Assessing Student Learning

Assessments provide learning opportunities for both students and teachers. Students are more likely to gain a deep understanding of curriculum when instruction is focused on standards and meets their individual learning needs. It is encouraged that teachers differentiate assessments by content, process, and/or product collecting information and data during all facets of instruction to better facilitate the learning, making sure to address the unique leaning differences of all students. This is an ongoing process of evaluation which ensures success for all students. Since data is gathered before, during, and after instruction from a variety of sources it helps provide an overall picture of student achievement.

Formative assessments focus more on "assessment *for* learning" which check for understanding along the way and guide teacher decision making about future instruction. Formative assessments are not graded, yet they serve as practice for students. They play an instrumental role in the support of learning during the learning process and help students retain, interact, and reflect on the content being covered therefore maximizing success. Summative assessments measure how much our students have learned up to a particular point in time and if they are meeting the standards. They are conducted after instruction and considered an "assessment *of* learning". Performance or authentic assessments require students to complete a task or project in order to show what learning has taken place. Students are actively demonstrating what they know, structure and apply information, therefore helping engage them in the learning process.

Below are various types of assessments that can be given to assess student's knowledge. Since students are diverse and have a wide range of learning styles, it is encouraged to modify assessments to accommodate individual needs (modify by giving choice, readiness, interest, how they learn, etc.)

Pre-Assessment (What do you know?)

- To determine what students already know, understand, and can do
- Used before instruction and during initial planning
- Teachers use the results to guide instruction, make decisions on grouping, and differentiate learning experiences
- Students use the results as a preview of what they need to know, understand, and be able to do
- **Samples:**
  - ✓ *Color Clusters:* The students are given color indicators. They show their color based on their knowledge of understanding. Examples:
    - Green: on the launch pad, getting started
    - Yellow: cautious, moving forward
    - Red: moving on up, almost there
    - Blue: soaring, got it
  - ✓ *Content Boxes:* The teacher provides the students with graphic organizers based on the new unit of study. The graphic organizers are divided into categories and sub categories connected to the topic. The students complete the information they already know.
  - ✓ *Knowledge Base Corners or Squaring Off:* The students move to a corner on their understanding of a concept. The teacher predetermines the level of understanding at each corner. The students discuss the topic with their group members. For example the corners could include: Not a clue, I know little, I know a lot, I've got it. Another option is: Little League, Minor League, Major Leagues, World Series.
  - ✓ *KWL:* Before students begin a unit or topic, they create a chart with 3 columns.
    - What I know, What I want to know, and What I learned
    - List details in the first two columns and fill in the last column after completing your unit or topic
  - ✓ *Ponder and Pass:* On a chart, the students are to write the facts they know on the given concept, information they want to learn, and questions they want to explore. The paper is then passed around the room.
  - ✓ *Pretest:* the test reveals the background knowledge base of the students.
  - ✓ *Take a Stand:* The teacher places numbers around the room and the students move to a number based on their understanding. With their group, the students discuss what they know about the concept and what they want to know.
  - ✓ **Reference:** http://differentiatedstrategies.wikispaces.com/Differentiated+Strategies+for+Assessment

Formative Assessment (What are you learning?)

