Mastery-Based Graduation

Kim Carter, Q.E.D. Foundation

Q. E. D.
Choices for learning; choices for life

Six Word Stories

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Choices for learning; choices for life
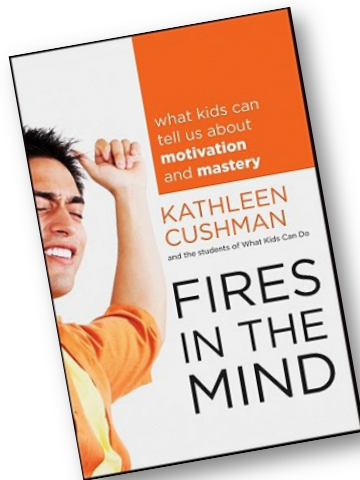
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What is a Master?

MASTER CARPENTER

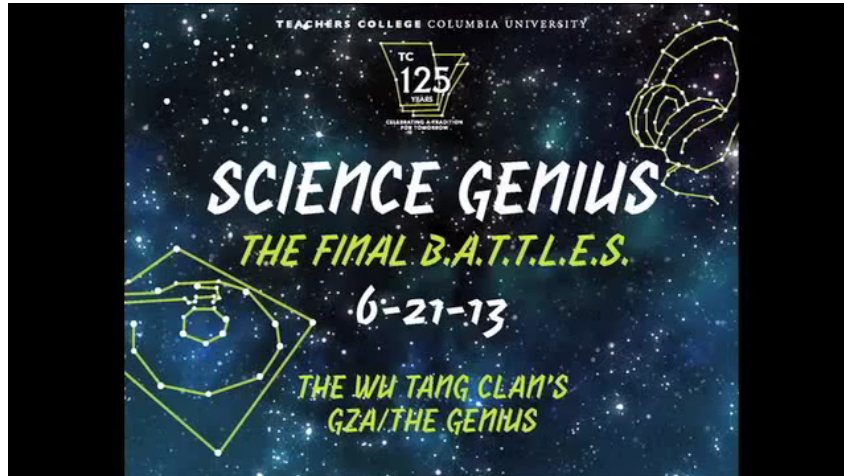Q. E. D.
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What does it take to get really good at something?

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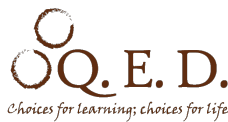*Choices for learning; choices for life*

What is Mastery?

Mastery is the consistently successful application of a set of knowledge (facts), skills (processes), and behaviors (actions) to complex problems and novel situations.

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Competency Education

- Students advance upon mastery.

- Competencies include explicit, measurable, transferable learning objectives that empower students.

- Assessment is meaningful and a positive learning experience for students.

- Students receive timely, differentiated support based on their individual learning needs.

- Learning outcomes emphasize competencies that include application and creation of knowledge, along with the development of important skills and dispositions
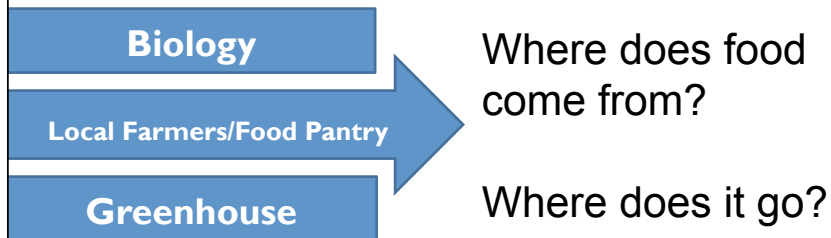
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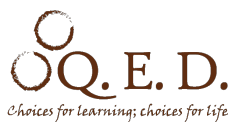
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Apply

- Graduation standards are the levels of mastery necessary for transition to adult life

- Developed and practiced within contexts

- Applied in personally meaningful ways

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Community Garden

Biology

Local Farmers/Food Pantry

Greenhouse

Where does food come from?

