Standards Based Grading

New Canaan
Board of Education
2018

Board of Education Goal

GOAL 1. Increase student learning as measured by multiple and varied assessments to assure all students graduate prepared for a dynamic and complex global society.

OBJECTIVE 3- Review and update alignment between new national and state frameworks in science, technology, engineering and math and local STEM initiatives.

a. Continue to design, implement, evaluate, and revise STEM programs K-12.
b. Implement Next Generation Science Standards (NGSS) K-8.
c. Continue to research and design a plan for NGSS for grades 9-12 in alignment with K-8 program.
d. Analyze and update BOE on Standard Based Grading Practices in Science in grades 6-8.

What is the purpose of grades?

Grades are a(n):

- measurement and feedback tool.
- system used to communicate academic progress to students, parents and teachers.
- indicator of what students understand and how to improve.

How is student progress assessed at Saxe?

Rubrics

Participation

Portfolios

Tests

Discourse

Projects

Collaboration

Behavior

Homework

Labs

Reports

Work habits

Notebooks

Reflections

What is standards based grading?

“ Standards based grading is a system of assessing and reporting that describes student progress in relation to standards.” -Thomas Guskey

- Represents depth of understanding of a standard
- Growth model- Measures a student’s current level of understanding
- Separates academic and non-academic elements

How is student progress reported in Powerschool?

Traditional Grading

Course	Q1	Q2	Q3
Lang Arts 7	B+	B	A-

Standards Based Grading

Standards	Q1	Q2	Q3	Q4
S.S Science Standards *(No Grade Collected)*				
S.S.C Science Content Knowledge *(No Grade Collected)*				
S.S.C7.7 C: Characteristics of Matter	3			
S.S.C7.8 C: Atoms and Periodic Table		3.5		
S.S.C7.10 Structure and Function - Cells			3.5	
S.S.C7.18 Structure and Properties of Matter		3		
S.S.C7.19 Chemical Reactions		3		
S.S.SEP Scientific and Engineering Practices	3			
S.S.SEP.1 Asking Questions and Defining Problems		3		
S.S.SEP.2 Developing and Using Models		3.25		
S.S.SEP.3 Planning and Carrying Out Investigations	3.5			
S.S.SEP.4 Analyzing and Interpreting Data			3.5	
S.S.SEP.8 Obtaining, Evaluating, and Communicatin5g Information	3.5			
S.S.WS Habits of Success	3.5			
S.S.WS2 HoS: Active Learning	4	3	3	
S.S.WS3 HoS: Collaboration	4	3.5	3	
S.S.WS4 HoS: Self Management		4		

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S.S.WS4 HoS: Self Management		4		

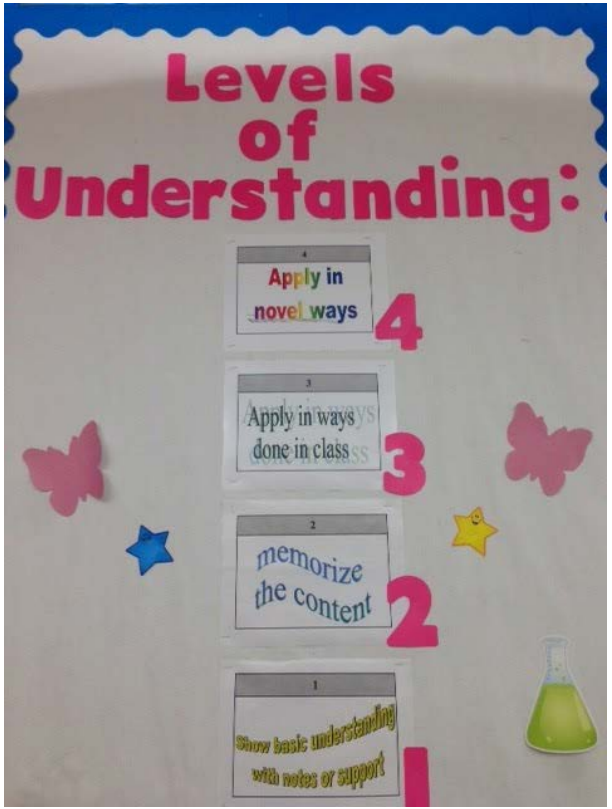
What do the scores 1-4 mean?

