Formative Assessment:
Empowering Learning in the Classroom

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Examples of formative assessments, explanations of each, and links to resources.
When incorporated into classroom practice, the formative assessment process provides information needed to adjust teaching and learning while they are still happening. The process serves as practice for the student and a check for understanding during the learning process. The formative assessment process guides teachers in making decisions about future instruction. Here are a few examples that may be used in the classroom during the formative assessment process to collect evidence of student learning.

**Observations**

The more we know about students, the more we can help them. Observations, sometimes called kid watching, can help teachers determine what students do and do not know. There are several instruments and techniques that teachers can use to record useful data about student learning. Here are a few:

- **Anecdotal Notes**: These are short notes written during a lesson as students work in groups or individually, or after the lesson is complete. The teacher should reflect on a specific aspect of the learning (sorts geometric shapes correctly) and make notes on the student's progress toward mastery of that learning target. The teacher can create a form to organize these notes so that they can easily be used for adjusting instruction based on student needs.
- **Anecdotal Notebook**: The teacher may wish to keep a notebook divided into sections for the individual students. With this method, all of the observations on an individual student are together and can furnish a picture of student learning over time.
Labels or Sticky Notes: Teachers can carry a clipboard with a sheet of labels (pre-printed with student names), or a pad of sticky notes and make observations as they circulate throughout the classroom. After the class, the labels or sticky notes can be placed in the observation notebook in the appropriate student’s section. Whatever the method used to record observations on students' learning, the import thing is to use the data collected to adjust instruction to meet student needs.

Links on Observation:
Observing Students
http://www2.scholastic.com/browse/article.jsp?id=3749065
Methods for Documenting Student Progress
http://newteachersupport.suite101.com/article.cfm/methods_for_documenting_student_progress
Anecdotal Records
http://www.saskschools.ca/curr_content/saskatoonint/1/Anecdotal.html

Questioning
Asking better questions affords students an opportunity for deeper thinking and provides teachers with significant insight into the degree and depth of student understanding. Questions of this nature engage students in classroom dialogue that expands student learning. Questions should go beyond the typical factual questions requiring recall of facts or numbers. Paul Black, a noted authority on formative assessment, suggests that "more effort has to be spent in framing questions that are worth asking: that is, questions which explore issues that are critical to the development of students' understanding." (Black et al., 2003)

Links for Questioning:
Text-Dependent Questions
http://secondaryreading.pds-hrd.wikispaces.net/Ask+text-dependent+questions
Tips for Teachers - Asking Good Questions
http://www.edb.utexas.edu/minliu/plb/TIPS/question.html#hots
Questioning Techniques: Research-Based Strategies for Teachers
http://onramp.nsd.org/eserv/onramp:1244/oct08_pl_tas.html
Edutopia: The Right Way to Ask Questions in the Classroom
http://www.edutopia.org/asking-students-good-questions
Inviting Student Engagement with Questioning
Using “Think Time” and “Wait Time” Skillfully in the Classroom

Discussion
Classroom discussions can tell the teacher much about student learning and understanding of basic concepts. The teacher can initiate the discussion by presenting students with an open-ended question. The goal is to build knowledge and develop critical and creative thinking skills. Discussions allow students to increase the breadth and depth of their understanding while discarding erroneous information and expanding and explicating background knowledge (Black and Wiliam 1998; Doherty 2003). By activating students as learning resources for one another there is the possibility of some of the largest gains seen in any educational intervention (Slavin, Hurley and Chamberlain 2003). The teacher can assess student understanding by listening to the student responses and by taking anecdotal notes. Use of graphic organizers or mind maps will let teachers “see” student thinking.

Links on Discussion:
Ten Techniques for Energizing Your Classroom Discussions
http://web.grec.edu/CTL/faculty%20resources/ten_techniques_for_energizing.htm
The Importance of Classroom Discussion
http://www.drscavanoaugh.org/discussion/inclass/importance_of_discussion.htm
How to Encourage Classroom Discussion
http://www.ehow.com/how_2128561_encourage-classroom-discussion.html
Exit/Admit 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 have it, 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. Admit slips are exactly like Exit Slips, but they are done prior to or at the beginning of the class. Students may be asked to reflect on their understanding of their previous night's homework, or they may reflect on the previous day's lesson if the question required a longer response time. Exit and Admit Slips can be used in all classes to integrate written communication into the content area.