- "Assessment *for* learning" gathers ongoing evidence creating self-regulated learners
- To guide and adjust instruction and provide student feedback and evidence of process and learning over time
- Should be done regularly and frequently before, during, and after lessons/units
- Teachers use results to check for understanding in order to adjust and differentiate instruction
- Students use results to self-monitor understanding and progress
- **Samples:**
  - ✓ *5-4-3-2-1 scoring scale:* Students raise their fist and answer the question showing the appropriate number of fingers to represent the understanding of the question/answer. One finger represent little to no knowledge while five fingers represents the students know it by mastery. Two fingers means partial/minimal understanding and four fingers means significant knowledge but not completely mastered.
  - ✓ *Analyzing Student Notes:* Looking at student notes gives the teacher insight into the thought process of the students.
  - ✓ *Assessing with a Blank Page:* This is a page added at the end of a quiz/test. The students can jot down any information they think is important and that they did not get the chance to share on the assessment. No marks are taken away but extra marks may be awarded. This gives the teacher the opportunity to discover the learning of the student.
  - ✓ *Bump in the Road:* A student writes a problem or question on the top of a piece of paper. The student passes the paper to three-five classmates to get their suggestions or answers to the question. Each person must initial their response to overcome the bump in the road.
  - ✓ *Classroom Observation:* During a classroom observation, the entire class may be out of their seats using their bodies to mimic lines, transformations, or graphs to show what has been learned. The teacher watches all students and identifies gaps in learning. Another example is when the teacher observes students while completing problems and then modifies instruction based on what students know and don't know.
  - ✓ *Conferencing:* A student-led conference is a meeting between students and their teacher in which the students explain what they have learned and document the progress they have made. One of the real advantages of student-led conferencing is that it puts the responsibility of learning on the students. They become involved in their own learning because they will be responsible for reporting the results. Students must know how to organize and evaluate their ideas and to communicate clearly and concisely.
  - ✓ *Exit slips:* Exit Slips are written responses to questions the teacher poses at the end of a lesson or a class to assess student understanding of key concepts. They should take no more than 5 minutes to complete and are taken up as students leave the classroom. The teacher can quickly determine which students understand, which ones need a little help, and which ones are going to require much more instruction on the concept. By assessing the responses on the Exit Slips the teacher can better adjust the instruction in order to accommodate students' needs for the next class.
  - ✓ *Four corners (Kagan & Kagan, 2009)*: Teacher announces a topic and gives students a choice of four alternatives. Students then form groups in their four corners of the room and share reasons for their choice. Students realize they can be accepted while making choices that are different from their classmates. Steps: 1) post a title or visual in each corner of the room 2) students think and then write down their choice without discussion among themselves 3) students move to their chosen corner 4) in each corner, give students time to communicate and share their thoughts with each other.
  - ✓ *Graphic organizer:* A visual representation of knowledge on a concept or topic. Graphic organizers can be used as powerful tools for probing and analyzing student thinking and learning. Students will organize information, make connections, and note relationships through the use of various graphic organizers. In addition, student can structure their writing, brainstorm ideas, assist in decision-making, clarify story structure, help with problem solving, and plan research with graphic organizers.
  - ✓ *Homework Menus:* Giving students the choice of what problems to complete in order to meet their needs. If all students must complete 10 problems, give them a variety of levels to choose from.
    - Problems in column 1 contain opportunities for the basic computation and understanding
    - Problems in column 2 contain opportunities that meet the level of the topic/standard
    - Problems in column 3 contain opportunities for challenge, critical thinking, and creativity