Where does it go?

The local need for help with a community garden inspired this E.L.O., where students explored **ecosystems, cellular structures, nutritional, energy, water and nitrogen cycles**. After designing their plots, students also decided where to **donate a portion** of their produce, following up on the life of local food.

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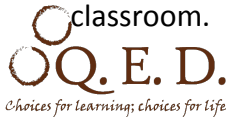
Civic Index Forum

Civics

NH Institute of Politics

Civics Forum

What does it mean to be an American?

A team of high school students helped plan, advertise and facilitate the first of several community Civic Index Forums. Students **researched, analyzed data, collaborated with community leaders and engaged in debate and public discourse** in and out of the classroom.

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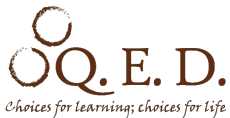
Geogami

Geometry

Glass Artist

Origami

Can Math BE Art?

This E.L.O. leveraged a relationship with a stained-glass artist who helped the students create "mathematically correct artwork." The final project was in glass, with design work done in origami, exploring **trigonometric functions, polygons and polyhedra** .

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Geogami

Individual + Group ELO

1 Credit Geometry

Semester (4 months)

Standards targeted included:
- Solve problems involving perimeter, circumference and area of two-dimensional figures circumference.
- Solves problems on and off the coordinate plane involving distance, midpoint, perpendicular and parallel lines, or slope.
- Makes and defends conjectures, constructs geometric arguments, uses geometric properties, or uses theorems to solve problems involving angles, lines, polygons, circles, or right triangle ratios.

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Rope Climbing Physics

Physics + Algebra

YMCA

Rappelling

Is life always balanced?

In this class, students learned **Physics** and **Algebra** as applied to immediately practical situations such as rope climbing and rappelling. They designed **on-site kinematics labs, discovered and applied Newtonian equations, analyzed data**, and debriefed their findings in a seminar-style discussion.
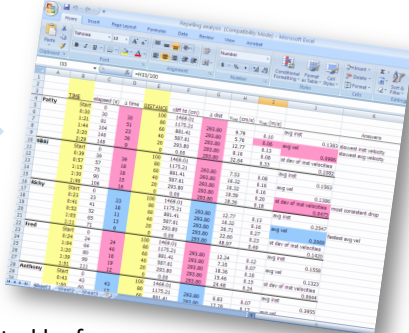
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Rope Climbing Physics

Group ELO (10)

½ Algebra + ½ Physics

Trimester (3 months)

Standards targeted included:
- (P) The motion of an object is affected by force.
- (P) Energy can be stored, transferred and transformed, but not created or destroyed.
- (A) Identifies, extends, and generalizes a variety of patterns models, tables, sequences, or graphs in problem solving situations.
- (A) Demonstrates conceptual understanding of equality by solving problems involving algebraic reasoning about equality

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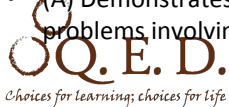
Energy Audit

Environment

Local School Board

Energy Audit

What makes an environment healthy?

This small group E.L.O. focused on **ecology** and **physical science**, culminating in an energy audit of the high school building, which was then presented to the School Board Facilities Committee. The students made explicit recommendations for improvements to the district for financial and environmental benefits.

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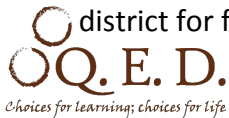
Museum Studies

