Rob Coe**: Professor, School of Education, Durham University; Director, Centre for Evaluation and Monitoring (CEM), Durham University
- **Marc Chun**: Education Program Officer, Hewlett Foundation
- **Terry Crooks**: Professor Emeritus and Co-Director of the National Monitoring Program, Otago University, New Zealand

- **Anne Davies**: Co-founder, Connect2Learning: Transforming Learning for Their Future
- **Ray Diffley**: Director of Admissions, Choate Rosemary Hall
- **Angela Duckworth**: Professor of Psychology at the University of Pennsylvania
- **Eleanor Duckworth**: Professor of Education, Harvard Graduate School of Education
- **Charles Fadel**: Founder and Chairman, Center for Curriculum Redesign
- **Camille Farrington**: Research Associate and Assistant Professor, University of Chicago School of Social Service Administration (SSA) and the Consortium on Chicago School Research (CCSR)
- **Sarah Fine**: Visiting Scholar, High Tech High Graduate School of Education
- **Douglas Fisher and Nancy Frey**: Co-founders, Fisher and Frey: Literacy for Life; Professors, San Diego State University
- **Dan French**: Executive Director, Center for Collaborative Education
- **Ted Fujimoto**: President, Landmark Consulting Group, Inc.
- **Michael Fullan**: Former Dean of the Ontario Institute for Studies in Education of the University of Toronto
- **Chris Gabrieli**: Co-Founder, TransformEd; Co-Founder, National Center on Time and Learning (NCTL); Co-founder and executive Chairman, Massachusetts 2020.
- **Howard Gardner**: John H. and Elisabeth A. Hobbs Professor of Cognition and Education, Harvard Graduate School of Education
- **Brian Gong**: Executive Director, Center for Assessment
- **Tom Guskey**: Professor, University of Kentucky; Education Consultant
- **Mariale Hardiman**: Vice Dean, Academic Affairs, Professor of Clinical Education; Co-founder and Director of the School of Education's Neuro-Education Initiative (NEI) at Johns Hopkins University.
- **John Hattie**: Director, Melbourne Education Research Institute, University of Melbourne, Australia
- **Dr. Mike Hibbard**: Assistant Superintendent For Instruction and Human Resources, North Salem Central School District
- **Josie Holford**: Head of School at Poughkeepsie Day School
- **Ellen Hume-Howard**: Director of Curriculum, Sanborn Regional School District, New Hampshire
- **Bob Lenz**: Executive Director, Buck Institute for Education (BIE)
- **Joe McDonald**: Professor of Teaching and Learning, Steinhardt School of Culture, Education and Human Development, New York University
- **Jay McTighe**: Independent Consultant
- **Scott Marion**: Vice President, National Center for

- the Improvement in Educational Assessment, Inc.
- **Kim Marshall**: Coach, New Leaders for New Schools (NLNS)
- **Jonathan Martin**: Author, Speaker, Consultant
- **Bob Marzano**: Co-founder and CEO, Marzano Research in Colorado
- **Kevin Mattingly**: Adjunct Professor, Teachers College
- **Jal Mehta**: Associate Professor, Harvard Graduate School of Education
- **Pam Moran**: Superintendent, Albemarle County Public Schools
- **Mary Moriarty**: District K-12 Curriculum Coordinator, Rochester Public Schools, New York
- **Ray Pecheone and Linda Darling-Hammond**: Ray Pecheone-Executive Director of the Stanford Center for Assessment, Learning and Equity (SCALE), Linda Darling Hammond- Charles E. Ducommun Professor of Education, Stanford University
- **Dr. Alex Patton**: Tenth grade Humanities teacher, High Tech High Chula Vista
- **Bob Pearlman**: Consultant
- **James Pellegrino**: Co-Director of Learning Sciences Research Institute
- **Kylie Peppler**: Associate Professor of Learning Sciences, Indiana University; Director, The Creativity Labs at Indiana University, Bloomington
- **Allison Plunkett Harris**: Principal, Smithfield Elementary School, Charlotte-Mecklenburg School district
- **Jim Popham**: Emeritus Professor, Graduate School of Education at the University of California, Los Angeles (UCLA)
- **Tim Presiado**: Chief Operating Officer, New Tech Network (NTN)
- **Gerrita Postlewait**: Chief K-12 Officer, Stupski Foundation
- **Gerard J. Puccio**: Department Chair and Professor at the International Center for Studies in Creativity, Buffalo State
- **Lisa Pullman**: Executive Director, Independent School Data Exchange (INDEX)
- **Bob Rath**: President and CEO, Our Piece of the Pie (formerly South End Community Services)
- **Rob Riordan**: Former President of the High Tech High Graduate School of Education
- **Richard D. Roberts**: Vice President and Chief Scientist, Professional Examination Service
- **Larry Rosenstock**: Founder and CEO, High Tech High
- **William Sedlacek**: Professor Emeritus of Education, University of Maryland, College Park
- **Steven Seidel**: Director of the Arts in Education Program, Harvard Graduate School of Education
- **Valerie Shute**: Mack and Effie Campbell Tyner endowed Professor of Education, Florida State University
- **Ted Sizer** (d. 2009): Founder of the Essential School movement

- **Robert Sternberg**: Professor of Human Development, Cornell University
- **Rick Stiggins**: Founder and CEO, Assessment Training Institute
- **Bernie Trilling**: Founder and CEO of 21st Century Learning Advisors and P21 Senior Fellow
- **Stephan Turnipseed**: President Emeritus and Executive Director of Strategic Partnerships, LEGO Education
- **Sheila Valencia**: Professor of Language, Literacy, and Culture at the University of Washington, Seattle
- **Tom Vander Ark**: CEO, Getting Smart; Partner, Learn Capital
- **Tony Wagner**: Expert in Residence, Harvard University i-Lab
- **Elliot Washor**: Big Picture Learning: Co-founder, Big Picture Learning and The Met Center
- **David Weston**: Founder and Chief Executive Officer, Teacher Development Trust
- **Grant Wiggins** (d. 2015):

President, Authentic Education
- **Gene Wilhoit**: Executive Director, National Center for Innovation in Education
- **Dylan Wiliam**: Emeritus Professor of Educational Assessment, University College London
- **Yong Zhao**: Presidential Chair and Director of the Institute for Global and Online Education in the College of Education, University of Oregon; Professor in the Department of Educational Measurement, Policy and Leadership, University of Oregon

In addition to these 'Key Players', interviewees highlighted the following collaborative efforts to move deeper learning assessment forward:

Hewlett Foundation

The Hewlett Foundation established its 'Deeper Learning' initiative in 2010 and has established a Deeper Learning Network comprising more than 500 schools in 41 states. The organization has commissioned a report to explore an open source database of deeper learning assessment practices. The report will be published in October 2015.

The Council for Chief State School Officers (CCSSO) – Innovation Lab Network (ILN)

The CCSSO ILN has launched a deeper learning assessment initiative called 'Balanced Systems of Assessment and Aligned Accountability'.

"ILN states are establishing comprehensive systems of formative and summative assessment, including performance-based measures of deeper learning, that provide meaningful measures of college and career readiness throughout a student's education. States are also pursuing aligned accountability systems." [Source: CCSSO website].

Most recently (January 2015), the network released a publication titled, Evolving Coherent Systems of Accountability for Next Generation Learning: A Decision Framework.

Center for Curriculum Redesign

The mission of the Center for Curriculum Redesign is global transformation through curriculum renewal. The organization recently published its [Character Framework](#) outlining the organization's view for 21st century competencies. The organization is looking to spin off a non-profit to design 21st century assessments of the competencies outlined in the framework. The non-profit will be governed by a coalition of assessment providers, including the Organisation for Economic Co-operation and Development (OECD), the National Association of Independent Schools (NAIS), and Pearson. The first meeting took place this past June to discuss the governance structure of the non-profit spin-off and how to build the Character Framework assessments.

The Center for Student Work

Expeditionary Learning (EL), in partnership with the Harvard Graduate School of Education (HGSE), recently launched an open source database called [The Center for Student Work](#). Ron Berger, EL Chief Program Officer, has been working for over 25 years with Steve Siedel at HGSE to use student work as models to guide the understanding of what quality work looks like. The database features exemplary pre-K to 12th grade student work; in addition to providing access to exemplary work, the site includes a resource collection where visitors can learn how to use student work to improve teaching and learning, as well as providing the opportunity for visitors to submit their own work through the site.

Assessment and Teaching of 21st Century Skills

The Assessment and Teaching of 21st Century Skills (ATC21S) project is focused on defining 21st century skills and developing ways to measure them. The project is supported by Cisco Systems Inc., Intel Corporation, and Microsoft Corp. The work started in 2009 and finished in 2012. This [site](#) is a project archive with all resources available to the public under a Creative Commons license.

New Pedagogies for Deep Learning (NPDL)

[NPDL](#) was launched in 2012 by Michael Fullan, Greg Butler, and Joanne Quinn, and representatives from Intel, Microsoft, OECD, and Promethean.

"(NPDL is) a global movement dedicated to transforming learning by identifying new pedagogies that foster deep learning competencies and ways to measure progress.

"We are partnering with 1,000 schools in 10 countries. We work with clusters and networks of schools to build knowledge and practices that develop deep learning and foster whole system change."

Imagining the database prototype...

7 DRAFT LISTING OF FEATURES FOR AN ASSESSMENT DATABASE PROTOTYPE.

Interviewees noted a range of features which they would like to see in an open source database:

Examples of great practice

"It's good to see examples of performance – exhibitions, student-led conference, defense."

"Rubrics are useful – New Tech Network has good ones re: what a good school looks like, what a good project looks like."

"Examples of something being assessed, what the teacher comments are."

"Achievement First has an interactive rubric – insane in its complexity, but also interesting (e.g., solving a geometry problem)."

"Models of kids talking about their work and their learning."

"Interviews of kids who have persistence through college, having them reflect on their own learning history – what the skills were that they learned while they were there. Paired with thoughtful proposals around particular skills that successful kids have found – and what are some thoughtful ways we can create the conditions for supporting those habits."

"Performance tasks tied to certain content areas – overlap with Common Core – using performance tasks with rubrics – rubrics assessing skill areas, Four Cs (not just content)."

"We need models of this being done effectively – a model which a school or teacher can adapt."

"Would like to see well-made rubrics – people are reinventing their own wheels in PLCs and not doing it very well."

"Wouldn't it be great to have exemplars of a top scoring

student example and then additional examples."

"A bank of models that teachers could go to; as they sat down to look at their own units they would say 'these are the adjustments I would make' – training would be relatively easy – as opposed to everyone being a creative assessment designer."

"What is the assessment of deeper learner outcome? What are deeper learning outcomes? Who's doing it? What does it look like?"

"Task bank – tasks which are both assessments for learning and of learning – assessments also as learning opportunities."

Research backing it up and evidence

"I would love to see research validation of whatever assessment strategies work. When teachers can see the biggest bang for the biggest buck."

"I would love to see us continue to use things that are externally validated – not created by individual

organizations like us – the reason I say that is that it helps to define and validate the broader why behind our work. Externally validated set of tools, we don't have that at the moment."

User experience is important

"Usability is key – what can you get with the fewest clicks (e.g., broken out by age level, development area)."

"How would you organize it to make it user friendly – get a group of teachers together to design."

Help/advice/community for teachers to support applying their learning

"For any kind of assessment database, 'what are you looking at?'" [Make it explicit.]

"How would teachers apply it?"

"Action research – teacher contributing back to database – a dynamic tool."

"Every teacher is looking for PLCs – good to collaborate with teachers outside of your own school – cross national sharing."

"Has to go well beyond a list of assessments and here are the grade levels. Has to do a good job of applying."

"It would be great if it had a feature to suggest strategies that are based on the assessment."

"PLC as part of the database."

Also, help, support and guidance with assessment literacy in general for teachers

"Where teachers are struggling the most is performance task and rubric development. Plus general best practices in assessment. I don't have a problem with multiple choice – just not ALL multiple choice – we need balance."

"How to choose the right assessment format? Guidance on this. We are lacking literacy in

formative assessments in particular. Once you get formative assessments right – you can really increase student achievement if you understand that. I have been surprised by the number of educators who don't understand formative assessments."

"The problem is no one wants to say this is good rubric, there is so much anxiety around this – you need design principles on rubrics – and how to assess the rubric that is assessing learning."

"Inter-rater reliability issues – we have worked with groups of teachers screening exemplar work."

"Information about different quality criteria – ways to shop an assessment system"

"Selection of good professional development, set of tools which helps people think about performance assessment, why it's different, how I use it, and how it impacts instruction."

Linked to standards

"I would want to see a database, standards aligned first – Common Core, Next Generation science standards, arts standards, with a database of model rubrics that are balanced – a lot of them on what Catalina Foothills started out to do. I want to see third grade – model rubrics for assessing the key standard in that grade."

"Need standards based on carefully constructed rubrics."

"A task bank that gets renewed that's aligned to standards and outcomes – Common Core, all the better."

"Assessments would be indexed by standard within achievement domain. I would want the background of that to be standards that are arranged in a learning progression – unfold over time across grade level – wouldn't even have a grade level

reference. Learning progression is important – how things unfold."

Interviewees noted caution and advice

"It is very difficult to get people to crowdsource this – because it doesn't compile, unlike Linux and Wikipedia – this doesn't happen with curriculum – it doesn't feel like you're doing one thing together."

"Challenge is how do you evaluate quality – needs to be a robust system for metadata – for curator and others."

"Ideally it would be offered under a Creative Commons license which allows content to be remixed. If people are stuck in a take it or leave it mode, they won't use it."

"Major problem in the high stakes arena is that we define the learning target as the domain of content and the test is built around the concept of domain sampling where we write a bunch of standards of the domain

– with inferences of student mastery. Alternative is to create assessment, each one of which focuses on one and only one high stake standard – it would include assessment, each one of which informed an inference about student's mastery of that standard and that standard alone. This would have instructional actionable results – we would talk about the data. Need evidence that is always DIAGNOSTIC."

"A worry I have is, it's my philosophical approach, the early adopters will only get you so far – it's a feel good approach that gives resources to the most willing, but it doesn't sustain itself, because the system is built to support the others. These tools will only be used if the system itself is redesigned to use them. The concern I have is there is a system need to change itself. We have to approach teams and leaders – there's a multi-dimensional approach needed."

"Students as partners in the process – to take charge of their learning – teams of teachers and students."

"A database might be premature – people might use it to identify quick fixes."

"Needs to be some calibration around terminology and tools. We have to use the same language if we plan to link arms with other like-minded organizations (e.g., Four Cs, Deeper Learning, STEM skills). There has to be a Rosetta Stone."

"It's going to become increasingly easy to provide metrics on just about any kind of learner behavior. The trick is going to be understanding which numbers are important and which are not. Even more important is going to be designing a tool that is helpful (not overwhelming) for assisting teachers/parents/students as they personalize learning for students. That's the Holy Grail."

"Don't reinvent or replicate what is there."

"I have seen so many of these launched and three years later – they are a graveyard. Interrogate this assumption

of a database – what will the impact be and how will it actually be used – how will it be measured? Plan for tracking its impact. One great model for this is the Literacy Design Collaborative – their repository is tied to a theory of action and is being used."

Interviewees also noted examples of great work underway

"There are some efforts for folks to curate their own – best one is Stan Weinberg – his project 'Beyond the Bubble' – capturing critical thinking. They developed primary source exercises using historical thinking skills. Rubrics for evaluating student work and samples of student work – bespoke highly curated efforts."

"Ron Berger and Jal Mehta are launching a database of excellent student work – some crowdsourcing, Ron is curating heavily."

"The Literacy Design Collaborative is a great example (of a well-supported database)."

Assessment goes to the "belly of the beast"
of the education system. It automatically invites
us to question, "What's worth learning?"

REFLECTIONS AND THOUGHTS REGARDING NEXT STEPS

Reflecting on the insights and advice from the interviewees, I am struck by the depth and scope of transformative work underway, the growing number of practitioners, scholars, and experts dedicating their careers to this work, and the increasing collaborative and open source efforts to promote and support system transformation.

If our overarching goal is to help transform the factory 'one size does not fit all' model of education, having conducted the interviews, I am even more convinced that assessment is one of the biggest levers in facilitating this transformation. With regards to next steps, the following will be key to moving forward with the database prototype:

- The community building around the database will be as important as the database itself, and will require just as much, if not more, thought and design. What might a national and regional support structure look like? How might the tenants of Social Physics[11] inform our thinking on this?

- To gain maximum traction, the database should be open source, with all tools, documents, and resources available in editable format (e.g., Word, Excel, GoogleDocs, etc.). What might the collaborative Linux-type opportunities be with this work?

- A cross-section of disparate and complementary skillsets will yield additional insights into the database design, for example, user experience, online community/tribe building, etc. What would the skillset be of the database dream team?

[11] http://socialphysics.media.mit.edu/

How might we include diverse viewpoints and rapidly prototype the database? Rather than spending up to a year slowly building a pilot database, what if we were to host a rapid prototyping session, held over a number of days, where curated groups convened to prototype both the database and its tribe/community support and leadership?

An immediate next step would be to make this report available, under a Creative Commons license, and seek reactions, input, and feedback – all with a view to, as one interviewee noted, *"interrogate our thinking"* regarding the database and its purpose.

I am very encouraged by what I have learned and humble at the magnitude of the task before us. Assessment goes to the *"belly of the beast"* of the education system. It automatically invites us to question, *"What's worth learning?"* and, *"How is it best learned?"* I believe there is enough discontent with the outcomes of the factory system and enough collective will for change. None of us can do this alone; however, I have faith that when we gather the right team around this work, we will have impact. This is the work.

Appendix

- Listing of 'key players'

- Articles, papers and websites

- Rubric examples

  - Science Leadership Academy
  - Mount Vernon Presbyterian School
  - KIPP Character Report Card
  - Expeditionary Learning
  - New Tech Network
  - Catalina Foothills School District
  - Virginia Beach City Public Schools
  - Sanborn Regional School District

9 APPENDIX

Listing of 'Key Players' in Assessing This Kind of Learning (i.e., Leading Thinkers, Scholars, Practitioners)

Name: **Tom Bennett**

Title: Director and Founder, researchEd

Brief Bio: Tom Bennett spent 10 years teaching in the East End of London before founding researchEd. He has authored four books on educational research, behavior management, and teacher-training and writes for TES and TES online. He became a teacher fellow of Corpus Christi College, Cambridge University in 2009. Under his directorship, researchEd has developed a national presence with conference programs and online discussion. In 2015, researchEd expanded into New York and Sydney, Australia.

URL: http://www.workingoutwhatworks.com/en-GB/About/Who-we-are

Name: **Ron Berger**

Title: Chief Program Officer, Expeditionary Learning

Brief Bio: Prior to helping found Expeditionary Learning, Ron Berger worked for 25 years in rural Massachusetts as a public school teacher and a carpenter. His focus includes transforming public high schools in low-income communities so that all graduates, through high achievement, character, and citizenship, will be able to attend college. In his professional speaking and writing, he emphasizes the importance of project-based learning, service learning, original research, and arts integration, and he is the author of *An Ethic of Excellence* and *A Culture of Quality*. He received his graduate degree from the Harvard Graduate School of Education.

URL: https://www.edutopia.org/user/255536

Name: **Tina Blythe**

Title: Researcher, Project Zero

Brief Bio: Tina Blythe's work focuses on curriculum and instruction, learning for understanding, professional development, and collaborative assessment. She teaches in the faculty development program at the Boston Architectural Center and has taught middle school, high school, and university courses. She has authored and co-authored numerous books and articles, including T*he Facilitator's Book of Questions: Tools for Looking Together at Student and Teacher Work*. She holds a B.A. in English with secondary teaching certification from Bryn Mawr College and an Ed.M. from the Harvard Graduate School of Education.

URL: https://www.gse.harvard.edu/faculty/tina-blythe

Name: **Aaron Brengard**

Title: Principal, Katherine Smith Elementary School in East San Jose, California.

Brief Bio: As Principal of the Katherine Smith Elementary School, Aaron Brengard has introduced 21st century skills and project-based learning into the school community. Since 2012, the school has been part of the New Tech Network, has been recognized by the Buck Institute of Education, and has joined the national No Excuses University Network. His continued goals include implementing authentic deep learning experiences for students so they may develop the academic skills necessary for college and career, helping students becoming self-directed, reflective, and empathetic learners, and ongoing professional development opportunities for teachers.

URL: http://bie.org/people/aaron_brengard

Name: **Susan Brookhart**

Title: Independent Educational Consultant; ASCD faculty member and Senior Research Associate, Duquesne University School of Education.

Brief Bio: Susan M. Brookhart is known internationally for her work in classroom assessment practices. She works with administrators and teachers to develop research-based strategies that can be applied in the classroom. She began her educational career as an elementary and middle-school classroom teacher and was a professor and Chair of the Department of Educational Foundations and Leadership at Duquesne University.

Susan holds a bachelor's degree from Arcadia University and earned her doctorate in educational research and evaluation from Ohio State University.

URL: http://www.ascd.org/Publications/ascd-authors/susan-brookhart.aspx

Name: **Anthony Bryk**

Title: President, Carnegie Foundation for the Advancement of Teaching

Brief Bio: President of the Carnegie Foundation since 2008, Dr. Byrk works with researchers and practitioners to transform educational research and improve teaching and learning. He is the former Spencer Chair in Organizational Studies in the School of Education and the Graduate School of Business at Stanford University, and was the Marshall Field IV Professor of Urban Education in the Sociology Department of the University of Chicago. He developed the Consortium on Chicago School Research and helped create the Center for Urban School Improvement. He is a member of the National Academy of Education, the National Board for

Education Sciences, and the American Academy of Arts and Sciences. His book, *Learning to Improve*, was published in 2015. Dr. Bryk received a B.S. from Boston College and an Ed.D. from Harvard University.

URL: http://www.carnegiefoundation.org/who-we-are/staff-directory/anthony-s-bryk/

Name: **Chuck Cadle**

Title: Global Entrepreneur, Educator and Technology Visionary

Brief Bio: Dr. Cadle is a licensed teacher and administrator (GA and MA), certified public accountant (GA), and a project management professional. His work is focused on creative and critical thinking, global tolerance, and the use of effective curriculum design and instruction to develop 21st century skills. He is a member of the executive board for the Partnership for 21st Century Skills, and serves on the Board of Trustees for Destination Imagination, Inc. and the advisory board for the Project Learning Network. He holds a B.B.A. in accounting and finance, a M.Ed. in educational leadership, and a doctorate in education.

URL: http://www.destinationimagination.org/who-we-are/staff/chuck-cadle

Name: **Kim Carter**

Title: Chief Education Officer, MC2 Charter School

Brief Bio: Named 1991 New Hampshire Teacher of the Year and 1996 New Hampshire Media Educator of the Year, Kim Carter has spent more than 35 years teaching, training, facilitating, and coaching students, parents, community members, teachers, and administrators. Her educational reform work has been focused on high school redesign, the design of highly effective learning and assessment, educational equity, learning theory, and democratic schooling.

URL: http://www.mc2school.org/academics/leadership/

Name: **Edward P. Clapp**

Title: Senior Research Manager, Agency *by* Design (A*b*D), Project Zero, Harvard Graduate School of Education

Brief Bio: Edward P. Clapp researches maker-centered learning, design thinking, creativity and innovation, and contemporary approaches to teaching and learning in the arts. He has been a co-instructor and lecturer for the course, *"Thinking and Learning Today and Tomorrow: Project Zero*

Perspectives," at the Harvard Graduate School of Education. As a visiting adjunct professor at the Massachusetts College of Art and Design, he teaches *"Principles of Pedagogy for the Studio Arts Educator."* Dr. Clapp received an Ed.D. and an Ed.M. from the Harvard Graduate School of Education, an M.Litt. in poetry from the University of Glasgow/Strathclyde, and a B.F.A. in painting from the Rhode Island School of Design.

URL: http://scholar.harvard.edu/edwardclapp/home

Name: **Rob Coe**

Title: Professor, School of Education, Durham University; Director, Centre for Evaluation and Monitoring (CEM), Durham University

Brief Bio: Rob Coe was a math teacher in secondary schools and colleges before taking a position as research associate and lecturer at Durham University. Among the courses he teaches are graduate level courses in 'Experiments in Education and Educational Assessment,' research methods for undergraduates and doctoral level students, and teacher training. As director for CEM, he oversees the delivery of assessment and monitoring systems and computer adaptive assessments for thousands of schools in more than

40 countries. He holds a Ph.D. from Durham University.

URL: https://www.dur.ac.uk/education/staff/profile/?id=614https://www.dur.ac.uk/education/staff/profile/?id=614

Name: **Marc Chun**

Title: Education Program Officer, Hewlett Foundation

Brief Bio: In his position at the Hewlett Foundation, Dr. Chun works with the Education Program's Deeper Learning Network, guiding research and grantmaking in the efficacy of integrating deeper learning skills in the classroom. In the past, he served as the Director of Education for the Council for Aid to Education and worked for the RAND Corporation, the Stanford Institute for Higher Education Research, and the Higher Education Research Institute. Dr. Chun has taught at Columbia University, Vanderbilt University, the New School, and Stanford University. He holds three masters degrees and received his Ph.D. in education from Stanford University and a postdoctoral fellowship in sociology and education at Teachers College, Columbia University.

URL: http://www.hewlett.org/about-us/staff/marc-chun

Name: **Terry Crooks**

Title: Professor Emeritus and Co-Director of the National Monitoring Program, Otago University, New Zealand

Brief Bio: Terry Crooks specializes in educational evaluation, assessment, and learning. He served as Co-Director for New Zealand's National Monitoring Program (NEMP) 1995–2010. In order to get a comprehensive look at student achievement, each year 260 schools were randomly selected and students were assessed through annual surveys in a broad range of content. This information was shared publicly and was used to identify performance trends and to inform policy and curriculum design.

URL: http://nemp.otago.ac.nz/_about.htm

Name: **Anne Davies**

Title: Co-founder, Connect2Learning: Transforming Learning for Their Future

Brief Bio: Dr. Anne Davies is an internationally known specialist in quality classroom assessment. Her mission is to *"increase the possibility for learning for all students."* She is a researcher, consultant, and author who has written or co-authored more than 30 books and multimedia

resources including three editions of her book, Making Classroom Assessment Work. Her newest book, *Grading, Reporting and Professional Judgement: Taking Actions in Elementary Classrooms*, is co-authored with Sandra Herbst and will be available in 2016.

