

Engaging Students in Quality Assessment Practices

"The art of progress is to
preserve order amid change
and to preserve change amid
order."

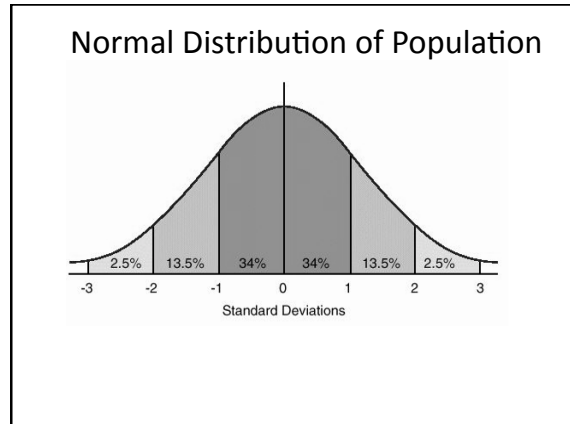
Alfred North Whitehead



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Important Research



Important take-away #1---

Teachers matter immensely!

Findings

- Effective leadership behavior at the district and school levels **does** have a positive impact on student achievement!
- Effective leadership at the district and school levels changes what occurs in classrooms; What happens in classrooms has a direct effect on student achievement!

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Tentative Findings: Reading

Teacher	School	District	Student
P50	P50	P50	P50
P84	P50	P50	P60
P98	P50	P50	P70
P50	P84	P84	P57
P50	P98	P98	P63

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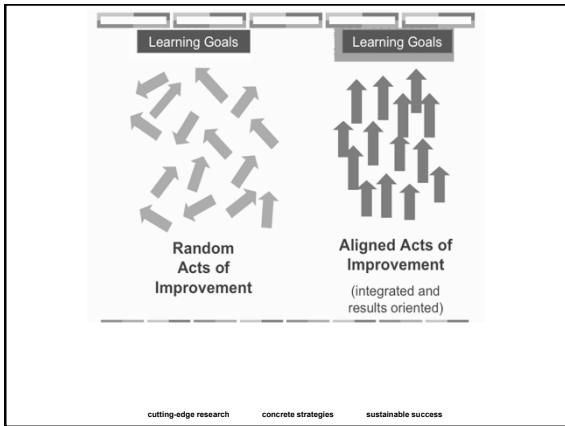
Tentative Findings: Mathematics

Teacher	School	District	Student
P50	P50	P50	P50
P84	P50	P50	P64
P98	P50	P50	P76
P50	P84	P84	P59
P50	P98	P98	P67

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School and District Leadership **not only matters**, but also has a **direct correlation and measureable effect on student achievement!**

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“The way a team plays as a whole determines its success. You may have the greatest bunch of individual stars in the world, but if they don’t play together, the club won’t be worth a dime.

•Babe Ruth

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All can be approached at the school level, but are **more powerful at the district level.**

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- Three Critical Interventions (COMMITMENTS)**
- ⇒ • A system of individual clear learning goals connected to student feedback and evaluation at the classroom, school, and district levels
 - Ensuring effective teaching in every classroom
 - Building background knowledge for all students
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How do you determine when students are proficient on the essentials?

<p>A. Items 1–10 Ten items that require recall of important but <u>simpler</u> content that was explicitly taught</p>	<p>Total for section = <input type="text"/></p>
<p>B. Items 11–14 Four items that ask for application of <u>complex</u> content that was explicitly taught AND in situations similar to what was taught.</p>	<p>Total for section = <input type="text"/></p>
<p>C. Items 15–16 Two items that asks for application in novel situations that <u>go beyond</u> what was explicitly taught</p>	<p>Total for section = <input type="text"/></p> <p style="text-align: center;">Total /100</p>

The problem with the 100 pt. scale

- Score range is a tremendous source of error.
- Teachers weight sections differently, often without reliability among one another.
- There is often little consideration as to how well the assessment items match varied levels of difficulty.



Why is this so difficult?

- Levels of difficulty....
 - On one test, items might be “easy” items--students receive high scores.
 - On next test, items may be more difficult and students

What helps?

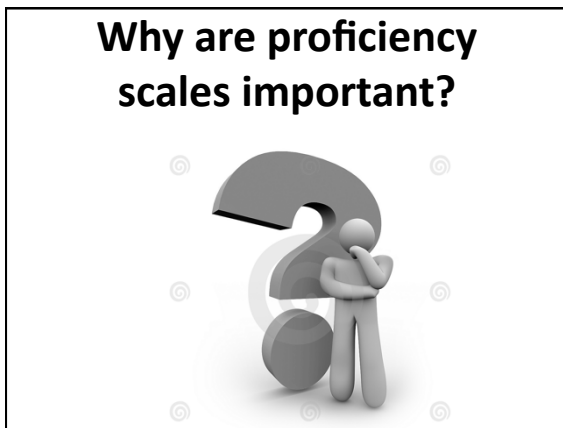
Creating a proficiency scale

Proficiency Scales

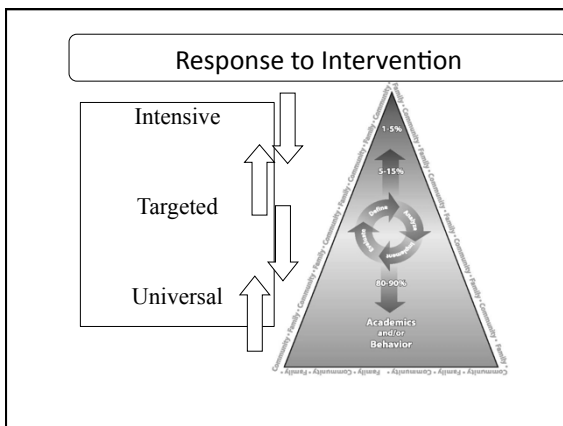
Level 1 Beginning	Level 2 Progressing	Level 3 Proficient	Level 4 Advanced

Scale	
4	In addition to exhibiting level 3 performance, in-depth inferences and applications that go BEYOND what was taught in class
3	No major errors or omissions regarding any of the information and/or processes (SIMPLE OR COMPLEX) that were explicitly taught
2	No major errors or omissions regarding the SIMPLER details and processes BUT major errors or omissions regarding the more complex ideas and processes
1	With HELP, a partial knowledge of some of the simpler and complex details and processes
0	Even with help, no understanding or skill demonstrated

Atmospheric Processes and Water Cycle	
4	Infer relationships regarding atmospheric processes and the water cycle.
3	An explanation of: <ul style="list-style-type: none"> • How the water cycle processes impact climate changes • The effects of temperature and pressure in different layers of Earth's atmosphere
2	<ul style="list-style-type: none"> • Recognize and recall basic terms such as: climatic patterns, atmospheric layers, stratosphere, troposphere. • Recognize or recall isolated details such as: <ul style="list-style-type: none"> • Precipitation is one of the processes of the water cycle. • The troposphere is one of the lowest portions of the Earth's atmosphere.



Level 1 Beginning	Level 2 Progressing	Level 3 Proficient	Level 4 Advanced
✘	✘	✘	



Achievement Level Definitions	
Advanced (4)	A student scoring at the Advanced Level has success with the most challenging content of the Colorado Model Content Standards. These students answer most of the test questions correctly, including the most challenging questions.
Proficient (3)	A student scoring at the Proficient Level has success with the challenging content of the Colorado Model Content Standards. These students answer most of the test questions correctly, but may have only some success with questions that reflect the most challenging content.
Partially Proficient (2)	A student scoring at the Partially Proficient Level has limited success with the challenging content of the Colorado Model Content Standards. These students may demonstrate inconsistent performance, answer many of the test questions correctly but are generally less successful with questions that are most challenging.
Unsatisfactory (1)	A student scoring at the Unsatisfactory Level has little success with the challenging content of the Colorado Model Content Standards.