English + History

Cultural Museum

Curate an exhibit
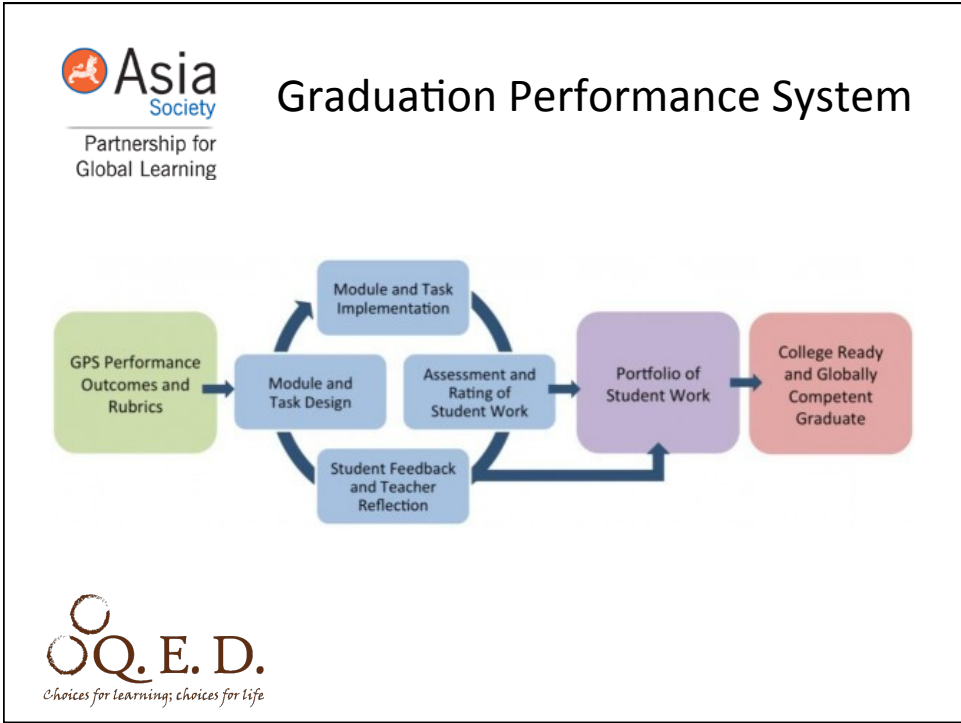
How does immigration impact the community?

Students act as historians and museum curators as they learn from and eventually contribute to a local cultural museum. They do **primary research in the larger community, conducting interviews, and gathering artifacts** in order to design exhibits that represent various immigrant populations.

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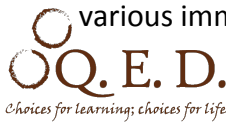
Document

• Meaning making

• Impact

• Challenges and triumphs (successes)

• Feedback loops – iterations (met/not yet)

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Slide 1

Asia Society
Partnership for Global Learning

Graduation Performance System

Module and Task Implementation → GPS Performance Outcomes and Rubrics → Module and Task Design → Assessment and Rating of Student Work → Student Feedback and Teacher Reflection → Portfolio of Student Work → College Ready and Globally Competent Graduate

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Slide 2

Asia Society
Partnership for Global Learning

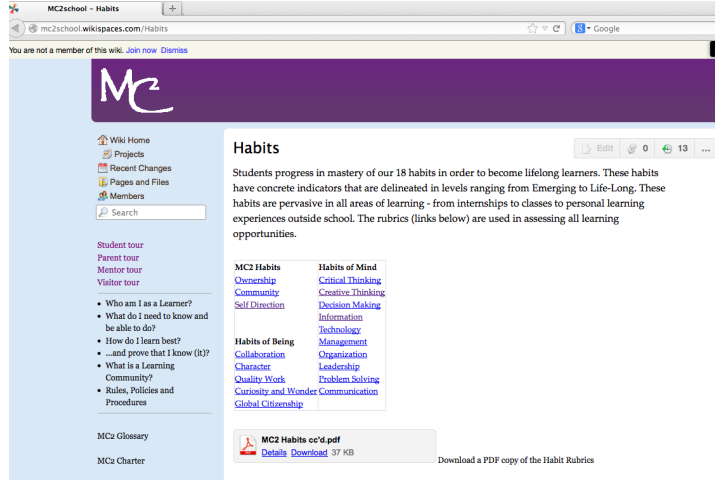**Graduation Performance System (GPS) Rubric**

ENGLISH LANGUAGE ARTS 12

INVESTIGATE THE WORLD
How effectively does the student investigate the world's complex and significant issues and ideas?