- ✓ *Individual whiteboards:* Individual slates or whiteboards are a great way to hold all students in the class accountable for the work. They actively involve students in the learning and are a terrific tool in the formative assessment process because they give the teacher immediate information about student learning. When students complete their work and hold their whiteboard up, the teacher can quickly determine who understands and who needs help, therefore adjust his/her instruction accordingly. Individual whiteboards are easy to make from melamine or tile boards which are usually carried at a local home supply store and cut to size for free.
- ✓ *Journal entry:* Ask students to maintain a journal to explain something they have learned, reflect on a task, write something down that they want or need to review, or to indicate a preference or attitude toward something that has been studied. Journal entries are usually done several times a week and are usually less than a half a page in length. Journals help students to be more conscious and in control of their learning. Consider reviewing each student's journal once a week and writing a positive comment or observation about what is written in the journal.
  - I learned……; I still don't understand …..; I will remember …..; I was pleased that …..
  - Someone can help me with …..; I wonder if….; I was surprised when …..; I can explain …..
- ✓ *Parking Lot/Burning questions:* This can be used to identify topics/questions that students still have trouble understanding. Hang a blank sheet of paper called "Parking Lot" on the exit door or side of the room and encourage students to place questions/comments that need to be addressed on sticky notes and place them on the paper during breaks. The teacher reads and answers them in front of the class to address the student's needs.
- ✓ *Self-reflection/peer assessment:* Peer assessment and self-reflection help to create a learning community within the classroom. When students are involved in criteria and goal setting, self-evaluation becomes a logical step in the learning process. Students become metacognitive and are more aware of their personal strengths and weaknesses. With peer assessment, students begin to see each other as resources for understanding and checking for quality work against previously determined criteria. The teacher can examine the self-assessments and the peer assessments and identify students' strengths and weaknesses. "When students are required to think about their own learning, articulate what they understand, and what they still need to learn, achievement improves." (Black and William, 1998).
- ✓ *Survey:* Surveys are legitimate and essential tools for research and data gathering to help with decision making. Teachers can create free accounts on these sample websites: www.polleverywhere.com; www.socrative.com; www.surveymonkey.com. Students can complete them in class or at home using their phone, tablet, laptop, or computer.
- ✓ *Think-pair-share:* Think-Pair-Share (Lyman, 1981) is a summarization strategy that can be used in any content area before, during, and after a lesson. The activity involves three basic steps. During the "think" stage, the teacher tells students to ponder a question or problem. This allows for wait time and helps students control the urge to impulsively shout out the first answer that comes to mind. Next, individuals are paired up and discuss their answer or solution to the problem. During this step, students may wish to revise or alter their original ideas. Finally, students are called upon to share with the rest of the class. There is also a Think-Pair-Square-Share. In this strategy, partners discuss answers with another pair before sharing with the class. This activity ensures that all students are interacting with the information. Teachers can use this activity in the formative assessment process as they walk about the room listening to student conversations.
- ✓ *Thumbs up/down:* A thumbs up, thumbs down, or thumb sideways is a gesture to take a quick read on whether or not your students agree, disagree, or are undecided. It can also be used to indicate understanding, a lack of understanding or uncertainty of understanding.
- ✓ **Reference:** http://wvde.state.wv.us/teac h21/ExamplesofFormativeAssessment.html
- ✓ **Reference:** http://differentiatedstrategies.wikispaces.com/Differentiated+Strategies+for+Assessment

Summative Assessment (What have you learned?)

- To determine if students have mastered what they should know, understand and be able to do
- Teachers use results to provide feedback, indicate progress and inform instruction, and to determine a grade that represents what the student knows, understands, and is able to do
- Students use the results to gauge their progress towards course or grade-level expectations
- Teachers use this to determine which teaching strategies worked and which ones didn't

- **Samples:**
  - ✓ District assessment, end of course exam, quiz/test, semester exam
  - ✓ *Assessment Cubing:* Cubing activities offers choice and novelty to the student thinking. Taking words from Webb's DOK or Bloom's Taxonomy that requires thinking (upper levels) and place each word on the side of a cube or list them numbering 1-6. Teacher selects a topic, unit title, term, phrase, or noun as the game topic. The student selects a side of the cube by rolling it, a spinner, or random number generator. Each player reports about the topic based on his/her lucky number. Round can be repeated for additional responses.
  - ✓ *Choice Boards:* Using the shape of tic-tac-toe or bingo, place questions in each of the spaces that will assess student learning. Make sure to include various leveled questions that require procedural, conceptual understanding, and application of the topic being assessed. Below are various ways to implement the board:
    - Complete either a horizontal, vertical, or diagonal row of activities
    - Select 3 or 4 activities from the choice board to complete
    - Strategically place activities for novice and/or advanced learners and assign to meet individual learning needs.
    - Center or wild card can be an activity that all students must complete in addition to those listed above

Performance Assessments (What have you learned?)