Colorado Department of Education

CSAP Science Achievement Levels

CSAP Science - Achievement Level Definitions	
Advanced (4)	A student performing at the Advanced level has demonstrated performance that exceeds the standard expected at the assigned grade level. The student has shown sophisticated application of scientific knowledge and skills contained in the Colorado Model Content Standards.
Proficient (3)	A student performing at the Proficient level has demonstrated performance that meets the standard at the assigned grade level. The student has shown a thorough and effective application of scientific knowledge and skills contained in the Colorado Model Content Standards.
Partially Proficient (2)	A student performing at the Partially Proficient level has partially demonstrated fundamental knowledge and skills toward meeting the standard at the assigned grade level. The student has shown basic but inconsistent application of fundamental scientific knowledge and skills contained in the Colorado Model Content Standards.
Unsatisfactory (1)	A student performing at the Unsatisfactory level has not demonstrated the fundamental knowledge and skills needed to meeting the standard at the assigned grade level. The student has shown fragmented and inconsistent application of basic scientific knowledge and skills contained in the Colorado Model Content Standards.

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Proficiency Level Description

Essential Learning: Analyzes and represents linear functions and solves linear equations and systems of linear equations. It is expected that these essential learnings, be addressed within contexts that promote problem solving, reasoning, communications, making connections (within and outside of mathematics), and designing and analyzing representations.

Beginning	Progressing	Proficient	Advanced
Uses algebraic manipulation to solve one-step equations Identifies slope in a given equation Evaluates a function for a given set of values; graphs a line given a table of values	Uses algebraic manipulation to solve two-step equations Finds the slope of the line given two points on the line Uses function notation to evaluate a function; graphs a function Solves a system algebraically	Uses algebraic manipulation to solve multi-step equations Interprets the meaning of slope and intercepts in the context of a given situation Represents functional relationships using written explanations, situations, tables, equations, and graphs and describes the connections among these representations Uses a variety of methods to solve systems, estimates reasonableness of solutions, models real world phenomena related to linear functions, and relates the solution to pairs of lines	Given a real world situation, the student generates data and presents this data in a variety of ways

Douglas County Public Schools, 2007

- ### Three points of clarity...
- Extending/Advanced is NOT the new proficient.
 - Extending/Advanced does NOT mean going into the next year's curriculum---rather going deeper in the thinking and problem solving within the power standards.
 - Your achievement level criteria are a work in progress.
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Engagement & Scales

4	I know it even better than my teacher taught it.
3	I know it just the way my teacher taught it.
2	I know some of the simpler stuff but can't do the harder parts.
1	With some help, I can do it.
0	Even with help, I can't do it.

Tracking My Own Learning

Student Name E.H. Date _____

Learning Goal
Math: Understand and use decimals and percents.

My score at beginning: 2- My goal: 3 by Nov 30th

a Oct 5 (2)

b Oct 12 (2)

c Oct 19 (2)

d _____

e Oct 22 (2)

f Oct 27 (3)

g _____

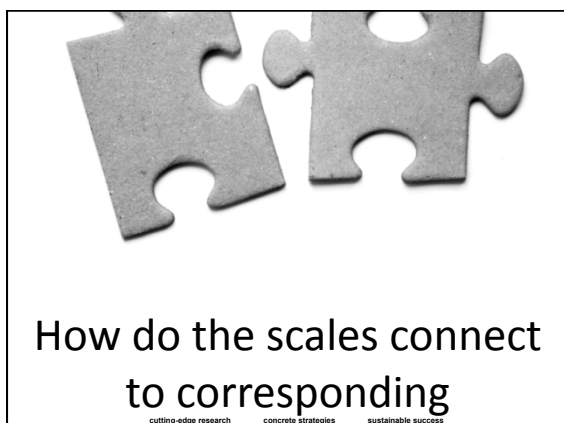
h _____

4 I make no mistakes; I understand completely

3 I make no major mistake; maybe little errors but understand what is important

2 I make some major mistakes; my error show I don't understand some important ideas

1 I make many major mistakes; I just don't understand yet



Three types of assessment items to measure the knowledge and skills defined

- **Level 2 items:** Simpler details and processes that have been explicitly taught
- **Level 3 items:** Complex ideas and processes that have been explicitly taught
- **Level 4 items:** Inferences and applications that go beyond what was taught

Proficiency Scale	
4	In addition to exhibiting level 3 performance, in-depth inferences and applications that go BEYOND what was taught in class
3	No major errors or omissions regarding any of the information and/or processes (SIMPLE OR COMPLEX) that were explicitly taught
2	No major errors or omissions regarding the SIMPLER details and processes BUT major errors or omissions regarding the more complex ideas and processes
1	With HELP , a partial knowledge of some of the simpler and complex details and processes
0	Even with help, no understanding or skill demonstrated

Level 3.0 Items for Measuring Atmospheric Processes and Water Cycle

- **Explain** how evaporation affects the climatic pattern in areas around large bodies of water, like the shoreline communities of Lake Michigan.
- Assume that a weather balloon traveled up into the stratosphere. **Explain** what would happen as it progresses through the various layers of the atmosphere.

Level 2.0 Items for Measuring Atmospheric Processes and Water Cycle

- Briefly **define** the following terms: climatic pattern, atmospheric layers, stratosphere
- **Identify** which of the following statements are true:
 - The atmosphere is between the troposphere and the stratosphere.
 - The Earth's atmosphere helps protect life on Earth by absorbing ultraviolet radiation.
 - The temperature of the Earth's atmosphere varies with altitude.

Level 4.0 Item for Science Test on Atmospheric Processes and Water Cycle

Complete the following analogy and **explain** why it is accurate:
 Condensation is to evaporation as _____ is to _____, because...

The complete scale allows for
half-point scores
(3.5, 2.5, 1.5, .5).

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Scale

4	In addition to exhibiting level 3 performance, in-depth inferences and applications that go beyond what was taught in class
3.5	<i>In addition to exhibiting level 3 performance, partial success at in-depth inferences and applications that go beyond what was taught in class</i>
3	No major errors or omissions regarding any of the information and/or processes (SIMPLE OR COMPLEX) that were explicitly taught
2.5	<i>No major errors or omissions regarding any of the simpler information and/or processes and partial knowledge of the more complex information and processes</i>
2	No major errors or omissions regarding the simpler details and processes BUT major errors or omissions regarding the more complex ideas and processes
1.5	<i>Partial knowledge of the simpler details and processes, but major errors or omissions regarding the more complex ideas and processes</i>
1	With help, a partial knowledge of some of the simpler and complex details and processes
.5	<i>With help, a partial knowledge of some of the simpler details and processes but not of the more complex ideas and processes</i>
0	Even with help, no understanding or skill demonstrated

Response Patterns and Corresponding Scale Score

- Student answers L2 items correctly, but not L3 and L4 items.
- **(2.0)**
- Student answers L2 and L3 items correctly, but not L4.
- **(3.0)**
- Student misses all items, but with help can answer some correctly.
- **(1.0)**
- Students misses all items even when helped.
- **(0.0)**

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Now what?

- Create a common assessment from the scale....or, use a common assessment and back map it to the scale.
- Begin to engage students and parents in conversations about the learning by using the scales.

Engagement & Assessment

3 Types of Feedback (Assessments)

- **Obtrusive**
 - Formalized, interrupt the normal flow of activity in the classroom
 - pencil/paper tests, projects, probing discussion
- **Unobtrusive**
 - Informal, do not interrupt the normal flow
 - Observations
- **Student Generated**
 - Students generate ideas about how they will demonstrate their current status

Practical Considerations for Reassessment

- Re-teaching, review, or reassessment is at teacher's discretion.
- Students prove they have taken corrective actions (study, peer tutoring, or reviewing sessions) before a second opportunity.

Consider the Most Recent Information

- **Be open to student-generated assessments**
- **Burning question:** If a kid falls in love and flunks the first test and then rebounds back to a 95%, how long will he have to pay for the first mistake?
- **Keep records** so they can be updated easily.

Second Chances

- Life provides second chances—and so should school.
- In the real world, very few consequences depend on a single opportunity.
- Aspiring surgeons practice on cadavers.
- Large-scale exams allow second chances to take tests (e.g., bar exam).

“The consequence for a student who fails to meet a standard is not a low grade but rather the opportunity—indeed, the requirement—to re-submit his or her work.”