URL: http://connect2learning.com/members/anne-davies/

Name: **Ray Diffley**

Title: Director of Admissions, Choate Rosemary Hall

Brief Bio: Ray Diffley is on the Board of Trustees of the Association of Independent School Admission Professionals (AISAP), and is focused on improving methods of assessment for matching applicants to the their optimal school environments. He received his undergraduate degree from Bowdoin College and his master's degree from Wesleyan University.

URL: http://www.choate.edu/page.cfm?p=537

Name: **Angela Duckworth**

Title: Professor of Psychology at the University of Pennsylvania

Brief Bio: Dr. Duckworth's research focuses on grit

and self-control and their relationship to academic and professional achievement. She has published over 45 articles in journals such as *Mind, Brain and Education, Contemporary Educational Psychology*, and *Journal of Personality and Social Psychology*. Courses taught include Research Experience in Personality Psychology and Intro to Positive Psychology. She holds a B.A. in neurobiology from Harvard University and a Ph.D. in psychology from the University of Pennsylvania.

URL: https://psychology.sas.upenn.edu/people/duckwort

Name: **Eleanor Duckworth**

Title: Professor of Education, Harvard Graduate School of Education

Brief Bio: Drawing from the work of Jean Piaget, Eleanor Duckworth developed Critical Exploration in the Classroom, an approach that merges research with teaching. She was an elementary school teacher and, in addition to being a renowned Professor of Education at the Harvard Graduate School of Education, she has worked internationally in curriculum development, teacher education, and program evaluation. Among her many awards, she received the American Educational Research Association Award and her book, *The Having of Wonderful Ideas and Other Essays on Teaching and Learning*, has been translated into four languages. She holds a Ph.D. from the Universite de Geneve.

URL: https://www.gse.harvard.edu/faculty/eleanor-duckworth

Name: **Charles Fadel**

Title: Founder and Chairman, Center for Curriculum Redesign

Brief Bio: Former Global Education Lead at Cisco Systems, and Cisco Liaison with UNESCO, the World Bank, and Change the Equation (STEM). He is an appointee to the Massachusetts gubernatorial *"Commission to Develop an Index of Creative and Innovative Education in Public Schools,"* and has served on the Massachusetts Governor's Readiness Project as well as its 21st Century Skills taskforce. Charles has contributed to education projects in more than 30 countries and has been featured by media such as *National Public Radio (NPR), The Huffington Post, eSchool News*, and *Education Week*. He is the co-author of *21st Century Skills – Learning for Life in Our Times* (Wiley) and *Deeper Learning*.

URL: http://curriculumredesign.org/about/team/

Name: **Camille Farrington**

Title: Research Associate and Assistant Professor, University of Chicago School of Social Service Administration (SSA) and the Consortium on Chicago School Research (CCSR)

Brief Bio: Dr. Farrington is the author of *Failing at School: Lessons for Redesigning Urban High Schools* and she is the lead author of *Teaching Adolescents to Become Learners: The Role of Noncognitive Factors in Shaping School Performance*. She focuses her research on urban high school reform and the impact of teacher practice and noncognitive factors on student academic performance. Dr. Farrington holds a B.A. from the University of California at Santa Cruz, teacher certification from Mills College, and a Ph.D. in policy studies in urban education from the University of Illinois at Chicago.

URL: https://uei.uchicago.edu/about/staff/camille-farrington

Name: **Sarah Fine**

Title: Visiting Scholar, High Tech High Graduate School of Education

Brief Bio: Sarah Fine is an advanced doctoral student at the Harvard Graduate School of

Education (HGSE). Her past work at HGSE includes the co-design of a course on organizing schools for deeper learning, serving as head teaching fellow for an undergraduate course on equity in American K–12 education, and research into the ambitious instruction at the secondary level. She was a leadership consultant for Prospect Hill Academy Charter School and designed and facilitated a course on formative assessment in higher education for the Derek Bok Center for Teaching and Learning. She holds a B.A. from Harvard University, an M.A. from Bread Loaf School of English, and an M.Ed. from the Harvard Graduate School of Education.

URL: https://www.linkedin.com/pub/sarah-fine/28/538/1ab

Name: **Douglas Fisher and Nancy Frey**

Title: Co-founders, Fisher and Frey: Literacy for Life; Professors, San Diego State University

Brief Bio: Both Dr. Frey and Dr. Fisher are Professors of Educational Leadership at San Diego State University. They have co-authored and individually published award winning books and articles, including *Using Graphic Novels, Anime, and the Internet in an Urban High School* and *The Path to Get There: A Common Core Road Map for Higher Student Achievement Across the Disciplines*. Dr. Frey and Dr. Fisher are recipients of the Christa McAuliffe award for excellence in teacher education from the American Association of State Colleges. In addition to their teaching at San Diego State University, Dr. Frey and Dr. Fisher both work as teacher leaders at Health Sciences High and Middle College. They each received their Ph.D. degrees from Claremont Graduate University of San Diego State University.

URL: http://fisherandfrey.com

Name: **Dan French**

Title: Executive Director, Center for Collaborative Education

Brief Bio: Dr. French developed the National Turning Points Network, started the New England Small Schools Network, and helped expand the pilot model for the Boston Public Schools. He worked at the Charles River Academy as a special educator and served as the Director of Instruction and Curriculum for the Massachusetts Department of Education. As Executive Director for CCE, he works with program and strategic development and has successfully obtained grants from multiple foundations and the U.S. Department of Education. Dr. French serves on the Board of Directors for the Massachusetts Citizens for Public Schools. He holds a M.Ed. in urban education from Antioch University and an Ed.D. in urban education from the University of Massachusetts at Amherst.

URL: http://centerforcollaborativeeducation.org/about/team

Name: **Ted Fujimoto**

Title: President, Landmark Consulting Group, Inc.

Brief Bio: As President of Landmark Consulting Group, Inc., Ted Fujimoto has aided in the design and creation of high performing public school systems such as New Tech Network and Big Picture Learning. He co-chairs the Right to Succeed Foundation, is the Co-Founder of MuzArt World Foundation and serves on the Board of Directors of the California Credit Union. He is a past member of the California Education Technology Advisory Committee. In 1999, he was recognized in *Converge Magazine* as one of *"Education's Dreamers, Leaders, and Innovators,"* and in 2002, he received the In the Arena Award for Education Leadership from the Center for Digital Government.

URL: http://www.consultlandmark.org/#!aboutus/c2414

Name: **Michael Fullan**

Title: Former Dean of the Ontario Institute for Studies in Education of the University of Toronto

Brief Bio: Michael Fullan is lauded as an educational reform authority and he regularly works with policymakers and leaders around the world to help ensure that all children learn. He has published many award winning books including *Leading in a Culture of Change* and the 2013 AACTE book of the year, co-authored with Andy Hargreaves, *Professional Capital*. His most recent book, *Big City School Reforms: Lessons from New York, Toronto, and London* (with Alan Boyle), was published in 2014. He was awarded the Order of Canada in 2012 and holds a doctorate in sociology from the University of Toronto.

URL: http://www.michaelfullan.ca/category/news/

Name: **Chris Gabrieli**

Title: Co-Founder, TransformEd; Co-Founder, National Center on Time and Learning (NCTL); Co-founder and executive Chairman, Massachusetts 2020.

Brief Bio: Chris Gabrieli has co-founded several organizations whose focus is on expanded learning time and the reimagining of the role and structure of schools. He is widely published in journals, is the author of *Time to Learn*, and he has been honored by organizations such as Citizen Schools and the Robert F. Kennedy Children's Action Corps. He is a lecturer at the Harvard Graduate School of Education and he was appointed the Chairman of the Springfield Finance Control Board by Massachusetts Governor Patrick Deval. As a partner in Bessemer Venture Partners, he was named to *Forbes Magazine*'s Midas List of the 100 top venture capitalists in America.

URL: http://transformingeducation.org/people/

Name: **Howard Gardner**

Title: John H. and Elisabeth A. Hobbs Professor of Cognition and Education, Harvard Graduate School of Education

Brief Bio: Howard Gardner co-founded the Good Project to study work that is *"excellent, engaging, and ethical."* He is a principal investigator and served as Director of Project Zero in the past. His current research includes contemporary conceptions of quality, and effective collaboration among non-profit institutions. His numerous awards include a MacArthur Prize Fellowship, the Prince of Asturias Award for Social Sciences, and the Brock International Prize in Education. He has been twice named as one of the 100 most influential public intellectuals in the world. He has authored 29 books and several hundred articles, and he developed the theory of multiple intelligences. He holds a Ph.D. in developmental psychology from Harvard University.

URL: https://www.gse.harvard.edu/faculty/howard-gardner

Name: **Brian Gong**

Title: Executive Director, Center for Assessment

Brief Bio: Prior to becoming Executive Director for the Center for Assessment, Brian Gong was the Associate Commissioner for the Division of Curriculum, Assessment, and Accountability for the Kentucky Department of Education. He also worked for the Educational Testing Service (ETS) as a Research Scientist.

He holds a B.S. in psychology from Brigham Young University, an M.S. in education and instructional technology from San Jose State University, and a Ph.D. in the design and evaluation of educational programs from Stanford University.

URL: https://www.linkedin.com/pub/brian-gong/73/720/bb0

Name: **Tom Guskey**

Title: Professor, University of Kentucky;
Education Consultant

Brief Bio: Dr. Guskey has worked with educators
throughout the United States and internationally
in educational reform and evaluation design and
analysis. He was the first Director of the Center for
the Improvement of Teaching and Learning and
was Director of Research and Development for the
Chicago Public Schools in the past. He has written
over 100 articles and has been the author/editor of
12 books. He is a two-time recipient of the National
Staff Development Council's Book of the Year Award
and three-time winner of the NSDC Article of the
Year Award. As part of the School Improvement
Network, Dr. Guskey helps develop products that
will help teachers understand and efficiently use
grading to improve student learning. He received
his Ph.D. from the University of Chicago, M.Ed. in
educational psychology from Boston College, and a
B.A. in physics from Thiel College.

URL: http://www.schoolimprovement.com/experts/
thomas-guskey/

Name: **Mariale Hardiman**

Title: Vice Dean, Academic Affairs, Professor of
Clinical Education; Co-founder and Director of the
School of Education's Neuro-Education Initiative
(NEI) at Johns Hopkins University.

Brief Bio: Mariale Hardiman worked in the
Baltimore City Schools for more than 30 years
and while Principal of Roland Park Elementary/
Middle School, her development and use of a
Brain-Targeted Teaching Model brought national
acclaim to the school. Through the NEI, she teaches
master's and doctoral courses, leads professional
development programs, and presents nationally
and internationally. Her research has focused on
how knowledge of cognitive neuroscience impacts
teachers' efficacy beliefs and practices, the impact
of arts integration on student engagement and
content retention, and on instructional methods that
lead to innovation and creative problem-solving.
She holds undergraduate and master's degrees
in education from Loyola University, Maryland
and received a doctorate in education from Johns
Hopkins University.

URL: http://education.jhu.edu/faculty/SOE_
Faculty/mariale-hardiman

Name: **John Hattie**

Title: Director, Melbourne Educational Research
Institute, University of Melbourne, Australia

Brief Bio:John Hattie is the author of *Visible Learning*
and *Visible Learning for Teachers*, books based on
15 years of research on best practices for learning.
His research focuses on the evaluation of teaching
and learning, performance indicators, and models
of measurement. He has been named *"possibly the
world's most influential education academic"* by TES.
He was a Professor of Education at the University
of Auckland, New Zealand and was the Project
Director of asTTle. He received his Ph.D. from the
University of Toronto, Canada.

URL: http://visible-learning.org/john-hattie/

Name: **Dr. Mike Hibbard**

Title: Assistant Superintendent For Instruction
and Human Resources, North Salem Central
School District

Brief Bio: Dr. Hibbard has led the creation
and implementation of authentic performance
assessments from grades K–12 across disciplines.
He has pioneered district-wide processes that have
engaged students, teachers, and administrators in

critical and creative thinking. Dr. Hibbard holds a Ph.D. in science education from Cornell University.

URL: https://www.linkedin.com/pub/kenneth-michael-hibbard/26/838/90a

Name: **Josie Holford**

Title: Head of School at Poughkeepsie Day School

Brief Bio: After working in the educational field for 45 years, Josie Holford is entering her tenth and final year at Poughkeepsie Day School. She is committed to a culture of learning and the development of lifelong learners and frequently posts on her blog, *The Compass Point.*

URL: https://josieholford.wordpress.com/

Name: **Ellen Hume-Howard**

Title: Director of Curriculum, Sanborn Regional School District, New Hampshire

Brief Bio: Ellen Hume-Howard has been the Director of Curriculum for Sanborn Regional School District for the past 11 years. She is a proponent of interdisciplinary assessments and the development of Professional Learning Communities (PLC) that focus on student proficiency. She holds a B.A.

from the University of New Hampshire, an M.Ed. from Antioch New England Graduate School, and a CAGS in School Administration from Rivier University, formerly Rivier College.

URL: https://twitter.com/mrshumehoward

Name: **Bob Lenz**

Title: Executive Director,
Buck Institute for Education (BIE)

Brief Bio: Bob Lenz is a renowned leader in 21 Century Skills education, performance assessment, high school redesign, and project-based learning. He was selected as a Senior Deeper Learning Fellow by The William and Flora Hewlett Foundation and he is co-author of the book *Transforming Schools: Using Project-Based Learning, Performance Assessment and the Common Core Standards*. He is the Co-Founder of Envision Education where he served as the CEO and Chief of Innovation, and he launched Envision Learning Partners and the Envision Schools College and Career Ready Student Performance Assessment System. A first-generation college graduate, he received his B.A. from St. Mary's College and his M.A. in education from San Francisco State University.

URL: https://www.edutopia.org/users/bob-lenz

Name: **Joe McDonald**

Title: Professor of Teaching and Learning, Steinhardt School of Culture, Education and Human Development, New York University

Brief Bio: Joe McDonald is a faculty affiliate of the Metropolitan Center for Research on Equity and the Transformation of Schools, and he served as the Associate Dean for Academic Affairs and as Associate Dean for Community and Global Initiatives at New York University (NYU). Prior to NYU, he taught at Brown University and he was the first Director of Research at the Annenberg Institute for School Reform and the Senior Researcher for the Coalition of Essential Schools. He received the 2015 PROSE Award in Education Practice from the Association of American Publishing for his book, *American School Reform: What Works, What Fails, and Why*. He is the Co-Founder of the NYU Partnership Schools program and was previously a high school English teacher and Principal. He holds a B.A. in English from the University of Scranton and an M.Ed. and an Ed.D. from Harvard University.

URL: http://steinhardt.nyu.edu/faculty/Joseph_McDonald

Name: **Jay McTighe**

Title: Independent Consultant

Brief Bio: Jay McTighe is a past Director of the Maryland Assessment Consortium. At the Maryland State Department of Education, he helped develop performance-based statewide assessments and helped lead Maryland's standard-based reforms. He has been a member of the National Assessment Forum and he was chosen for the Educational Policy Fellowship Program through the Institute for Educational Leadership in Washington, D.C. He has co-authored 13 books, including the *Understanding by Design* series and written more than 35 articles and book chapters. Jay has worked at the state and district level as a program coordinator, classroom teacher, and resource specialist. He holds an undergraduate degree from the College of William and Mary, a master's degree from the University of Maryland, and completed post-graduate studies at Johns Hopkins University.

URL: http://jaymctighe.com/

Name: **Scott Marion**

Title: Vice President, National Center for the Improvement in Educational Assessment, Inc.

Brief Bio: A former field biologist and high school science teacher, Dr. Marion currently works on the design and implementation of teacher evaluation systems, and the effectiveness and validity of interim and local assessments, state assessments, and accountability systems. He serves as an assessment and accountability advisor to the United States Department of Education (USED) and has served on multiple committees including five state technical advisory committees (TAC) and two National Research Committees (NRC). He was the Director of Assessment and Accountability for the Wyoming Department of Education and he has authored multiple articles. Dr. Marion received a bachelor's degree in biology from the State University of New York, a master's in science education from the University of Maine, and a Ph.D. in measurement and evaluation from the University of Colorado, Boulder.

URL: http://www.nciea.org/

Name: **Kim Marshall**

Title: Coach, New Leaders for New Schools (NLNS)

Brief Bio: Kim Marshall has worked as a principal, middle school teacher, policy advisor, speechwriter, curriculum developer, and is a past Director of Curriculum and Planning for the Boston School District. He has published articles on innovations in schools and classrooms and has focused much of his work on curriculum, assessment, and teacher effectiveness. At NLNS, he currently coaches new principals in New York City, with a concentration on the effective implementation of interim assessments, and improving teacher supervision and evaluation. He also delivers workshops and courses to current and pre-career school leaders.

URL: http://www.nlns.org

Name: **Jonathan Martin**

Title: Author, Speaker, Consultant

Brief Bio: Jonathan's mission is *"to support educators, schools, districts, and associations in the work of strengthening 21st century teaching, learning, and assessing and in becoming 'schools of the future.'"* He has 15 years' experience as an independent school principal/head (1996–2012), most recently

as Head of St. Gregory College Preparatory School in Tucson, Arizona (2009–12).

He regularly presents at conferences and provides workshops to schools, boards, and faculties around the country. He regularly supports, coaches, and educates educators on several topics, including Deeper Learning, Assessing Higher Order Thinking, Data-Informed Decision Making, Project-Based Learning, and Non-Cognitive Assessment.

Jonathan holds degrees from Harvard University (B.A., government, cum laude); Starr King School for the Ministry (M.Div., Unitarian ministry preparation); and the University of San Francisco School of Education (M.A., private school administration).

URL: http://21k12blog.net/

Name: **Bob Marzano**

Title: Co-founder and CEO,
Marzano Research in Colorado

Brief Bio: A leader in educational research, Bob Marzano has authored more than 30 books and 150 articles focused on topics such as assessment, instruction, and standards. Recent publications include *Awaken the Learner: Finding the Source of Effective Education and Coaching Classroom*

Instruction. Integrating current research and theory into classroom strategies, he has positively impacted the work of teachers and administrators domestically and internationally. He holds a bachelor's degree from Iona College in New York, a master's degree from Seattle University, and a doctorate from the University of Washington.

URL: http://www.marzanoresearch.com/robert-j-marzano

Name: **Kevin Mattingly**

Title: Adjunct Professor, Teachers College

Brief Bio: Kevin Mattingly worked for 17 years as a master teacher in science at the Kingenstein Summer Institute for young teachers and currently teaches in the master's degree program in educational leadership at the Leadership Academy. He delivers workshops and teaches courses in student assessment, learning theory, and interdisciplinary curriculum development. He received his B.A. in biological sciences and a Ph.D. in zoology from Indiana University.

URL: http://www.klingenstein.org/content/faculty

Name: **Jal Mehta**

Title: Associate Professor,
Harvard Graduate School of Education

Brief Bio: Dr. Mehta is the Co-Editor of *The Futures of School Reform* and his research focuses on studying the development of high quality schooling at scale and the professionalization of teaching. One of his current projects, *In Search of Deeper Learning*, examines schools, systems, and nations that are hoping to produce ambitious instruction. He holds a Ph.D. in sociology and social policy from Harvard University.

URL: https://www.gse.harvard.edu/faculty/jal-mehta

Name: **Pam Moran**

Title: Superintendent,
Albemarle County Public Schools

Brief Bio: Dr. Moran is committed to providing innovative, multidisciplinary educational opportunities through project-based learning models such as Learning Spaces, in order for students to develop proficiencies in communication and collaboration, and analytical and critical thinking. She is a member of the Governor's Commission on Higher

Education and has served as President of the Women Education Leaders in Virginia, President of the Virginia Association of School Superintendents, and President of the Virginia Association of Science Supervisors. Her many roles in education include high school science teacher, elementary school principal, assistant superintendent for instruction and adjunct instructor in educational leadership for the University of Virginia's Curry School and the School of Continuing Education. She holds a B.S. in biology from Furman University and received her master's and doctoral degrees from the University of Virginia.

URL: https://www2.k12albemarle.org/acps/division/superintendent/Pages/superintendent-about.aspx

Name: **Mary Moriarty**

Title: District K-12 Curriculum Coordinator, Rochester Public Schools, New York

Brief Bio: Prior to becoming the Curriculum Coordinator for Rochester Public Schools, Mary Moriarty taught high school math, served as a department head, and as an elementary school principal. Her current focus is on working with staff in math, science, and literacy. She holds an undergraduate degree with math teaching

certification and a master's degree in leadership from Plymouth State University, and is in the CAGS

URL: http://rochesterschools.edublogs.org/2009/08/18/new-administrators/

Name: **Ray Pecheone and Linda Darling-Hammond**

Title: Ray Pecheone-Executive Director of the Stanford Center for Assessment, Learning and Equity (SCALE), Linda Darling Hammond- Charles E. Ducommun Professor of Education, Stanford University

Brief Bio: Ray Pecheone and Linda Darling-Hammond have worked together at SCALE and Stanford University. They co-authored and presented their paper, *"Developing an Internationally Comparable Balanced Assessment System that Supports High-Quality Learning"* at the National Conference on Next Generation Assessment Systems. In addition to his work at SCALE, Ray Pecheone is the Co-Executive Director of the Stanford School Redesign Network and the Director of the Performance Assessment for California Teachers (PACT) program. He has published many articles on teacher and student assessment and he received his Ph.D. from the University of Connecticut. Linda Darling-Hammond is a former President of

the American Educational Research Association and in 2006 she was named one of the nation's 10 most influential people affecting educational policy over the last decade. Her more than 300 publications have received many awards including the AACTE Pomeroy Award and the National Staff Development Council's Outstanding Book Award for 2000.

URL: https://scale.stanford.edu/about/our-team; https://scale.stanford.edu/about/staff/linda-darling-hammond

Name: **Dr. Alex Patton**

Title: 10th grade Humanities teacher, High Tech High Chula Vista

Brief Bio: Dr. Patton received his Ph.D. from the University of Sheffield and worked at the Innovation Unit in London, England before joining the faculty of High Tech High. He is the author of *Work That Matters: The teacher's guide to project-based learning*.

URL: http://alecpatton.weebly.com/about-me.html

Name: **Bob Pearlman**

Title: Consultant

Brief Bio: Bob Pearlman's 40 years in education includes work as a teacher, teacher union leader and negotiator, Director of Education of Workforce Development, and Director of Strategic Planning for the New Technology Foundation (now the New Tech Network). He is a senior education consultant for Fielding Nair International and UNITE-LA, and he is a strategy consultant for school and district development of 21st century skills. He has helped launch 50 new 21st Century Secondary Schools, and has designed and developed programs and trained educators in multiple areas, such as Whole District Reform, Business-Education Partnerships and Coalitions, School Restructuring and Technology, Project-Based Learning, Professional Development, Educational Finance, and School-site Assessment and Accountability.

URL: http://bobpearlman.org/

Name: **James Pellegrino**

Title: Co-Director of Learning Sciences Research Institute

Brief Bio: James W. Pellegrino has presented nationally and internationally and authored or co-authored over 270 books, chapters, and journal articles on topics including instruction and assessment, educational technology, and cognition. At Vanderbilt University, he served as the Dean of the Peabody College of Education and Human Development, held the position of Frank W. Mayborn Professor of Cognitive Studies and was the Co-Director of the Learning Technology Center. He has been the head of several National Academy of Science/National Research Council study committees, is a past member of the *Board on Testing and Assessment*, and was elected to lifetime membership in the National Academy of Education. His research interests include examining technology-assisted formative assessment practices in relation to student learning and deep understanding. He holds a 1969 B.A. in psychology from Colgate University, and a M.A. and Ph.D. in experimental and quantitative psychology from the University of Colorado.

URL: http://www.lsri.uic.edu/people/james-pellegrino

Name: **Kylie Peppler**

Title: Associate Professor of Learning Sciences, Indiana University; Director, The Creativity Labs at Indiana University, Bloomington

Brief Bio: As the Director of The Creativity Labs, Kylie Peppler focuses on how learning can be supported by new technologies, the arts, and hands-on design-based interactions. She has created new learning environments such as BioSim, an interactive simulation that uses e-puppetry to engage students in investigations of biological systems. Her many publications include *New Creativity Paradigms: Arts Learning in the Digital Age* and *Soft Circuits: Creating E-Fashion with DIY Electronics*. She is an advisor to the Connected Learning Research Network, the lead of the MacArthur Foundation's Make-to-Learn initiative, and a member of the 2015 National Educational Technology Plan Committee sponsored by the U.S. Department of Education. Dr. Peppler completed her post-doctoral work at the University of California, Irvine and holds a B.A. from Indiana University and a Ph.D. in education from the University of California, Los Angeles.

URL: http://kpeppler.com/

Name: **Allison Plunkett Harris**

Title: Principal, Smithfield Elementary School, Charlotte-Mecklenburg School district

Brief Bio: Allison Plunkett Harris has helped implement Feuerstein's Instrumental Enrichment program into Smithfield Elementary School in order to help students improve academically, behaviorally, and emotionally, and become critical thinkers and 21st century learners. She works with the staff at Smithfield to study educational neuroscience in relation to education

URL: http://www.p21.org/component/taxonomy/term/summary/144/358

Name: **Jim Popham**

Title: Emeritus Professor, Graduate School of Education at the University of California, Los Angeles (UCLA)

Brief Bio: Jim Popham began his journey of nearly 30 years in teacher education as a high school teacher. He went on to become an award-winning professor of instructional methods and evaluation and measurement. Among his many awards, *UCLA Today* named him one of the top 20 university professors of the 20th century, and the National Council on Measurement in Education granted him the Award for Career Contributions to Educational Measurement. He is the former President of the American Educational Research Association, Founding Editor of the AERA journal, *Educational Evaluation and Policy Analysis*, and has written and published more than 30 books and 200 articles.