	Emerging	Developing	Proficient	Advanced
ELA11-12.INV1.IDEAS	Summarizes and begins to analyze the ideas or arguments in texts.	Analyzes and begins to evaluate the ideas or arguments in texts.	Analyzes and evaluates the ideas and arguments in texts and begins to consider implications and consequences.	Analyzes and evaluates the ideas and arguments in texts by examining implication and consequences.
ELA11-12.INV2.INFO	Cites several sources and summarizes each of them.	Examines several sources and summarizes each of them.	Evaluates credibility of sources, and effectively synthesizes information.	Examines and evaluates the credibility of a variety of sources and effectively and skillfully synthesizes information.
ELA11-12.INV3.QUSTN	Generates a question focused on an issue and examines texts primarily one-dimensionally.	Generates questions focused on complex issues and examines texts multi-dimensionally.	Generates questions focused on complex issues, examines texts from multi-dimensional perspectives, and begins to consider possible implications for other issues.	Generates questions focused on complex issues, examines texts from multi-dimensional perspectives, and makes strong connections to possible implications for other issues.
ELA11-12.INV4.CTATN	Cites most textual evidence consistently, primarily following one accepted research format.	Cites most textual evidence consistently, using one accepted research format.	Cites all textual evidence consistently, using one accepted research format.	Cites all textual evidence accurately and consistently, using one accepted research format.

