How does classroom assessment help teachers and students?

Classroom assessments can help teachers plan and implement effective instruction and can help students learn at deeper and higher levels.

- Assessments help teachers plan and provide effective, targeted instruction in the academic content standards. By assessing student learning against the standards, teachers can tailor instruction directly to individual student needs. Effective assessments facilitate the work of teachers; they are not add-ons or an end unto themselves.
- Assessments help students identify their areas of strength and weakness. Classroom assessments also help students prepare students for the standards-based statewide achievement tests. For example, the Ohio Graduation Test includes open-ended and extended response questions; therefore, classroom writing and performance tasks in all content areas are essential preparation.

What is the role of classroom assessment?

Assessment should provide ongoing data about student learning. Although state assessments are a valuable component of an assessment system, they provide only a piece of student performance data; therefore local assessment data is needed to measure student achievement of the core content standards and benchmarks at classroom, building and district levels.

Classroom assessments, those assessments designed or selected and then administered by classroom teachers, play an essential role in an assessment system. It is through these assessments that classroom teachers can effectively target instruction in the Academic Content Standards and arm students with the knowledge and skills they will need for future success, both in and out of school. It is only through effectively assessing students that teachers can tailor instruction directly to individual student needs.

Classroom or instructional assessments can also prepare students for the standards-based statewide achievement tests. For example, the Ohio Graduation Test includes constructed-response questions; therefore, classroom writing and performance tasks will be essential for the preparation of students.

How can standards help to inform classroom assessment planning?

- Standards can help educators form a coherent assessment system from start to finish, including a variety of assessments that target the full range of standards.
- Standards can help to match assessments to what students are learning.
- Standards can help educators focus classroom assessment on important skills and knowledge, not isolated facts.
- Standards can help educators ensure that they emphasize both process and product within their classroom assessments.
- Standards-based assessments yield useful information to guide instruction.
- Standards can help ensure that students are evaluated against high and deep standards of learning, not just against the performance of other students.

What are some effective standards-based classroom assessment practices?

There are two overarching considerations to bear in mind when planning and designing instructional assessments: the standards and the students.

Standards

- Design assessment to match the standards, with individual forms of assessment linked directly to specific benchmarks and indicators. This linkage should be part of daily and overall instructional plans.
- Form a coherent assessment system from start to finish, including a variety of assessments that target the full range of standards.
- Carefully match assessments to what students are actually learning.
- Focus on important skills and knowledge, not isolated facts.
- Emphasize both process and product.
- Design assessments to yield useful information to guide instruction.
- Ensure that assessments promote valid inferences about learning.

Students

- Use assessment results to show students where they are in terms of achievement; this use should help guide assessment design.
- De-mystify the assessment process. Provide clear purposes and guidelines, and share with students the scoring criteria so that success is well-defined and attainable.
- Let students know at the start of an instructional unit how they will be assessed throughout.
- Evaluate students against the standards, not other students.
- Include varied formats so that they provide for multiple learning styles and opportunities for all students to demonstrate success.
- Use a variety of assessment formats and, from time to time, offer students choices in the kinds of assessments they wish to engage in. This will promote equity and help to meet the needs and preferences of each student.

At what points of instruction should students be assessed?

To make classroom assessment work for you and your students, assess students before, during and after learning.

Before learning:

Pre-assessments can be used to determine what students already know and can do in order to determine readiness for a lesson; identify misconceptions and gaps in knowledge or skills; and identify students in need of differentiated instruction. Pre-assessments are used for instructional decision-making, not to assign grades. Pre-assessment answers the questions:

- What knowledge and skills do students already have?
- Are students ready for a lesson on a given indicator (e.g., do they have the necessary prerequisites)?
- Are students ready to go beyond a given indicator? (Before deciding to skip a lesson, make sure that the content of the lesson is not required as a prerequisite for a larger unit of study.)
- Will students need additional support to meet a given indicator? (This support might take the form of adjusting grouping arrangements or altering the level of content materials.)

During learning:

Ongoing instructional assessment helps teachers monitor student progress and make adjustments based on student performance and needs. Observing students can help teachers make day-to-day decisions about the pacing and complexity of lessons and activities.

After learning:

Post assessment allows educators to assess student learning and mastery of content, skills or strategies. Post-assessment answers the questions:

- What do students know?
- At what level are students able to perform?
- Was my instruction effective?
- What additional activities are needed for students to meet the academic content standards?

At the end of a unit or grading period:

Summative assessment can be used to get a picture of students' overall performance and progress against grade-level indicators. Summative assessments are often the basis for student evaluation. Summative assessments also help ensure long-term student learning as they require students to integrate and retain information over a period of learning.

What are some types of classroom assessment and what student evidence can they generate?

Classroom assessments generally fall into one of the following categories, based on what students do in the assessment and what data is generated by the assessment. An extended assessment, such as a test

or a project, may include a few different types.