URL: http://insidetheacademy.asu.edu/w-james-jim-popham

Name: **Tim Presiado**

Title: Chief Operating Officer, New Tech Network (NTN)

Brief Bio: Tim was a founding teacher of the Sacramento New Tech High School where he taught English and Social Studies, served as a lead teacher and the Co-Chair of the Social Studies Department and worked as a New Tech Site advocate. In his current position as COO, he helps with the planning and implementation of the New Tech design in new schools. He holds an undergraduate degree with high honors from the University of California, Berkeley and an M.Ed. from University of California, Santa Barbara.

URL: http://www.newtechnetwork.org/about/our-team/tim-presiado

Name: **Gerrita Postlewait**

Title: Chief K-12 Officer, Stupski Foundation

Brief Bio: Gerrita Postlewait served as Superintendent for the Myrtle Beach, South Carolina School District for 10 years. Among her many distinctions, she has been awarded the state Superintendent of the Year, the South Carolina School Boards' Outstanding Superintendent of the Year, West Virginia's Leader of Learning, and she was selected to the governing board of the American Association of School Administrators. An active advocate for state and national level school reform, she is a member of the South Carolina State Board of Education and the ETV Endowment Board.

URL: http://www.scformativeassessment.com/gerrita-postlewait/

Name: **Gerard J. Puccio**

Title: Department Chair and Professor at the International Center for Studies in Creativity, Buffalo State

Brief Bio: Gerard J. Puccio has authored and co-authored more than 50 articles, chapters, and books including *The Innovative Team* and *Creative Leadership: Skills that Drive Change*. As a speaker

and consultant, he has worked with universities, school districts, and major corporations, and has presented and delivered creativity workshops in more than 20 countries. He is the recipient of the President's Medal for Scholarship and Creativity and the State University of New York Chancellor's Recognition Award for Research Excellence. He has been a featured TEDx speaker, and in 2012, the Teaching Company named him one of America's Great Lecturers. In 2014, a series of twenty-four 30-minute video sessions designed and delivered by Dr. Puccio was released under the title *"The Creative Thinker's Tool Box."* He earned a Ph.D. in organizational psychology from the University of Manchester, England.

URL: http://creativity.buffalostate.edu/faculty/gerard-j-puccio

Name: **Lisa Pullman**

Title: Executive Director, Independent School Data Exchange (INDEX)

Brief Bio: Prior to INDEX, Lisa Pullman worked as Consultant for Benchmark Research, Director of E-Business for Electric Insurance Company, Business Manager for Wooster School, Software Project Manager for Atex, Financial Manager for Time Warner, Inc., and she taught school for two years. She holds an M.B.A. from Yale University and a B.A. in history from Hamilton College.

URL: https://www.linkedin.com/pub/lisa-mason-pullman/0/922/982

Name: **Bob Rath**

Title: President and CEO, Our Piece of the Pie (formerly South End Community Services)

Brief Bio: Recognized by the Bank of America as a *"Local Hero,"* Bob Rath's work is focused on helping urban youth, ages 14–24, transition into becoming successful adults. He worked with the Hartford Public Schools on the development of Opportunity High School (OHS), where, through the implementation of youth development strategies created by Our Piece of the Pie, students who dropped out or are at risk of dropping out of school can re-engage and graduate. He is the Chair for Communities Collaborating to Reconnect Youth and was awarded the 2010 State of the Schools Award for his work in Harford, CT.

URL: http://www.opp.org/About/docs/bios/Bob%20Rath2.pdf

Name: **Rob Riordan**

Title: Former President of the High Tech High Graduate School of Education

Brief Bio: Rob Riordan has collaborated on the development of 14 new K–12 schools. He has worked for over 40 years as a program developer, teacher, and trainer, and while teaching at Cambridge Rindge and Latin School in Cambridge, MA, he created two lauded school-to-work transition programs: the Cambridge-Polaroid Technical Internship Program and the Cambridge-Lesley Careers in Education Program. He has served as a member of the faculty of the Harvard Graduate School of Education and led the New Urban High School project which later led to the creation of High Tech High. Rob is the co-author of *Schooling for the Real World: The Essential Guide to Rigorous and Relevant Learning*, and he received a B.A. from Haverford College and a M.A.T. and Ed.D. from the Harvard Graduate School of Education.

URL: http://gse.hightechhigh.org/people/?Rob_Riordan

Name: **Richard D. Roberts**

Title: Vice President and Chief Scientist, Professional Examination Service

Brief Bio: Rich leads the ProExam Center for Innovative Assessments, developing products in the fields of noncognitive assessment and emotional intelligence. For 12 years, Rich was a Managing Principal Research Scientist in the Center for Academic and Workforce Readiness and Success at Educational Testing Service (ETS). A former National Research Council Fellow, Rich has conducted extensive research on cognitive and noncognitive assessment, emotional intelligence, cognitive biases, cross-cultural competence, personality, health and well-being, motivation, aging and human chronotype (morningness-eveningness) in disciplines including education, psychology, business, and medicine. He is widely published in his field with numerous books and more than 150 peer-reviewed articles or book chapters on these topics, and nearly 400 presentations around the world.

URL: http://www.proexam.org/index.php/about/leadership

Name: **Larry Rosenstock**

Title: Founder and CEO, High Tech High

Brief Bio: Prior to founding High Tech High, Larry Rosenstock was a carpentry teacher in urban high schools, a staff attorney at the Harvard Center for Law and Education, Director of the Rindge School of Technical Arts, and Principal of Cambridge Rindge and Latin School. He has been a Visiting Associate Professor at the University of California, Berkeley School of Education and a lecturer at the Harvard Graduate School of Education. His educational background includes a J.D. from Boston University Law School, an M.Ed. from Cambridge College, a B.A. from Brandeis University, and a Doctor of Letters, Honoris Causa from Cambridge College. He has received both the McGraw Prize in Education and the Ashoka Fellowship.

URL: http://www.hightechhigh.org/about/team.php

Name: **William Sedlacek**

Title: Professor Emeritus of Education, University of Maryland, College Park

Brief Bio: Among his numerous publications, William Sedlacek is the author of *Beyond the Big Test: Noncognitive Assessment in Higher Education*, and

the senior author of *Racism in American Education: A Model for Change*. He helped develop *The Situation Attitude Scale* (SAS), a measure of racial attitudes. He has received multiple honorary awards including Diamond Honoree from the ACPA, and in 2010, he was chosen as a Fellow of the American Counseling Association. Dr. Sedlacek has consulted on interracial and intercultural issues with more than 300 different organizations and institutions of higher education. He holds bachelor's and master's degrees from Iowa State University and a Ph. D. from Kansas State University.

URL: http://williamsedlacek.info/biography.html

Name: **Steven Seidel**

Title: Director of the Arts in Education Program, Harvard Graduate School of Education

Brief Bio: Before coming to Harvard, Steve Seidel worked for 17 years as a high-school theater and language arts teacher. He has worked at Project Zero as a principal investigator on research that examines reflective practices, group learning and assessment, and the documentation of learning. His recent work includes the *"Arts Survive!: A Study of Sustainability in Arts Education Partnerships."* He facilitates ROUNDS at Project Zero, a monthly

opportunity for educators to discuss collaborative assessment practices. Seidel's primary focus lies in arts education, teaching, and assessment in elementary and secondary schools. He holds an Ed.M. and an Ed.D. from the Harvard Graduate School of Education.

URL: https://www.gse.harvard.edu/faculty/steven-seidel

Name: **Valerie Shute**

Title: Mack and Effie Campbell Tyner endowed Professor of Education, Florida State University

Brief Bio: Valerie Shute researches the use of technology and advanced instruction systems to enhance learning. A recent project involved an investigation into the use of immersive games with stealth assessment to support cognitive and noncognitive knowledge and skill building. She is collaborating on the development of a suite of model-based tools that may be used during instruction to assess student comprehension and to provide opportunities for feedback. Before coming to Florida State, she was a principal research scientist at Educational Testing Service, working on projects that were focused on assessment, cognitive diagnosis, and learning from advanced instruction systems. She received her Ph.D. in cognitive/

educational psychology from the University of California, Santa Barbara (1984), and held a two-year postdoctoral fellowship at the Learning Research and Development Center.

URL: http://myweb.fsu.edu/vshute/

Name: **Ted Sizer** (d. 2009)

Brief Bio: As a leader in educational reform, Ted Sizer was the Founder of the Essential Schools Movement. He worked as a high school teacher, was a faculty member and Dean of the Harvard Graduate School of Education, headmaster of Phillips Academy in Andover, Massachusetts, and Professor and Chair of the Education Department at Brown University. He was the Founding Director of the Annenberg Institute for School Reform and among his many publications, he wrote the Horace Trilogy. With his wife, he co-founded the Francis W. Parker Charter Essential School and co-authored *Keeping School*. He received his B.A. in English from Yale, and his master's and doctorate in education from Harvard University.

URL: https://en.wikipedia.org/wiki/Ted_Sizer

Name: **Robert Sternberg**

Title: Professor of Human Development, Cornell University

Brief Bio: In a 2002 survey published in the *Review of General Psychology*, Dr. Sternberg was ranked the 60th most cited psychologist of the 20th century. He has authored over 1,500 books, chapters, and articles. Before coming to Cornell, he served as Professor of Psychology and Provost at Oklahoma State University, Dean of Arts and Sciences at Tufts University, IBM Professor of Psychology and Education at Yale University, and President of the American Psychological Association. In addition to his theories on thinking styles, wisdom, and creativity, he developed the Triarchic theory of intelligence.

URL: https://en.wikipedia.org/wiki/Robert_Sternberg

Name: **Rick Stiggins**

Title: Founder and CEO, Assessment Training Institute

Brief Bio: Since the founding of the Assessment Training Institute in 1992, Rick Stiggins has worked with teachers and administrators from around the world to increase student achievement

through improved assessment programs. He is the author of numerous books and papers, and he has been a member of the faculties of Michigan State University, the University of Minnesota, and Lewis and Clark College. His work has included serving as the Senior Program Director of the Centers of Classroom Assessment at the Northwest Regional Educational Laboratory and as the District Assessment Director and Director of Test Development for the American College Testing program. Rick received his Ph.D. in Educational Measurement from Michigan State University.

URL: http://ati.pearson.com/about-ati/rick-stiggins.html

Name: **Bernie Trilling**

Title: Founder and CEO of 21st Century Learning Advisors and P21 Senior Fellow

Brief Bio: Bernie is the former Global Director of the Oracle Education Foundation, where he directed the development of education strategies, partnerships, and services for the Foundation and its ThinkQuest programs. Bernie co-authored the widely acclaimed book, *21st Century Skills: Learning for Life in Our Times*, published by Wiley. He has also written dozens of articles for educational journals and magazines and is a featured speaker at numerous educational conferences. Recently, Bernie has been researching the common practices of over 400 schools that are models for 21st century learning as part of the Hewlett Foundation's Deeper Learning initiative. As a consultant to The Conference Board, he has worked on redefining the future of work and what students need to be work ready.

URL: http://www.p21.org/about-us/p21staff/1248-bernie-trilling

Name: **Stephan Turnipseed**

Title: President Emeritus and Executive Director of Strategic Partnerships, LEGO Education

Brief Bio: As leader of LEGO Education North America for 16 years, Stephan Turnipseed worked to transform the company into an educational resource leader, engaging students through hands-on learning. He is the Chairman for the Partnership for 21st Century Learning and is a member of the Global Business Coalition for Education and the Clinton Global Initiative. He designed the Tetrix robotic system and has authored two books and published many articles. He is the past President of the Tourette Syndrome Association, is a veteran of the United States Air Force, and he holds a degree in electrical engineering from Auburn University.

URL: http://www.p21.org/about-us/strategic-council-members/1029-lego

Name: **Sheila Valencia**

Title: Professor of Language, Literacy, and Culture at the University of Washington, Seattle

Brief Bio: Dr. Valencia's research and instruction focuses on professional development for teachers, instruction, literacy assessment, and policy. She has been published in books and journals including Journal of Literacy Research, *Journal of Teacher Education, and The Reading Teacher*. To improve assessment systems and policies, she has served on multiple committees on the local, state, and national levels, such as the Common Core Standards Advisory Panel on Literacy. She received her Ph.D. from the University of Boulder, and M.Ed. in reading education, and a B.S. in elementary and remedial reading from the State University of New York, Buffalo.

URL: https://education.uw.edu/people/faculty/valencia

Name: **Tom Vander Ark**

Title: CEO, Getting Smart; Partner, Learn Capital

Brief Bio: Mr. Vander Ark has worked as the Executive Director of Education for the Bill and Melinda Gates Foundation and as a public school superintendent in Washington State. He has published his articles widely and has co-authored more than 35 white papers. He has written or contributed to several books including *Getting Smart: How Digital Learning is Changing the World*. Mr. Vander Ark regularly posts on GettingSmart.com and on his Education Week blog, *"Vander Ark on Innovation."* He is a director of Bloomboard, Digital Learning Institute, and Imagination Foundation. He champions innovations that improve access and provide motivation for learning. He graduated from the Colorado School of Mines and holds an M.B.A. in finance from the University of Denver.

URL: http://gettingsmart.com/tom-vander-ark/

Name: **Tony Wagner**

Title: Expert in Residence, Harvard University i-Lab

Brief Bio: Tony Wagner is an internationally known speaker and author. A second edition of his book, *The Global Achievement Gap*, has been released and his book, *Creating Innovators: The Making of Young People Who Will Change the World*, has been translated into 10 languages. He is the Founding Executive Director of Educators for Social Responsibility, founded the Change Leadership Group at the Harvard Graduate School of Education, and was the first Innovation Education Fellow at the Technology & Entrepreneurship Center at Harvard. He has worked as a professor of teacher education, a high school teacher, and a K-8 principal, and holds a M.A.T. and an Ed.D. from the Harvard Graduate School of Education.

URL: http://www.tonywagner.com/about

Name: **Elliot Washor**

Title: Co-founder, Big Picture Learning and The Met Center

Brief Bio: Dr. Washor's work on school reform has bridged across disciplines, rural and urban environments, and early elementary grade levels through college. As a teacher, principal, administrator, video producer, and writer, he has focused on Big Picture Learning to promote more engaged and rigorous learning, strengthening schools and society. Recognitions include an *"Innovations in State and Local Government Award"* from the Ford Foundation and the Kennedy School of Government at Harvard University. The George Lucas Educational Foundation has recognized him as one of the Twelve Most Daring Educators in the World.

URL: http://www.bigpicture.org/elliot/

Name: **David Weston**

Title: Founder and Chief Executive Officer, Teacher Development Trust

Brief Bio: Prior to founding the Teacher Development Trust, David Weston worked as a math and physics teacher, and a data and assessment consultant, and has authored textbook materials. He currently consults on professional development for teachers and is a writer and conference presenter. The work of the Teacher Development Trust is focused on improving teaching so that students can succeed.

URL: http://tdtrust.org/about/team

Name: **Grant Wiggins** (d. 2015)

Brief Bio: Grant Wiggins was an education reform consultant and the co-author of *Schooling by Design and Understanding by Design*, an award-winning program and set of materials used in curriculum design. He worked on multiple reform initiatives on the state and national levels, including Coalition of Essential Schools and the International Baccalaureate Program. He served as lead consultant on state assessment reform initiatives and has published two books, *Educative Assessment* and *Assessing Student Performance*, as well as many articles. Grant taught English and electives in philosophy at the high school level for 14 years.

He earned his B.A. from St. John's College in Annapolis and his Ed.D. from Harvard University.

URL: https://www.authenticeducation.org/whoweare/grant.lasso

Name: **Gene Wilhoit**

Title: Executive Director, National Center for Innovation in Education

Brief Bio: Gene Wilhoit's career in education began as a social studies teacher in Ohio and Indiana. He went on to serve at state and national levels including serving as the Executive Director of the National Association of State Boards of Education (NASBE), Director of the Arkansas Department of Education, and Commissioner of the Kentucky Department of Education. From 2006–2013, he was the Executive Director of the Council of Chief State School Officers (CCSSO) where he led the state to adopt the Common Core State Standards and founded the multi-state Innovation Lab Network. He studied education administration at the West Virginia College of Graduate Studies and holds degrees from Georgetown College and Indiana University.

URL: http://www.prichardcommittee.org/wp-content/uploads/2013/06/Gene-Wilhoit-bio.pdf

Name: **Dylan Wiliam**

Title: Emeritus Professor of Educational Assessment, University College London

Brief Bio: Dr. Wiliam taught in private and inner-city schools before joining Chelsea College, University of London which later merged with King's College. Here he helped develop new assessment strategies for mathematics before becoming Dean of the School of Education and Assistant Principal of the College. He has worked with the Educational Testing Service in Princeton, NJ as Senior Research Director and he was Deputy Director of the Institute of Education at the University of London. His research and academic work has been focused on formative assessment, and he currently works internationally training teachers how to develop and implement formative assessment practices.

URL: http://www.dylanwiliam.org/

Name: **Yong Zhao**

Title: Presidential Chair and Director of the Institute for Global and Online Education in the College of Education, University of Oregon; Professor in the Department of Educational Measurement, Policy and Leadership, University of Oregon

Brief Bio: Yong Zhao focuses his research on the study of the implications of technology and globalization on education, and he has published over 120 books and articles, including his recent award winning book, *World Class Learners*. He was honored as one of 2012's ten most influential people in educational technology in *Tech & Learn Magazine*, and he was given the Early Career Award by the American Educational Research Association. He is an elected fellow of the International Academy for Education and is a professorial fellow at the Mitchell Institute for Health and Education Policy at Victoria

University. Before coming to the University of Oregon, Yong Zhao served at Michigan State University as a University Distinguished Professor at the College of Education and as the Founding Director of the Center for Teaching and Technology. Born in China's Sichuan Province, he holds a B.A. from the Sichuan Institute of Foreign Languages and received his M.A. and Ph.D. from the University of Illinois at Urbana-Champaign.

URL: http://zhaolearning.com/

Articles, Papers and Websites

Throughout the past eighteen months or so, I have been clipping assessment related articles, papers and notes via Evernote. This is not an exhaustive listing of all the related resources out there, but rather a reflection of what has 'come across my desk' over the past eighteen months.

Here is a complete listing of my Evernote file, in alphabetical order via author:

Achievement First. (n.d.). Success in college and beyond. Retrieved from http://www.achievementfirst.org/high-school/self-management/success-in-college-and-beyond/

American Educational Research Association (2015, May 13). Measurement matters: Assessing personal qualities other than cognitive ability for educational purposes. Duckworth, A., & Yeager, D. S. Retrieved from http://www.aera.net/Newsroom/RecentAERAResearch/MeasurementMattersAssessingPersonalQualitiesOtherThanCognitiveAbilityforEducationalPurposes/tabid/15946/Default.aspx

American Institutes for Research. (2014, May). Study of deeper learning: Opportunities and outcomes. Retrieved from http://www.air.org/project/study-deeper-learning-opportunities-and-outcomes

American Institutes for Research & The Research Alliance for New York City Schools. (2014, September). Report 3: Findings from the study of deeper learning: Opportunities and outcomes: Evidence of deeper learning outcomes. Washington, DC & New York, NY: Zeiser, K. L., Taylor, J., Rickles, J., Garet, M. S., & Segeritz, M.

Annenberg Institute for School Reform (2014). College readiness indicator systems resource series. Retrieved from http://annenberginstitute.org/?q=publication/CRIS-resource-series

Apprenet. (2015). How it works: Learners build competencies in three simple steps. Retrieved from http://info.apprennet.com/how-it-works/

Ashoka & The LEGO Foundation. (2014, May). Social innovation mapping: Entrepreneurial patterns for the future of learning.

Rahman, R. Retrieved from http://static-changemakerscom.netdna-ssl.com/sites/default/files/social_innovation_mapping_future_of_learning_ashoka_lego_foundation_may_2014.pdf

Asia Society: Global Cities Education Network. (2013, November). Measuring 21st century competencies: Guidance for educators.

RAND Corporation: Soland, J., Hamilton, L. S., & Stecher, B. M. Retrieved from http://asiasociety.org/files/gcen-measuring21c-skills.pdf

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Center for Policy Design= Education Evolving + Healthcare Evolving. http://www.educationevolving.org/splitscreen

Character Lab. https://characterlab.org/

Core Districts. http://coredistricts.org/

Developmental Cognitive Neuroscience: The Lab of Adele Diamond. http://www.devcogneuro.com/usefulinfo.html

Dylan William Center: http://www.dylanwiliamcenter.com/

Excellence For All: World-Class Instructional Systems for our Schools. http://www.ncee.org/programs-affiliates/excellence-for-all/

Instruction Design Learning Theories. http://www.instructionaldesign.org/theories/index.html

Kahn Academy. https://www.khanacademy.org/

The Learner First. http://www.thelearnerfirst.com/

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Social Media in Higher Education. Blog, Junco, R. http://blog.reyjunco.com/

Valerie Shute. Journal Articles and Book Chapters. http://myweb.fsu.edu/vshute/publications.html
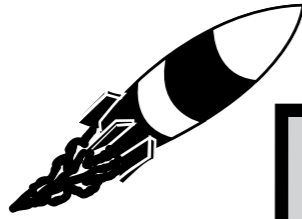
SLA Standard Rubric

	Design 20	Knowledge 20	Application 20	Presentation 20	Process 20
Exceeds Expectations 20 - 19					
Meets Expectations 18 - 15					
Approaches Expectations 14 - 13					
Does Not Meet Expectations 12 - 0					
Totals:					

BELOW ARE 2 TEACHER-MADE RUBRICS AND ASSESSMENTS FROM SLA

The following lesson plan is from Joshua Block- a history and English instructor at SLA. This was found on the blog: http://techrav.blogspot.com/2013/05/visiting-science-leadership-academy.html

Joshua Block
jblock (at) scienceleadership.org

Students will understand that . . .

- **There are benefits to "seeing" a culture through the words of someone who is indigenous to the culture.**
- **Colonialism and independence are some of the primary influential factors shaping the modern world**
- **Colonialism has been, and in some ways continues to be, a complicated and complex system**

Essential Questions:

- **In what different ways did the system of colonialism affect different populations?**
- **How did people resist colonial rule?**
- **In what ways can nonviolence be a more effective strategy for change than violence?**
- **What different legacies did colonialism leave behind?**

Students will know . . .
- **Different interpretations of how colonialism influenced different populations**
- **An understanding of different ways that people struggled against colonialism**
- **The ways that colonialism gradually devastated the Ibo people**

Students will be able to . . .
- **Evaluate the advantages and disadvantages of non-violent vs. violent political action**
- **Understand that colonialism is one larger system that manifested differently at different times and in different parts of the world.**

Performance Tasks:
- **Things Fall Apart, proverbs, letter of advice, chapter 26**
- **Colonialism in Asia, Fanon, Cesaire- journals and analysis**
- **Film: Battle of Algiers- class notes, discussion, reflective writing assignment**
- **Gandhi Reading- journal and discussion**
- **Film: Have You Heard From Johannesburg? (South Africa)- class notes and discussion, model museum artifacts**

Research paper:

Using evidence from our studies and your research write a 750 word paper in which you make an argument about either:

- The influence of the system of colonialism on the course of World History.
- The effectiveness of different strategies employed to enact social change.

Whichever option you choose be sure to use specific evidence from primary sources. You can also use evidence from any of the films that we watched together.

or

Final Assessment:

To conclude our study of colonialism you will be designing a proposal for a museum exhibit in a room of the Museum of Global History. Your proposal should do at least three of the following:
1) Demonstrate an understanding of some of the thinking behind colonialism
2) Demonstrate an understanding of the scope of European global conquest
3) Demonstrate an understanding of some of the different ways colonialization affected both colonized and colonizer
4) Give examples of different strategies that were used in the global movement to end colonialism
5) Demonstrate how colonialism has affected the modern day world.

Proposals must have:
• An exhibit name and goal
• An introduction to the exhibit
• At least eight artifacts accompanied by text
• Final thoughts

Your exhibit should demonstrate your knowledge of colonialism and the struggle against colonialism but should also express your own views about what you think needs to be considered when thinking about the historic roots of global inequality.

Connections to SLA Core Values:
Inquiry = How to present a narrative about colonialism for museum exhibit
Research = Research for museum artifacts, background on country
Collaboration = Reading groups, interpretation of theoretical readings, peer editing of projects, evaluation of presentations
Presentation = Presenting exhibit to "Museum Committee"
Reflection = Responding to feedback about proposal, evaluation of others

Below is taken from a blog written by SLA teacher Larissa Pahomov.
http://larissapahomov.com/2013/02/06/rubrics-across-discipline/

These rubrics were created by SLA Math teacher Brad Latimer.

Calculus Second Quarter Benchmark   **Name:** _____

	Exceeds Expectations 20 – 19	Meet Expectations 18 – 16	Approaches Expectations 15 – 13	Does NOT Meet Expectations 12 – 0	OVERALL SCORE
Design Design of website and original problems	Website flawlessly illustrates applications of derivative functions and demonstrates how to differentiate various types of specific functions; all 8 topics are included.	website clearly illustrates applications of derivative functions and demonstrates how to differentiate various types of specific functions; 5 topics are covered and meet expectations.	website mostly illustrates applications of derivative functions and demonstrates how to differentiate various types of specific functions; 1 topic is missing or not covered; website approaches expectations.	website does not demonstrate applications of derivative functions or how to differentiate types of functions; multiple topics are missing or incomplete.	
Knowledge Using different rules and techniques to find derivative functions	All derivative functions are found flawlessly for all 8 types of functions; solutions and uses of different techniques exceed expectations (simplified completely).	All derivative functions are found without error for 5 types of functions; solutions and uses of different techniques meet expectations.	Most derivative functions are found for 4 types of functions; project contains 1-2 errors; solutions and uses of different techniques approach expectations.	Project displays weak and minimal knowledge of derivative functions; derivative functions are missing, incomplete, or contain many errors.	
Application Application of different techniques to find derivative functions	Flawless analysis of derivative functions for all 8 types of functions, including the process of finding the derivative and the meaning of the derivative for the specific problem.	Accurate analysis of derivative functions for 5 types of functions, including the process of finding the derivative and the meaning of the derivative.	Somewhat flawed analysis of derivative functions for 4 types of functions, including the process of finding the derivative and the meaning of the derivative. Explanations and/or analysis have one/two mistakes or one type of function is not included.	Highly flawed or incomplete analysis of types of functions; techniques for finding derivatives are missing or incomplete, and not analyzed at all.	
Process Completion of project	All parts of the project are completed on time and *beyond* the necessary requirements.	All parts of the project are completed on time and meet the necessary requirements.	Most parts of the project are completed on time and meet the necessary requirements.	Many parts of the project were missing or incomplete.	
Presentation Presentation of website	website is superbly written and polished; methods to find derivative functions are flawlessly demonstrated and presented; all aspects of the website exceed expectations.	website is well constructed and polished; methods to find derivative functions are demonstrated and presented; all aspects of the website meet expectations.	website is pretty well constructed with a few mistakes; methods to find derivative functions are demonstrated and presented with 1-2 mistakes/omissions; most aspects of the website meet expectations.	website is not well composed with several mistakes; methods to find derivative functions are not demonstrated or presented; almost all aspects of the website do not meet expectations.	