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Knowledge frameworks
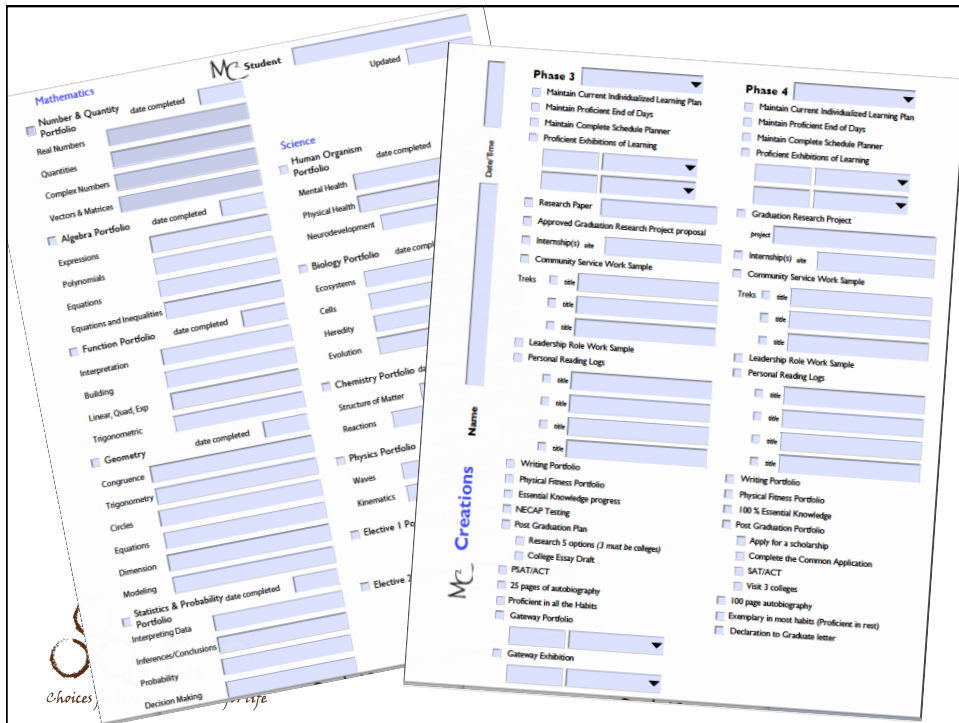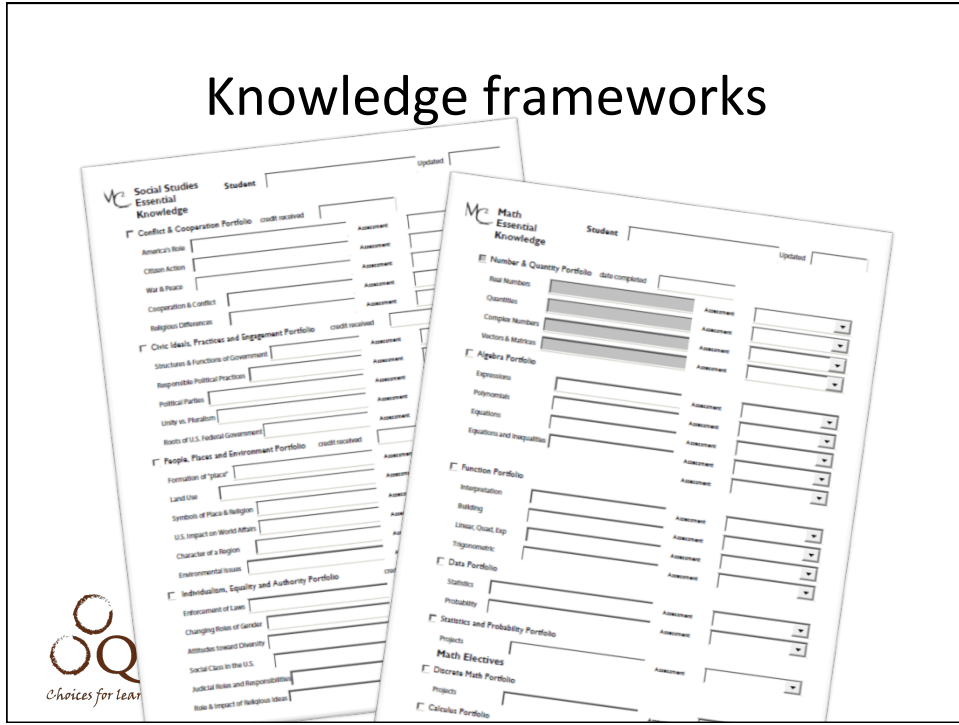
http://mc2school.wikispaces.com/Habits
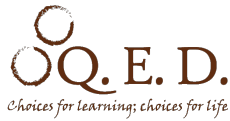
Habits

| Habits of Mind		Problem Solving			Fall 2012
	Emerging	**Progressing**	**Proficient**	**Exemplary**	**Life-Long**
Use of Strategies	Looks for convenient solutions, or is unaware of problem solving strategies	Is aware of and only uses one strategy	Understands that there is more than one strategy	Can identify multiple strategies	Uses prior knowledge to select best strategies: construct and employs effective strategies
Use of resources	Is unaware of resources and/or how to access them	Is minimally aware of resources and how to access them	Is aware of several resources and how to access them	Knows how to access multiple resources	Seeks out resources and uses previous knowledge and experience to construct multidimensional solutions
Seeking solutions	Doesn't seek solutions to a problem	Uses limited or haphazard solutions and/or doesn't seek other solutions	Uses limited resources to seek one solution	Uses resources to seek more than one solution	Values and creates a repertoire of a variety of potential solutions
Problem Recognition	Avoids difficult problems, doesn't see the problem, or can't define it	Sees the problem and is able to define it	Recognizes and can define some problem questions	Recognizes and defines problem questions	Seeks, defines, and explores the major issues of a problem
Finding Solutions	Proceeds to quick solutions without much thought	Proceeds to solutions with minimal exploration of resources	Proceeds to solutions using limited variety of resources	Proceeds to solution after exploring options	Experiments with a variety of solutions and perspectives and thoughtfully selects the best

