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is integrated into  
instruction and  
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and concepts are  
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## Formative Assessment

*This is a process that can improve teaching  
and advance student learning*

**T**eachers use a variety of assessments in K-12 classrooms today—summative, formative, criterion referenced, benchmark, diagnostic, screening, and norm referenced. One of the most useful is formative assessment, but it may be the least understood. This SCOE Bulletin explores formative assessment and the important role it plays in instructional improvement and student learning.

**What is formative assessment?** Formative assessment is a *process* used by teachers and students *during* instruction. It's different from other kinds of assessment because it doesn't occur at the end of the learning process. Instead, it is integrated into instruction and takes place as ideas and concepts are developing within a lesson or unit. As such, it provides important feedback for both teachers and students.

- Teachers obtain information that helps them know how to adjust instruction to advance student learning.
- Students have opportunities to gauge their own learning, ask questions, and improve their understanding.

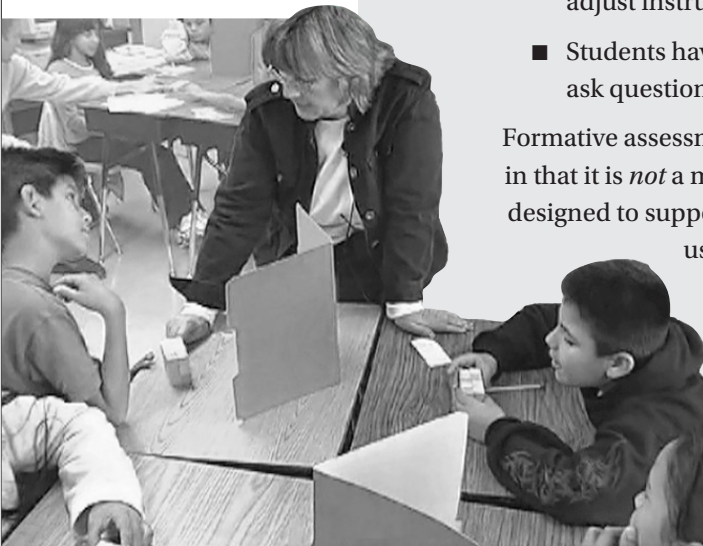
Formative assessment is distinguished from other kinds of assessment in that it is *not* a measurement instrument. It is a distinct strategy designed to support learning during the instructional process. Teachers use formative assessment to check for student understanding, provide practice, and adapt instruction to the specific needs of their students. The goal is to improve both teaching and learning.

### Formative assessment and the human brain.

The way we view the human brain affects our understanding of formative assessment and the feedback strategies used in the classroom. At issue is the human brain's capacity to learn. Some hold

that the brain's abilities are fixed and can't be increased, that capacity is predetermined based on the brain that an individual is born with.

The alternate view is that the brain develops based on purposeful engagement and that people have the capacity for lifelong learning and improvement. People holding this view believe that an individual's basic



Giving students descriptive feedback is a critical part of the formative assessment process



## Two views of the human brain

<b>Fixed Mindset</b>	<b>Growth Mindset</b>	
Intelligence is static ↓ Leads to a desire to look smart and a tendency to...	Intelligence can be developed ↓ Leads to a desire to learn and a tendency to...	
Avoid challenges	Embrace challenges	<b>Challenges</b>
Give up easily	Persist in the face of setbacks	<b>Obstacles</b>
See effort as fruitless or worse	See effort as the path to mastery	<b>Effort</b>
Ignore useful negative feedback	Learn from criticism	<b>Criticism</b>
Feel threatened by the success of others	Find lessons and inspiration in the success of others	<b>Success of others</b>
<b>As a result,</b> they may plateau early and achieve less than their full potential	<b>As a result,</b> they reach ever-higher levels of achievement	

Based on the work of Carol S. Dweck, Ph.D., *Mindset: The New Psychology of Success*, 2006.

See also Brainology, [www.brainology.us](http://www.brainology.us), an online program developed by Dr. Dweck that teaches brain science and study skills to middle and high school students.

intellectual qualities can be cultivated and improved upon. Stanford University professor and social psychologist Dr. Carol S. Dweck puts it this way: “Although people may differ in every which way in their initial talents and aptitudes, interests, or temperaments, everyone can change and grow through application and experience.”