- They evaluate the individual growth and development of students in the classroom which requires the student to create answers or products demonstrating his/her knowledge or skills.
- They systematically document what children know and can do based on activities they engage in on a daily basis in their classrooms. In addition, performance assessment evaluates thinking skills such as analysis, synthesis, evaluation, and interpretation of facts and ideas — skills which standardized tests generally avoid.
- They are flexible enough to allow teachers to evaluate each child's progress using information obtained from ongoing classroom interactions with materials and peers. In other words, they permit an individualized approach to assessing abilities and performance.
- They are a means for improving instruction, allowing teachers to plan a comprehensive, developmentally oriented curriculum based on their knowledge of each child.
- **Samples:** Individual or group projects, evaluation/synthesis of mathematical concepts, student logs, journals, create/develop a lesson, presentations, extended responses, and written reports
  - ✓ *Journals/Student Logs:* Have students maintain a journal to explain something they have learned, reflect on a task, write something down that they want or need to review, or to indicate a preference or attitude toward something that has been studied. Journal entries are usually done several times a week and are usually less than a half a page in length. Journals help students to be more conscious and in control of their learning. Consider reviewing each student's journal once a week and writing a positive comment or observation about what is written in the journal.
    - I learned……; I still don't understand …..; I will remember …..; I was pleased that …..
    - Someone can help me with …..; I wonder if….; I was surprised when …..; I can explain …..
  - ✓ *Open ended questions/tasks:* Problems that involve a higher degree of ambiguity, solved in different ways and on different levels, and may allow for several correct solutions (no fixed answer). Many times a single question can assess multiple standards. The importance of these questions/tasks empower students to make their own mathematical *decisions* and make room for own mathematical *thinking*, in addition to *d*evelop *reasoning and communication* skills.
  - ✓ *Portfolios:* These are a collection of student work that exhibit students' efforts, progress, and achievements in one or more areas. These selections should vary over periods of time. Many times the teacher selects items and then the student selects other items to be included in the portfolio helping build a sense of responsibility for his/her learning. This helps promote an ongoing process where students demonstrate, assess and revise in order to improve and produce quality work.
  - ✓ *Wraparounds II:* The students sit in a circle and they take a turn telling:
    - Something the student will use from the information or activities learned today.
    - Something the student will remember from today.
    - A significant AHA! Moment from today.
    - I have learned …
    - Something I'm having trouble with …
- **Reference:** http://teacher.scholastic.com/professional/assessment/perfassess.htm

Rubric

- A rubric is a scoring tool that explicitly represents the performance expectations for an assignment or piece of work. A rubric divides the assigned work into component parts and provides clear descriptions of the characteristics of the work associated with each component, at varying levels of mastery. Rubrics can be used for a wide array of assignments: papers, projects, oral presentations, artistic performances, group projects, etc. Rubrics can be used as scoring or grading guides, to provide formative feedback to support and guide ongoing learning efforts, or both.
- A rubric is a great tool for teachers, because it is a simple way to set up a grading criteria for assignments. Not only is this tool useful for teachers, it is helpful for students as well. A rubric defines in writing what is expected of the student to get a particular grade on an assignment.

Rubrics are designed to do the following:

- To serve as **guidelines** for what is expected in a final product, including points on which a grade can be based
- To provide students with a **structural picture** of an excellent final product
- To provide an organized approach to **revision**, which is the key to a student's growth

http://rubistar.4teachers.org/

SAMPLE

CATEGORY	4	3	2	1
Mathematical Concepts	Explanation shows complete understanding of the mathematical concepts used to solve the problem(s).	Explanation shows substantial understanding of the mathematical concepts used to solve the problem(s).	Explanation shows some understanding of the mathematical concepts needed to solve the problem(s).	Explanation shows very limited understanding of the underlying concepts needed to solve the problem(s) OR is not written.
Mathematical Reasoning	Uses complex and refined mathematical reasoning.	Uses effective mathematical reasoning	Some evidence of mathematical reasoning.	Little evidence of mathematical reasoning.
Explanation	Explanation is detailed and clear.	Explanation is clear.	Explanation is a little difficult to understand, but includes critical components.	Explanation is difficult to understand and is missing several components OR was not included.
Diagrams and Sketches	Diagrams and/or sketches are clear and greatly add to the reader's understanding of the procedure(s).	Diagrams and/or sketches are clear and easy to understand.	Diagrams and/or sketches are somewhat difficult to understand.	Diagrams and/or sketches are difficult to understand or are not used.
Mathematical Terminology and Notation	Correct terminology and notation are always used, making it easy to understand what was done.	Correct terminology and notation are usually used, making it fairly easy to understand what was done.	Correct terminology and notation are used, but it is sometimes not easy to understand what was done.	There is little use, or a lot of inappropriate use, of terminology and notation.