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Habits

| Habits of Being		Quality Work			Fall 2012
	Emerging	Progressing	Proficient	Exemplary	Life-Long
Quality Work	Doesn't understand why quality is important	Understands why quality work is important	Sees the connection between doing quality work inside and outside of school	Understands why it is important to always do best quality work	Understands and seeks quality in all work
Setting Standards	Does not understand assessment standards	Expects others to provide standards for work	Takes part in setting standards for own work	Is fully involved in setting expectations and standards for work	Can develop standards and assessments for work for self and others
Desire to Continuously Improve	Is satisfied with minimal effort	Makes improvements when asked	Identifies where improvements can be made	Understands that work can continually improve	Constantly reevaluates and makes improvements
Striving for Excellence	Shows no concern about work	Does work just to get it done, with no concern for quality	Does the best work possible on first effort	Revises work to improve it, using feedback	Strives for excellence, seeks and uses outside feedback for improvement

Defend
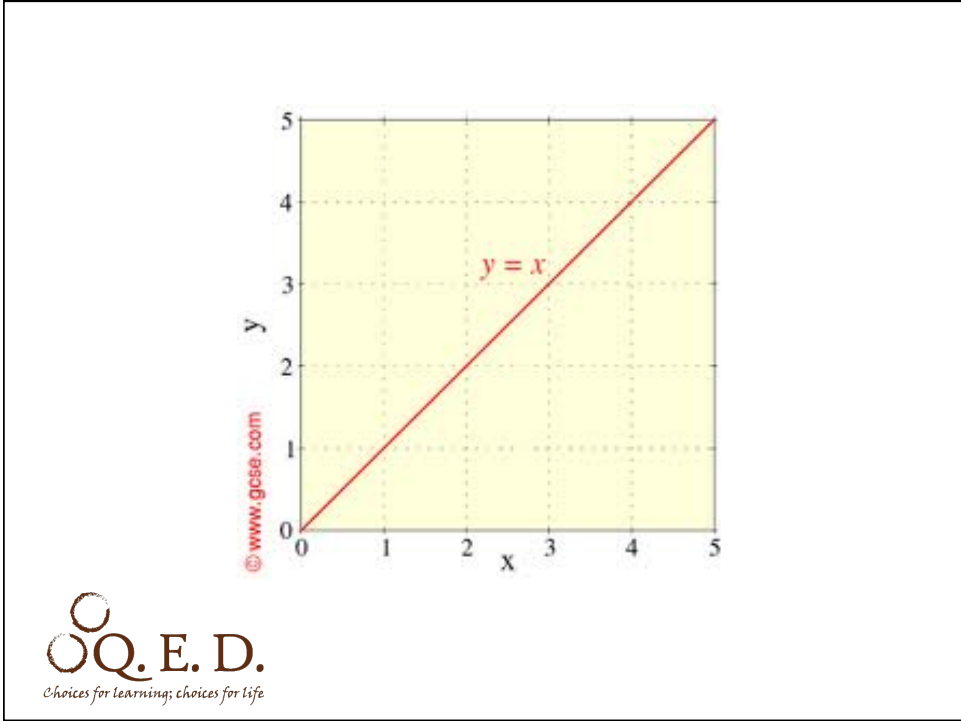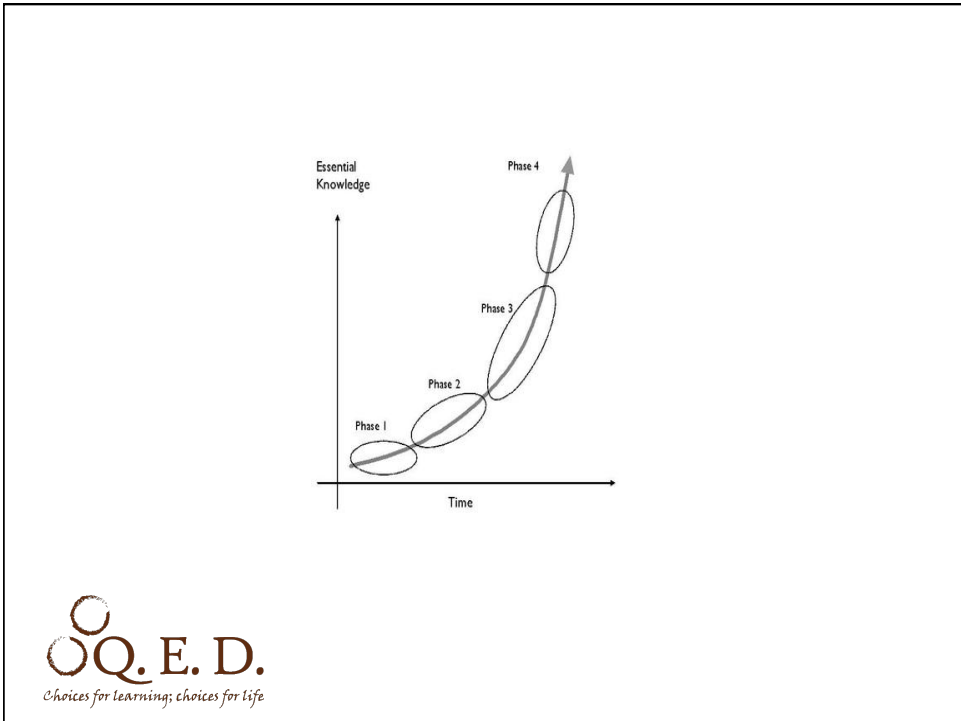
- Portfolios