4.0: The student demonstrates an in-depth understanding of the material by completing advanced applications of the material.

3.0: The student has mastered the complex, targeted knowledge and skills for the class.

2.0: The student understands the foundational material that supports the targeted learning, but is still working to master the complex material for the class.

1.0: The student is able to demonstrate an understanding of the foundational material for the class with help from the teacher, but still struggles when working independently.



What do learning progressions look like in science?

Level of Understanding	Disciplinary Core Ideas (Content)	Science and Engineering Practices (SEP)	Crosscutting Concepts (Big Ideas)
4	Demonstrates the ability to apply concepts and/or skills in new and novel ways.		
3	**Structures and Properties of Matter** • Structure and arrangement of atoms and molecules (elements, compounds and mixtures). • Structure and arrangement of elements on the Periodic Table. **Chemical Reactions** • Substances react/don't react chemically based on their characteristic properties. • Synthetic materials come from the restructuring of natural atoms/molecules. • The total number of atoms does not change in a chemical reaction (law of conservation of mass).	<u>Modeling</u> • Develop and/or use a model (diagram, drawing, simulation, 3D model, analogies, graphs): ○ to predict or describe how an event or process occurs. ○ to match what happens if a variable or component of a system is changed. ○ to describe unobservable mechanisms. ○ to communicate and/or revise your thinking. • Revise a model to show the relationships among variables (observable and unobservable). • Evaluate limitations of a model.	<u>Energy and Matter</u> • Matter is conserved because atoms are conserved in physical and chemical processes. • Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter. • Energy may take different forms (e.g. energy in fields, thermal energy, energy of motion). • The transfer of energy can be tracked as energy flows through a designed or natural system. <u>Structure and Function</u> • Observable and unobservable systems can be visualized, modeled, and used to

Example

Standard: ESS2.A: Earth Materials and Systems Rainfall helps to shape the land and affects the types of living things found in a region. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around. (4-ESS2-1)

Prompt: Given a landform (image or video), explain how water shapes landforms.

Level 4:

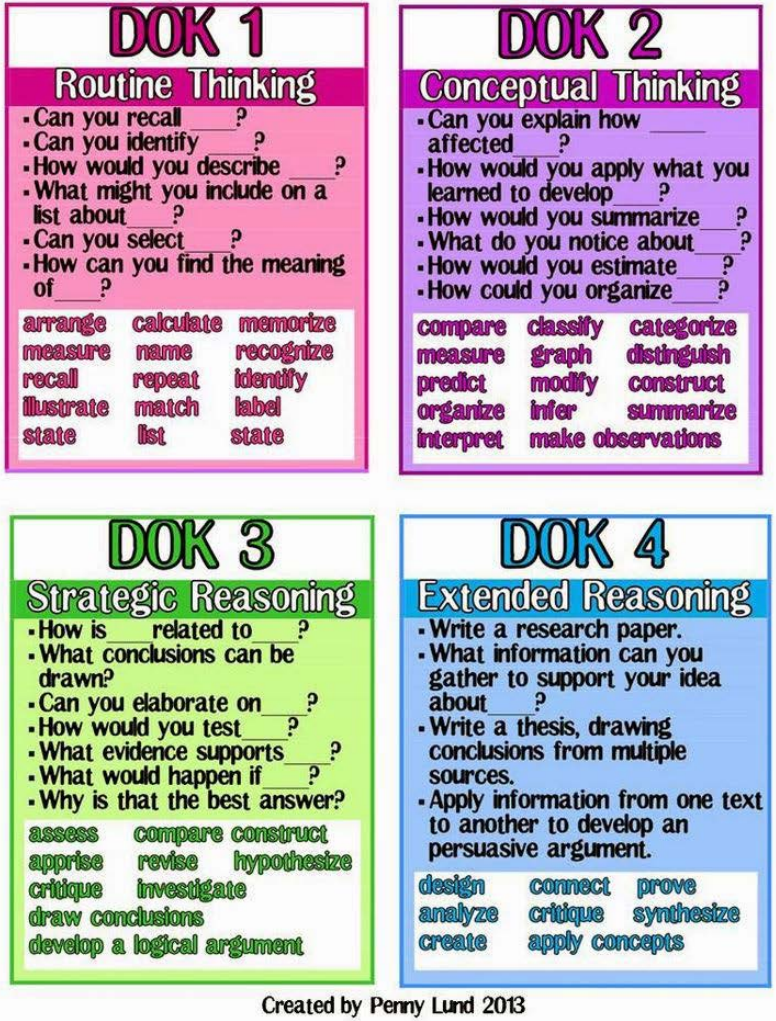
- Predict how the processes of erosion and deposition can affect humans.
- Design a solution to a human problem related to erosion or deposition.