Dr. Douglas Reeves

Engagement & Grading

Language Arts Strands and Topics

READING

- Word recognition and vocabulary
- Comprehension
- Literary analysis

WRITING

- Spelling
- Language mechanics and conventions

- Research and technology
- Evaluation and revisions

LISTENING and SPEAKING

- Listening comprehension
- Speaking applications

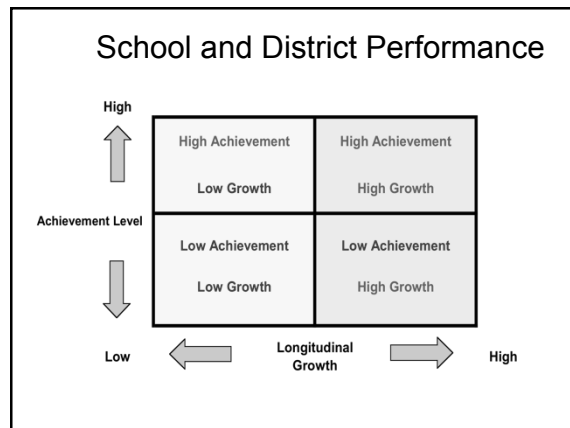
Language Arts		
Word Recognition and Vocabulary	3.5	
For Main Idea	2.5	
Literary Analysis	3.0	
Writing:		
Language Conventions	4.0	
Organization and Focus	2.0	
Research and Technology	1.5	
Evaluation and Revision	2.5	
Writing Applications	1.0	
Listening and Speaking:		
Comprehension	3.0	
Organization and Delivery	3.5	
Analysis and Evaluation of Media	2.0	
Speaking Applications	2.0	
Life Skills:		
Participation	4.0	
Work Completion	3.0	
Behavior	4.0	
Working in Groups	2.5	

Knowledge Gain for Student 1

	Topic #1	Topic #2	Topic #3
4.0			
3.5			
3.0			
2.5			
2.0			
1.5			
1.0			
.5			
0			

Knowledge Gain Student 2

	Topic #1	Topic #2	Topic #3
4.0			
3.5			
3.0			
2.5			
2.0			
1.5			
1.0			
.5			
0			



	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
	2.5	3.0	3.0	3.5
	2.5	3.0	3.0	3.5
	3.0	3.0	3.0	4.0
	1.5	2.5	2.5	3.0
	2.5	3.0	3.0	4.0
	2.0	2.5	2.5	3.0
		3.0	3.0	3.5
		2.5	2.5	3.5
		1.5	1.5	2.5
		3.0	3.0	3.0
		2.5	2.0	3.0
		2.5	2.5	3.5
			3.0	3.5
			2.5	3.0
			2.5	3.0
			2.5	3.5
			3.0	3.5
			3.0	3.0
				2.5
				3.0
				2.5
				3.0
				3.0
				2.5

Feedback and Grading

- Student achievement higher for group receiving pre-specified comments instead of letter grades (rubrics)
- And--even **higher** for students receiving free comments (written by teacher)

Page, 1958

A few take-aways...

- The comments were descriptive.
- The descriptive comments affected both performance and motivation.
- **Unfortunately, the grade “trumps” the comments if used together.**
- The descriptive comments fostered interest in the task for its own sake--a trait noted in successful, self-regulated learners.

Butler, D. L., & Nisan, M. (1986). Effects of no feedback, task-related comments, and grades on intrinsic motivation and performance. *Journal of Educational Psychology, 78*, 210-216.

Engagement in Reporting

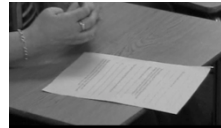
Middle School

What are the benefits of Student Led Conferences versus the traditional conferences?

- Students are familiar with this type of conference coming in from the Elementary School.
- Student Ownership.
- Students are able to show their best work to their parents, and also to let them know what they are struggling with.
- Portfolios are have all of the students work and accomplishments so parents can see their progress.
- Best Practices.
- Students are coached in how to talk to parents about their school work.

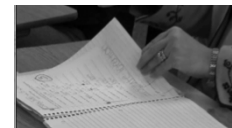
Parent Information

Check off list for parents and students to review



Flag system used if parents need to speak with parent during conference.

Student work is organized so parents will be able to see all Work in one notebook.



GRADE LEVEL BANDS
(Keep Course Structure)

UPPER DIVISION (11-12)

LOWER DIVISION (9-10)

6-8

3-5

K-2

Feedback is most powerful when it comes *from the student to the teacher.*

Hattie, J. (2009). *Visible learning a synthesis of over 800 meta-analyses relating to achievement.* New York, NY; Routledge

“Feedback from student to teacher helps make learning visible” (Hattie, 2009).

- Teachers seek (or at least open to)
 - What do students know and understand?
 - Where are they making errors?
 - When do they have misconceptions?
 - When do they lose interest?

Table 1.1 Research Results for Feedback

Synthesis Study	Focus	Number of Effect Sizes (ESs)	Average ES	Percentile Gain
Bloom, 1976	General effects of feedback	8	1.47	43
Lysakowski & Webb, 1987 ^a	General effects of feedback	39	1.15	37
Lysakowski & Webb, 1987	General effects of feedback	94	0.97	33
Wolfe & Miles, 1983	Diagnostic feedback in science	49	0.55	21
Hattie, 1987 ^b	General effects of feedback	Not reported	0.29	11
Hattie, Chish, & Webb, 1987 ^b	General effects of feedback	115	0.71	26
Banerjourn & Gooding, 1982	General effects of feedback	16	0.66	25
Bonquet-Dumont, Kuhn, Kuhn, & Morgan, 1991	General effects of feedback	58	0.25	10
Burns, 1991 ^c	General effects of feedback	5	1.35	41
Asensio & Bernard, 1997	Immediate feedback in computer-based instruction	22	0.80	29
Kluger & DeNill, 1996	Efficacy of feedback interventions	607	0.41	16
Webb, 1999	General effects of feedback	30	0.94	33
Hattie, 1999 ^d	General effects of feedback	0.750	0.90	33
Hattie, 2009	General effects of feedback	19	0.55	21

^a Reported in Hattie, Webb, Wolfe, & Hattie, 1987.

^b Reported in Hattie & Timperley, 2007.

^c Feedback was embedded in general management strategies.

^d The dependent variable was engagement.

^e Reported in Hattie, 2009.

The Meta-Analysis of Feedback

Ranked	10/138
Desired Effects	High
Number of meta-analyses	23
Number of studies	1,287
Number of people	67,931

An interesting finding....(Carless, 2006)

- Asked students and teachers whether teachers provided detailed feedback that helped students improve their next assignments...
 - 70% teachers claimed they provided such detailed feedback often or always
 - 45% of students agreed with their teachers' claims

Feedback Findings... (Nuthall, 2005)

- Most feedback students obtained in any day in classrooms was from other students, and most of this feedback was incorrect.

Some types of feedback are more effective....

- Provide cues or reinforcement to the learning or relate the feedback to learning goals.
 - Video, audio, or computer-assisted instruction
- Key=feedback received and acted upon by students--not that teachers did it, but that **students were able to interpret and act upon** that which was given.

Feedback Effectiveness

Most Least

- | | |
|--|--|
| <ul style="list-style-type: none"> • Provide info on specifics • Provide a notation about errors in margin and ask students to find the error. • Low threat environment • Clear • Purposeful • Meaningful • Compatible with students' prior knowledge | <ul style="list-style-type: none"> • Telling only number correct or incorrect • Praise about attributes rather than effort • Punishment • Extrinsic (tangible) rewards |
|--|--|

Adapted from Brookhart, *Effective Feedback*, ASCD

Scale

4	In addition to exhibiting level 3 performance, in-depth inferences and applications that go BEYOND what was taught in class
3	No major errors or omissions regarding any of the information and/or processes (SIMPLE OR COMPLEX) that were explicitly taught
2	No major errors or omissions regarding the SIMPLER details and processes BUT major errors or omissions regarding the more complex ideas and processes
1	With HELP, a partial knowledge of some of the simpler and complex details and processes
0	Even with help, no understanding or skill demonstrated

Student

Keeping Track of my Learning

Name J. H.
 Learning Goal Understand and use decimals and percents.
 My score at the beginning 2 My Goal is to be at 3 by Nov 30th
 Specific things I am going to do to improve: Work 15 mins three times a week.