"Here's another example from Latimer's classroom, where he chose only to detail the "process" section for every category.

For the project, students were partnered up, and each pair was given a different investment and credit situation. They then had to research five different options (bank, lenders, credit cards, etc) to deal with each situation. The final product was a detailed research paper which made a recommendation on the best option for their specific situation, and included mathematical justification (using exponential functions and compound interest formulas)."

Algebra 2: Quarter 4 Benchmark Rubric- Applications of Exponential Functions

Name: _____ Band: _____ Partner: _____

	Exceeds Expectations 20 – 19	Meet Expectations 18 – 16	Approaches Expectations 15 – 13	Does NOT Meet Expectations 12 – 0	SCORE
Design Design of paper		Paper is well designed; all required components/sections are complete; 5 different savings and 5 different credit options are covered, and all calculations and citations are included; individual work is also included.			
Knowledge Knowledge of key concepts involving exponential growth and compound interest		All mathematical calculations are correct and meet expectations for 5 investment **and** 5 credit options.			
Application Application of knowledge of exponential functions		Analysis section of paper clearly and accurately applies knowledge of exponential functions to specific situations; conclusions for your situations are clearly explained and justified using mathematics.			
Process Project is complete and submitted on time; Use of in-class work periods	All parts of the project are completed on time and *beyond* the necessary requirements; excellent use of all in-class work periods	All parts of the project are completed on time and meet the necessary requirements; all in-class work periods are used effectively	Most parts of the project are completed on time and meet the necessary requirements; effective use of most in-class work periods	Many parts of the project were missing or incomplete; ineffective use of in-class work periods.	
Presentation Presentation of paper		Final paper is polished and professional in appearance. There are no typos, and all required sections of the paper are included.			

THE MOUNT VERNON CONTINUUM

MISSION

Inquiry — College Ready
Innovation — Globally Competitive
Impact — Engaged Citizen Leaders

Grounded in Christian Values

PRINCIPLES & PRACTICE

Relationships are Foundational for Learning

Curiosity and Passion Drive Learning

Learning Demands Interactive and Flexible Spaces

Empathy Influences Learning

Learners Apply Knowledge to Make an Impact
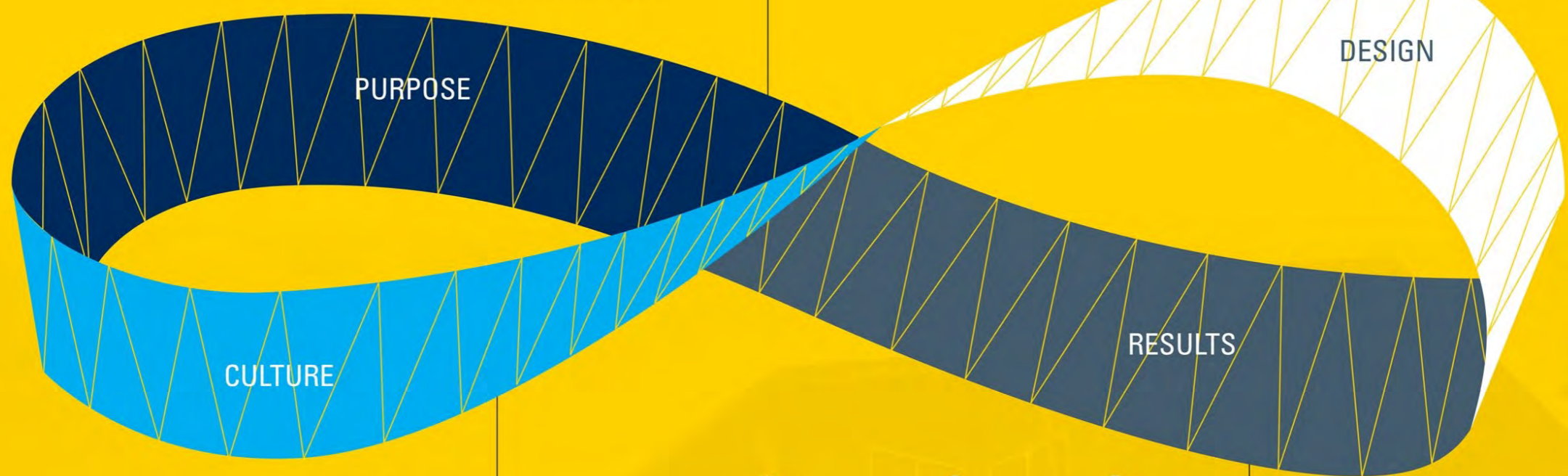
PURPOSE

DESIGN

CULTURE

RESULTS

MV NORMS

Start with Questions
Fail Up
Share the Well
Assume the Best
Have Fun

21ST CENTURY MV MIND

Creative Thinker
Ethical Decision-Maker
Innovator
Solution Seeker
Collaborator
Communicator

MOUNT VERNON

Discovery Portfolio – Assignment & Scoring Chart

COMPLETED BY STUDENTS FRIDAY, NOVEMBER 1, 2013

1. In 2-3 paragraphs, what are the most compelling (or important) problems that have come out of your discovery phase? Identify and explain a primary set of questions related to those problems. Provide evidence for the existence of the problem, the impact of the problem, and the urgency in solving the problem. Why is the problem important to solve?

2. In 2-3 paragraphs, what do you need to know as you address the questions related to your problems? What sort of individuals do you need to speak with? What kinds of resources do you need to explore? What kind of data do you need to find and evaluate? Which questions are most important and why?

3. In 1 paragraph, what are possible solutions to your problems that you would propose today? Explain why these solutions are promising according to your learning?

As you write, you can make use of first person ("I"). Also, include a variety of specific evidence including quotations from your artifacts (cited with author's name and title of artifact) to support your understandings of the problem.

	Does Not Meet Expectations	Approaches Expectations	Meets Expectations	Exceeds Expectations
Writing Effectiveness	Provides simplistic concepts with few descriptions to show reasoning. Makes arguments based on evidence that is inadequate or unstated.	Provides knowledge that may be stated unclearly; descriptions often lack clarity. Cites evidence to support argument, but is insufficient to provide justification.	Provides a claim that clearly articulates an opinion & explains reasons. Cites a sufficient quantity of relevant evidence to support most claims.	Clearly expresses results of one's reasoning through arguments that are supported by a variety of evidence.
Writing Mechanics	Demonstrates poor control of grammatical conventions with frequent minor errors and some distracting errors. Consistently writes sentences with similar structure and length, and some may be difficult to understand. Uses simple vocabulary, and some vocabulary may be used inaccurately or in a way that makes meaning unclear.	Demonstrates fair control of grammatical conventions with few errors. Writes sentences that read naturally but tend to have similar structure and length. Uses vocabulary that communicates ideas adequately but lacks variety.	Demonstrates very good control of grammatical conventions. Consistently writes well-constructed sentences with varied structure and length. Uses varied and sometimes advanced vocabulary that effectively communicates ideas.	Demonstrates outstanding control of grammatical conventions. Consistently writes well-constructed, complex sentences with varied structure and length. Displays adept use of vocabulary that is precise, advanced, and varied.
Problem Solving	Formulates unclear and/or easily answered questions that would not provide a foundation for inquiry.	Formulates questions, but questions are limited and provide a framework for limited inquiry.	Identifies a prioritized set of questions that provide a solid foundation for inquiry.	Identifies a prioritized set of questions that provide a solid foundation for inquiry.
Creativity	Describes & explores ideas in black and white terms with little attention given to diverse points of view.	Sometimes asks & answers "what if" questions, but has difficulty expressing ideas clearly.	Is curious, flexible and open to ambiguity in exploring ideas.	Demonstrates high levels of curiosity, imagination in exploring new ideas.
Innovation	Raises few open-ended, "what if" questions during the idea generation process.	Communicates some diverse ideas, but not sufficient enough to incite creativity.	Generates a sufficient volume of new ideas. Offers ideas that are broad, diverse, related and clearly articulated.	Asks sophisticated, open-ended questions leading to generation of original ideas.
Ethical Issues	Demonstrates little understanding of the importance of the problem/issue.	Demonstrates some understanding of the importance of the problem/issue.	Demonstrates understanding of the importance of the problem/issue.	Demonstrates high level of understanding of the importance of the problem/issue.

Point Of View Statement – Assignment & Scoring Chart

COMPLETED BY STUDENTS BEFORE THANKSGIVING BREAK

1. In 2-3 paragraphs, what are the various "users" that are currently experiencing problems related to GMO-related or Limited Land/Water Use issues? In what ways did experiences with external experts impact your understanding?

2. In 2-3 paragraphs, on what "user" or group of "users" have you chosen to focus your efforts and why? What exactly is their need expressed both in qualitative and quantitative terms? Through what process and analysis did you arrive at your focus?

3. In 1 paragraph, what insight about your "user" have you learned that will be helpful in brainstorming solutions to the problem or challenge they face?

4. Lastly, in 1 sentence, write your **Point of View Statement**, or **POV Statement**, in the following format: [Your user] needs [user's need] because [insight].

	Does Not Meet Expectations	Approaches Expectations	Meets Expectations	Exceeds Expectations
Writing Effectiveness	Provides limited, invalid, overstated, or very unclear arguments. May present information in a disorganized fashion or undermine own points.	Provides limited or somewhat unclear arguments.	Organizes response in a logically cohesive way that makes it fairly easy to follow the writer's arguments.	Organizes response in a logically cohesive way that makes it very easy to follow the writer's arguments.
Writing Mechanics	Demonstrates poor control of grammatical conventions with frequent minor errors and some distracting errors. Consistently writes sentences with similar structure and length, and some may be difficult to understand. Uses simple vocabulary, and some vocabulary may be used inaccurately or in a way that makes meaning unclear.	Demonstrates fair control of grammatical conventions with few errors. Writes sentences that read naturally but tend to have similar structure and length. Uses vocabulary that communicates ideas adequately but lacks variety.	Demonstrates very good control of grammatical conventions. Consistently writes well-constructed sentences with varied structure and length. Uses varied and sometimes advanced vocabulary that effectively communicates ideas.	Demonstrates outstanding control of grammatical conventions. Consistently writes well-constructed, complex sentences with varied structure and length. Displays adept use of vocabulary that is precise, advanced, and varied.
Problem Solving	Provides or implies a decision and some reason to favor it, but the rationale may be contradicted by unaccounted for evidence.	Provides a rationale and credible evidence to back it up. Possibly does not account for credible, contradictory evidence. May attempt to discount alternatives.	Provides a solid rationale based largely on credible evidence from multiple sources and discounts alternatives.	Provides a solid rationale based on credible evidence from a variety of sources. Weighs other options, but presents the decision as best given the available evidence.
Innovation	Makes limited revisions that rarely advance or improve the quality or quantity of ideas.	Makes revisions, but has difficulty sufficiently advancing or improving the quality and quantity of ideas.	Refines, strengthens, or develops ideas by analyzing various possibilities. Demonstrates revision of ideas to improve them.	Refines, strengthens, or develops ideas by analyzing all possibilities. Demonstrates revision of ideas to improve them.
Ethical Issues	Shows a lack of empathy and understanding regarding the ideas, opinions and feelings of the "user" of the problem/issue.	Displays minimal awareness of the ideas, opinions and feelings of the "user" of the problem/issue.	Displays awareness of the ideas, opinions and feelings of the "user" of the problem/issue.	Shows respect and empathy for the ideas, opinions and feelings of the "user" of the problem/issue.

Mount Vernon Mindset Profile – Fall Semester Scoring

COMPLETED BY TEACHERS & PROJECT ADVISORS BY FRIDAY, DECEMBER 13, 2013

The Mindset Profile measures overall student performance in each Mindset category over the course of a semester during the GMO Project. To reduce the subjectivity of scoring student performance, panels of seven teachers (6 regular teachers plus the Project Advisor) are assembled. With seven judges, then the highest and lowest scores are discarded and the middle five are summed. Throughout the Fall semester, Students are expected to…

1. Learn as much about the problem/issue as possible
2. Participate fully in, and master learning outcomes from, their regular classes
3. Connect with external experts to learn more about the problem/issue
4. Attend skills based workshops to prepare for project impact
5. Complete the Discovery Portfolio & Reflection
6. Complete the Point of View Statement assignment

	Does Not Meet Expectations	Approaches Expectations	Meets Expectations	Exceeds Expectations
Communicator	Provides simplistic concepts with few descriptions to show reasoning. Makes arguments based on evidence that is inadequate or unstated.	Provides knowledge that may be stated unclearly; descriptions often lack clarity. Cites evidence to support argument, but is insufficient to provide justification.	Provides claims that clearly articulate an opinion and explain reasons. Cites a sufficient quantity of relevant evidence to support most claims.	Regularly and clearly expresses results of one's reasoning through arguments that are supported by a variety of evidence.
Solution Seeker	Formulates unclear and/or easily answered questions that would not provide a foundation for inquiry.	Formulates questions, but questions are limited and provide a framework for limited inquiry.	Identifies a key question or prioritized set of questions that provide a solid foundation for inquiry.	Identifies a key question or prioritized set of questions that provide a solid foundation for inquiry.
Creative Thinker	Describes and explores ideas in black and white terms with little attention given to diverse points of view.	Sometimes asks and answers "what if" questions, but has difficulty expressing ideas clearly.	Is curious, flexible and open to ambiguity in exploring ideas.	Demonstrates high levels of curiosity, imagination in exploring new ideas.
Innovator	Raises few open-ended, "what if" questions during the idea generation process.	Communicates some diverse ideas, but not sufficient enough to incite creativity.	Generates a sufficient volume of new ideas. Offers ideas that are broad, diverse, related and clearly articulated.	Asks sophisticated, open-ended questions leading to generation of original ideas.
Ethical Decision Maker	Demonstrates little understanding of the nature and importance the problem.	Demonstrates some understanding of the nature and importance of the problem.	Demonstrates understanding of the nature and importance the problem.	Demonstrates high level of understanding of the nature and importance of the problem.
Collaborator	Hesitates to communicate ideas and provide feedback to others.	Is somewhat engaged in class discussions. Is beginning to communicate ideas and feedback to others effectively.	Engages in class discussions. Communicates ideas and feedback to others effectively.	Actively participates in class discussions. Offers and incorporates feedback effectively.

KIPP Character Report Card and Supporting Materials

KIPP CHARACTER REPORT CARD

Jane Smith Grade: 8	KIPP Imagine Date: 01/28/11	Q2			Q2			
	OVERALL SCORE	**4.30**	Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5	Teacher 6
Zest		4.28						
1	Actively participates	4.50	4	5	5	4	4	5
2	Shows enthusiasm	4.17	5	4	3	4	4	5
3	Invigorates others	4.17	3	4	5	4	5	4
Grit		4.11						
4	Finishes whatever he or she begins	4.00	4	5	3	4	4	4
5	Tries very hard even after experiencing failure	4.17	5	4	4	3	4	5
6	Works independently with focus	4.17	4	4	3	4	5	5
Self Control – School Work		**4.33**						
7	Comes to class prepared	4.50	4	5	5	5	4	4
8	Pays attention and resists distractions	4.50	4	5	4	5	4	5
9	Remembers and follows directions	4.17	4	5	5	4	3	4
10	Gets to work right away rather than procrastinating	4.17	5	4	4	4	3	5
Self Control - Interpersonal		**4.54**						
11	Remains calm even when criticized or otherwise provoked	4.50	4	5	4	5	5	4
12	Allows others to speak without interruption	4.83	5	5	5	4	5	5
13	Is polite to adults and peers	4.50	4	5	4	5	4	5
14	Keeps his/her temper in check	4.33	4	5	4	4	5	4
Optimism		4.25						
15	Gets over frustrations and setbacks quickly	4.33	5	4	4	4	5	4
16	Believes that effort will improve his or her future	4.17	5	4	4	3	4	5
Gratitude		4.25						
17	Recognizes and shows appreciation for others	4.17	4	4	5	4	5	3
18	Recognizes and shows appreciation for his/her opportunities	4.33	5	4	5	3	4	5
Social Intelligence		**4.33**						
19	Is able to find solutions during conflicts with others	4.17	4	4	3	5	4	5
20	Demonstrates respect for feelings of others	4.50	5	4	4	4	5	5
21	Knows when and how to include others	4.33	5	4	4	4	5	4
Curiosity		**4.28**						
22	Is eager to explore new things	4.17	5	4	3	4	5	4
23	Asks and answers questions to deepen understanding	4.50	5	4	5	4	4	5
24	Actively listens to others	4.17	4	4	5	4	5	3

SCALE

1= Very much unlike the student

2= Unlike the student

3= Somewhat like the student

4= Like the student

5= Very much like the student

ZEST
Actively participates
Shows enthusiasm
Invigorates others

GRIT
Finishes whatever he or she begins
Tries very hard even after experiencing failure
Works independently with focus

SELF-CONTROL – SCHOOL WORK
Comes to class prepared
Pays attention and resists distractions
Remembers and follows directions
Gets to work right away rather than procrastinating

SELF-CONTROL – INTERPERSONAL
Remains calm even when criticized or otherwise provoked
Allows others to speak without interruption
Is polite to adults and peers
Keeps temper in check

OPTIMISM
Gets over frustrations and setbacks quickly
Believes that effort will improve his or her future

GRATITUDE
Recognizes and shows appreciation for others
Recognizes and shows appreciation for his/her opportunities

SOCIAL INTELLIGENCE
Able to find solutions during conflicts with others
Demonstrates respect for feelings of others
Knows when and how to include others

CURIOSITY
Is eager to explore new things
Asks and answers questions to deepen understanding
Actively listens to others

The 24 Character Strengths[1]

1. **Zest:** approaching life with excitement and energy; feeling alive and activated
2. **Grit:** finishing what one starts; completing something despite obstacles; a combination of persistence and resilience.
3. **Self-control:** regulating what one feels and does; being self-disciplined
4. **Social intelligence:** being aware of motives and feelings of other people and oneself
5. **Gratitude:** being aware of and thankful for the good things that happen
6. **Love:** valuing close relationships with others; being close to people
7. **Hope:** expecting the best in the future and working to achieve it
8. **Humor:** liking to laugh and tease; bringing smiles to other people; seeing a light side
9. **Creativity:** coming up with new and productive ways to think about and do things
10. **Curiosity:** taking an interest in experience for its own sake; finding things fascinating
11. **Open-mindedness:** examining things from all sides and not jumping to conclusions
12. **Love of learning:** mastering new skills and topics on one's own or in school
13. **Wisdom:** being able to provide good advice to others
14. **Bravery:** not running from threat, challenge, or pain; speaking up for what's right
15. **Integrity:** speaking the truth and presenting oneself sincerely and genuinely
16. **Kindness:** doing favors and good deeds for others; helping them; taking care of them
17. **Citizenship:** working well as a member of a group or team; being loyal to the group
18. **Fairness:** treating all people the same; giving everyone a fair chance
19. **Leadership:** encouraging a group of which one is a valued member to accomplish
20. **Forgiveness:** forgiving those who've done wrong; accepting people's shortcomings
21. **Modesty:** letting one's victories speak for themselves; *not* seeking the spotlights
22. **Prudence/Discretion:** being careful about one's choices; not taking undue risks
23. **Appreciation of beauty:** noticing and appreciating all kinds of beauty and excellence
24. **Spirituality:** having beliefs about the higher purpose and meaning of the universe

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[1] Peterson, C. and Seligman, M. E. P. (2004). *Character strengths and virtues*. Oxford: Oxford UP.

Six Keys to Developing Character[2]

1. Believe It and Model It: Breathe life into the James Baldwin quote that, "The children are ours. Every single one of them…children have never been very good at listening to their elders but have never failed to imitate them."

2. Name It: Give the intangible and often unnamed a name. Martin Seligman and Chris Peterson identified 24 character strengths that lead to happy, engaged, and meaningful lives. 7 of these strengths are 'high predictive' strengths: zest, grit, self-control, hope, love, social intelligence, and gratitude.

3. Find It: Introducing kids to real-world and fictional examples that display the various character strengths

4. Feel It: Giving kids the opportunity to feel the positive effects of being character-full.

5. Integrate It: Creating dual-purpose experiences that involve the character strengths

6. Praise It: Providing people with growth mindset praise (i.e. precise, descriptive praise) around character

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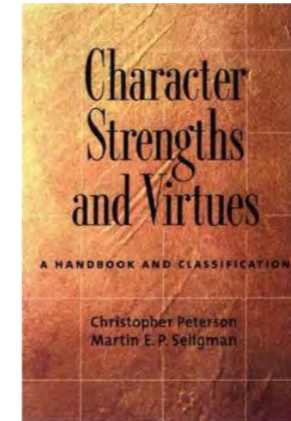
[2] These keys are based on the work of amazing educators including: Mitch Brenner, Tom Brunzell, Caleb Dolan, Mayme Hostetter, Dave Levin, Brent Maddin, Joe Negron, Chi Tschang, and Mike Witter – and are rooted in and inspired by the research of many scientists including: Angela Duckworth, Carol Dweck, Chris Peterson, and Martin Seligman.

The Intensified Socratic Seminar Assessment Guide

All students start with a grade of 100%. As a grader, you can subtract points if people do not follow the necessary guidelines.

Expectations:

- Shadowing is a serious process that ensures will all live up to our standards of intellectual conversation
- If you have any questions about how you should rate a student's performance, ask Mr. McNulty

Evaluation for:_____ **(student name)**
Evaluator: _____

	DID MY PEER:	**Yes**	**No**	**Comments (If "NO" was checked"**	**Final Grade (if "NO" then…)**
SCHOLARLY DISCUSSION	**Seem prepared?**				- 10 points
	Speak at least once during the conversation? At least twice?				- 20 points (not once) - 5 (not twice)
	Use the DBQ text to find support				- 10 points
	Paraphrase accurately (When citing a document, or making a point, were they accurate?)				- 2 points
	Cite OUTSIDE EVIDENCE to support their argument?				- 10 points
	Stick with the subject?				- 2 points
	Use analytical and evaluative language (most important, significant, this happened <u>because</u>, the effects of this were, economic, political, social, religious, etc,)				-5 points

Effectiveness of Argument: 1   2   3   4   5   6   7 8   9   10

Professionalism				
Look engaged and present the entire time?				- 10 points
Listen to others respectfully?				- 5 points
Ask at least one question?				- 5 points
Speak loudly and clearly?				- 5 points

OVERALL EFFECTIVENESS: 1 2 3 4 5 6 7 8 9 10 (If 10, subtract 0. If 7, subtract 3. If 1, subtract 9…etc.)

My Peer Evaluation GRADE: 100% - _____   =   _____

Comments:

Self-Assessment

All students start with a grade of 100%. As a grader, you can subtract points if people do not follow the necessary guidelines.

Expectations:
- Shadowing is a serious process that ensures will all live up to our standards of intellectual conversation
- If you have any questions about how you should rate a student's performance, ask Mr. McNulty

Evaluation for: Myself

	DID MY PEER:	Yes	No	Comments (If "NO" was checked"	Final Grade (if "NO" then…)
SCHOLARLY DISCUSSION	Seem prepared?				- 10 points
	Speak at least once during the conversation?				- 10 points
	Use the DBQ text to find support				- 10 points
	Paraphrase accurately (When citing a document, or making a point, were they accurate?)				- 2 points
	Cite OUTSIDE EVIDENCE to support their argument?				- 10 points
	Stick with the subject?				- 2 points
	Use analytical and evaluative language (most important, significant, this happened because, the effects of this were, economic, political, social, etc)				-5 points
	Effectiveness of Argument: 1 2 3 4 5 6 7 8 9 10				
Professionalism					
Look engaged and present the entire time?					- 10 points
Listen to others respectfully?					- 5 points
Ask at least one question?					- 5 points
Speak loudly and clearly?					- 5 points

OVERALL EFFECTIVENESS: 1 2 3 4 5 6 7 8 9 10 (If 10, subtract 0. If 7, subtract 3. If 1, subtract 9…etc.)

My Peer Evaluation GRADE: 100% - _____ = _____

Comments:

Learning Targets Rubric

	Accomplished	Developing	Beginning
Standards-based and rigorous	They are derived from national or state standards and school or district documents such as curriculum maps and adopted program materials. Targets fall across multiple categories in a cognitive rigor matrix.	They are derived from general academic tasks but not grade-specific standards, or they describe learning or tasks that do not meet proficiency standards. Targets fall across limited categories in a cognitive rigor matrix.	They are not derived from standards and do not clearly reference academic tasks. Targets fall primarily in one or two columns/rows of a cognitive rigor matrix, or learning targets are not rigorous enough.
Student-friendly	They are written in student-friendly language (accessible vocabulary and from a student perspective) and begin with the stem "I can".	They begin with the stem "I can" but may not use student-friendly language; i.e., they sound like "objectives."	They do not begin with "I can" and/or are simply reiterations of state objectives.
Measurable	They are measurable and use concrete, assessable verbs (e.g., identify, compare, analyze). The verb suggests the way in which the target will be assessed (e.g., "analyze" suggests a writing or problem-solving assessment, not a multiple choice quiz).	They are measurable but may contain two verbs or have too broad a scope in content (e.g., I can draw a raccoon and describe its habitat).	They are not measurable (e.g., I can understand, or I can commit).
Specific and contextualized	They are specific, often referring to the particular context of a lesson, project, or case study.	They articulate only long-term targets that can be generalized for any similar academic task (e.g., I can write a persuasive essay).	They are too broad for students to see progress (e.g., I can read) or too narrow for students to own their learning (e.g. I can put my name on my paper).
Learning-centered	The verb following the "I can" stem clearly identifies the intended learning, articulating what the students will learn rather than how they will demonstrate their learning.	They verb following the "I can" stem focuses on the academic tasks students will do rather than what students will learn (e.g., I can complete a graphic organizer).	The targets are focused only on compliance and completion (e.g., I can retake my test).