Level 3:

- How does water shape landforms?
- How is a landform created by water erosion?
- How is a landform created by deposition?

Level 2:

- Define erosion, deposition, and gravity.
- Identify the landforms.

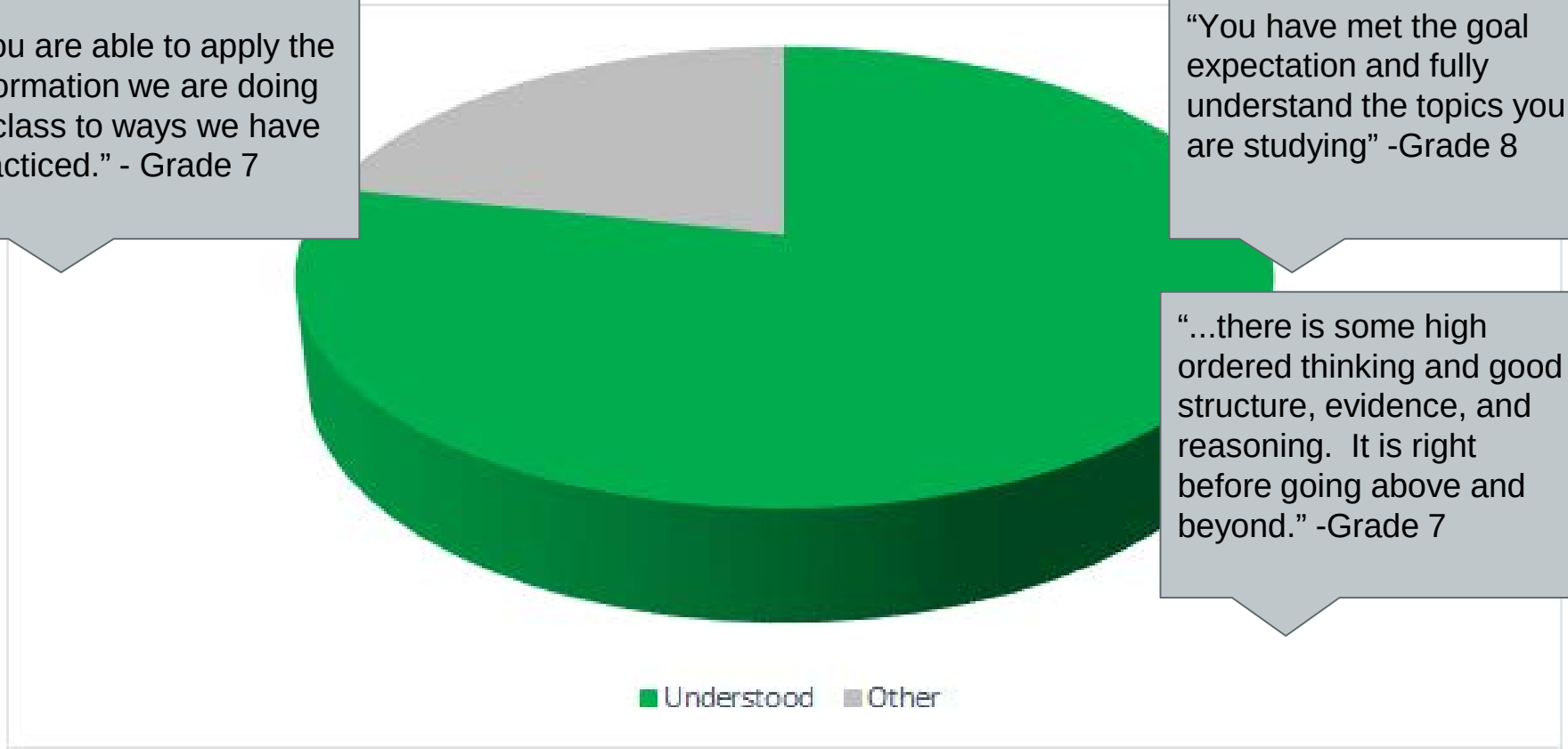


What does a score of 3 mean in science?

"You are able to apply the information we are doing in class to ways we have practiced." - Grade 7

"You have met the goal expectation and fully understand the topics you are studying" -Grade 8

"...there is some high ordered thinking and good structure, evidence, and reasoning. It is right before going above and beyond." -Grade 7



What are some strengths of standards based grading?

Student

- Learning targets are clearly defined.
- Students can monitor their progress, self assess and goal set.
- Multiple opportunities (available or provided) to meet mastery.

Parent

- View what their child knows and can do separate from his or her task management skills.
- Identify academic areas where their child needs additional support or where he/she should be pushed to higher levels.

Teacher

- Focus planning, instruction, and assessment on specific learning targets.
- Provide specific and targeted feedback.
- Know exactly where students stand in their progress toward the learning target and identify what additional supports are needed.
- Work collaboratively.

What Saxe students identify as strengths?

"I like how it shows exactly what you are doing on a rubric and exactly what you need to improve on."
-Grade 7

"It makes you think a little more in depth of what you are doing." - Grade 7

"there is less pressure in getting tests back and the grading is more about you and the improvements you can make." – Grade 8

"I like that you don't get a score on what you got wrong or right, you get scored on your understanding of what you know." - Grade 6

What is the history of its implementation in science?