- Presentations of learning

- Authentic audiences
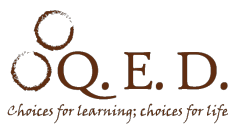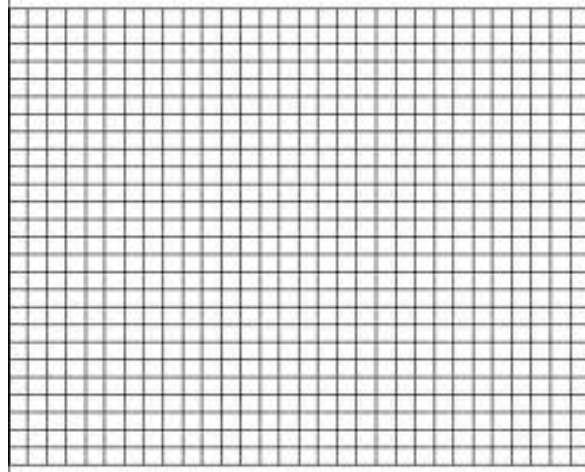
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- Asia Society performance outcomes:
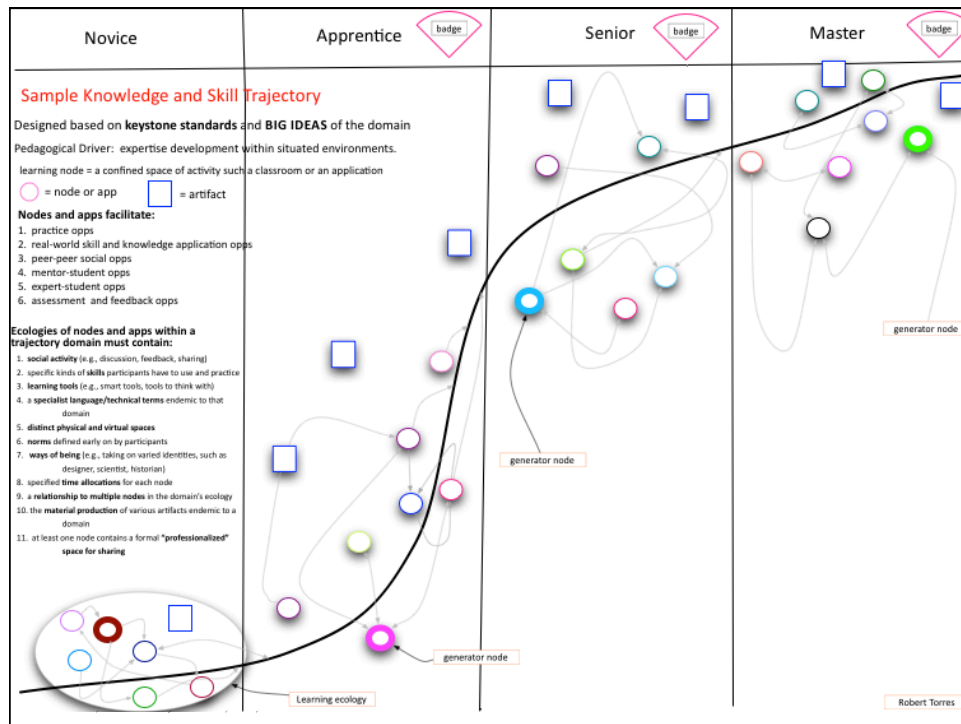- http://sites.asiasociety.org/pglonline/teach/performance-outcomes-3/
- Graduation presentations:
- http://www.mc2school.org/graduation-presentations/
- http://mc2school.wikispaces.com
- http://pinterest.com/qedfoundation/competency-based-learning-pathways-and-learning-op/