LEARNING GOAL: Decimals and Percents

4	
3	
2	
1	
0	

Oct 5th Nov 26
Oct 12 Oct 19
Oct 20 Oct 26
Oct 30 Nov 12

© DYP/Charlotte-Mecklenburg Schools

Tracking My Own Learning

Student Name J. H. Date _____

Learning Goal Math: Understand decimals and percents - problem solving

4	
3	
2	
1	
0	

a Oct 10 2
 b Oct 17 2
 c Oct 21 3
 d Oct 30 2
 e _____
 f _____
 g _____
 h _____

Learning Goal Math: Know calculations with decimals and percents

4	
3	
2	
1	
0	

a Oct 10 3
 b Oct 17 3
 c Oct 21 3
 d Oct 30 4
 e _____
 f _____
 g _____
 h _____

Tracking My Own Learning

Student Name J. H. Date _____

Learning Goal Math: Understand and use decimals and percents
 My score at beginning 2 My goal 3 by Nov 30th

4	
3	
2	
1	
0	

a Oct 5 (2)
 b Oct 12 (2)
 c Oct 19 (2)
 d Oct 20 (1)
 e Oct 22 (2)
 f Oct 27 (3)
 g _____
 h _____

4 I make no mistakes; I understand completely
 3 I make no major mistakes; maybe still have but understand what is important
 2 I make some major mistakes; my score shows I don't understand some important ideas
 1 I make many major mistakes; I just don't understand yet

Examples

- "You need to include more about the Treaty". (specific to the task)
- "You need to edit this piece of writing for descriptive language--this way the reader can better understand your meaning". (specific to process)

More Examples...

- “Consider using the throwing strategies we discussed; load it, hold it, crack it, or pull, lift, contact” (process)
- “You already know the features of a helpful introduction, check to see if they are in your first paragraph”. (self-regulation)
- “You captured the essence of our goals. Good work!” (specific praise)

Timing Feedback

- | Better | Worse |
|--|---|
| <ul style="list-style-type: none"> • Returning assessment or assignment the next day • Giving immediate responses <ul style="list-style-type: none"> – Flash card idea or white boards – Clicker technology – Re-teaching misconceptions | <ul style="list-style-type: none"> • Returning assessment or assignment weeks later • Ignoring misconceptions • No opportunity for student to rework/ reassess to show improvement |

Adapted from Brookhart, 2008 ASCD

Amount of Feedback

- | Better | Worse |
|---|---|
| <ul style="list-style-type: none"> • Select a couple of main points for comments • Comment on strengths as well as challenges | <ul style="list-style-type: none"> • Returning assignments with every single error noted • Excessive comments • Giving feedback on lower quality papers only |

Adapted from Brookhart, 2008 ASCD

Feedback, to whom?

- | Better | Worse |
|--|---|
| <ul style="list-style-type: none"> • Individual and specific feedback • Small group or whole group for similar needs in re-teaching | <ul style="list-style-type: none"> • Using same comments for all students • Refraining from individual comments due to time constraints—consider the scales or rubrics. |

Adapted from Brookhart, 2008 ASCD

Use Peer Editing--Some Guidelines

- Read the work carefully and completely
- Compare the work to the rubric or proficiency scale
- Review any exemplars
- Talk about the work **NOT** the person
- Be specific about what works and what doesn't--no judgment
- Tell what you think and **why** the evidence you used to determine

Brookhart, 2008 ASCD

Dweck, Mindset: The New Psychology of Success, 2007



There are differing mindsets that affect success.

- ☉ Fixed mindset
 - ☉ talents are carved in stone
- ☉ Growth mindset
 - ☉ qualities are things to be cultivated through effort and can change through application and experience.

Dweck, Mindset: The New Psychology of Success, 2007

Growth/Fixed Teachers

- ☉ Growth mindset teachers love to learn. They want to learn about their students, about themselves, about life.
- ☉ Fixed mindset teachers think of themselves as finished products. Their role--to impart knowledge.

Dweck, Mindset: The New Psychology of Success, 2007

The key: High Standards and a Nurturing Atmosphere

- Creating an atmosphere of trust, not judgment.
- Teach your children HOW to reach high standards.
- When students don't know how to do something when others do, the gap feels huge.
- Growth minded teachers, parents, adults tell students the truth, and then give them the tools to close the gap.

Dweck, Mindset: The New Psychology of Success, 2007

Are mindsets permanent?

- ☉ Mindsets are an important part of your personality, but you CAN change them.
- ☉ By simply being conscious about the differing mindsets, you can start thinking and reacting in new ways.

Dweck, Mindset: The New Psychology of Success, 2007

So how shall we respond?

- ☉ **Not... "Wow, you got nine of ten correct. You must be really smart."**
 - ☉ these students were pushed into fixed mindset --when given a choice, they rejected a new task they could have learned from. Instead, they didn't want to expose their flaws.
- ☉ **Instead--"you got nine right. That's a really good score, and you must have worked really hard."**
 - ☉ 90% of these students wanted the challenging new task they could learn from. The effort kids thought difficulty meant try harder.

Dweck, Mindset: The New Psychology of Success, 2007

Grow your mindset

- Think about your hero --find out about the effort he/she applied
- Think of times when others outdid you--you assumed they were smarter--likely they used better strategies
- Be cautious about labels "This one is the artist, and that one is the scientist."

Dweck, Mindset: The New Psychology of Success, 2007

What to do...

- Every word and action from adult to child sends a message.
- How do you praise? Focus on the process they used: strategies, effort, or choices.
- Watch and listen to yourself when a child messes up.
- Set goals with your children and acknowledge their efforts to reach their goals.
- Remember to keep standards high, yet give your children strategies to reach the high standards. Give process feedback.
- Help ensure lower achieving children obtain the beliefs and strategies to achieve.
- Consider the shaping small behaviors of improvement you see along the way.

Dweck, Mindset: The New Psychology of Success, 2007

Next Steps....(Ideas)

- Work together on a proficiency scale for an essential learning (task specific feedback)
- Work together on process specific feedback
- Get an article to read....Hattie & Timperley, 2007 devoted to power of feedback

Three things you learned or
relearned today...

One thing you'll try...

Formative Assessment & Standards-Based Grading, Marzano 2009

Strand: Earth and Space Science	
Topic: Composition and Structure of the Earth kindergarten	
Score 4.0	In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught such as: <ul style="list-style-type: none"> describing a specific instance of a change in the Earth over time describing how the major features of the Earth's surface were created
Score 3.5	In addition to Score 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	While engaged in tasks that address the composition and structure of the Earth, the student: <ul style="list-style-type: none"> describes how the Earth's surface changes over time (<i>i.e. rivers cut canyons, wind causes erosion; volcanoes erupt</i>) describes major features of the Earth's surface (e.g. mountains, rivers, plains, oceans) The student exhibits no major errors or omissions.
Score 2.5	No major errors or omissions regarding the simpler details and process and partial knowledge of the more complex ideas and processes.
Score 2.0	There are no major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> recognizing or recalling specific terminology such as: <ul style="list-style-type: none"> change mountains rivers plains ocean performing basic processes such as: <ul style="list-style-type: none"> recognizing or recalling accurate statements about the features of the Earth's surface However, the student exhibits major errors or omissions regarding the more complex ideas and processes.
Score 1.5	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and procedures.
Score 1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score 0.5	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes.
Score 0.0	Even with help, no understanding or skill demonstrated.

Sample Tasks for Score 4.0, 3.0, and 2.0

Score 4.0

- Ask students to describe a specific instance of a change in the Earth over time.
- Ask students to describe how the major features of the Earth's surface were created.

Score 3.0

- Ask students to describe the Earth's surface changes over time.
- Ask students to describe major features of the Earth's surface.

Score 2.0

- Ask students to recognize or recall accurate statements about the features of the Earth's surface.
- Ask students to identify or produce definitions for given terms.