EXPEDITIONARY
LEARNING

Grade 8: Module 1
Performance Task

EXPEDITIONARY
LEARNING

Summary of Task

- For the final performance task of Module 1, students will draw upon their study of the universal refugee experience to write two research-based poems that reflect the "inside out" and "back again" aspect of a refugee experience. Students will collaborate in Research Teams to research the experiences of refugees of a specific culture. They then will draw upon the research, and their study of the novel and the informational texts to write two poems. Of the two poems, the first, an Inside Out Poem, is based on the research conducted and the second poem, a more creative Back Again Poem , is aligned with the students individual interpretation of informational text, and their own background knowledge and experiences. The students will have the opportunity to revise, edit, and share their two poems within the classroom, and with other Research Teams for the final performance task. **This task centers on NYSP12 CCSS RI.8.1, RI.8.2, W.8.3a, b, d, W.8.4, W.8.4a, W.8.5, W.8.7, W.8.9, L.8.1, L.8.2, and L.8.6.**

Format

- A well-constructed, research-based, free-verse "inside out" poem.

- A well-constructed, creative, free-verse "back again" poem.

- Both poems are to be typed, one sided, and on 8.5" x 11" paper.

Standards Assessed Through This Task

- RI.8.1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

- RI.8.2. Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.

- W.8.3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.

- W.8.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

- W.8.4a. Produce text (print or nonprint) that explores a variety of cultures and perspectives.

- W.8.5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.

- W.8.7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

- W.8.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

- L.8.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- L.8.2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

- L.8.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Student-Friendly Writing Invitation/Task Description

- You are a refugee who has experienced being turned "inside out" upon fleeing home and has begun to feel like your life is "back again" as you adjust to your new country. For this performance task, you will research and write poetry to describe these experiences.

Part 1: Researching Refugees (in your research team)

- With your Research Team, use resources provided to research a specific time and place in history when people have been forced to flee because of war, religious beliefs, political beliefs, or a natural disaster. Gather the strongest evidence and accurate details about this historical situation: what caused people to flee their home country home and find a new home? Use the Research Guide to help you gather sufficient relevant information.

Part 2: Writing Free-Verse Narrative Poetry (on your own)

- Then imagine that you are a refugee from this specific time and place in history. You, like Ha and the real refugees we have read about, have been forced to flee your home country for your safety. On your own, write two free verse poems similar to Ha's diary entries in the novel Inside Out & Back Again.

Key Criteria For Success (Aligned With NYSP12 ELA CCLS)

Below are key criteria students must address when completing this task. Specific lessons during the module build in opportunities for students to understand the criteria, offer additional criteria, and work with their teacher to construct a rubric on which their work will be critiqued and formally assessed.

Your free-verse poems will:
- Include figurative language, sensory details and descriptive words and phrases that convey meaning and tone
- Make explicit reference to research-based historical details and information that add to the authenticity of the story
- Adhere to the conventions of standard written English
- Provide research-based historical details in the context of a realistic scene
- Align the details in both poems need to align for continuation of the story
- Maintain a consistent voice through both poems

Options For Students

- Students will learn about dangerous conditions (political, religious, or natural) that would cause a person to make the difficult decision to leave home for an uncertain future. Students will develop narrative writing skills by paying close attention to details, word choice, organization, and conventions.

- Students may be regrouped into countries of similar interest or assigned a country to research. Students may be provided research tasks to support the overall collection of complete information gathering for their poetry writing.

- Consider preselecting countries of interest, allowing fewer research texts to explore, providing texts of various structures or Lexile ranges, and/or isolating information in texts for students with IEPs or ELLs.

Options For Teachers

- Teachers may differentiate research options for students depending on their experience with the research process.

- Teachers may scaffold the writing process in stages as needed for student success. Keep in mind that the students' best independent draft of each poem will be used as Mid-Unit and End of Unit Assessments in Unit 3.

- Consider research texts for students that offer a range of Lexile measures and structures to offer a rich variety of texts with which students may engage.

- Students may share their stories with the class, display them in the school library, or publish them on the school's Web site.

Resources

- Research Texts: See Unit 2, Lesson 18 supporting materials for a complete list of texts students continue to work with as a part of their short research project.

NTN Agency Rubric, High School

Develop Growth Mindset: *I can grow my intelligence and skills through effort, practice, and challenge. The brain grows bigger with use, like a muscle.*

	EMERGING	E/D	DEVELOPING	D/P	PROFICIENT	P/A	ADVANCED
Use Effort and Practice to Grow	• Does not connect effort or practice to getting better at a skill, improved work quality, or performance		• Superficially connects effort and practice to getting better at a skill, improved work quality, or performance		• Understands how effort and practice relate to getting better at skills, improved work quality, or performance		• Understands that effort and practice improve skills, work quality, and performance and that the process takes patience and time
Seek Challenge	• Rarely takes on academic challenge and risks to pursue learning • Struggles to identify the personal barriers (mindset, beliefs, circumstances) that inhibit taking risks		• With encouragement, sometimes takes on academic challenge and risks to pursue learning • Superficially describes personal barriers (mindset, beliefs, circumstances) that inhibit taking risks		• Seeks academic challenge and takes risks to pursue learning • Analyzes personal barriers (mindset, beliefs, circumstances) that inhibit taking risks		• Strategically and independently seeks academic challenge and takes risks to pursue learning • Analyzes and overcomes personal barriers (mindset, beliefs, circumstances) that could inhibit taking risks
Grow from Setbacks	• Identifies challenges, failures, or setbacks, but does not describe reactions to them (i.e. giving up or trying harder)		• Identifies challenges, failures, or setbacks and describes reactions to them (i.e. giving up or trying harder)		• Identifies challenges, failures, or setbacks and reflects on how reactions to them (i.e. giving up, trying harder) affect process, product, or learning		• Reflects on personal or academic growth from challenges, failures, or setbacks as well as why and how reactions (i.e. giving up or trying harder) affect the product, process, and learning
Build Confidence	• Struggles to identify academic strengths, previous successes, or endurance gained from personal struggle to build confidence in academic success for a new task, project, or class		• Identifies an academic strength, previous success, or endurance gained through personal struggle, but does not use these skills to build confidence in success for a new task, project, or class		• Builds confidence in success (on a new task, project, or class) by knowing and using academic strengths, previous success, or endurance gained through personal struggle		• Consistently confident that success is possible (on a new task, project, or class) by knowing and using academic strengths, previous successes, or endurance gained through personal struggle
Find Personal Relevance	• Rarely, and with significant support, finds personal relevance in the work by connecting it to interests or goals, reflecting on progress towards mastery, or identifying autonomous choices		• With support, sometimes finds personal relevance in the work by connecting it to interests or goals, reflecting on progress towards mastery, or identifying autonomous choices		• Often finds personal relevance in the work by connecting it to interests or goals, reflecting on progress towards mastery, or identifying autonomous choices		• Independently seeks and finds personal relevance in the work by connecting it to interests or goals, reflecting on progress towards mastery, or identifying autonomous choices

Take Ownership Over One's Learning: *I can learn how to learn and monitor progress to be successful on tasks, school, and life.*

	EMERGING	E/D	DEVELOPING	D/P	PROFICIENT	P/A	ADVANCED
Meet Benchmarks	• Completes few benchmarks and class assignments and may resist or struggle to use resources and supports (i.e. study groups, teacher support, workshops, tutorials)		• Completes some benchmarks and class assignments; and, only when forced to, or at the last minute, uses resources and supports (i.e. study groups, teacher support, workshops, tutorials)		• Usually completes polished benchmarks and class assignments by using resources and supports when necessary (i.e. study groups, teacher support, workshops, tutorials)		• Achieves personal best work on almost all benchmarks and class assignments by setting goals, monitoring progress, and using resources and supports (i.e. study groups, teacher support, workshops, tutorials)
Seek Feedback	• Rejects feedback and/or does not revise work		• Sometimes shows evidence of accepting feedback to revise work, but at times may resist when it's difficult		• Consistently shows evidence of accepting and using feedback to revise work to high quality		• Consistently shows evidence of actively seeking, identifying, and using feedback to revise work to high quality
Tackle and Monitor Learning	• For a task or project, superficially identifies what is known, what needs to be learned, and how hard it will be		• For a task or project, identifies what is known, what needs to be learned, and how hard it will be; but may not use a strategy to tackle the task or does not monitor how well the strategy is working		• For a task or project identifies what is known, what needs to be learned, and how hard it will be; uses a strategy and steps to tackle the task; and monitors how well the approach and effort are working		• For a task or project, identifies what is known, what needs to be learned, and how hard it will be; selects an appropriate strategy and takes steps to tackle the task; and monitors and adjusts based on how well the approach and effort are working
Actively Participate	• Stays focused for part of the activity/discussion, team meeting, or independent time but often cannot resist distraction or does not notice when or why a loss of focus		• Mostly stays focused on the activity/discussion, team meeting, or independent time and knows when and why disengagement or distraction happens		• Actively participates in the activity/discussion, team meeting, or independent time and has strategies for staying focused and resisting most distraction		• Actively participates and takes initiative on the activity/discussion, team meeting, or independent time and has personal strategies for staying focused
Build Relationships	• Does not build relationships with trusted adults or peers to get back on track as needed or to enhance learning		• Does not initiate building relationships, but has a few trusted adults or peers to get back on track as needed or to enhance learning		• Builds and uses relationships with trusted adults and peers to get back on track as needed and to enhance learning		• Actively builds trusting relationships with adults and peers to pursue goals, enhance learning, and get back on track as needed
Impact Self & Community	• Identifies the ups and downs of the classroom and home community		• Has limited understanding of individual role in the ups and downs of the classroom and home community		• Analyzes individual role in the ups and downs of the classroom and home community		• Monitors and adjusts individual role to positively influence the ups and downs of the classroom and home community

Assessment In PBL

NewTech Network

	WHAT TO ASSESS	HOW TO ASSESS IT
PROJECT LAUNCH	• Do students understand the project? • Do students "need to know" core content and concepts? • Do students know the first benchmark and have a clear "next step"?	• Know, Need-To-Know, Problem Statement protocol • Warm-up and/or Exit Journals related to overall project • Team check-ins or meetings with teacher • Ungraded pre-assessment to determine current levels of knowledge and understanding
EARLY PHASE	• Are students on the right track, researching the right things? • Have the student teams become organized with roles and assigned tasks? • Is each team member engaged and contributing?	• Know, Need-To-Know, Next Steps protocol to determine needed workshop / lessons • Warm-up and/or Exit Journals related to group dynamics • Team check-ins and meetings with teacher • Individual assignments and homework
MIDDLE PHASE	• Are students learning and understanding the material they are researching and the variables to consider in their solution? • Are students making the connections between their research and the project? • Are students teams working effectively with clarity of next steps?	• Content based quizzes and assignments to determine needed interventions and differentiated instruction • Warm-up and/or Exit Journals related to content mastery to check for deeper understanding • Know, Need-To-Know, Next Steps protocol • Team check-ins and meetings with teacher • Early proposals, drafts, story boards, brainstorms, etc.
LATE PHASE	• Do students understand the rubric criteria and are they checking their work against it? • Have students mastered the content and apply it both in and outside of the project? • Do the teams have a to ensure they will be ready for culminating event?	• Feedback opportunities (peer, guest experts, etc.) against rubric criteria. • Larger individual and group assignments demonstrating content mastery (essays, drafts, models, etc.) • Warm-up and Exit Journals related to rubric criteria • Team check-ins and meetings with teacher
CULMINATING EVENT	• Did students accurately apply the key knowledge and thinking to create a thoughtful product? • Were students able to effectively communicate the elements of their product? • Did the team collaborate effectively?	• Evaluation of final product against rubric criteria • Evaluation of presentation or written documentation • Peer collaboration evaluations • Individual reflections on what was learned, the experience as a whole, and what might be done differently next time

SYSTEMS THINKING RUBRICS

GRADES K-12

CATALINA FOOTHILLS SCHOOL DISTRICT

TUCSON, ARIZONA

SYSTEMS THINKING

Systems thinking is a vantage point from which one sees a whole, a web of relationships, rather than focusing only on the detail of any particular piece. Events are seen in the larger context of a pattern that is unfolding over time. Systems thinking provides students with a more effective way of interpreting the complexities of the world in which they live—a world that is increasingly dynamic, global, and complex.

Systems Thinking – Concept Rubrics: (designed for instructor and/or student use), pages 3-10
These rubrics were designed for intermediate grade → high school students and/or students who have reached a more advanced understanding of systems thinking concepts and strategies.

- o Big Picture, page 3
- o Change over Time, page 4
- o Interdependencies, page 6
- o Consequences, page 7
- o System-as-Cause, page 9
- o Leverage Actions, page 10

Systems Thinking – Beginner: (designed for instructor use), pages 11-12
These rubrics were designed for use with primary students and/or students who are just beginning to learn systems thinking concepts and strategies.

Systems Thinking – Beginner: (designed for student use), pages 13-14
These rubrics were reworded based on the rubrics on pages 11-12 to simplify the language and systems thinking terminology. They were designed for use by primary students and/or students who are just beginning to learn systems thinking concepts and strategies.

A continuum of systems thinking rubrics corresponding to performance levels within CFSD's Deep Learning Proficiencies
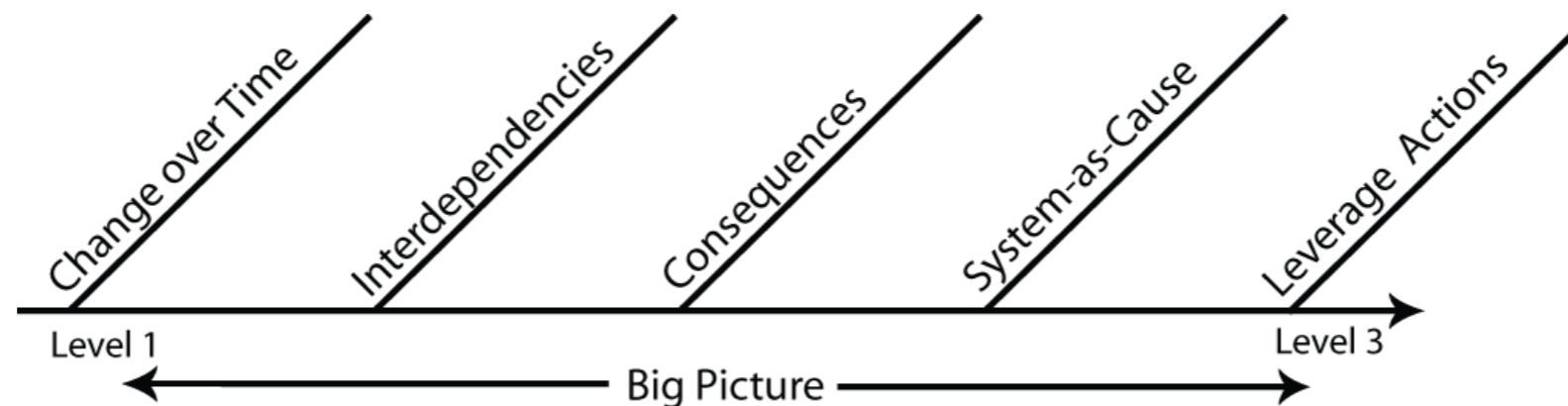
SYSTEMS THINKING RUBRICS

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Systems Thinking – Beginner: (designed for student use), pages 13-14
These rubrics were reworded based on the rubrics on pages 1-2 to simplify the language and systems thinking terminology. They were designed for use by primary students and/or students who are just beginning to learn systems thinking concepts and strategies.

Big Picture, page 3	Interdependencies, page 6	System-as-Cause, page 9
Change over Time, page 4	**Consequences, page 7**	**Leverage Actions, page 10**

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SYSTEMS THINKING: BIG PICTURE

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Identification and Explanation	Identifies and explains issues, goals, and/or problems within a system as individual details.	Identifies and explains issues, goals, and/or problems within a system as a series of interrelated details.	Identifies and explains issues, goals, and/or problems within a system from a wide, "big picture" view, rather than focusing on details. Seeks out and considers the different perspectives/ mental models underlying the system being considered.	Identify and explain issues, goals, and/or problems within a system from a wide, "big picture" view, rather than focusing on details. Gather information about a system to form an overarching assessment of the situation.
Representations	Creates a model of a system.	Creates a model of a system that includes relevant and sufficient details; displays the interrelationships among details.	Creates a model of the system's relevant set of relationships by taking a whole-system perspective on an issue or process.	Create the simplest possible model of a system, aggregating (generalizing) detailed information to represent the whole-system perspective on an issue or process.
Transfer	Compares one situation to another.	Transfers understanding of the interrelated details of one system to another system.	Transfers understanding of "the big picture" of how one system operates by comparing it to another system of the same type.	Transfer understanding of "the big picture" of how one system operates by comparing it to another system of a different type that operates in a similar manner.

SYSTEMS THINKING: CHANGE OVER TIME

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Identification and Explanation	Describes a change that occurs over time.	Identifies and explains change as a series of individual events that are connected in time.	Identifies and explains a distinct system component's continuous pattern of change/trend over a specified period of time.	Identify and explain a distinct system component's continuous pattern of change / trend over a specified period of time. Do one or more of the following: • Project a behavior into the future based on current trends. • Identify and explain the difference between changes in accumulations over time and the rates at which they change. • Identify, describe and distinguish between changes in qualitative (*for example:* happiness) vs. quantitative (*for example:* population) entities that change over time.
Representation	Represents events (*for example:* lists a sequence of events).	Represents change as event-based (*for example:* dots connected on a graph).	Represents continuous change over time (*for example:* on a line graph).	Represents continuous change over time of more than one variable (*for example:* on a line graph).
Transfer	Explains change-over-time in a single situation.	Compares change-over-time in one situation to another.	Transfers understanding of an identified change-over-time by comparing it to a situation of a similar type (*for example:* perseverance over time for two	Transfer understanding of an identified change-over-time by comparing it to a situation of a different type that operates in a similar manner (*for*

			characters in different texts. Identifies similarities and differences between the two patterns of change.	*example:* a fictional character's perseverance over time compared to that of an historic figure). Identify similarities and differences between two patterns of change and explain why the similarities and differences exist.

SYSTEMS THINKING: INTERDEPENDENCIES

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Identification and Explanation	Shows causal relationships as one-way (*for example:* cause → effect).	Identifies and explains a single cause-and-effect loop.	Identifies and explains causality in a system as an ongoing reinforcing or balancing process with effects feeding back to influence causes, and causes possibly affecting each other.	Identify and clearly explain the interdependent causal relationships in a system as ongoing reinforcing or balancing processes with effects feeding back to influence causes, and causes possibly affecting each other.
Representations	Connects elements of a system.	Represents a circular causal relationship between two elements of a system.	Represents causal feedback among two or more elements of a system and/or creates multiple loops that illustrate different. Represents causal feedback relationships as either reinforcing or balancing.	Represent causal feedback among three or more elements of a system and/or create interconnected multiple loops. Represent causal feedback relationships as either reinforcing or balancing. Describe how two or more interdependent feedback loops are comparably more or less powerful over time.
Transfer	Explains causality in a single situation.	Compares one cause-and-effect loop to another situation.	Transfers understanding of known causality in a system by comparing it to similar situation of the same type (*for example: biological* growth of bacteria vs. a rabbit population). Explains how the new situation follows the same reinforcing or balancing pattern.	Transfer understanding of known causality in a system by comparing it to a situation of a different type that operates in a similar manner (*for example:* growth of bacteria and the spread of rumors). Explain how and why the new situation follows the same reinforcing or balancing pattern.

SYSTEMS THINKING: CONSEQUENCES

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Identification and Explanation	Explains how actions produce results. Identifies at least one consequence of an action.	Identifies short-term, intended consequences of a particular action.	Identifies what short and long-term consequences, intended or unintended, have emerged within a system as a result of actions. Explains an example of "the most obvious solution" making a situation worse in the long term.	Identify what specific short and long-term consequences, intended or unintended, have emerged within a system and explains in detail why these consequences have occurred as a result of specific actions. Identify how and explains why a proposed solution could potentially backfire.
Representations	Makes a list of results occurring from actions.	Represents an identified short-term consequence, using a systems archetype or causal loop diagram.	Represents how aspects of a situation inherently cause specific consequences over time. The representation could be made through a systems archetype, causal loop diagram, stock/flow diagram, and/or kinesthetic activity.	Represent concisely how aspects of a situation inherently cause specific consequences over time by creating a running computer model/ simulation.
Transfer	Explains consequences in a single situation.	Compares consequences of one situation to another.	Transfers understanding of known short and long-term consequences by comparing it to a situation of a similar type (*for example:* consequences of two different wars. Explains how the new situation follows the same pattern of consequences).	Transfer understanding of known short and long-term consequences by comparing it to a situation of a different type that operates in a similar manner (*for example:* consequences of a war compared to similar consequences relating to the immune system warding off a disease).

| | | | | Explain thoroughly how the new situation follows the same pattern of consequences.

Explain potential short and long-term consequences as a result of specific actions (*for example:* setting and working toward personal goals). |

SYSTEMS THINKING: SYSTEM-AS-CAUSE

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Identification and Explanation	Recognizes an accumulation within a system and names one or more factors influencing the increase or decrease of that accumulation.	Recognizes and explains interdependent elements of a system including accumulations and flows with at least one feedback relationship.	Recognizes and clearly explains interdependent elements of a system including key accumulations and flows, relevant boundaries, inherent time delays, and balancing and reinforcing feedback	Recognize and clearly explain relevant interdependent elements of a system including key accumulations and flows, boundaries, inherent time delays, and balancing and reinforcing feedback.
Representations	Represents how an accumulation increases and/or decreases.	Represents interdependent relationships affecting accumulations.	Represents how the underlying structure of a system operates and produces particular behavior(s) over time, including the relationships between accumulations and the rates at which they increase and decrease.	Represent concisely how the underlying structure of a system operates and produces particular behavior(s) over time.
Transfer	Explains the structure of an individual system.	Compares known system structures to another situation.	Transfers understanding of known system structures by comparing it to a situation of a similar type (*for example:* consequences of two different wars). Explains how the new situation is structured in a parallel manner and thus produces similar results over time.	Transfer understanding of known system structures by comparing it to a situation of a different type that operates in a similar manner (*for example:* consequences of a war compared to similar consequences relating to the immune system warding off a disease). Explain thoroughly how the new situation is structured in a parallel manner and thus produces similar results over time.

SYSTEMS THINKING: LEVERAGE ACTIONS

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Identification and Explanation	Acknowledges that actions can have desirable and undesirable effects.	Identifies at least one leverage action in a given historical or current system. Given a challenge, uses understanding of system structures to identify and explain possible leverage actions.	Identifies possible leverage and non-leverage actions within a specific system. Given a challenge, uses understanding of system structures and underlying mental models to identify and clearly explain possible leverage actions.	Given a challenge, use understanding of system structures and underlying mental models to identify and explain potential leverage actions clearly and concisely. Surface and test assumptions about potential leverage actions within a real-world context, such as student-action committees, class projects, or community involvement.
Representations	Represents cause and effect relationships.	Represents how an action functions as leverage in a given system. The representation could be made through an iceberg model, systems archetype, stock/flow diagram, system dynamics computer model, or other means.	Thoroughly represents how an action functions as leverage in a given system. The representation could be made through an iceberg model, systems archetype, stock/flow diagram, system dynamics computer model, or other means.	Represent clearly and concisely how an action functions as leverage in a given system. The representation could be made through an iceberg model, systems archetype, stock/flow diagram, system dynamics computer model, or other means.
Transfer	Explains leverage actions within a system.	Compares leverage action(s) within a system to another situation.	Transfers understanding of leverage action(s) within a system by comparing it to a situation of a similar type (*for example*: leverage in bringing about change in two different laws).	Transfer understanding of leverage action(s) within a system by comparing it to a situation of a different type that operates in a similar manner (*for example:* changing a law compared to changing a policy in a school).

SYSTEMS THINKING: BEGINNER (K-3)

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Big Picture	Identifies a single point of view or perspective.	Identifies individual parts of a system. Shares and listens to other points of view.	Explains how the parts of a system come together to make a whole. Considers other points of view to increase understanding.	Explain the nuances of how the parts of a system come together to make a whole; identify and integrate hidden or subtle components of the system. Recognize and explain how one's thinking affects what happens. Seek out other points of view.
Change over Time	Identifies individual events. Describes change at an event level (*for example:* changing clothes).	Identifies and orders key events. Describes change as a series of events that connect over time.	Identifies elements of the system that are changing over time. Describes change as a series of events that are connected in time to produce a particular pattern of behavior.	Use an understanding of event sequence to identify a time frame and the degree to which one or more elements change over time. Describe change as a continuous trend over time. Compare different patterns of behavior.
Interdependencies	Explains an event that occurred.	Explains cause and effect as one event or part of a system directly causing a change in a second event or part.	Explains cause and effect as happening in a circular fashion.	Describe how causes and effects repeat over a period of time.
Consequences	Explains the concept of cause and effect.	Gives an example of how a specific action can affect what happens in the short-term.	Given a specific situation, accurately explains how specific actions affect what happens in the short-term and the long-term. Explains how actions can	Identify and clearly explain how and why specific short and long-term results occur or may occur due to a specific action. Explain using specific examples how actions can create

			create consequences, both wanted and unwanted.	consequences, both wanted and unwanted.
System-as-Cause	Describes individual or isolated behaviors in a system.	Describes behaviors in a system as related to specific parts of the system or individual events.	Recognizes and describes how a system's organization creates its behaviors over time.	Identify and explain reasons why specific behaviors result from the organization of a system.
Leverage	Describes basic concept of leverage, i.e. an action that would bring about a desirable effect.	Given a specific situation, identifies a leverage action.	Given a specific situation, identifies and explains a leverage action that had or could have a significant desirable effect on results.	Evaluate a situation carefully in order to propose leverage actions that would potentially have the greatest desirable effect, i.e. high leverage actions. Compares a high leverage action to a low leverage action.
Representations of a System/ Systems Concept(s)	Creates a representation of a system/systems thinking concept.	Creates an accurate representation of a system/systems thinking concept.	Creates a clear and complete representation of a system/systems thinking concepts.	Create an innovative representation of a system/systems thinking concept.
Transfer Understanding to Another Situation	Demonstrates understanding of a particular situation (*for example:* how a character is feeling).	Compares one situation to another situation.	Transfers understanding of known system parts and behaviors by making a viable comparison to another situation of the same type (*for example:* the happiness of two characters in a book. Identifies the similarities and differences between the two situations using appropriate systems vocabulary.	Transfer understanding of known system parts and behaviors by making a comparison to another situation of a different type that operates in a similar manner (*for example:* the happiness of a character in a book and the happiness of him/herself). Identify and explain the similarities and differences between the two situations using appropriate systems vocabulary.