This idea supports the core belief of school-based professional learning communities—that all children can learn. Given this understanding of the brain, educators can have significant impact when they help students understand and expand their thinking abilities. One way to do this is through formative assessment.

**Using formative assessment in the classroom.** When planning formative assessments, it’s important for teachers to first know and understand what they are teaching. For example, they must be able to articulate a lesson’s learning objectives and understand its relationship to the district’s essential standards or guaranteed curriculum. This focuses instruction and ensures linkage with learning throughout the grades.

Teachers should convey the lesson’s objective to students and explain what is expected of them. Communicating goals and the criteria by which learning will be judged engages students and creates clear expectations. Some primary-grade teachers do this by regularly translating learning standards into “kid friendly” language. The key idea here is to give students a sense of what will be accomplished in a given lesson. Students should be able to grasp the learning goal, see the criteria for reaching it, and understand what it means to be successful.

Once the objective is clear, the next step is for teachers to gain perspective on current levels of performance in relation to the objective. What do students already know? What misconceptions are present? Teachers might use pre-assessments or K-W-L (what I *know*, what I *want* to know, what I *learned*) activities so that students also have a gauge for where they are and where they’re going.

As the lesson unfolds, teachers use formative assessment to monitor student progress. For example, observation—one form of formative assessment—can be used to gather evidence of student learning and inform instructional planning. These observations must go beyond walking around the room to see if students are on task; they should involve checklists, anecdotal notes, or other informal means of notating students’ grasp of what’s being taught.

Whatever formative assessment process is used, it should incorporate learning feedback and/or coaching for students. This feedback should be descriptive and interactive—that is, it should offer ideas, strategies, and tasks that students can use to “close the gap” between their current learning and the next level.

**Involving students.** Formative assessment presumes that students are not passive receptacles that learning is poured into, but that they can themselves take action to improve their learning. Via formative assessment, teachers act as guides to help students acquire knowledge and develop skills. This focus on “learning how to learn” is especially significant as we move further into the 21st century because it equips learners to be resilient and adaptable in a world of challenges and opportunities.

There are many ways of involving students in assessing their own learning. For example:

■ **Modeling:** Some teachers use classroom bulletin boards to post student work samples that are exemplars of what’s expected in a given area. Other teachers employ classroom document cameras to share models during lesson activities. These examples can help students understand what they’re working toward, how their current work measures up, and whether they need coaching or guidance to achieve the learning goal.

■ **Rubrics:** Rubrics provide criteria for evaluating student work and offer students a means of receiving constructive feedback. Specific levels of performance are listed, with a rating system such as *needs improvement*, *acceptable*, or *excellent*. For example, the Northwest Regional Educational Laboratory’s Six Traits Writing Assessment is a rubric with categories of evaluation in organization, idea development, voice, word choice, sentence fluency, and conventions. Each category has specific criteria and rating scales, offering students precise information about how they can revise and improve their written work.

■ **Student Interviews:** Mathematics teachers prize both solutions and the underlying thought processes behind

## Examples of formative assessment

**Learning Logs** are students’ written reflections about what they are learning. In these logs, students record the process they are going through in learning something new and note any questions they need to have clarified. This allows them to make connections to what they’ve learned, set goals, and reflect on their progress. The act of writing helps them become deeper thinkers, more active learners, and better writers. By reading student logs, delivering descriptive feedback about what the student is doing well, and offering suggestions for improvement, a teacher can use Learning Logs as an alternative assessment resource.

**Exit Cards** provide data to inform the next day’s instruction. On an index card that’s handed in as they leave the classroom, students write their name and respond to a question, solve a problem, or summarize their understanding of a particular concept. Teachers can sort the cards into groups based on the students’ responses, then use the information to form needs-based mini-lessons, plan review sessions, or prepare to move to the next stage of the lesson.