Strand: Life Science	
Topic: Biological Evolution and Diversity of Life kindergarten	
Score 4.0	In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught such as: <ul style="list-style-type: none"> creating a classification system for a given set of organisms based on appearance
Score 3.5	In addition to Score 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	While engaged in tasks that address biological evolution and diversity of life, the student: <ul style="list-style-type: none"> describes how living things (plants, animals) can be grouped based on appearance (<i>e.g., explaining basic ways living things can be grouped, i.e., cats and dogs can be grouped together because they are both animals with four legs; birds and oak trees would not be grouped together because a bird is an animal and an oak tree is a plant</i>) The student makes no major errors or omissions.
Score 2.5	No major errors or omissions regarding the simpler details and process and partial knowledge of the more complex ideas and processes.
Score 2.0	No major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> recognizing and recalling specific terminology, such as: <ul style="list-style-type: none"> appearance plant, animal body performing basic processes such as: <ul style="list-style-type: none"> recognizing or recalling accurate statements about the basic distinctions in the appearance of various animals recognizing or recalling examples of groups of living things However the student exhibits major errors or omissions with score 3.0 elements.
Score 1.5	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and procedures.
Score 1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score 0.5	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes.
Score 0.0	Even with help, no understanding or skill demonstrated.

Sample Tasks for Score 4.0, 3.0, and 2.0

Score 4.0

- Ask students to create a unique class of living things and explain the criteria created for membership.

Score 3.0

- Ask students to describe how living things (plants, animals) can be grouped on the basis of appearance.

Score 2.0

- Ask students to recognize or recall accurate statements about the basic distinctions in the appearance of various animals.
- Ask students to recognize or recall examples of groups of living things.

Formative Assessment & Standards-Based Grading, Marzano 2009

Strand: Reading	
Topic: Vocabulary and Word Analysis & Recognition	
kindergarten	
Score4.0	In addition to Score3.0, in-depth inferences and applications that go beyond what was taught such as: <ul style="list-style-type: none"> providing words that begin or end with a given letter or sound
Score3.5	In addition to Score3.0 performance, in-depth inferences and applications with partial success.
Score3.0	While reading grade level appropriate materials, the student enriches word recognition and vocabulary by: <ul style="list-style-type: none"> recognizing all upper and lower case letters and their sounds, and using basic letter-sound relationships to decode simple words demonstrating voice-print match while reading a grade-level text demonstrating beginning concepts of phonemic awareness/rhyming recognizing high frequency words (TBD ... from Dolch word list) The student exhibits no major errors or omissions.
Score2.5	No major errors or omissions regarding the simpler details and process and partial knowledge of the more complex ideas and processes.
Score2.0	There are no major errors or omissions regarding the simpler details and processes as the student: <ul style="list-style-type: none"> recognizes or recalls specific terminology such as: <ul style="list-style-type: none"> phonemic performs basic processes, such as: <ul style="list-style-type: none"> matching a letter sound to a given letter following along while the text is being read aloud (<i>e.g., the students can follow along in a book with pictures and words while the teacher is reading the text aloud</i>) recognizing or recalling examples of basic rhyming words However, the student exhibits major errors or omissions regarding the more complex ideas and processes.
Score1.5	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and procedures.
Score1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score0.5	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes.
Score0.0	Even with help, no understanding or skill demonstrated.

Score 4.0

- Ask students to provide words that begin or end with a given letter or sound.

Score 3.0

- Ask students to identify all upper and lower case letters and their sounds, and use basic letter-sound relationships to decode simple words.
- Provide structured opportunities for students to demonstrate voice-print match while reading a grade-level text.
- Provide structured opportunities for students to demonstrate beginning concepts of phonemic awareness/rhyming.
- Ask students to identify high frequency words.

Score 2.0

- Ask students to match a letter sound to a given letter.
- Ask students to follow along while the text is being read loud.



Strand: Reading - Fluency		Missouri GLEs
Reporting Topic: Fluency		
Grade: 3		R1D
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond what was taught. For example, the student may: <ul style="list-style-type: none"> read a passage above DRA level 38 passage/ guided reading level P with consistent, natural phrasing and expression with a rate of 107 or more words correct per minute. 	
3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.	
Score 3.0	The student will: <ul style="list-style-type: none"> read grade-level instructional text DRA level 38/ guided reading level P) with appropriate phrasing and expression most of the time and a rate of 107 words correct per minute. The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.	
Score 2.0	The student will: <ul style="list-style-type: none"> read a DRA level 38/ guided reading level P passage with appropriate phrasing and expression at a rate of 78 words correct per minute. The student exhibits no major errors or gaps in the simpler details and processes.	
1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.	
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.	
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- The teacher will conduct a fluency check noting the student's attention to phrasing, expression, and rate.

3.0 Example Assessment Items

- The teacher will conduct a fluency check.

2.0 Example Assessment Items

- The teacher will conduct a fluency check.

Formative Assessment & Standards-Based Grading, Marzano 2009

Strand: U.S. History		Missouri GLEs H3a.F, H3a.I
Topic: The Civil War		
Grade: 5		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond what was taught. For example, the student may: <ul style="list-style-type: none"> use multiple steps to apply knowledge of conflict resolution relating to the Civil War. 	
Score 3.0	The student will: <ul style="list-style-type: none"> describe the growing conflict between the North and South over the issue of slavery. explain the political, economical and social consequences of the Civil War. The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
Score 2.0	The student will: <ul style="list-style-type: none"> recognize accurate statements about the causes and consequences of the Civil War. recognize or recall specific terminology: <ul style="list-style-type: none"> slavery Civil War The student exhibits no major errors or gaps in the simpler details and processes.	
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Write an editorial explaining one strategy for stopping the Civil War.

3.0 Example Assessment Items

- Write a historical fiction story describing the growing conflict between the North and South.
- Create a chart organizing the consequences of the Civil War into categories (political, economical and social).

2.0 Example Assessment Items

Select the causes of the growing conflict between the North and South from a teacher provided list. Using a true/false format, determine if a statement is a consequence

Writing	
Topic: Narrative	
Grade 5	
Score 4.0	In addition to score 3.0 performance, in-depth inferences and applications that go beyond what was taught such as: <ul style="list-style-type: none"> creating a setting that is important to the plot and conflict showing one event in two different lights
Score 3.5	In addition to score 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	The student is skilled at writing a fictional narrative that includes: <ul style="list-style-type: none"> a beginning that grabs the readers attention with an interesting character in a situation or problem that needs to be resolved a description of the characters, setting and events a well-developed plot/storyline that includes narrative transitions an ending that brings resolution to the conflict The student exhibits no major errors or omissions.
Score 2.5	No major errors or omissions regarding the score 2.0 elements and partial knowledge of the score 3.0 elements.
Score 2.0	No major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> plot conflict events resolution point of view setting characters performing basic processes such as: <ul style="list-style-type: none"> recognizing the difference between showing and telling writing brief descriptions of people, places, and events However the student exhibits major errors or omissions with score 3.0 elements.
Score 1.5	Partial knowledge of the score 2.0 elements but major errors or omissions regarding the score 3.0 elements.
Score 1.0	With help, a partial understanding of some of the score 2.0 elements and some of the score 3.0 elements.
Score 0.5	With help, a partial understanding of some of the score 2.0 but not the score 3.0 elements.
Score 0.0	Even with help, no understanding or skill demonstrated

Sample Tasks for Scores 4.0, 3.0, & 2.0

Score 4.0

- Ask students to write a story making the setting important to the plot and conflict. LLLS #2.
- Ask students to write a story showing an event in two different lights. LLLS #3.

Score 3.0

- Ask students to establish a plot, point of view, setting, and conflict in a story. LLLS #2.
- Ask the students to think about an event in a story and show a reader how it happened instead of telling a reader how it happened. LLLS #2.

Score 2.0

- Ask students to write about an isolate event or person. LLLS #2.
- Ask students to read two paragraphs of an example story and identify which paragraph is showing an event and which is telling about an event. LLLS #2.

Formative Assessment & Standards-Based Grading, Marzano 2009

Strand: Economic Concepts and Principles		Missouri GLEs EC4A
Reporting Topic: Economic Concepts		
Grade: 5		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond what was taught. For example, the student may: <ul style="list-style-type: none"> apply real life examples of economic concepts and explain the consequences of those decisions. 	
Score 3.0	<p>3.5 In addition to 3.0 performance, in-depth inferences and applications with partial success.</p> <p>The student will:</p> <ul style="list-style-type: none"> explain key economic concepts (e.g., scarcity, supply and demand and opportunity cost). <p>The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).</p>	
Score 2.0	<p>2.5 No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.</p> <p>The student will:</p> <ul style="list-style-type: none"> recognize or recall specific terminology: <ul style="list-style-type: none"> scarcity supply and demand opportunity cost <p>The student exhibits no major errors or gaps in the simpler details and processes.</p>	
Score 1.0	<p>1.5 Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.</p> <p>With help, a partial understanding of the 2.0 content and some of the 3.0 content.</p>	
Score 0.0	<p>0.5 With help, a partial understanding of the 2.0 content and none of the 3.0 content.</p> <p>Even with help, no understanding or skill demonstrated.</p>	

4.0 Example Assessment Items

- Generate and test a hypothesis for a key economic concept (e.g. scarcity, supply and demand and opportunity cost).