DLP Performance Area	Keep working at it.	You're getting close.	You've got It!	Wow!
Big Picture	I'm not sure which parts are important. I have trouble listening to other people's ideas.	I know which parts are important, but I'm not sure how they all work together. I share my ideas with others and try to listen to other people's ideas.	I see how the parts work together and can explain my thinking. I try to understand other people's thinking and their thinking helps me to figure out how things work.	I see how the parts work together and can explain my thinking in a way that is very clear to other people. I explain that how people think can change what happens.
Change over Time	I make a list of what happened, but I'm not sure which parts are really important. I'm not sure how something can change over time.	I make a list of what happened in order, but I'm not sure what's changing. I see that everything that happens is connected together.	I put important events in order. I can figure out what is changing over time and can explain how it is changing.	I can find something that is changing over time. I can figure out the time it takes for change and how much something changes in that time.
Interdependencies	I know that some things happen because of other things happening.	I can explain how one part causes a change in another part.	I can explain how one part changes a second part and how that comes back and changes the first part.	I can explain and give examples of how "the parts affecting each other" works in a circle over and over.
Consequences	I know that what I do changes what happens, but I can't think of an example.	I can talk about a time when someone did something that caused something to happen right away. I can explain that sometimes what happens is "good" and sometimes it is "bad."	I can talk about a time when someone did something that caused something to happen right away and later on, too. I can give an example of how what happens might be what I want or what I don't want.	I can give examples and explain how what people do can affect what happens right away and a long time from now. I can give examples of consequences, both that are wanted and unwanted.

System-as-Cause	I can talk about what happened, but I'm not sure why it happened.	I can talk about how one part makes certain things happen.	I can explain how something that is put together makes it work the way it does.	I can find and explain examples that show that how something is put together makes it work the way it does.
Leverage	I can explain that doing something to make a change can work or not work, but I can't think of an example.	I can think of a way to make a change, but I cannot explain why it's the best way.	I can think of a way to make a change and explain why it is the best choice.	I look at all the ways to make a change to find the best choice. I can explain why some choices are better than others.
Picture of what a System Looks Like	I show my thinking in a way that others cannot understand.	I show my thinking but I'm missing some parts and some parts are confusing.	I show my thinking in a way that makes sense to other people.	I show my thinking in a way that is very clear to other people.
Comparison to Another Similar Situation	I'm not sure how what I learned is like another situation.	I can think of another situation but it's not really the same.	I can find another situation that is like what I learned. I can list how the two situations are the same and different.	I can find something that is like what I learned, but in a different situation. I can list and talk about how the two situations are the same and different.

COLLABORATION RUBRIC

GRADES K-2

CATALINA FOOTHILLS SCHOOL DISTRICT

TUCSON, ARIZONA

General Description and Suggestions for Use

A new strategic plan, *Envision21: Deep Learning*, forms the basis for a fresh focus on cross-disciplinary skills/proficiencies necessary for preparing our students well for a 21ˢᵗ century life that is increasingly complex and global. These "deep learning proficiencies" (DLPs) are represented as 5c + s = dlp. They are the 5Cs: (1) Citizenship, (2) Critical Thinking and Problem Solving, (3) Creativity and Innovation, (4) Communication, (5) Collaboration + S: Systems Thinking. CFSD developed a set of rubrics (K-2, 3-5, 6-8, and 9-12) for each DLP.

The rubrics were developed using a backward design process to define and prioritize the desired outcomes for each DLP. They provide a common vocabulary and illustrate a continuum of performance. By design, the rubrics have not been aligned to any specific subject area; they are intended to be contextualized within the academic content areas based on the performance area(s) being taught and assessed. In practice, this will mean that not every performance area in each of the rubrics will be necessary in every lesson, unit, or assessment.

The CFSD rubric for *Collaboration* was designed as a cross-disciplinary tool to support educators in teaching and assessing the performance areas associated with this proficiency:
- Leadership and Initiative
- Cooperation and Flexibility
- Responsibility and Productivity
- Responsiveness
- Self-regulation and Reflection

This tool is to be used primarily for formative instructional and assessment purposes; it is not intended to generate psychometrically valid, high stakes assessment data typically associated with state and national testing. CFSD provides a variety of tools and templates to support the integration of *Collaboration* into units, lessons, and assessments. When designing units, teachers are encouraged to create authentic assessment opportunities in which students can demonstrate mastery of content and the deep learning proficiencies at the same time.

The approach to teaching the performance areas in each rubric may vary by subject area because the way in which they are applied may differ based on the field of study. Scientists, mathematicians, social scientists, engineers, artists, and musicians (for example), all collaborate, solve problems, and share their findings or work within their professional communities. However, the way in which they approach their work, the tools used for collaboration, and the format for communicating their findings may vary based on the profession. These discipline-specific expressions of the 5Cs + S may require some level of customization based on the subject area.

Each rubric can also be used to provide students with an opportunity to self-assess the quality of their work in relation to the performance areas. Student-friendly language or "I can" statements can be used by students to monitor and self-assess their progress toward established goals for each performance area.

The deep learning proficiencies (5Cs + S) are highly interconnected. For example, productive collaboration is contingent upon effective communication. Efficient and effective problem solving often requires collaboration skills. Divergent and convergent thinking, traits of creativity and innovation, are directly related to critical thinking. Our students will need to use a combination of proficiencies to solve problems in new contexts beyond the classroom. Therefore, it is important to be clear about which proficiency and/or performance area(s) are the focus for student learning, and then to assist students in understanding the connections between them and how they are mutually supportive.

What does Score 1.0 – Score 4.0 mean in the rubrics?

The rubrics are intended to support student progress in mastering the deep learning proficiencies (DLPs). Four levels of performance are articulated in each rubric: Score 1.0 (Novice), Score 2.0 (Basic), Score 3.0 (Proficient), and Score 4.0 (Advanced). The descriptions follow a growth model to support students in developing their skills in each performance area. Scores 1.0 (Novice) and 2.0 (Basic) describe positive steps that students might take toward achieving Score 3.0 (Proficient) or Score 4.0 (Advanced) performance. When using the rubrics to plan for instruction and assessment, teachers need to consider the knowledge and skills described in the Score 2.0 column (Basic) to be embedded in the Score 3.0 (Proficient) and 4.0 (Advanced) performance. The Novice level (Score 1.0) indicates that the student does not yet demonstrate the basic skills within the performance area, but that he/she exhibits related readiness skills that are a stepping-stone to a higher level of proficiency. The descriptive rubrics were designed to illustrate students' depth of knowledge/skill at various levels in order to facilitate the instructional and assessment process for all learners. The following descriptions explain the four levels on the rubric:

Score 1.0 (Novice): Describes student performance that demonstrates readiness skills for Score 2.0, but requires significant support.

Score 2.0 (Basic): Describes student performance that is approaching proficiency.

Score 3.0 (Proficient): Describes student performance that is proficient – the targeted expectations for each performance area of the DLP.

Score 4.0 (Advanced): Describes an exemplary performance that exceeds proficiency.

Sources

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Partnership for 21st Century Skills. (2009). P21 framework definitions. Washington, DC.

Rhodes, T. L. (Ed.) (2010). Assessing Outcomes and Improving Achievement: Tips and Tools for Using Rubrics. Association of American Colleges and Universities: Washington D.C. [Adaptations from VALUE rubrics, VALUE Project]

COLLABORATION

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Leadership and Initiative	Defines key concepts of leadership and initiative including "Goal", "Team", and "Teamwork".	Identifies basic roles within a provided or familiar teamwork structure (*for example: shoulder partners, clock buddies, Show-Down cooperative group roles*). Fulfills simple assigned tasks within a familiar team structure. Sets general goals for individual work (*for example: "I can work more carefully."*)	Describes the duties and responsibilities of a single, assigned role within a group structure Fulfills a variety of assigned tasks within a group or team structure, when individual role tasks or responsibilities are clearly defined. Sets personal goals for individual work within a team structure that are related to the task and/or group process. (*for example: "I can check in with my teammates and ask for their feedback on my part of the project."*)	Explain the duties of different team roles within a familiar or provided structure. Share roles and responsibilities with other team members, including leadership, in order to accomplish a team goal. Set team goals which pertain to the task by collaborating with others. Encourage others on the team.
Cooperation and Flexibility	Defines key concepts of cooperation and flexibility, including "Cooperation", "Active Listening", "Opinion", and "Flexibility".	States own opinions and ideas. Identifies simple challenges or obstacles that occurred during a collaborative learning activity.	Explains own opinions and ideas to others within a team setting; listens to others' ideas and opinions; compares own opinions or ideas with others. Explains why challenges or obstacles to achieving the group's goals occurred during the collaborative process or team activity. Uses provided strategies or protocols to respectfully	Paraphrase others' ideas and opinions to check for understanding. Ask clarifying questions to increase personal understanding of the topic or a teammate's thinking. Suggest a plausible plan to address future challenges or obstacles to achieving the group's goals based on the reflection of a previous

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			disagree with another team member (*for example: using "I" statements, using a set of provided stem statements or hand signals during a discussion to disagree.*)	experience. Encourage the group's use of strategies to respectfully address challenges that arise within the team (*for example: rephrasing others' ideas, using "I" statements, referring to familiar classroom protocols*).
Responsibility and Productivity	Defines key concepts of responsibility and productivity, including "Responsibility", "Product", and "Quality".	Performs individual work related to the assigned group task when provided with a step-by-step procedure or process. Submits products in response to a specific request.	Develops a basic plan to perform individual tasks related to the team goals and follows the plan to complete the work. Submits products that meet the specifications (quality, within a provided time frame) for the group tasks. Monitors individual progress in relation to an individual goal. Accept responsibilities with a positive attitude.	Assist others as needed to meet group goals, without abandoning personal tasks or goals. Submit high-quality products that show evidence of extended learning within the context of the assigned group task. Monitor personal and team progress; make simple corrections or adjustments in relation to the group goal (*for example: suggesting a change in the time allotted to a task, or sharing materials to finish the task*).
Responsiveness	Defines key concepts of responsiveness including "Feedback", "Criteria", and "Rubric". Accepts positive/encouraging feedback.	Responds to specific questions about the group's work. Provides general feedback to others (*for example: "That looks nice." or "I think you need to make revisions to the first part."*).	Responds respectfully to feedback that suggests changes or revisions to work, based on provided criteria for success. Provides specific feedback to others based on provided criteria for success.	Encourage/persuade the group to act upon feedback to revise or improve a product (*for example: suggest the group revise or improve a model or written project after receiving feedback*).

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Self-regulation and Reflection	Defines key concepts of self-regulation in collaboration including "Reflection", "Strength", "Challenge", and "Results".	Identifies characteristics of successful groups or teams. Connects individual actions to outcomes or consequences.	Compares characteristics and outcomes/results of successful and unsuccessful teams or groups. Identifies basic personal strengths and weaknesses in collaborating with others. Identifies strategies that will potentially improve individual success in team structures.	Describe personal and team strengths and weaknesses with regard to the established team roles and responsibilities, or the assigned task. Explain strategies to improve individual participation, or to improve how a group can be more productive.

COLLABORATION RUBRIC

GRADES 3-5

CATALINA FOOTHILLS SCHOOL DISTRICT

TUCSON, ARIZONA

General Description and Suggestions for Use

A new strategic plan, *Envision21: Deep Learning*, forms the basis for a fresh focus on cross-disciplinary skills/proficiencies necessary for preparing our students well for a 21st century life that is increasingly complex and global. These "deep learning proficiencies" (DLPs) are represented as $5c + s = dlp$. They are the 5Cs: (1) Citizenship, (2) Critical Thinking and Problem Solving, (3) Creativity and Innovation, (4) Communication, (5) Collaboration + S: Systems Thinking. CFSD developed a set of rubrics (K-2, 3-5, 6-8, and 9-12) for each DLP.

The rubrics were developed using a backward design process to define and prioritize the desired outcomes for each DLP. They provide a common vocabulary and illustrate a continuum of performance. By design, the rubrics have not been aligned to any specific subject area; they are intended to be contextualized within the academic content areas based on the performance area(s) being taught and assessed. In practice, this will mean that not every performance area in each of the rubrics will be necessary in every lesson, unit, or assessment.

The CFSD rubric for *Collaboration* was designed as a cross-disciplinary tool to support educators in teaching and assessing the performance areas associated with this proficiency:
- Leadership and Initiative
- Cooperation and Flexibility
- Responsibility and Productivity
- Responsiveness
- Self-regulation and Reflection

This tool is to be used primarily for formative instructional and assessment purposes; it is not intended to generate psychometrically valid, high stakes assessment data typically associated with state and national testing. CFSD provides a variety of tools and templates to support the integration of *Collaboration* into units, lessons, and assessments. When designing units, teachers are encouraged to create authentic assessment opportunities in which students can demonstrate mastery of content and the deep learning proficiencies at the same time.

The approach to teaching the performance areas in each rubric may vary by subject area because the way in which they are applied may differ based on the field of study. Scientists, mathematicians, social scientists, engineers, artists, and musicians (for example), all collaborate, solve problems, and share their findings or work within their professional communities. However, the way in which they approach their work, the tools used for collaboration, and the format for communicating their findings may vary based on the profession. These discipline-specific expressions of the 5Cs + S may require some level of customization based on the subject area.

Each rubric can also be used to provide students with an opportunity to self-assess the quality of their work in relation to the performance areas. Student-friendly language or "I can" statements can be used by students to monitor and self-assess their progress toward established goals for each performance area.

The deep learning proficiencies (5Cs + S) are highly interconnected. For example, productive collaboration is contingent upon effective communication. Efficient and effective problem solving often requires collaboration skills. Divergent and convergent thinking, traits of creativity and innovation, are directly related to critical thinking. Our students will need to use a combination of proficiencies to solve problems in new contexts beyond the classroom. Therefore, it is important to be clear about which proficiency and/or performance area(s) are the focus for student learning, and then to assist students in understanding the connections between them and how they are mutually supportive.

What does Score 1.0 – Score 4.0 mean in the rubrics?

The rubrics are intended to support student progress in mastering the deep learning proficiencies (DLPs). Four levels of performance are articulated in each rubric: Score 1.0 (Novice), Score 2.0 (Basic), Score 3.0 (Proficient), and Score 4.0 (Advanced). The descriptions follow a growth model to support students in developing their skills in each performance area. Scores 1.0 (Novice) and 2.0 (Basic) describe positive steps that students might take toward achieving Score 3.0 (Proficient) or Score 4.0 (Advanced) performance. When using the rubrics to plan for instruction and assessment, teachers need to consider the knowledge and skills described in the Score 2.0 column (Basic) to be embedded in the Score 3.0 (Proficient) and 4.0 (Advanced) performance. The Novice level (Score 1.0) indicates that the student does not yet demonstrate the basic skills within the performance area, but that he/she exhibits related readiness skills that are a stepping-stone to a higher level of proficiency. The descriptive rubrics were designed to illustrate students' depth of knowledge/skill at various levels in order to facilitate the instructional and assessment process for all learners. The following descriptions explain the four levels on the rubric:

Score 1.0 (Novice): Describes student performance that demonstrates readiness skills for Score 2.0, but requires significant support.

Score 2.0 (Basic): Describes student performance that is approaching proficiency.

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$5c + s = dlp$

COLLABORATION

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Leadership and Initiative	Identifies basic roles within a provided or familiar teamwork structure (*for example: shoulder partners, cooperative learning group roles*). Describes the goal-setting process.	Describes the duties and responsibilities of a single, assigned role within a group structure Fulfills an assigned role when individual role tasks or responsibilities are clearly defined. Sets goals for individual work within a team structure.	Explains the duties of different team roles within a familiar or provided structure. Fulfills various basic roles and responsibilities in order to complete a task. Explains the team's goals as they pertain to the task.	Assume any assigned role and can accurately perform the designated duties of each role, including leadership. Set team goals collaboratively as they pertain to a given task. Share roles and responsibilities with other team members, including leadership, in order to accomplish a team goal. Encourage others.
Cooperation and Flexibility	States own opinions and ideas. Identifies potential challenges that might occur during a collaborative process.	States own opinions and ideas to others within a team setting; listens to others' ideas and opinions. Describes challenges that occurred during the collaborative process.	Explains own opinions and ideas to others; paraphrases others' ideas and opinions; compares own opinions or ideas with others. Uses strategies to respectfully resolve conflicts with another team member (*for example: using "I" statements, following a provided protocol for conflict resolution*)	Share ideas and opinions with members of the team in a collaborative conversation; seek to understand others' ideas, opinions, and perspectives within the team by asking clarifying questions. Use strategies to respectfully address challenges that arise within the team (*for example: rephrasing others' ideas, using "I" statements, etc.*).

Responsibility and Productivity	Performs work related to the assigned task when provided with a step-by-step procedure or process. Submits products in response to a specific request.	Performs work related to the assigned task. Submits products that meet the basic specifications for the individual assigned task within the teamwork structure. Monitors individual progress in relation to an individual goal.	Completes individual action items to achieve the team goals. Submits products that meet the specifications for the group tasks. Monitors individual and team progress; makes simple corrections or adjustments in relation to the group goal (*for example: time allotted to a task, or sharing materials to finish the task*).	Accept responsibilities with a positive attitude. Assist others as needed to meet group or team goals. Prepare for teamwork ahead of time. Submit high-quality products that meet or exceed the group goals for the task. Initiate effective corrections and adjustments needed to meet the team goals (*for example: suggest how to re-organize the division of labor, or change materials or design*).
Responsiveness	Accepts positive/encouraging feedback. Responds to specific questions about the group's work. Provides general feedback to others (*for example: "That looks nice." or "I think you need to make revisions to the first part."*).	Responds respectfully to feedback that suggests changes or revisions to work. Provides specific feedback to other group members, based on provided criteria for the group task.	Requests general feedback from another group member for a specific part of the group project. (*for example: "What do you think?" or "Is this part good?"*) Acts upon feedback that suggests changes or revisions to work, based upon provided criteria for success.	Suggest the group act upon feedback to revise or improve the group's project; present a plausible response for the group to consider.
Self-regulation and Reflection	Identifies characteristics of successful groups or teams. Connects individual actions to outcomes or consequences.	Identifies personal strengths and weaknesses when collaborating with others in a team structure. Compares characteristics and outcomes of successful and unsuccessful teams or groups. Identifies general strategies to	Describes personal and team strengths and weaknesses with regard to the established team roles and responsibilities, or the criteria for the assigned task. Explains specific strategies to improve personal participation and/or group	Describe the learning (about the content and/or collaboration) that resulted from the collaborative experience. Develop a plan for improving individual participation, or to improve how a group can be more productive.

		improve the success of a group (*for example: "Everyone should stay on task"*).	productivity.	

COLLABORATION RUBRIC

GRADES 6-8

CATALINA FOOTHILLS SCHOOL DISTRICT

TUCSON, ARIZONA

General Description and Suggestions for Use

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Each rubric can also be used to provide students with an opportunity to self-assess the quality of their work in relation to the performance areas. Student-friendly language or "I can" statements can be used by students to monitor and self-assess their progress toward established goals for each performance area.

The deep learning proficiencies (5Cs + S) are highly interconnected. For example, productive collaboration is contingent upon effective communication. Efficient and effective problem solving often requires collaboration skills. Divergent and convergent thinking, traits of creativity and innovation, are directly related to critical thinking. Our students will need to use a combination of proficiencies to solve problems in new contexts beyond the classroom. Therefore, it is important to be clear about which proficiency and/or performance area(s) are the focus for student learning, and then to assist students in understanding the connections between them and how they are mutually supportive.

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5c + s = dlp

COLLABORATION

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Leadership and Initiative	Identifies different roles within the team. Sets goals for individual work; describes other students' individual goals.	Identifies roles within the team that are necessary to complete the task. Fulfills a basic assigned role when tasks are clearly defined. Explains the team's goals as they pertain to the task.	Explains the duties of different team roles needed to complete the task. Fulfills basic roles and responsibilities. Sets team goals collaboratively as they pertain to a given task.	Assume any role and can accurately describe and perform the duties of each role, including leadership. Clarify roles and responsibilities among team members. Describe the scope and relevance of the team's work; describe the relationship between roles and the team's goals. Encourage others.
Cooperation and Flexibility	Identifies reasons why team members might present different ideas (*for example: different ways of thinking, different strengths, etc.*). Identifies potential challenges that might occur during a collaborative process.	States own opinions to others; paraphrases others' ideas and opinions; compares own opinions with others. Identifies and acknowledges challenges that occur during the collaborative process.	Shares ideas with members of the team; acknowledges diverse ideas, opinions, and perspectives within the team. Uses strategies to respectfully address challenges that arise within the team (*for example: rephrasing others' ideas, using "I" statements*).	Integrate diverse ideas, opinions, and perspectives of the team and negotiate to reach workable solutions. Share concerns, personal insights, and resources with the team. Anticipate challenges that might occur during the collaborative process; help resolve conflict or address challenges within the team through discussion and

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			consensus-building activities (*for example: straw poll, consensus board, collaborative learning protocols*).
Responsibility and Productivity	Performs work related to the assigned task when directed to do so. Submits products related to the task.	Performs work related to an assigned task. Submits products that meet the basic specifications for the assigned task. Monitors individual progress and makes adjustments based on individual goals.	Completes individual action items to achieve the team's goals. Submits products that meet the specifications for the assigned task. Monitors individual and team progress; makes adjustments based on the status of collaborative work toward team goals.	Accept responsibilities with a positive attitude. Assist others as needed; value opinions and skills of all team members. Prepare for teamwork ahead of time; complete individual action items on time. Submit high-quality products that meet the specifications for the assigned task. Prioritize and monitor individual and team progress toward goals, making sufficient corrections and adjustments when needed.
Responsiveness	Accepts positive/encouraging feedback. Responds to specific questions about others' work.	Provides general feedback to others (*for example: "That looks nice." or "I think you need to make revisions to the first part."*). Requests general feedback (*for example: "What do you think?" or "Is my project good?"*).	Provides and requests specific feedback pertaining to the established criteria of the task. Uses feedback to make adjustments to own work.	Provide constructive feedback. Deliver feedback effectively in a manner that is appropriate to the audience and topic. Proactively solicit feedback; accept and show appreciation for constructive feedback. Acts upon feedback to achieve team goals.

$5c + s = dlp$

Self-regulation and Reflection	Identifies strengths and weaknesses of the team's collaboration. Explains how individual behaviors can influence group outcomes.	Identifies individual strengths and weaknesses in collaborating with others. Identifies general strategies to improve the success of the group (*for example: "Everyone should do their assigned task."*)	Describes individual and team strengths and weaknesses with regard to the established criteria for the task. Explains specific strategies to improve personal participation and/or group productivity.	Critique and reflect on individual and collaborative strengths and weaknesses; describe the learning (about content and/or collaboration) that resulted from the collaborative experience. Develop a plan for improving individual participation or group productivity.

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COLLABORATION RUBRIC

GRADES 9-12

CATALINA FOOTHILLS SCHOOL DISTRICT

TUCSON, ARIZONA

General Description and Suggestions for Use

A new strategic plan, *Envision21: Deep Learning*, forms the basis for a fresh focus on cross-disciplinary skills/proficiencies necessary for preparing our students well for a 21st century life that is increasingly complex and global. These "deep learning proficiencies" (DLPs) are represented as 5c + s = dlp. They are the 5Cs: (1) Citizenship, (2) Critical Thinking and Problem Solving, (3) Creativity and Innovation, (4) Communication, (5) Collaboration + S: Systems Thinking. CFSD developed a set of rubrics (K-2, 3-5, 6-8, and 9-12) for each DLP.

The rubrics were developed using a backward design process to define and prioritize the desired outcomes for each DLP. They provide a common vocabulary and illustrate a continuum of performance. By design, the rubrics have not been aligned to any specific subject area; they are intended to be contextualized within the academic content areas based on the performance area(s) being taught and assessed. In practice, this will mean that not every performance area in each of the rubrics will be necessary in every lesson, unit, or assessment.

The CFSD rubric for *Collaboration* was designed as a cross-disciplinary tool to support educators in teaching and assessing the performance areas associated with this proficiency:
- Leadership and Initiative
- Cooperation and Flexibility
- Responsibility and Productivity
- Responsiveness
- Self-regulation and Reflection

This tool is to be used primarily for formative instructional and assessment purposes; it is not intended to generate psychometrically valid, high stakes assessment data typically associated with state and national testing. CFSD provides a variety of tools and templates to support the integration of *Collaboration* into units, lessons, and assessments. When designing units, teachers are encouraged to create authentic assessment opportunities in which students can demonstrate mastery of content and the deep learning proficiencies at the same time.

The approach to teaching the performance areas in each rubric may vary by subject area because the way in which they are applied may differ based on the field of study. Scientists, mathematicians, social scientists, engineers, artists, and musicians (for example), all collaborate, solve problems, and share their findings or work within their professional communities. However, the way in which they approach their work, the tools used for collaboration, and the format for communicating their findings may vary based on the profession. These discipline-specific expressions of the 5Cs + S may require some level of customization based on the subject area.