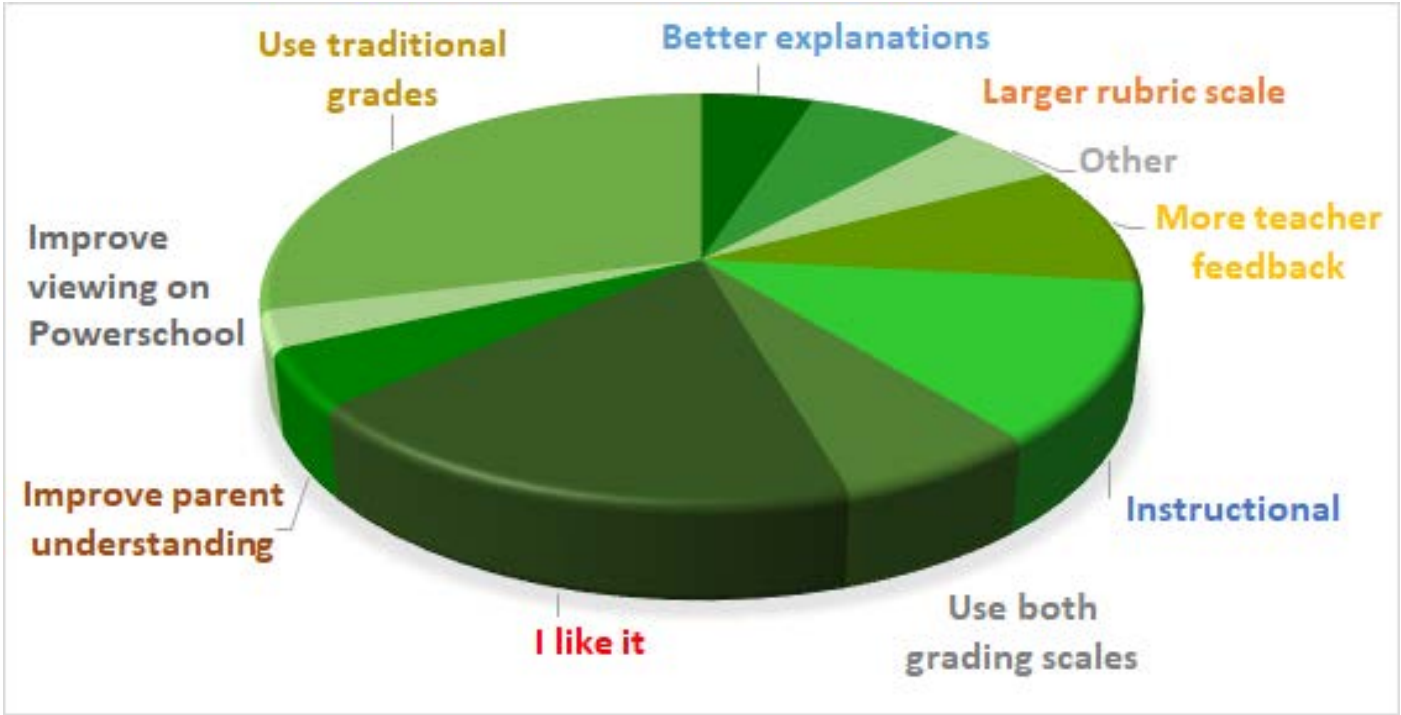
2009-2011	Professional learning and research
2011-2012	Summer work
	Pilot Grades 6 and 8
2012-2013	Communication and continuation with 2 teachers in grade 6
2013-2014	Growth in number of teachers and grade levels
	Multi-year roll-out plan was developed and shared
2014-2015	All grade 6 teachers implement
2015-2016	All grade 7 teachers implement
2016-2017	All grade 8 teachers implement
	Planning for HS transition
2017-2018	Revision to standards and learning progressions due to NGSS

Why does science use standards based grading?

- Depth of Knowledge (DOK)
- Performance Based Assessment - PBA
- Next Generation Science Standards (NGSS)
- Student Learning Expectations (excerpt below)

	Learning Objective	Instructional Practices	Learning Strategies	Questioning	Student Independence and Interdependence	Monitoring	Differentiation	Feedback	Metacognition
If…	Essential questions and learning objectives are displayed and communicated to students so that ***students are able to explain both.*** Performance expectations require ***students to think at a higher level***	***Students are able to articulate*** how the new learning applies to situations outside the scope of the lesson.	***Student-to-student discourse*** is purposeful, collaborative, and supports problem-solving of real-world issues. ***Students approach*** problem solving tasks ***and respond with***	***Students pose questions*** to the educator that are relevant to the learning objective and demonstrate higher order thinking.	Educator provides opportunities for ***students to collaborate with each other to discuss and apply*** skills and concepts presented. Scaffolds allow most ***students to take responsibility***	***Students self-evaluate*** performance or work based on specific criteria.	***Students respond to*** differentiation and are successful in meeting learning objectives.	Feedback to ***students about the quality of their work/performance is timely, specific, accurate and reinforces effective learning strategies.***	Educator explicitly instructs about and models metacognition to help ***students think more deeply*** about the discipline. Opportunities are provided for ***students to reflect about and share*** their growth related

What do students identify as next steps?



Resources

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