3.0 Example Assessment Items

- Depict key economic concepts with non-linguistic representations.

2.0 Example Assessment Items

- Match descriptions to the following economic terms: scarcity, supply and demand, opportunity cost.

Topic: Conventions/Editing	
Grade 6	
Score4.0	<p>In addition to Score3.0, in-depth inferences and applications that go beyond what was taught such as:</p> <ul style="list-style-type: none"> correctly using ellipses, hyphens and dashes
Score3.5	In addition to Score3.0 performance, in-depth inferences and applications with partial success.
Score3.0	<p>While engaged in grade level appropriate writing tasks, students will be able to:</p> <ul style="list-style-type: none"> use resources such as spell checkers, dictionaries, and charts to demonstrate use of conventional spelling in their published works punctuate and capitalize titles edit for run-on sentences and sentence fragments proofread and edit independently for all previous level conventions <p>The student exhibits no major errors or omissions.</p>
Score2.5	No major errors or omissions regarding the simpler details and process and partial knowledge of the more complex ideas and processes.
Score2.0	<p>There are no major errors or omissions regarding the simpler details and processes as the student:</p> <ul style="list-style-type: none"> recognizes or recalls specific terminology such as: <ul style="list-style-type: none"> run-on sentence, sentence fragments performs basic processes, such as: <ul style="list-style-type: none"> using basic resources and corrects obvious errors in own writing recognizing or recalling examples of correctly punctuated and capitalized titles proofreading for basic errors <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
Score1.5	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and procedures.
Score1.0	<p>With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.</p>
Score0.5	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes.
Score0.0	Even with help, no understanding or skill demonstrated.

Sample Tasks for Scores 4.0, 3.0, & 2.0

Score 4.0

- Ask students to correctly use ellipses, hyphens and dashes.

Score 3.0

- Ask students to use resources such as spell checkers, dictionaries, and charts to demonstrate use of conventional spelling in their published works.
- Ask students to punctuate and capitalize titles.
- Ask students to edit for run-on sentences and sentence fragments.
- Ask students to proofread and edit independently for all previous level conventions.

Score 2.0

- Ask students to use basic resources and corrects obvious errors in own writing.
- Ask students to identify or produce examples of correctly punctuated and capitalized titles.
- Ask students to proofread for basic errors.
- Ask students to identify or produce definitions to given terms.

Formative Assessment & Standards-Based Grading, Marzano 2009

Geometry	
Transformations, Congruency and Similarity	
Grade 7	
Score 4.0	In addition to Score 3.0 student demonstrates in-depth inferences and applications that go beyond what was explicitly taught, such as understands how to: <ul style="list-style-type: none"> analyze problems and explain relationships within the problem
Score 3.5	In addition to score 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	While engaged in tasks regarding transformations, congruency and similarity, the student understands how to: <ul style="list-style-type: none"> demonstrate/explain the relationships between the sides and angles of the two congruent geometrical figures The student exhibits no major errors or omissions.
Score 2.5	No major errors or omissions regarding the score 2.0 elements and partial knowledge of the score 3.0 elements.
Score 2.0	No major errors or omissions regarding the simpler details and processes as the student: <ul style="list-style-type: none"> recognizes or recalls specific terminology such as: <ul style="list-style-type: none"> congruent corresponding sides corresponding angles included angles included sides performs basic processes such as knows how to: <ul style="list-style-type: none"> recognize factors that make figures congruent However the student exhibits major errors or omissions with score 3.0 elements.
Score 1.5	Partial knowledge of the score 2.0 elements but major errors or omissions regarding the score 3.0 elements.
Score 1.0	With help, a partial understanding of some of the score 2.0 elements and some of the score 3.0 elements.
Score 0.5	With help, a partial understanding of some of the score 2.0 but not the score 3.0 elements.
Score 0.0	Even with help, no understanding or skill demonstrated

Sample Tasks for Scores 4.0, 3.0, & 2.0

Score 4.0

- Ask students to analyze problems and explain mathematical relationships within the problem.

Score 3.0

- Ask students to demonstrate/explain the relationships between the sides and angles of the two congruent geometrical figures.

Score 2.0

- Ask students to recognize which two shapes are congruent and why when given a set of shapes
- Ask students to identify factors that make figures congruent.
- Ask students to recognize or produce definitions for given terms
 - Complete the 6-step vocabulary process (Marzano)

Strand: Numbers and Operations	
Topic: Number Sense and Number Systems	
Grade 8	
Score 4.0	In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught such as: <ul style="list-style-type: none"> Create a problem that uses angle analysis as part of the solutions
Score 3.5	In addition to Score 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	While engaged in tasks regarding degrees, the student: <ul style="list-style-type: none"> estimates, justifies and/or explains the reasonableness of a solution dealing with angles The student exhibits no major errors or omissions.
Score 2.5	No major errors or omissions regarding the simpler details and process and partial knowledge of the more complex ideas and processes.
Score 2.0	There are no major errors or omissions regarding the simpler details and processes as the student: <ul style="list-style-type: none"> recognizes or recalls specific terminology such as: <ul style="list-style-type: none"> angles, justify performs basic processes such as: <ul style="list-style-type: none"> estimating the measure of common angles However, the student exhibits major errors or omissions regarding the more complex ideas and processes.
Score 1.5	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and procedures.
Score 1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score 0.5	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes.
Score 0.0	Even with help, no understanding or skill demonstrated.

Sample Tasks

Score 4.0

- Ask students to analyze the solution to a problem dealing with angles for errors.

Score 3.0

- Ask students to estimate, justify and/or explain the reasonableness of a solution dealing with angles.

Score 2.0

- Ask students to estimate the measure of common angles.
- Ask students to identify or produce definitions for given terms.

Formative Assessment & Standards-Based Grading, Marzano 2009

Strand: Algebraic Relationships		Missouri GLEs A1D
Reporting Topic: Identify Functions		
Grade: 8		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond what was taught. For example, the student may: <ul style="list-style-type: none"> compare properties of linear and/or nonlinear functions. 	
Score 3.0	<p>3.5 In addition to 3.0 performance, in-depth inferences and applications with partial success.</p> <p>The student will:</p> <ul style="list-style-type: none"> identify functions as linear or nonlinear from tables (using constant differences), patterns, graphs, or equations. <p>The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).</p>	
Score 2.0	<p>2.5 No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.</p> <p>The student will:</p> <ul style="list-style-type: none"> identify functions as linear or nonlinear from graphs, equations, or tables. recognize or recall specific terminology: <ul style="list-style-type: none"> function <p>The student exhibits no major errors or gaps in the simpler details and processes.</p>	
Score 1.0	<p>1.5 Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.</p> <p>With help, a partial understanding of the 2.0 content and some of the 3.0 content.</p>	
Score 0.0	<p>0.5 With help, a partial understanding of the 2.0 content and none of the 3.0 content.</p> <p>Even with help, no understanding or skill demonstrated.</p>	

4.0 Example Assessment Items

- Complete the table to show that the data represents a linear function then write the equation for the function.

x	3	4	5	
y	13		17	23


3.0 Example Assessment Items

- Given the table, identify if the data represents a linear or nonlinear function.

x	2	4	6	8
y	12	9	6	3

2.0 Example Assessment Items

- Identify if each graph as linear or nonlinear.

A.  B.  C.  D. 

- Identify if each equation is linear or nonlinear.