Each rubric can also be used to provide students with an opportunity to self-assess the quality of their work in relation to the performance areas. Student-friendly language or "I can" statements can be used by students to monitor and self-assess their progress toward established goals for each performance area.

The deep learning proficiencies (5Cs + S) are highly interconnected. For example, productive collaboration is contingent upon effective communication. Efficient and effective problem solving often requires collaboration skills. Divergent and convergent thinking, traits of creativity and innovation, are directly related to critical thinking. Our students will need to use a combination of proficiencies to solve problems in new contexts beyond the classroom. Therefore, it is important to be clear about which proficiency and/or performance area(s) are the focus for student learning, and then to assist students in understanding the connections between them and how they are mutually supportive.

What does Score 1.0 – Score 4.0 mean in the rubrics?

The rubrics are intended to support student progress in mastering the deep learning proficiencies (DLPs). Four levels of performance are articulated in each rubric: Score 1.0 (Novice), Score 2.0 (Basic), Score 3.0 (Proficient), and Score 4.0 (Advanced). The descriptions follow a growth model to support students in developing their skills in each performance area. Scores 1.0 (Novice) and 2.0 (Basic) describe positive steps that students might take toward achieving Score 3.0 (Proficient) or Score 4.0 (Advanced) performance. When using the rubrics to plan for instruction and assessment, teachers need to consider the knowledge and skills described in the Score 2.0 column (Basic) to be embedded in the Score 3.0 (Proficient) and 4.0 (Advanced) performance. The Novice level (Score 1.0) indicates that the student does not yet demonstrate the basic skills within the performance area, but that he/she exhibits related readiness skills that are a stepping-stone to a higher level of proficiency. The descriptive rubrics were designed to illustrate students' depth of knowledge/skill at various levels in order to facilitate the instructional and assessment process for all learners. The following descriptions explain the four levels on the rubric:

Score 1.0 (Novice): Describes student performance that demonstrates readiness skills for Score 2.0, but requires significant support.

Score 2.0 (Basic): Describes student performance that is approaching proficiency.

Score 3.0 (Proficient): Describes student performance that is proficient – the targeted expectations for each performance area of the DLP.

Score 4.0 (Advanced): Describes an exemplary performance that exceeds proficiency.

Sources

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$5c + s = dlp$

COLLABORATION

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Leadership and Initiative	Identifies roles within the team that are necessary to complete the task. Sets goals for individual work; describes other students' individual goals.	Explains the duties of different team roles needed to complete the task. Fulfills basic roles and responsibilities. Explains the team's goals as they pertain to the task.	Assumes any role and can accurately describe and perform the duties of each role, including leadership. Clarifies roles and responsibilities among team members. Describes the scope and relevance of the team's work; describes the relationship between roles and the team's goals. Encourages others.	Discern which team member is appropriately matched for each role; thoughtfully organize and divide the work, check on progress. Share leadership; develop an appropriate balance of when to lead and when to follow. Encourage and inspire others to assume leadership roles. Provide leadership in defining the mission and vision for the work. Question and challenge the mission and vision for the team's work in response to new learning, team discussions, etc. in order to achieve the team's goals.
Cooperation and Flexibility	States own opinions to others. Identifies and acknowledges challenges that occur during the collaborative process.	Shares ideas with members of the team; restates diverse ideas, opinions, and perspectives within the team. Uses strategies to respectfully address challenges that arise within the team (*for example: rephrasing others' ideas, using "I" statements*).	Integrates diverse ideas, opinions, and perspectives of the team and negotiates to reach workable solutions. Shares concerns, personal insights, and resources with the team. Anticipates challenges that might occur during the	Show respect and empathy for the ideas, opinions, values, and feelings of other team members (*for example: restate and affirm others' ideas, ask for clarification, focus feedback on ideas rather than individuals, use positive language and tone*). Enhance team productivity by

			collaborative process; helps resolve conflict or address challenges within the team through discussion and consensus-building activities (*for example: straw poll, consensus board, collaborative learning protocols*).	making compromises, building consensus among team members, and setting a positive tone in words and actions; use conflict to build consensus.
Responsibility and Productivity	Performs work related to the assigned task when directed to do so.	Completes individual action items to achieve the team's goals. Submits products that meet the basic specifications for the assigned task. Monitors individual and team progress; makes adjustments based on the status of collaborative work toward team goals.	Accepts responsibilities with a positive attitude. Assists others as needed; values opinions and skills of all team members. Prepares for teamwork ahead of time; completes individual action items on time. Submits high-quality products that meet the specifications for the assigned task. Prioritizes and monitors individual and team progress toward goals, making sufficient corrections and adjustments when needed.	Show commitment to the task at hand; inspire and motivate the team. Produce high-quality individual work; connect this work to the work of others in ways that improve the team's overall performance. Employ a wide range of project management strategies that enhance the team's effectiveness (*for example: create timelines, identify or set goals, prioritize and allocate tasks, organize resource-gathering, monitor progress, keep team on task*).
Responsiveness	Provides general feedback to others (*for example: "That looks nice." or "I think you need to make revisions to the first part."*). Requests general feedback (*for example: "What do you think?" or "Is my project good?"*). Accepts positive/encouraging feedback.	Provides and requests specific feedback pertaining to the established criteria of the task.	Provides constructive feedback. Delivers feedback effectively in a manner that is appropriate to the audience and topic. Proactively solicits feedback; accepts and shows appreciation for constructive feedback. Acts upon feedback to achieve team goals.	Display curiosity about the quality of the work; seek helpful, descriptive feedback from peers, the teacher, and experts involved; provides and accepts feedback in ways that advance the team's production of high-quality work.

Self-regulation and Reflection	Identifies own strengths and weaknesses in collaborating with others. Explains how individual behaviors can influence group outcomes.	Identifies individual and team strengths and weaknesses with regard to the established criteria for the task. Explains specific strategies to improve personal participation and/or group productivity.	Critiques and reflects on individual and collaborative strengths and weaknesses; describes the learning (about content and/or collaboration) that resulted from the collaborative experience. Develops a plan for improving individual participation and group productivity.	Reflect on the collaborative experience throughout the process. Analyze patterns and prior performances to set new goals for individual and team performances in response to ongoing reflection.

CREATIVITY AND INNOVATION RUBRIC

GRADES K-2

CATALINA FOOTHILLS SCHOOL DISTRICT

TUCSON, ARIZONA

General Description and Suggestions for Use

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The rubrics were developed using a backward design process to define and prioritize the desired outcomes for each DLP. They provide a common vocabulary and illustrate a continuum of performance. By design, the rubrics have not been aligned to any specific subject area; they are intended to be contextualized within the academic content areas based on the performance area(s) being taught and assessed. In practice, this will mean that not every performance area in each of the rubrics will be necessary in every lesson, unit, or assessment.

The CFSD rubric for *Creativity and Innovation* was designed as a cross-disciplinary tool to support educators in teaching and assessing the performance areas associated with this proficiency:

- Idea Generation
- Idea Design and Refinement
- Openness and Courage to Explore
- Work Creatively with Others
- Creative Production and Innovation
- Self-regulation and Reflection

This tool is to be used primarily for formative instructional and assessment purposes; it is not intended to generate psychometrically valid, high stakes assessment data typically associated with state and national testing. CFSD provides a variety of tools and templates to support the integration of *Creativity and Innovation* into units, lessons, and assessments. When designing units, teachers are encouraged to create authentic assessment opportunities in which students can demonstrate mastery of content and the deep learning proficiencies at the same time.

The approach to teaching the performance areas in each rubric may vary by subject area because the way in which they are applied may differ based on the field of study. Scientists, mathematicians, social scientists, engineers, artists, and musicians (for example), all collaborate, solve problems, and share their findings or work within their professional communities. However, the way in which they approach their work, the tools used for collaboration, and the format for communicating their findings may vary based on the profession. These discipline-specific expressions of the 5Cs + S may require some level of customization based on the subject area.

Each rubric can also be used to provide students with an opportunity to self-assess the quality of their work in relation to the performance areas. Student-friendly language or "I can" statements can be used by students to monitor and self-assess their progress toward established goals for each performance area.

The deep learning proficiencies (5Cs + S) are highly interconnected. For example, productive collaboration is contingent upon effective communication. Efficient and effective problem solving often requires collaboration skills. Divergent and convergent thinking, traits of creativity and innovation, are directly related to critical thinking. Our students will need to use a combination of proficiencies to solve problems in new contexts beyond the classroom. Therefore, it is important to be clear about which proficiency and/or performance area(s) are the focus for student learning, and then to assist students in understanding the connections between them and how they are mutually supportive.

What does Score 1.0 – Score 4.0 mean in the rubrics?

The rubrics are intended to support student progress in mastering the deep learning proficiencies (DLPs). Four levels of performance are articulated in each rubric: Score 1.0 (Novice), Score 2.0 (Basic), Score 3.0 (Proficient), and Score 4.0 (Advanced). The descriptions follow a growth model to support students in developing their skills in each performance area. Scores 1.0 (Novice) and 2.0 (Basic) describe positive steps that students might take toward achieving Score 3.0 (Proficient) or Score 4.0 (Advanced) performance. When using the rubrics to plan for instruction and assessment, teachers need to consider the knowledge and skills described in the Score 2.0 column (Basic) to be embedded in the Score 3.0 (Proficient) and 4.0 (Advanced) performance. The Novice level (Score 1.0) indicates that the student does not yet demonstrate the basic skills within the performance area, but that he/she exhibits related readiness skills that are a stepping-stone to a higher level of proficiency. The descriptive rubrics were designed to illustrate students' depth of knowledge/skill at various levels in order to facilitate the instructional and assessment process for all learners. The following descriptions explain the four levels on the rubric:

Score 1.0 (Novice): Describes student performance that demonstrates readiness skills for Score 2.0, but requires significant support.

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CREATIVITY AND INNOVATION

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Idea Generation	When presented with a problem or area of focus, generates an idea or solution. Completes basic brainstorming tasks, such as listing or webbing with adult guidance, to generate an idea.	Identifies a problem or area of focus that leads to idea generation in a familiar context or situation. **Applies basic characteristics of divergent thinking in a familiar situation, problem, or context:** **Metaphorical Thinking -** Makes basic comparisons between tangible (objects) and intangible (feelings, ideas) things. **Fluency-** Generates ideas that generally relate to the area of focus or topic. **Originality -** Recalls similarities of previously known problems, situations, or challenges to the current problem or challenge. **Flexibility -** Listens to the ideas of peers.	Clearly defines a problem, investigation, or challenge in a familiar context or situation. **Applies basic characteristics of divergent thinking in a familiar situation, problem, or context:** **Metaphorical Thinking -** Compares the current problem, investigation, or challenge to other problems or situations. **Fluency -** Generates multiple ideas relevant to the problem or the challenge that are new to the student. **Originality -** Uses previous solutions for a similar problem, challenge, or investigation to generate new ideas for the current problem or challenge. **Flexibility-** Answers "what if" questions posed by peers and/or adults relevant to the task in order to better understand the problem.	Explain the significance of the problem, investigation, or challenge. **Apply characteristics of divergent thinking:** **Metaphorical Thinking -** Reframe the problem, investigation, or challenge in a different way (*for example, starting from a different point in the process or rearranging a concrete model in a new way*). **Fluency -** Generate multiple, plausible ideas that are relevant to the problem, investigation, or challenge. **Originality -** Generate a novel solution to a problem. **Flexibility -** Ask "what if" questions relevant to the task in order to propose a new solution.

Idea Design and Refinement	Presents an idea in response to a provided task. Modifies ideas or makes simple revisions to a process.	Uses a provided model to explain ideas *(for example: the student uses a teacher-created idea web or flow chart as a visual representation of a suggested solution/idea)* Explains how revision can affect the success or failure of a new idea or process.	Creates a representation or model of the idea to illustrate thinking *(for example: a simple flow chart, idea web, physical model)*. Makes revisions to ideas and processes based on specific feedback from peers and adults.	Analyze the representation or model of the idea to illustrate or clarify thinking prior to implementation. Translate feedback into logical "next steps", and make effective revisions.
Openness and Courage to Explore	Defines key concepts of openness and courage to explore including "risk", "flexible", and "perseverance". Uses a consistent method and/or perspective for producing a product or solution. Explores ideas within a comfortable setting *(for example: in the absence of failure or obstacles)*.	Asks clarifying questions about the task or process. Takes comfortable risks *(for example: in group situations or when the outcome is known)*. Explores ideas within a structured process and/or time frame.	Demonstrates curiosity and courage to explore by asking questions to extend understanding of a proposed solution or idea. Takes risks calculated to advance an idea or solution *(for example: when the outcome isn't known)*. Perseveres in exploring ideas within a multi-step or labor-intensive process.	Demonstrate curiosity and flexibility by asking questions to extend understanding, and/or trying new approaches to a task. Use the result/outcome of risk-taking to confirm or modify an idea or solution. Demonstrate perseverance by using constructive criticism or feedback about an idea or solution as part of an ongoing process to revise an idea or achieve a successful outcome.
Work Creatively with Others	Articulates own ideas to others.	Summarizes or restates others' ideas.	Compares others' ideas to own ideas to identify similarities and differences in the approach to the task or other elements of the design. Reaches consensus on an idea or solution within a group structure or protocol.	Integrate ideas from others with own ideas in order to solve a problem or complete a task. Encourage peers or group members to share ideas and/or reach consensus throughout the creative process.

Creative Production and Innovation	Defines key concepts including "Audience", "Needs", "Interests", and "Plan".	Identifies the audience and purpose for the task. Uses provided materials in a proscribed manner to create a product or solution. Follows a provided plan.	Identifies details about the target audience, including needs and interests that will influence the final product or solution. Selects materials that are appropriate in the process of producing a product or solution. Develops and follows a general plan to create the product or solution.	Shape original ideas into a product that is relevant to the target audience. Select and uses materials in a unique or novel manner to produce the product or solution. Create and follows an organized plan to meet the design demands of the product or solution.
Self-regulation and Reflection	Defines key concepts including "Reflection", "Goal", "Challenge", and "Results.	Describes a final product, solution, or creative process in general terms. (for example: *We did a great job!*) Sets a general personal goal(s) for performance (*for example: "I'm going to take longer to complete the project next time."*)	Describes personal actions or behaviors and their effect on creating the product or process. Sets specific goals for future actions or behaviors to improve performance based on personal reflections.	Evaluate the quality of the performance and creative process according to established criteria. Set goals and develops strategy for improving future performance based on feedback about established criteria.

CREATIVITY AND INNOVATION RUBRIC

GRADES 3-5

CATALINA FOOTHILLS SCHOOL DISTRICT

TUCSON, ARIZONA

General Description and Suggestions for Use

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The rubrics were developed using a backward design process to define and prioritize the desired outcomes for each DLP. They provide a common vocabulary and illustrate a continuum of performance. By design, the rubrics have not been aligned to any specific subject area; they are intended to be contextualized within the academic content areas based on the performance area(s) being taught and assessed. In practice, this will mean that not every performance area in each of the rubrics will be necessary in every lesson, unit, or assessment.

The CFSD rubric for *Creativity and Innovation* was designed as a cross-disciplinary tool to support educators in teaching and assessing the performance areas associated with this proficiency:

- Idea Generation
- Idea Design and Refinement
- Openness and Courage to Explore
- Work Creatively with Others
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- Self-regulation and Reflection

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The approach to teaching the performance areas in each rubric may vary by subject area because the way in which they are applied may differ based on the field of study. Scientists, mathematicians, social scientists, engineers, artists, and musicians (for example), all collaborate, solve problems, and share their findings or work within their professional communities. However, the way in which they approach their work, the tools used for collaboration, and the format for communicating their findings may vary based on the profession. These discipline-specific expressions of the 5Cs + S may require some level of customization based on the subject area.

Each rubric can also be used to provide students with an opportunity to self-assess the quality of their work in relation to the performance areas. Student-friendly language or "I can" statements can be used by students to monitor and self-assess their progress toward established goals for each performance area.

Creativity and Innovation – Grades 3-5

5c + *s* = *dlp*

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CREATIVITY AND INNOVATION

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Idea Generation	When presented with a problem or area of focus, generates an idea or solution. Completes basic brainstorming tasks, such as listing or webbing, to generate an idea.	Identifies a problem or area of focus. **Applies basic characteristics of divergent thinking:** **Metaphorical Thinking -** Define a metaphor and/or metaphorical thinking **Fluency -** Generates ideas that generally relate to the problem or topic. **Originality -** Connects previous ideas or solutions to the current problem or challenge **Flexibility -** Generates new ideas when presented with another perspective.	Clearly defines a problem, investigation, or challenge and explains its significance. **Applies characteristics of divergent thinking:** **Metaphorical Thinking -** Compares the problem to other problems, situations, or needs. **Fluency -** Generates multiple new ideas relevant to the problem. **Originality -** Generates a novel solution to a problem. **Flexibility -** Asks and answers "what if" questions relevant to the task in order to propose new solutions or better understand the problem.	Clearly define a problem, investigation, or challenge in a manner that builds a framework for idea generation. **Apply characteristics of divergent thinking:** **Metaphorical Thinking -** Reframe the problem, investigation, or challenge in a different way (*for example: looking at it from a different perspective, starting from a different point in the process*). **Fluency -** Generate multiple, plausible new ideas that lead to further investigation. **Originality -** Ask, "Is my idea really new?" Researches others' ideas or solutions to the problem. **Flexibility -** Consider ideas from different perspectives.

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Idea Design and Refinement	Presents ideas in response to the task. Modifies ideas or makes simple revisions to a process.	Makes basic connections among ideas about the process or task. Makes revisions to ideas and processes based on specific feedback.	Creates a representation or model of the idea to clarify or illustrate thinking prior to implementation (*for example: a flow chart, idea web, physical model*). Reviews feedback, translates feedback into logical "next steps", and makes effective revisions.	Use a representation or model of the idea to reveal design flaws and guide revisions. Seek specific feedback to make revisions that sufficiently advance and/or improve the quality and quantity of ideas.
Openness and Courage to Explore	Uses a consistent method and/or perspective for producing a product or solution. Explores ideas within a comfortable setting (*for example: in the absence of failure or obstacles*).	Asks clarifying questions about the task or process. Takes comfortable risks (*for example: in group situations or when the outcome is known*). Perseveres in exploring ideas within a multi-step or labor-intensive process; considers constructive criticism or feedback when evaluating an idea.	Demonstrates curiosity and flexibility by questioning to extend understanding, trying new approaches to the task, considering new ideas, and/or identifying conflicting ideas. Discards ideas or solutions if viability is not confirmed, modifies an idea or solution in response to constructive criticism or failure.	Demonstrate openness to ambiguity by suspending evaluation on ideas until they are thoroughly explored. Show resilience in situations in which failure is part of the experience; reflect on failure as a means to revise ideas, or generate new ideas, and adapt plans accordingly. (*for example: willing to discard a viable solution in order to improve the final product/outcome*).
Work Creatively with Others	Summarizes or restates others' ideas. Articulates own ideas to others.	Compares others' ideas to own ideas.	Integrates ideas from others with own ideas in order to address the problem or task.	Make connections between and build upon others' ideas to generate new and unique insights. Encourage collaborators to share ideas; facilitate the integration of ideas throughout the creative process.
Creative Production and Innovation	Identifies the target audience for the task. Uses provided materials.	Identifies details about the target audience, including needs and interests, and the role of a target audience in the creative process.	Shapes original ideas into a product that is relevant to the target audience. Selects materials that are	Shape original ideas into a product that meets the needs or interests of the target audience.

	Follows a provided plan.	Identifies materials needed for the task. Describes the specifications of the product or solution.	appropriate to the product or solution. Creates and follows a general plan to meet the specification of the product or solution.	Effectively integrate materials at hand to develop a product or solution. Analyze components of the plan to develop specific tasks and effectively organize the work.
Self-regulation and Reflection	Evaluates overall success of the product and/or process.	Identifies personal actions or behaviors in creating the product or process. Sets a general personal goal(s) for performance (*for example: "I'm going to take longer to complete the project next time."*)	Assesses the quality of the performance and creative process in response to feedback and/or established criteria. Sets specific goals for future performance based on feedback and/or established criteria.	Accurately evaluate the quality of the work; uses reflection and/or feedback to revise ideas or products. Question and critique one's own creative process (*for example: dedication of time and effort, exploration of ideas, amount of support needed*). Develop strategies for improving future creative processes based on feedback and personal reflections.

ENVISION 21
Deep Learning

CREATIVITY AND INNOVATION RUBRIC

GRADES 6-8

CATALINA FOOTHILLS SCHOOL DISTRICT

TUCSON, ARIZONA

The deep learning proficiencies (5Cs + S) are highly interconnected. For example, productive collaboration is contingent upon effective communication. Efficient and effective problem solving often requires collaboration skills. Divergent and convergent thinking, traits of creativity and innovation, are directly related to critical thinking. Our students will need to use a combination of proficiencies to solve problems in new contexts beyond the classroom. Therefore, it is important to be clear about which proficiency and/or performance area(s) are the focus for student learning, and then to assist students in understanding the connections between them and how they are mutually supportive.

What does Score 1.0 – Score 4.0 mean in the rubrics?

The rubrics are intended to support student progress in mastering the deep learning proficiencies (DLPs). Four levels of performance are articulated in each rubric: Score 1.0 (Novice), Score 2.0 (Basic), Score 3.0 (Proficient), and Score 4.0 (Advanced). The descriptions follow a growth model to support students in developing their skills in each performance area. Scores 1.0 (Novice) and 2.0 (Basic) describe positive steps that students might take toward achieving Score 3.0 (Proficient) or Score 4.0 (Advanced) performance. When using the rubrics to plan for instruction and assessment, teachers need to consider the knowledge and skills described in the Score 2.0 column (Basic) to be embedded in the Score 3.0 (Proficient) and 4.0 (Advanced) performance. The Novice level (Score 1.0) indicates that the student does not yet demonstrate the basic skills within the performance area, but that he/she exhibits related readiness skills that are a stepping-stone to a higher level of proficiency. The descriptive rubrics were designed to illustrate students' depth of knowledge/skill at various levels in order to facilitate the instructional and assessment process for all learners. The following descriptions explain the four levels on the rubric:

Score 1.0 (Novice): Describes student performance that demonstrates readiness skills for Score 2.0, but requires significant support.

Score 2.0 (Basic): Describes student performance that is approaching proficiency.

Score 3.0 (Proficient): Describes student performance that is proficient – the targeted expectations for each performance area of the DLP.

Score 4.0 (Advanced): Describes an exemplary performance that exceeds proficiency.

Sources

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CREATIVITY AND INNOVATION

DLP Performance Area	1.0 Novice	2.0 Basic	3.0 Proficient	4.0 Advanced
	The student may exhibit the following readiness skills for Score 2.0:	When presented with a grade-level-appropriate task, the student:	In addition to Score 2.0, the student:	In addition to Score 3.0, the student may:
Idea Generation	When presented with a problem or area of focus, generates an idea or solution.

Completes basic brainstorming tasks, such as listing or webbing, to generate an idea. | Identifies a problem or area of focus.

Applies basic characteristics of divergent thinking:

Metaphorical Thinking - Compares the problem to other problems, situations, or needs.

Fluency - Generates multiple ideas.

Originality - Generates a novel solution to a problem.

Flexibility - Generates new ideas when presented with other perspectives. | Defines the parameters of a problem and explains its significance.

Applies characteristics of divergent thinking:

Metaphorical Thinking - Reframes the problem, investigation, or challenge in a different way (*for example: looking at it from a different perspective, starting from a different point in the process*).

Fluency- Generates multiple ideas relevant to the problem.

Originality - Generates a plausible, novel solution to a problem.

Flexibility - Asks and answers "what if?" questions in order to propose new solutions or better understand the problem. | Clearly define a compelling problem, investigation, or challenge in a manner that builds a framework for idea generation.

Apply characteristics of divergent thinking:

Metaphorical Thinking - Reframe a problem, investigation, or challenge into a metaphor or analogy to yield a clear direction regarding how to approach the task (*for example: "a personal music player is jewelry" metaphor sparked creativity in the idea generation phase that led to the iPod*).

Fluency - Generate multiple, distinct ideas that are closely related to the creative challenge at hand and that are sufficient to spark a creative process.

Originality - Generate multiple novel solutions to a problem. Ask, "Is my idea really new?" Research others' ideas or solutions to the |

			problem. **Flexibility** - Consider ideas from different perspectives.
Idea Design and Refinement	Presents ideas in response to the task. Makes simple revisions to ideas and processes based on specific, pointed feedback.	Creates a representation or model of the idea. Makes effective revisions to ideas and processes based on specific feedback.	Creates a clear representation or model of the idea; identifies steps toward implementation. Makes complex revisions or subtle refinements in response to broad/general feedback or criteria.	Create a detailed representation or model of important aspects of the idea. Seek targeted feedback to make revisions that sufficiently advance and/or improve the quality and quantity of ideas.
Openness and Courage to Explore	Uses a consistent method and/or perspective for producing a product or solution. Explores ideas within a comfortable setting (*for example: in the absence of failure or obstacles*).	Asks clarifying questions about the task or process. Takes comfortable risks (*for example: in group situations or when the outcome is known*). Perseveres in exploring ideas within a multi-step or labor-intensive process.	Demonstrates curiosity and flexibility by questioning to extend understanding, trying new approaches to the task, considering new ideas, etc. Discards a solution that does not lead to the end product or performance; modifies an idea or solution in response to constructive criticism or failure.	Demonstrate openness to ambiguity by suspending evaluation on ideas until they are thoroughly explored. Challenge existing parameters or ideas tied to norms or conventions (*for example: driving on the right side of the road in the U.S.*). Take calculated risks and persevere in exploring ideas when encountering moments of failure or constructive criticism; show resilience in situations in which failure is part of the experience and adapt plans accordingly (*for example: willing to discard a viable solution in order to improve the final product/outcome*).