Links on Exit/Admit Slips:
Readingrockets: Exit Slips
http://www.readingrockets.org/strategies/exit_slips
AdLit.org: Exit Slips
http://www.adlit.org/strategies/19805
Writing Across the Curriculum: Entry/Exit Slips
http://writing2.richmond.edu/wac/entexit.html
Exit Slips: Effective Bell-Ringer Activities
http://www.teachhub.com/news/article/cat/14/item/377
Admit Slips and Exit Slips
http://literacy.kent.edu/eureka/strategies/admit_slips09.pdf

Learning/Response Logs

Learning Logs are used for students' reflections on the material they are learning. This type of journal is in common use among scientists and engineers. In the log, students record the process they go through in learning something new, and any questions they may need to have clarified. This allows students to make connections to what they have learned, set goals, and reflect upon their learning process. The act of writing about thinking helps students become deeper thinkers and better writers. Teachers and students can use Learning Logs during the formative assessment process, as students record what they are learning and the questions they still have, and teachers monitor student progress toward mastery of the learning targets in their log entries and adjust instruction to meet student needs. By reading student logs and delivering descriptive feedback on what the student is doing well and suggestions for improvement, the teacher can make the Learning Log a powerful tool for learning.

Response Logs are a good way to examine student thinking. They are most often connected with response to literature, but they may be used in any content area. They offer students a place to respond personally, to ask questions, to predict, to reflect, to collect vocabulary and to compose their thoughts about text. Teachers may use Response Logs as formative assessment during the learning process.

Math Journals

Websites on Learning Logs and Response Logs:
Instructional Strategies Online: What Are Learning Logs?
http://olc.spsd.sk.ca/DE/PD/Instr/strats/logs/
Writing to Learn: Learning Logs
http://www.wku.edu/3kinds/mflmpg.html
Field Trip Planner: Active Learning Log
http://www.omsi.edu/teachers/fieldtrips/all.cfm
Learning (B)logs: Time to Give Students a Voice
Peer/Self Assessments

Peer and self assessment 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 Wiliam 1998)

Links for Peer/Self Assessments:
Assessing Learning: Peer and Self-Assessment
http://www.nclrc.org/essentials/assessing/peereval.htm
Self Assessment in Learning
Peer Feedback and Self Assessment
http://www.teachingexpertise.com/articles/two-stars-and-a-wish-1394
Peer and Self Assessment

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 is understanding and who needs help and adjust his/her instruction accordingly. Individual whiteboards are easy to make from melamine or tile board which are usually carried at a local home supply store.

Links for Individual Whiteboards:
Education World: Whiteboards Stimulate Student Learning
http://www.educationworld.com/a_lesson/lesson/lesson251.shtml
Using Individual Whiteboards in the Math Classroom
Using White Boards: Fun Ideas for Reading & Language Arts
http://www.brightHub.com/education/k-12/articles/4730.aspx
Teachnet.com: White Boards
http://www.teachnet.com/how-to/manage/082398.html
Teaching Tools: 7 Ways to Use Individual Student Whiteboards
http://www.minds-in-bloom.com/2010/02/7-ways-to-use-individual-student.html
Constructive Quizzes

Periodic quizzes can be used during the formative assessment process to monitor student learning and adjust instruction during a lesson or unit. Constructive quizzes will not only furnish teachers with feedback on their students, but they serve to help students evaluate their own learning. The process is outlined in the document below. By using quizzes to furnish students with immediate feedback, the teacher can quickly determine the status of each student in relation to the learning targets, and students can learn more during the discussions that immediately follow the quizzes, instead of having to wait until the next day to see the results of the assessment in the form of a meaningless grade on the top of a paper. The teacher should use the results of these quizzes to adjust instruction immediately based on student outcomes.

Links to Quizzes as Formative Assessments:
Different Types of Formative Assessment
http://www.ehow.com/list_6385067_different-formative-assessment-lesson-plans.html
Using Pop-Quizzes as an Assessment
http://www.suite101.com/content/using-popquizzes-as-an-assessment-a182537

Four Corners – Four Questions

A formative assessment technique that helps students see their own thinking. Useful for teachers to “sort” students according to their misconceptions.

IMPLEMENTING THIS ACTIVITY

1. Students fold a sheet of paper into four quadrants. The following are samples of four sentence stems that the teacher would provide. These are designed to ascertain student thinking and learning around a topic.
   a. Examples of types of sentence stems
      1. Definition type statements
         1. When I read this, I imagine that…
         2. ______ means …
      2. Explanatory Statements
         1. One way to use this would be…
      3. Comparative Statements
         1. This is like ______, yet differs in this way…
         2. This is similar to…
      4. Relevance Declarations
         1. Knowing this led me to wonder…
         2. I could use this when…
   2. Ask students to express their knowledge using the stems.
   3. Discuss what students have discovered about their own levels of knowledge.
   4. Teachers can quickly sort student papers into piles according to which questions students struggled with. These groups are now small groups formed for specific re-teaching, or practice.