A. $y = 9 - x^2$ B. $y = -2.3x$ C. $2x + 3y = 62$ D.

Strand: Economics	
Topic: Nature and Function of Economic Systems	
Grade 8	
Score4.0	In addition to Score3.0, in-depth inferences and applications that go beyond what was taught such as: <ul style="list-style-type: none"> comparing economic factors in historical chains to economic factors of current chains
Score3.5	In addition to Score3.0 performance, in-depth inferences and applications with partial success.
Score3.0	<p>While engaged in tasks regarding the nature and function of economic systems, the student:</p> <ul style="list-style-type: none"> explains different economic factors in a causal chain (economic, social, cultural, political) (Great Depression before, during and after; Germany 1900-1950; Iraq; Cuba; Soviet Union; Venezuela) works individually or with others to decide on an appropriate course of action in response to a contemporary economic problem (mortgage/subprime crisis; government bailouts; inflation; unemployment; stock fraud; consumer fraud; taxes; wealth distribution; poverty) explains the concept of capitalism and its impact on class, production, the distribution of wealth and resource development (compare/contrast capitalistic countries around the world; compare/contrast capitalistic concepts before and after the Industrial Revolution; compare/contrast capitalism to other economic systems) <p>The student exhibits no major errors or omissions.</p>
Score2.5	No major errors or omissions regarding the simpler details and process and partial knowledge of the more complex ideas and processes.
Score2.0	<p>There are no major errors or omissions regarding the simpler details and processes as the student:</p> <ul style="list-style-type: none"> recognizes or recalls specific terminology such as: <ul style="list-style-type: none"> capitalism, resource development performs basic processes such as: <ul style="list-style-type: none"> recognizing or recalling examples of economic factors in a casual chain recognizing or recalling basic concepts of capitalism recognizing or recalling examples of contemporary economic problems <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
Score1.5	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and procedures.
Score1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score0.5	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes.
Score0.0	Even with help, no understanding or skill demonstrated.

Formative Assessment & Standards-Based Grading, Marzano 2009

Strand: Physical Science	
Topic: Sources and Properties of Energy	
Grade 8	
Score 4.0	In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught such as: <ul style="list-style-type: none"> describing pros and cons of various types of renewable energy
Score 3.5	In addition to Score 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	<p>While engaged in tasks that address the sources and properties of energy, the student:</p> <ul style="list-style-type: none"> describes characteristics of various types of renewable energy (geothermal, hydrogen, hydropower, ocean, solar, wind) (e.g., explaining information known about a specific type of renewable energy, i.e., geothermal power is the use of geothermal heat to generate electricity) describes distinctions between various types of thermal energy and heat transfer (e.g., explaining the differences between two thermodynamic systems, i.e., describing how energy and matter is exchanged with the environment in an open system and how this differs from the exchange of energy and matter with the environment in a closed system) <p>The student makes no major errors or omissions.</p>
Score 2.5	No major errors or omissions regarding the simpler details and process and partial knowledge of the more complex ideas and processes.
Score 2.0	<p>No major errors or omissions regarding the simpler details and processes such as:</p> <ul style="list-style-type: none"> recognizing and recalling specific terminology, such as: <ul style="list-style-type: none"> chemical energy heat retention kinetic energy thermodynamic system open system, closed system performing basic processes such as: <ul style="list-style-type: none"> recognizing or recalling accurate statements about the characteristics of various forms of renewable energy (i.e., the Earth's oceans produce mechanical energy from the tides and waves) recognizing or recalling accurate statements about thermodynamic systems <p>However the student exhibits major errors or omissions with score 3.0 elements.</p>
Score 1.5	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and procedures.
Score 1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score 0.5	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes.
Score 0.0	Even with help, no understanding or skill demonstrated.

Strand: Writing	
Topic: Planning, Drafting and Revising	
Grade 9	
Score4.0	In addition to Score3.0, in-depth inferences and applications that go beyond what was taught such as: <ul style="list-style-type: none"> creating a peer revision rubric/checklist
Score3.5	In addition to Score3.0 performance, in-depth inferences and applications with partial success.
Score3.0	<p>While engaged in tasks regarding level appropriate writing tasks, the student demonstrates an understanding of and skill at planning, drafting and revising by:</p> <ul style="list-style-type: none"> revising for tense, voice, aspect, and point of view with an emphasis on word choice, consistency or purposeful shifts in voice (e.g., how switching from active to passive voice will make one's writing more distant and contribute to a switch in emphasis away from the narrator/main character to another character), and appropriate point of view (e.g., finding voice errors and revising them by determining if a consistent emotion is communicated) checking for clarity (e.g., asking peers for editing feedback to establish if confusion or miscommunication has occurred, determine which revisions would change the piece of writing accordingly, possibly through the use of a self-developed peer revision rubric or checklist) <p>The student exhibits no major errors or omissions.</p>
Score2.5	No major errors or omissions regarding the simpler details and process and partial knowledge of the more complex ideas and processes.
Score2.0	<p>There are no major errors or omissions regarding the simpler details and processes as the student:</p> <ul style="list-style-type: none"> recognizes or recalls specific terminology such as: <ul style="list-style-type: none"> clarity, point of view performs basic processes, such as: <ul style="list-style-type: none"> proofreading for basic errors in tense and point of view correcting obvious clarity errors <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
Score1.5	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and procedures.
Score1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score0.5	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes.
Score0.0	Even with help, no understanding or skill demonstrated.

Sample Tasks for Scores 4.0, 3.0, & 2.0

Score 4.0

- Ask students to create a peer revision rubric/checklist.

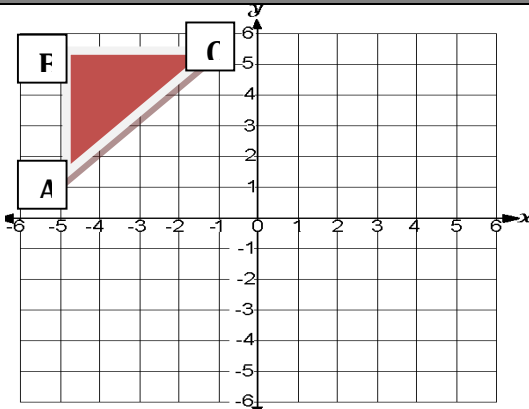
Score 3.0

- Ask students to revise for tense, voice, aspect, and point of view with an emphasis on word choice, consistency or purposeful shifts in voice and appropriate point of vie.
- Ask students to ask peers for editing feedback to establish if confusion or miscommunication has occurred, determine which revisions would change the piece of writing accordingly, possibly through the use of a self-developed peer revision rubric or checklist.

Score 2.0

- Ask students to proofread for basic errors in tense and point of view.
- Ask students to correct obvious clarity errors

Formative Assessment & Standards-Based Grading, Marzano 2009

Strand : Geometric Reasoning		
Topic: Motion Geometry		
Class: Geometry		
Score 4.0	In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught.	Sample Tasks
	3.5 In addition to score 3.0 performance, in-depth inferences and applications with partial success.	
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none"> demonstrate transformation geometry (e.g., reflections, rotations, scale factor, translation) <p>The student exhibits no major errors or omissions.</p>	 <ul style="list-style-type: none"> Use the diagram above to complete each transformation below and supply the vertices of the new image. <ol style="list-style-type: none"> Reflect the triangle shown over the x-axis Rotate the image 180 degrees about the origin Enlarge the image by a scale factor of 2 Translate the pre-image 4 units to the right
	2.5 No major errors or omissions regarding 2.0 content and partial knowledge of the 3.0 content	
Score 2.0	<p>There are no major errors or omissions regarding the simpler details and processes as the student:</p> <ul style="list-style-type: none"> recognizes or recalls examples of transformation geometry recognizes or recalls basic terminology such as: <ul style="list-style-type: none"> reflections, rotations, scale factor, translation <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>	<ul style="list-style-type: none"> Ask the student to label teacher provided examples of the various types of transformations. Ask the student to produce or identify definitions to given terms.
	1.5 Partial knowledge of the 2.0 content but major errors or omissions regarding the 3.0 content	
Score 1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.	
	0.5 With help, a partial understanding of the 2.0 content but not the 3.0 content	
Score 0.0	Even with help, no understanding or skill demonstrated.	