Portfolio Evaluation Form

Name: Date: Evaluated by:

	Level 1	Level 2	Level 3	Level 4
Presentation	▪ Little effort to show work in a positive light	▪ Some parts of presentation are attractive	▪ Attractive presentation	▪ Exciting to look at
Variety	▪ Contains little variety of work	▪ Contains some variety of work	▪ Contains good variety of work	▪ Contains a wide variety of work
Organization	▪ Somewhat disorganized	▪ Somewhat organized	▪ Organized	▪ Very well organized
Communication	▪ Few ideas are communicated clearly	▪ Some ideas are communicated clearly	▪ Most ideas are communicated clearly	▪ All ideas are communicated clearly
Entry Selection	▪ Few of the established criteria are met	▪ Some of the established criteria are met	▪ Most of the established criteria are met	▪ All of the established criteria are met
Self Reflection	▪ Little evidence of self reflection	▪ Some evidence of self reflection	▪ Evidence of realistic self reflection	▪ Evidence of thorough, realistic and constructive self reflection

Comments:	Next Steps:	Evaluation:

Assessment Data Collection

Period:_____

Assessment of:_____ Dates:_____

4 – Advanced
3 – Proficient
2 – Developing
1 – Beginning

Assessment Type ➡												
Student Names		**List specific skill/standard(s) & date above: Record 4, 3, 2, 1**										
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Now what? The next step…. Use the information gathered to design tiered (scaffolding/challenging) activities.

Chart of Sample Assessment Types

Pre-Assessments – (what do you know?)

- To determine what students already know, understand, and can do
- Used before instruction and during initial planning
- Teachers use the results to guide instruction, make decisions on grouping, and differentiate learning experiences
- Students use the results as a preview of what they need to know, understand, and be able to do

PA1 – Color Clusters	PA2 – Content Boxes	PA3 – Knowledge Based Corners
PA4 – KWL	PA5 – Ponder and Pass	PA6 – Pretest
PA7 – Take a Stand	PA8 –	PA9 –

Formative Assessments – (What are you learning?)

- "Assessment *for* learning" gathers ongoing evidence creating self-regulated learners
- To guide and adjust instruction and provide student feedback and evidence of process and learning over time
- Should be done regularly and frequently before, during, and after lessons/units
- Teachers use results to check for understanding in order to adjust and differentiate instruction
- Students use results to self-monitor understanding and progress

FA1 – 5-4-3-2-1 Scoring Scale	FA2 – Analyzing Student Notes	FA3 – Assessing w/ a Blank Page
FA4 – Bump in the Road	FA5 – Classroom Observation	FA6 – Conferencing
FA7 – Exit Slip/Ticket	FA8 – Four Corners	FA9 – Graphic Organizer
FA10 – Homework Menus	FA11 – Individual Whiteboards	FA12 – Journal Entry
FA13 – Parking Lot/Questions	FA14 – Self/Peer Reflection	FA15 – Survey
FA16 – Think-Pair-Share	FA17 – Thumbs Up/Down	FA18 –

Performance/Authentic Assessments – (What have you learned?)

- Evaluate the individual growth and development of students in the classroom which requires the student to create answers or products demonstrating his/her knowledge or skills
- Evaluate thinking skills such as analysis, synthesis, evaluation, and interpretation of facts and ideas
- Flexible enough to allow teachers to evaluate each child's progress using information obtained from ongoing classroom interactions with materials and peers.

AA1 – Develop a Lesson	AA2 – Journals/Student Logs	AA3 – Open-ended Question/Task
AA4 – Portfolio	AA5 – Presentation	AA6 – Project
AA7 – Report	AA8 – Wraparound II	AA9 –

Summative Assessments – (What have you learned?)

- To determine if students have mastered what they should know, understand and be able to do
- Teachers use results to provide feedback, indicate progress and inform instruction, and to determine a grade that represents what the student knows, understands, and is able to do
- Students use the results to gauge their progress towards course or grade-level expectations
- Teachers use this to determine which teaching strategies worked and which ones didn't

SA1 – Assessment Cubing	SA2 – Choice Boards	SA3 – Quiz
SA4 – Test	SA5 –	SA6 –