Work Creatively with Others	Summarizes or restates others' ideas. Articulates own ideas to others.	Compares others' ideas to own ideas.	Integrates ideas from others with own ideas in order to address the problem or task.	Make connections between and build upon others' ideas to generate new and unique insights. Encourages collaborators to share ideas; facilitates integration of ideas throughout the creative process.
Creative Production and Innovation	Identifies the target audience for the task; explains the role of a target audience in the creative process. Uses provided materials. Follows a provided plan.	Identifies details about the target audience, including needs and interests. Identifies materials needed for the product or solution. Describes the specifications of the product or solution.	Shapes original ideas into a product that is relevant to the target audience. Selects materials that are appropriate to the product or solution. Creates and follows a general plan to meet the specifications of the product or solution.	Shape original ideas into a product that meets the needs or interests of the target audience. Effectively integrate materials at hand to develop a product or solution. Analyze components of the plan to develop specific tasks and effectively organize the work.
Self-regulation and Reflection	Evaluates overall success of product and/or process.	Identifies individual strengths and weaknesses in the product and/or process. Sets general personal goals for performance.	Assesses the quality of the performance and creative process in response to feedback and/or established criteria. Sets goals for performance based on feedback and/or established criteria.	Accurately evaluates the quality of the work; use reflection and/or feedback to revise ideas or products. Question and critique one's own creative process (*for example: dedication of time and effort, exploration of ideas, amount of support needed, etc.*). Set new goals for performance based on reflection.

CREATIVITY AND INNOVATION RUBRIC

GRADES 9-12

CATALINA FOOTHILLS SCHOOL DISTRICT

TUCSON, ARIZONA

General Description and Suggestions for Use

A new strategic plan, *Envision21: Deep Learning*, forms the basis for a fresh focus on cross-disciplinary skills/proficiencies necessary for preparing our students well for a 21st century life that is increasingly complex and global. These "deep learning proficiencies" (DLPs) are represented as 5c + s = dlp. They are the 5Cs: (1) Citizenship, (2) Critical Thinking and Problem Solving, (3) Creativity and Innovation, (4) Communication, (5) Collaboration + S: Systems Thinking. CFSD developed a set of rubrics (K-2, 3-5, 6-8, and 9-12) for each DLP.

The rubrics were developed using a backward design process to define and prioritize the desired outcomes for each DLP. They provide a common vocabulary and illustrate a continuum of performance. By design, the rubrics have not been aligned to any specific subject area; they are intended to be contextualized within the academic content areas based on the performance area(s) being taught and assessed. In practice, this will mean that not every performance area in each of the rubrics will be necessary in every lesson, unit, or assessment.

The CFSD rubric for *Creativity and Innovation* was designed as a cross-disciplinary tool to support educators in teaching and assessing the performance areas associated with this proficiency:

- Idea Generation
- Idea Design and Refinement
- Openness and Courage to Explore
- Work Creatively with Others
- Creative Production and Innovation
- Self-regulation and Reflection

This tool is to be used primarily for formative instructional and assessment purposes; it is not intended to generate psychometrically valid, high stakes assessment data typically associated with state and national testing. CFSD provides a variety of tools and templates to support the integration of *Creativity and Innovation* into units, lessons, and assessments. When designing units, teachers are encouraged to create authentic assessment opportunities in which students can demonstrate mastery of content and the deep learning proficiencies at the same time.

The approach to teaching the performance areas in each rubric may vary by subject area because the way in which they are applied may differ based on the field of study. Scientists, mathematicians, social scientists, engineers, artists, and musicians (for example), all collaborate, solve problems, and share their findings or work within their professional communities. However, the way in which they approach their work, the tools used for collaboration, and the format for communicating their findings may vary based on the profession. These discipline-specific expressions of the 5Cs + S may require some level of customization based on the subject area.

Each rubric can also be used to provide students with an opportunity to self-assess the quality of their work in relation to the performance areas. Student-friendly language or "I can" statements can be used by students to monitor and self-assess their progress toward established goals for each performance area.

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Idea Generation	Identifies a problem or area of focus. Completes basic brainstorming tasks, such as listing or webbing to generate an idea. Describes others' ideas or solutions to a problem.	Defines the parameters of a problem and explains its significance. **Applies characteristics of divergent thinking:** **Metaphorical Thinking** – Reframes the problem, investigation, or challenge in a different way (*for example: looking at it from a different perspective, starting from a different point in the process*). **Fluency** – Generates multiple ideas relevant to the problem. **Originality** – Generates a novel solution to a problem. **Flexibility** – Asks and answers "what if?" questions in order to propose new solutions or better understand the problem.	Clearly defines a compelling problem, investigation, or challenge in a manner that builds a framework for idea generation. **Applies characteristics of divergent thinking:** **Metaphorical Thinking** – Reframes a problem, investigation, or challenge into a metaphor or analogy to yield a clear direction regarding how to approach the task (*for example: "a personal music player is jewelry" metaphor sparked creativity in the idea generation phase that led to the iPod*). **Fluency** – Generates multiple, distinct ideas that are closely related to the creative challenge at hand and that are sufficient to spark a creative process. **Originality** – Generates multiple novel solutions to a problem. Asks, "Is my idea really new?" Researches	Discover a compelling problem or redefine an old problem in a new way. Show depth of understanding of the audience for the solution to the problem, including expectations for and constraints on the solution. **Apply characteristics of divergent thinking:** **Metaphorical Thinking** – Use comparison or analogy to make new or unique connections, making the strange familiar, or the familiar strange. **Fluency** – Generate multiple ideas that approach the problem or challenge from diverse perspectives. **Originality** – Generate multiple novel, viable ideas. Research precedents to evaluate the viability and originality of newly generated idea(s).

			others' ideas or solutions to the problem. **Flexibility** – Considers ideas from different perspectives.	**Flexibility** – Examine ideas in unexpected ways; intentionally challenge ideas or seek flaws in proposed solutions.
Idea Design and Refinement	Creates a representation or model of the idea. Makes effective revisions to ideas and processes based on specific feedback.	Creates a clear representation or model of the idea; identifies steps toward implementation. Makes complex revisions or subtle refinements in response to broad/general feedback or criteria.	Creates a detailed representation or model of important aspects of the idea. Seeks targeted feedback to make revisions that sufficiently advance and/or improve the quality and quantity of ideas.	Incorporate details that might go unnoticed; imagine details that might not be readily apparent. Find important, interesting, and relevant information from unique or unexpected sources. Sort, arrange, connect, and/or prioritize ideas in ways that turn options into creatively productive outcomes. Refine, strengthen, or develop ideas by analyzing possibilities; regularly revise and revisit ideas to improve them (*for example: "tinkering"*).
Openness and Courage to Explore	Asks clarifying questions. Uses a consistent method and/or perspective for producing a product or solution. Explores ideas within a comfortable setting (*for example: in the absence of failure or obstacles*).	Demonstrates curiosity and flexibility by questioning to extend understanding, trying new approaches to the task, considering new ideas, etc. Discards a solution that does not lead to the end product or performance; modifies an idea or solution in response to constructive criticism. Takes comfortable risks (*for example: in group situations or when the outcome is known*).	Demonstrates openness to ambiguity by suspending evaluation on ideas until they are thoroughly explored. Challenges existing parameters or ideas tied to norms or conventions (*for example: driving on the right side of the road in the U.S.*). Takes calculated risks and perseveres in exploring ideas when encountering moments of failure or constructive criticism; shows resilience in situations in which failure is	Explore ideas and solutions that extend beyond underlying assumptions/ beliefs. Critically examine conventional or authoritarian assertions; challenge one's own assertions or beliefs; express unconventional and possibly unpopular ideas. Foresee potential challenges, problems, or unintended consequences of a solution; modify the ideas in response.

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			part of the experience and adapts plans accordingly (*for example: willing to discard a viable solution in order to improve the final product/outcome*).	
Work Creatively with Others	Summarizes or restates others' ideas. Articulates own ideas to others.	Integrates ideas from others with own ideas.	Makes connections between and builds upon others' ideas to generate new and unique insights.	Synthesize ideas from different group members and capitalize on the different strengths and perspectives of individual group members to develop a cohesive product or performance. Create a climate where others can extend their own creativity; draw on the strengths of others to help guide them toward producing creative ideas.
Creative Production and Innovation	Identifies details about the target audience, including needs and interests. Identifies materials needed for the product or solution. Describes the specifications of the product or solution.	Shapes original ideas into a product that is relevant to the target audience. Selects materials that are appropriate to the product or solution. Creates and follows a general plan to meet the specifications of the product or solution.	Shapes original ideas into a product that meets the needs or interests of the target audience. Effectively integrates materials at hand to develop a product or solution. Analyzes components of the plan to develop specific tasks and effectively organize the work.	Develop creative ideas into tangible solutions or contributions that are valuable and unique in meeting the needs or interests of the target audience. Adapt materials to develop an innovative product or solution; use materials in new or unexpected ways. Anticipate potential problems or obstacles; plan effectively to circumvent, overcome, or recover from setbacks. Elaborate on the design or solution, extending beyond the boundaries established in the specifications to enhance the usefulness or potential of

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				the product or performance (*for example: effectively using a narrative structure in an analytical essay*).
Self-regulation and Reflection	Identifies own strengths and weaknesses in the product and/or process. Sets personal goals for performance.	Assesses the quality of the performance and creative process in response to feedback and/or established criteria. Sets goals for performance based on feedback and/or established criteria.	Accurately reflects on the quality of the work; uses reflection and/or feedback to revise ideas or products. Questions and critiques one's own creative process (*for example: dedication of time and effort, exploration of ideas, amount of support needed, etc.*). Sets new goals for performance based on reflection.	Reflect on performance throughout the creative process; seek targeted feedback to reflect upon and revise ideas, thinking processes, products, solutions, etc. Analyze patterns and prior performances to set new goals for the task; revise goals in response to ongoing reflection.

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VBCPS CONTINUUM FOR 21ST CENTURY SKILLS

Our Compass to 2015 Strategic Plan for Virginia Beach City Public Schools has been designed to equip students with the skills they need to succeed as 21st century learners, workers, and citizens. So just what are those 21st century skills? Based on our research and our own experience, we believe the following to be key skills for today's world. Therefore, instruction will be designed to foster the development of those attributes.

[CRITICAL AND CREATIVE THINKERS, INNOVATORS, AND PROBLEM SOLVERS]

Critical Thinking
Analyze and evaluate information and ideas to determine appropriate actions or develop a point of view.

NOVICE
Respond to information and ideas through prior knowledge, personal experience, or emotional reaction.

EMERGING
Analyze information and ideas within a source, problem, or situation to develop a knowledge base.

PROFICIENT
Analyze and evaluate information and ideas across a range of sources, problems, situations, and/or contexts to determine appropriate actions and develop a point of view.

ADVANCED
Analyze, evaluate, and synthesize information and ideas across a range of sources, problems, situations, and/or contexts to understand diverse points of view, deepen knowledge base, clarify personal perspective, and make reasoned judgments.

Creative/Innovative Thinking
Generate original ideas, unique solutions, or new associations of existing ideas for an aesthetic or practical purpose.

NOVICE
Generate ideas without exploring their originality, relevance, or connections to existing knowledge – not limited by accepted truth because they are not knowledgeable of it.

EMERGING
Use knowledge of existing structures to create original ideas, stories, and models.

PROFICIENT
Generate and elaborate upon ideas to create a unique vision or refinement of a known product.

ADVANCED
Create a novel approach, structure, technique, or technological application that provides the opportunity to create a need, to satisfy an existing need, to solve a problem, or evoke an aesthetic response.

Problem Solving
Anticipate and identify problems and challenges to develop solutions that effectively address them.

NOVICE
Identify the problem and apply an appropriate procedure to arrive at a solution.

EMERGING
Use prior knowledge to identify the problem, select an appropriate procedure, arrive at a solution, and evaluate its reasonableness given the parameters of the problem or situation.

PROFICIENT
Use prior knowledge to identify a range of possible problems, root causes, or solution paths, then select an appropriate procedure, arrive at a solution, evaluate its reasonableness given the parameters, and compare strategies with others.

ADVANCED
Examine the nature of the problem to determine relevant and irrelevant information, create and implement an appropriate procedure, monitor its effectiveness, and make necessary adjustments to arrive at a viable solution or to deepen knowledge of the problem.

Information Literacy

Use digital technology (networks, databases, and print materials) in an ethical manner to identify relevant sources, evaluate validity, synthesize, analyze, and interpret information.

NOVICE
Explore simple questions through the completion of a given procedure that requires location and collection of information through navigation of digital sources and/or text features in order to share information with others.

EMERGING
Generate questions, locate and evaluate digital and other sources that provide needed information, analyze information to verify accuracy and relevance, categorize information using a given organizational structure, and report findings.

PROFICIENT
Use an inquiry-based process that requires the development of questions, identification and evaluation of a range of digital and other sources, analysis of information and point of view, identification of significant information and any conflicting evidence, categorization of relevant information using a self-selected organizational structure, and production and presentation of a verifiable synthesis of research findings that lays the groundwork for conclusion(s) drawn.

ADVANCED
Use an inquiry-based process that requires the generation and refinement of specific questions to focus the purpose of the research, evaluation of digital and other sources from a variety of social or cultural contexts based on accuracy, authority, and point of view; resolution of conflicting evidence or clarification of reasons for differing interpretations of information and ideas; organization of information based on the relationships among ideas and general patterns discovered; and combination of information and inferences to draw conclusions and create meaning for a given audience, purpose, and task.

Listening

Construct meaning and demonstrate understanding from verbal and nonverbal cues.

NOVICE
Pay attention to the listening experience and refocus when prompted as demonstrated through body language and ability to report out what was said.

EMERGING
Focus on the content of the listening experience as demonstrated through body language, appropriate verbal and nonverbal reactions, as well as an ability to sustain focus for increasing lengths of time, identify relevant information, summarize what was said, make connections, and pose clarifying questions.

PROFICIENT
Focus on the content and purpose of the listening experience while simultaneously monitoring and refocusing internal thinking. This type of listening requires the ability to extrapolate and articulate the train of thought, line of reasoning, and use of techniques/evidence/rhetoric.

ADVANCED
Suspend judgment before and during the listening experience through immersion in the content, purpose, and motivation of the speaker. This type of listening requires the ability to engage with what is being said, extrapolate the train of thought, line of reasoning, use of techniques/evidence/rhetoric, and reengage in using the experience to drive creativity, agile thinking, problem solving, and deeper understanding.

Collaboration
Interact with diverse groups to achieve an objective while displaying flexibility and willingness to understand alternate points of view.

NOVICE
Share information and ideas with others to complete a given task.

EMERGING
Express own ideas and appropriately respond to diverse points of view in order to create a shared plan of action to solve a problem or complete a given task.

PROFICIENT
Assume shared responsibility for the creation of a unified product or proposed solution through the exploration of a range of ideas, establishment of a collective plan of action, and completion of individual responsibilities.

ADVANCED
Network locally and remotely with diverse peers, experts, and others to leverage collective expertise in the design and execution of an effective plan of action to solve a complex problem or complete an interdependent task.

Communication
Articulate ideas and information clearly and appropriately for the given context, medium, and audience.

NOVICE
Use a given medium to express basic information to an audience in an accurate manner.

EMERGING
Use a given medium to present information and ideas clearly so that main points are relevant to the purpose and evident to an audience.

PROFICIENT
Select and use an appropriate medium to effectively engage the target audience in a topic, point of view, argument, and/or creative work through the presentation of information and ideas.

ADVANCED
Deliberately use the features of a medium and knowledge of the audience to achieve a desired result through skillful delivery of content: strategic, flexible, and responsible use of format, tone, rhetoric, information, and technical language.

Social Responsibility
Understand the importance of acting with integrity, empathy, and compassion and commit to making a meaningful contribution to the local, national, and/or global community by offering time, talents, advocacy, and/or resources to a worthy cause.

NOVICE
Volunteer personal resources for an established cause or an immediate need.

EMERGING
Identify a need and take appropriate action based on personal interest, integrity, and commitment.

PROFICIENT
Develop and/or contribute to a collective course of action to spread awareness about the nature of the need and solicit resources and volunteers.

ADVANCED
Forge a deep and lasting connection for a cause or social issue as demonstrated through ongoing commitment to communicate about the significance of the cause/issue as well as seek remedies and collective contributions.

Sustainability
Foster responsible development and protection of the world's natural environment and resources through individual and collective action.

NOVICE
Take actions to maintain and improve the health of an environment based on information, prompts, and good citizenship.

EMERGING
Demonstrate basic understanding of the impact of human behaviors and natural phenomena on the environment through examination of data and personal actions.

PROFICIENT
Analyze consumption patterns, energy sources, and economic factors to determine how individuals, companies, and governments work to improve the health of an environment for future generations and use that analysis to create a compelling vision for collective action.

ADVANCED
Apply knowledge of the dynamic interdependence of economic, environmental, and societal factors to research and develop new ideas/products that will impact consumption patterns and improve environmental conditions.

Interdependence
Recognize and understand the social, economic, and political issues and concerns that connect us on all levels – locally, nationally, and/or globally – and commit, when necessary, to using this knowledge to inform decisions and actions.

NOVICE
Identify the relationships among components that comprise a larger system.

EMERGING
Analyze the impact that change has (or potentially will have) on the components and functioning of the larger system.

PROFICIENT
Seek out connections amongst systems to identify intended and unintended consequences that become apparent when remedies, courses of action, or policies are pursued/implemented.

ADVANCED
Articulate and justify potential/actual impact of different scenarios on systems to inform decision making on issues and concerns that connect the global community.

Health Literacy
Make informed decisions based on appropriate sources for a healthy lifestyle.

NOVICE
Identify healthy choices and engage in healthy behaviors based on information, prompts, and examples provided by external sources.

EMERGING
Select strategies based on self-awareness and knowledge of healthy practices that promote physical and emotional well-being.

PROFICIENT
Evaluate the impact of choices on personal well-being based on self-awareness, life experience, and scientific knowledge to inform decision making.

ADVANCED
Make deliberate adjustments to personal behaviors based on current health, self-awareness, external factors, intrinsic motivation, and newly-acquired knowledge to promote well-being and a healthy lifestyle.

Writing Continuum I

Pre-conventional Ages 3-5	Emerging Ages 4-6	Developing Ages 5-7	Beginning Ages 6-8
▤ Relies primarily on pictures to convey meaning.	▤ Uses pictures and print to convey meaning.	▤ Writes 1-2 sentences about a topic.	▤ Writes several sentences about a topic.
▤ Begins to label and add "words" to pictures.	▤ Writes words to describe or support pictures.	▤ Writes names and familiar words.	▤ Writes about observations and experiences.
▤ Writes first name.	▤ Copies signs, labels, names, and words (environmental print).\	🗀 Generates own ideas for writing.	▤ Writes short nonfiction pieces (simple facts about a topic) with guidance.
✍ Demonstrates awareness that print conveys meaning.	🗀 Demonstrates understanding of letter/sound relationship.	✍ Writes from top to bottom, left to right, and front to back.	🗀 Chooses own writing topics.
✍ Makes marks other than drawing on paper (scribbles).	✍ Prints with upper case letters.	✍ Inter-mixes upper and lower case letters.	✂ Reads own writing and notices mistakes with guidance.
✍ Writes random recognizable letters to represent words.	✍ Matches letters to sounds.	✍ Experiments with capitals.	✂ Revises by adding details with guidance.
☺ Tells about own pictures and writing.	✍ Uses beginning consonants to make words.	✍ Experiments with punctuation.	✍ Uses spacing between words consistently.
	✍ Uses beginning and ending consonants to make words.	✍ Begins to use spacing between words.	✍ Forms most letters legibly.
	☺ Pretends to read own writing.	✍ Uses growing awareness of sound segments (e.g., phonemes, syllables, rhymes) to write words.	✍ Writes pieces that self and others can read.
	☺ Sees self as writer.	✍ Spells words on the basis of sounds without regard for conventional spelling patterns.	✍ Uses phonetic spelling to write independently.
	☺ Takes risks with writing.	✍ Uses beginning, middle, and ending sounds to make words.	✍ Spells simple words and some high frequency words correctly.
		☺ Begins to read own writing.	✍ Begins to use periods and capital letters correctly.
			☺ Shares own writing with others.

▤ Types of Texts   🗀 Content and Traits   ✂ Process   ✍ Mechanics and Conventions   ☺ Attitude and Self-Evaluation

Writing Continuum II

Expanding Ages 7-9	Bridging Ages 8-10	Bridging Ages 9-11	Bridging Ages 10-13
▤ Writes short fiction and poetry with guidance. ▤ Writes a variety of short nonfiction pieces (e.g., facts about a topic, letters, lists) with guidance. 🗀 Writes with a central idea. 🗀 Writes using complete sentences. 🗀 Organizes ideas in a logical sequence in fiction and nonfiction writing with guidance. 🗀 Begins to recognize and use interesting language. ✂ Uses several prewriting strategies (e.g., web, brainstorm) with guidance. ✂ Listens to others' writing and offers feedback. ✂ Begins to consider suggestions from others about own writing. ✂ Adds description and detail with guidance. ✂ Edits for capitals and punctuation with guidance. ✂ Publishes own writing with guidance. ✎ Writes legibly. ✎ Spells most high frequency words correctly and moves toward conventional spelling. ☺ Identifies own writing strategies and sets goals with guidance	▤ Writes about feelings and opinions. ▤ Writes fiction with clear beginning, middle, and end. ▤ Writes poetry using carefully chosen language with guidance. Writes organized nonfiction pieces (e.g., reports, letters, and lists) with guidance. 🗀 Begins to use paragraphs to organize ideas. 🗀 Uses strong verbs, interesting language, and dialogue with guidance. ✂ Seeks feedback on writing. ✂ Revises for clarity with guidance. ✂ Revises to enhance ideas by adding description and detail. ✂ Uses resources (e.g., thesaurus and word lists) to make writing more effective with guidance. ✂ Edits for punctuation, spelling, and grammar. ✂ Publishes writing in polished format with guidance. ✎ Increases use of visual strategies, spelling rules, and knowledge of word parts to spell correctly. ✎ Uses commas and apostrophes correctly with guidance. ☺ Uses criteria for effective writing to set own writing goals with guidance.	▤ Begins to write organized fiction and nonfiction (e.g., reports, letters, biographies, and autobiographies). ▤ Develops stories with plots that include problems and solutions with guidance. ▤ Creates characters in stories with guidance. ▤ Writes poetry using carefully chosen language. 🗀 Begins to experiment with sentence length and complex sentence structure. 🗀 Varies leads and endings with guidance. 🗀 Uses description, details, and similes with guidance. 🗀 Uses dialogue with guidance. ✂ Uses a range of strategies for planning writing. ✂ Adapts writing for purpose and audience with guidance. ✂ Revises for specific writing traits (e.g., ideas, organization, word choice, sentence fluency, voice, and conventions) with guidance. ✂ Incorporates suggestions from others about own writing with guidance. ✂ Edits for punctuation, spelling, and grammar with greater precision. ✂ Uses tools (e.g., dictionaries, word lists, and spell checkers) to edit with guidance. ☺ Develops criteria for effective writing in different genres with guidance.	▤ Writes persuasively about ideas, feelings, and opinions. ▤ Creates plots with problems and solutions. ▤ Begins to develop the main characters and describe detailed settings. ▤ Begins to write organized and fluent nonfiction, including simple bibliographies. 🗀 Writes cohesive paragraphs including reasons and examples with guidance. 🗀 Uses transitional sentences to connect paragraphs. 🗀 Varies sentence structure, leads, and endings. 🗀 Begins to use descriptive language, details, and similes. 🗀 Uses voice to evoke emotional response from readers. 🗀 Begins to integrate information on a topic from a variety of sources. ✎ Begins to revise for specific writing traits (e.g., ideas, ✎ Organization, word choice, sentence fluency, voice, and conventions). ✎ Uses tools (e.g., dictionaries, word lists, spell checkers) to edit independently. ✎ Selects and publishes writing in polished format independently. ✎ Begins to use complex punctuation (e.g., commas, colons, semicolons, quotation marks) appropriately. ☺ Begins to set goals and identify strategies to improve writing in different genres.

▤ Types of Texts   🗀 Content and Traits   ✂ Process   ✎ Mechanics and Conventions   ☺ Attitude and Self-Evaluation

Writing Continuum III

Bridging Ages 11-14	Independent
▤ Writes in a variety of genres and forms for different audiences and purposes independently.	▤ Writes organized, fluent, accurate, and in-depth nonfiction, including references with correct bibliographic format.
▤ Creates plots with a climax.	▤ Writes cohesive, fluent, and effective poetry and fiction.
▤ Creates detailed, believable settings and characters in stories.	🗁 Uses a clear sequence of paragraphs with effective transitions.
▤ Writes organized, fluent, and detailed nonfiction independently, including bibliographies with correct format.	🗁 Begins to incorporate literary devices (e.g., imagery, metaphors, personification, and foreshadowing).
🗁 Writes cohesive paragraphs including supportive reasons and examples.	🗁 Weaves dialogue effectively into stories.
🗁 Uses descriptive language, details, similes, and imagery to enhance ideas independently.	🗁 Develops plots, characters, setting, and mood (literary elements) effectively.
🗁 Begins to use dialogue to enhance character development.	🗁 Begins to develop personal voice and style of writing.
🗁 Incorporates personal voice in writing with increasing frequency.	✂ Revises through multiple drafts independently.
🗁 Integrates information on a topic from a variety of sources independently.	✂ Seeks feedback from others and incorporates suggestions in order to strengthen own writing.
🗁 Constructs charts, graphs, and tables to convey information when appropriate.	✂ Publishes writing for different audiences and purposes in polished format independently.
✂ Uses prewriting strategies effectively to organize and strengthen writing.	✂ Internalizes writing process.
✂ Revises for specific writing traits (e.g., ideas, organization, word choice, sentence fluency, voice, and conventions) independently.	✍ Uses correct grammar (e.g., subject/verb agreement and verb tense) consistently.
✂ Includes deletion in revision strategies.	☺ Writes with confidence and competence on a range of topics independently.
✂ Incorporates suggestions from others on own writing independently.	☺ Perseveres through complex or challenging writing projects independently.
✍ Uses complex punctuation (e.g., commas, colons, semicolons, quotation marks) with increasing accuracy.	☺ Sets writing goals independently by analyzing and evaluating own writing.

▤ Types of Texts   🗁 Content and Traits   ✂ Process   ✍ Mechanics and Conventions   ☺ Attitude and Self-Evaluation

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