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Strand: Nature of Science	
Topic: Scientific Enterprise	
High School	
Score 4.0	In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught such as: <ul style="list-style-type: none"> making predictions about the ethical impacts of scientific and technological developments
Score 3.5	In addition to Score 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	While engaged in tasks that address scientific enterprise, the student: <ul style="list-style-type: none"> explores implications of ethical or social issues on scientific enterprise (animal testing, drug trials) (<i>e.g., explaining how scientists and their research are impacted by an ethical issue, i.e., describing how research to find a cure for a disease would be affected if the scientists involved considered research on animals a violation of their personal code of ethics</i>) The student exhibits no major errors or omissions.
Score 2.5	No major errors or omissions regarding the simpler details and process and partial knowledge of the more complex ideas and processes.
Score 2.0	There are no major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> recognizing or recalling specific terminology such as: <ul style="list-style-type: none"> ethics social issue animal testing, drug trials performing basic processes such as: <ul style="list-style-type: none"> recognizing or recalling accurate statements about the implications of ethical or social issues on scientific enterprise However, the student exhibits major errors or omissions regarding the more complex ideas and processes.
Score 1.5	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and procedures.
Score 1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score 0.5	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes.
Score 0.0	Even with help, no understanding or skill demonstrated.

Sample Tasks for Score 4.0, 3.0, and 2.0

Score 4.0

- Ask students to make predictions about how technological advancements might affect scientific ethics.

Score 3.0

- Ask students to describe the implications of ethical issues on the scientific enterprise.

Score 2.0

- Ask students to recognize or recall accurate statements about the implications of ethical or social issues on scientific enterprise.
- Ask students to identify or produce definitions for given terms.

Strand: Physical Science	
Topic: Forces and Motion	
Grade 2	
Score 4.0	In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught such as: <ul style="list-style-type: none"> comparing the sizes and locations of two objects given relative object location and background information
Score 3.5	In addition to Score 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	While engaged in tasks that address forces and motion, the student demonstrates an understanding of important information such as: <ul style="list-style-type: none"> describing the position of an object relative to another object, relative to the background) (<i>e.g., explaining that the position of an object can be described in different ways, i.e., at rest, or in motion, as compared to the position of another object or the background</i>) The student makes no major errors or omissions.
Score 2.5	No major errors or omissions regarding the simpler details and process and partial knowledge of the more complex ideas and processes.
Score 2.0	No major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> recognizing and recalling specific terminology, such as: <ul style="list-style-type: none"> relative background motion position performing basic processes such as: <ul style="list-style-type: none"> recognizing or recalling accurate statements about basic ways to describe the position of an object However the student exhibits major errors or omissions with score 3.0 elements.
Score 1.5	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and procedures.
Score 1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score 0.5	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes.
Score 0.0	Even with help, no understanding or skill demonstrated.

Sample Tasks for Score 4.0, 3.0, and 2.0

Score 4.0

- Ask students to compare the sizes and locations of two objects given relative object location and background information.

Score 3.0

- Ask students to explain basic ways of describing the position of an object (relative to another object, relative to the background).

Score 2.0

- Ask students to recognize or recall accurate statements about basic ways to describe the position of an object.
- Ask students to identify or produce the definitions for given terms.

Name: _____

Numeration Mastery Assessment

M.5.1 Students will solve addition and subtraction problems using whole numbers and apply to real world situations.

Complete the definitions:

1. A sum is _____.
2. A difference is _____.

Write the word form of each number.

3. 5,673,210
4. 4,765,986,235

Write the standard form for each.

5. $7,000,000 + 40,000 + 3,000 + 20 + 7$
6. Eight billion, six million, four hundred thirty-seven thousand, nine hundred fourteen

Use $<$, $>$ or $=$ to make the comparison true.

7. 6,342,984 6,432,984
8. 54,872,082 54,934,092
9. 1,256,347,980 2,256,347,980

Order the set of numbers from least to greatest.

10. 5,342,752 5,384,982,762 5,825,701 5,827,902,872
- _____

Estimating

11. Round 342,287,976 to the nearest million. _____
12. Round 547,892 to the nearest thousand. _____
13. Round 90,437,987,965 to the nearest billion. _____

14. Estimate the sum of $355,291 + 628,902$ by rounding each number to the nearest hundred thousand.
15. Estimate the difference of $723,981 - 390,871$ by rounding each number to the nearest hundred thousand.

Problem Solving

16. In the year 2000, Florida had a population of about 16,000,000 people, and Ohio had a population of about 11,350,000 people. How much greater was the population of Florida than Ohio?
17. Sally drove 3,197 miles in one year. She drove a total of 8,243 miles in two years. How many miles did she drive in the second year?
18. Janice bought 2 packs of tennis balls for \$12 each and 3 packs of ping-pong balls for \$8 each. How much did she pay in all?
19. Bill bought a sweater for \$28 and a shirt for \$13. How much change would he get back from \$50?
20. Arrange the number cards to create the largest possible number. Use each card one time.

7	6	2	8	4	0	5	0	7	2

21. Which is the best estimate for the following problem $53,987 + 72,585$?
- a. 120,000
b. 127,000
c. 126,600

Why is your choice the best estimate?

M.5.1 Students will solve addition and subtraction problems using whole numbers and apply to real world situations			
Grade 5			
Score 4.0	In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught.		Sample Assessment Tasks
	3.5	In addition to score 3.0 performance, in-depth inferences and applications with partial success.	
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none"> M.5.1.1 Solve multi-step real world problems using addition and subtraction. <p>The student exhibits no major errors or omissions.</p>		<ul style="list-style-type: none"> Quiz
	2.5	No major errors or omissions regarding 2.0 content and partial knowledge of the 3.0 content	
Score 2.0	<p>There are no major errors or omissions regarding the simpler details and processes as the student:</p> <ul style="list-style-type: none"> Solve single-step problems using addition and subtraction Recognizes or recall related vocabulary terms (e.g., sum, difference) <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>		<ul style="list-style-type: none"> White board activity
	1.5	Partial knowledge of the 2.0 content but major errors or omissions regarding the 3.0 content	
Score 1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.		
	0.5	With help, a partial understanding of the 2.0 content but not the 3.0 content	
Score 0.0	Even with help, no understanding or skill demonstrated.		
M.5.1 Students will compare, order, add and subtract whole numbers and make applications to real world situations.			

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Grade 5			
Score 4.0	In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught.		Sample Assessment Tasks
	3.5	In addition to score 3.0 performance, in-depth inferences and applications with partial success.	
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none"> • M.5.1.2 Read and write numbers to the billions. • M.5.1.3 Compare and order whole numbers to the billions using $<$, $>$, $=$. <p>The student exhibits no major errors or omissions.</p>		<ul style="list-style-type: none"> • Place value card game “War” • I have, who has cards
	2.5	No major errors or omissions regarding 2.0 content and partial knowledge of the 3.0 content	
Score 2.0	<p>There are no major errors or omissions regarding the simpler details and processes as the student:</p> <ul style="list-style-type: none"> • Read and write numbers to the millions. • Compare and order whole numbers to the millions using $<$, $>$, $=$. <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>		<ul style="list-style-type: none"> • Place value card game “War” • I have, who has cards
	1.5	Partial knowledge of the 2.0 content but major errors or omissions regarding the 3.0 content	
Score 1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.		
	0.5	With help, a partial understanding of the 2.0 content but not the 3.0 content	
Score 0.0	Even with help, no understanding or skill demonstrated.		

M.5.1 Students will solve addition and subtraction problems using whole numbers and apply to real world situations

Grade 5		
Score	In addition to Score 3.0, in-depth inferences and applications that go	Sample Assessment Tasks

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e 4.0	beyond what was taught.		Sample Assessment Tasks
	3.5	In addition to score 3.0 performance, in-depth inferences and applications with partial success.	
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none"> • M.5.1.5 Estimate sums and differences by rounding to the nearest hundred thousand. <p>The student exhibits no major errors or omissions.</p>		<ul style="list-style-type: none"> • Center
	2.5	No major errors or omissions regarding 2.0 content and partial knowledge of the 3.0 content	
Score 2.0	<p>There are no major errors or omissions regarding the simpler details and processes as the student:</p> <ul style="list-style-type: none"> • Round whole numbers to the nearest hundred thousand <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>		<ul style="list-style-type: none"> • “Whose your neighbor?” worksheet
	1.5	Partial knowledge of the 2.0 content but major errors or omissions regarding the 3.0 content	
Score 1.0	<p>With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.</p>		
	0.5	With help, a partial understanding of the 2.0 content but not the 3.0 content	
Score 0.0	<p>Even with help, no understanding or skill demonstrated.</p>		