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Competency Development

List characteristics of graduates (what do they need to know and be able to do?)

     - e.g. effective communicator

Identify how each discipline contributes to those characteristics.

     - e.g. English: speaking skills, organizational methods, grammar and mechanics, etc.

Map the progression of knowledge and skills that get students there.

     - e.g. Learning progression through skill levels

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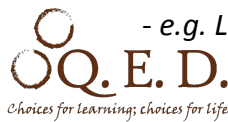
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What Makes a Good Competency?

- Describes knowledge and skills that can be applied to novel, complex situations.
- Skills will be valuable ten years from now even if the content knowledge has changed.
- Learning objectives have clear performance criteria so students can identify their performance level(s) and what they need to do to improve.
- Learning objectives are accompanied by effective rubrics that help students understand themselves as learners.
- The competency and the learning objectives allow for personalization and opportunities for deeper learning.

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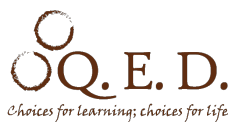
CompetencyWorks.org

Examples

Students will make informative presentations.

Students will understand that different audiences require different communication styles and strategies.

Students [I can] use a wide range of strategies to communicate effectively with a variety of audiences to convey a variety of purposes.

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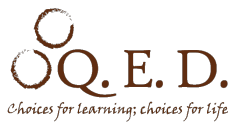
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Quality Competency

CCSS: Adapt speech to a variety of contexts and communication tasks, demonstrating command of formal English when indicated or appropriate.

MC²: Students [I can] use a wide range of strategies to communicate effectively with a variety of audiences to convey a variety of purposes.

	Emerging	Approaching	Proficient	Lifelong
Trait 1: How well does the student **communicate the information** using a variety of strategies? *(e.g. Eye contact, speaking rate, volume, articulation, enunciation, pronunciation, inflection, voice modulation, intonation, rhythm, and gesture)*	The presentation does not communicate intended information because organization, and/or delivery interfere.	The presentation communicates the information, with inconsistent organization, and/or delivery.	The presentation communicates the information through logical organization and clear focus. The student's delivery is appropriate to the audience, context, and purpose.	The presentation communicates the information seamlessly through logical organization, introduction of and clear focus on the topic, smooth transitions, well-chosen supporting details, and a coherent conclusion. The student's delivery uses a variety of strategies to engage the audience and responds to audience cues.

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