**Questioning** that is embedded in lessons can engage students in classroom dialogue that both uncovers and expands learning. Teachers who use formative assessment prize student inquiry. By asking questions that result in higher-level thinking, teachers can gain significant insight into the degree and depth of student understanding. Sample question starters include:

Imagine ...	Suppose ...
Predict ...	If ..., then ...
How might ...	Can you create ...
What if ...	What are the consequences of ...

**Student Recordkeeping** helps students understand their learning as evidenced by their classroom work. The process of keeping ongoing records of their own work not only engages students, it also helps them move beyond a “grade” to see the progress they’re making toward learning goals.

*More examples, next page*

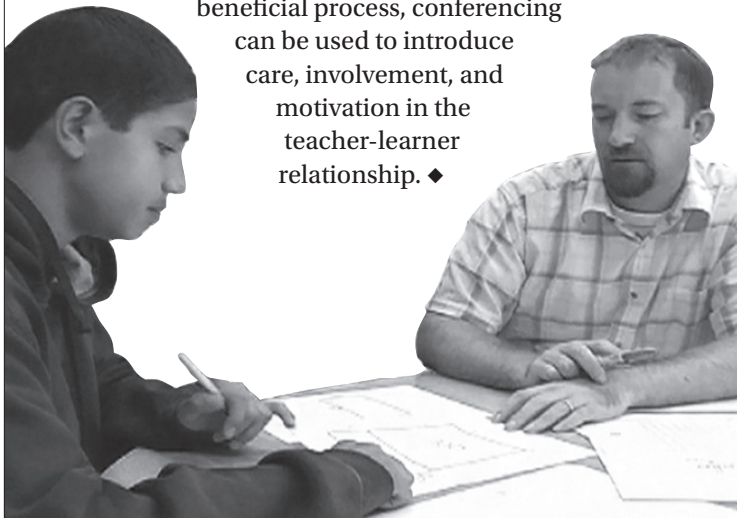
them. Using the Noyce Foundation's standards-aligned Mathematics Assessment Resource Service (MARS) tasks, local math teachers are finding value in using student interviews as part of their formative assessment process. Teachers interview students about specific MARS tasks to discover their thought process or "justification" behind the task solutions. These interviews allow teachers to probe thinking, analyze reasoning, and plan future instruction. The interviews also help students conceptualize larger ideas, explain mathematics using language, and understand that there are many ways to solve problems.

*More formative assessment examples ...*

**Self and Peer Assessments** help build strong classroom learning communities. When students are aware of the criteria and goals of a lesson, answering the question, *Have I learned what I'm supposed to learn?*, is a logical next step in the learning process. Adding peer evaluation into the mix allows students to see each other as resources for understanding and encourages them to check for quality work against established criteria.

**Graphic Organizers** provide visual models that can help students organize information and communicate clearly and effectively. Students can use graphic organizers to structure their writing, brainstorm ideas, support decision making, clarify story structure, help with problem solving, and plan research. Graphic organizers help students "see" their learning and talk about it.

**Conferencing** involves teachers and students sitting together to review student work and the progress they are making. A very useful and beneficial process, conferencing can be used to introduce care, involvement, and motivation in the teacher-learner relationship. ♦



Student interviews give teachers insight into what students are learning, which informs lesson planning

**Formative assessment and the common core standards.** California and some 40 other states have now adopted the Common Core State Standards (CCSS) for English-language arts and mathematics. These new standards are a critical first step for bringing about the instructional changes needed to improve student achievement, but the standards alone are not enough. Creating common assessments grounded in the new standards is extremely important.

California has already joined an alliance of states working to develop new standards-aligned assessments, and these are expected to debut in 2014-15. The planned system will feature a mix of assessments, including short answer, longer open response, and performance-based items.

Present plans also call for checking student learning at key points throughout the year to give teachers, parents, and students better information about whether students are "on track" or need additional support. This means that formative assessment will be integrated into the state's new assessment system. This type of assessment is critical because it provides information that improves teaching and advances student learning, which is our overarching goal. ♦

**About this publication:** The SCOE Bulletin is a quarterly publication that highlights key instructional issues and provides information to help local educators improve student achievement. Content for this issue was provided by Rick Phelan, [rphelan@scoe.org](mailto:rphelan@scoe.org). Suzanne Gedney, editor.

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