Assessment Types	Format	Usefulness and Resulting Evidence
Closed Tasks	•Multiple-choice items •True-false items •Fill in the blanks •Solve (without showing process)	•Useful for assessing content-based standards; not useful for process-based standards •Assess student knowledge of facts, skills or concepts •Take less time, thus allowing time for open-ended and performance tasks
Open Tasks and Constructed Responses	•Tasks with different possible answers •Tasks with different possible processes	Useful for assessing student: •Use of processes or strategies •Ability to interpret information •Ability to apply information •Reasoning •Ability to communicate thinking
Performance Tasks	•Integrative tasks that yield specific products •Authentic assessments •Extended projects	Useful for assessing student: •Ability to organize, synthesize and apply information and skills •Use of resources
Informal Assessments	•Teacher observations •Teacher checklists •Conversations or interviews	Depending on what is discussed or observed, these informal assessments may reveal student: •Process or strategy use •Reasoning •Understanding of a topic or concept •Ability to communicate and collaborate
Self-Assessment or Reflection	•Student journals or reflection logs •Student checklists •Group (whole class or small group) reflection activities •Daily or weekly self-evaluations •Teacher-student interviews	•Develops student awareness of strengths and weaknesses and conscious use of thinking skills (metacognitive skills) •Can show student process and thinking and reasoning skills •Reveals student disposition toward topic or learning •Helps teachers and students identify student's personal goals Adapted from NCTM (2000) with additional information from Marzano & Kendall (1996)

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What are some forms of classroom assessment?

To obtain the most accurate and extensive information about students to meet their needs for instruction, it is essential to incorporate a wide variety of assessments into your teaching plans. Almost any instructional activity can become a useful form of assessment. The following are examples of classroom assessments regularly developed and used by teachers.

Form	Type	What it is	How is it useful
Journal	Self-Assessment or reflection	A designated notebook in which students can write independently, either freely or in response to specific prompts. To be used for assessment, journals must be collected and reviewed regularly.	Can be used before, during or after an activity for: •planning or organization •making connections •monitoring thinking •metacognition •reflecting on recognition
Quiz	Usually closed, possibly with some open-ended items	A means of checking students' understanding or progress in meeting benchmarks and indicators. Typically brief.	Can be used as: •pre-assessment (prior to introducing a unit) •ongoing assessment (to determine if further instruction or practice is needed) •post-assessment (to ensure that all students have met goals and are ready to move on)
Interview or Conferencing	Self-Assessment or reflection	A meeting with an individual student or small groups of students.	Can be used to collect reflective information that may not emerge through other kinds of assessment. Serves as a way to "check in" with students at any point in instruction. Data can be used to make decisions about instruction.
Essay or extended writing activity	Open Task	A written product in which students convey, apply and synthesize information and ideas or create a poetic or fictional work.	Can be used as a post- or summative assessment in which students demonstrate learning as well as writing and communication skills.
Extended project	Performance Task	A series of related tasks in which: •students engage in a variety of processes, often including research and cooperative group work; •students solve a problem or create a designated product or products that may be written, oral, visual or performance-based or a combination of these. Examples include: reports, presentations, plays or skits, debates, graphs or tables, demonstrations, exhibits, videotapes.	Can be used to apply and assess a wide body of knowledge and a variety of skills that span across standards, benchmarks and indicators. Can incorporate a range of academic disciplines.
Test	Usually a combination of closed and open tasks, such as multiple-choice followed by an essay.	A means of measuring achievement.	Can be used as a summative assessment at the end of an instructional unit. Can also be used by teachers to monitor effectiveness of instruction.
Portfolio	Open Task or Performance Task, as well as Self-Assessment	A collection of students' products gathered over period of time.	Can be used to measure long-term progress, and as a student self-assessment tool.

How can educators develop and use effective assessments?

The five sections below outline a path to developing and using assessments effectively.

Developing Effective Assessments and Putting Them to Use

There are some general tips that are useful when developing any type of assessment:

- Make assessment purposes and guidelines clear to students. The difficulty in an assessment should not come from understanding the task.
- Share the scoring criteria with students prior to their completing the assessment.
- Include varying formats of assessments to allow for multiple learning styles and provide opportunities for all students to demonstrate success.

Once you have identified the most appropriate form of assessment to use in addressing a particular benchmark or indicator, these suggestions can assist you with developing your assessment.

Open Tasks and Performance Tasks: Tips for Developing and Using

Tips for Creating Clear Tasks

- Specify what students are expected to do and how they will be evaluated. This can help students take ownership of their own learning.
- Strive for a balance between "structure" and "openness." Too much guidance can limit students' thinking and creativity; too much openness can generate products that do not reveal what students know or can do related to the standards.
- Provide visual clues (such as diagrams or pictures) when possible and appropriate.

Tips for Evaluating for Clarity

- Before: have someone else, such as your colleague, child or friend, take the assessment to identify problems you may have overlooked.
- After: Check to see that even students who did not do well understood the task. Also, check to see if students who otherwise did well consistently responded incorrectly to a question or task.

Tips for Creating a Context for Tasks

- Embed tasks within realistic or enjoyable situations or scenarios to increase students' interest and motivation.
- Provide students with an actual or hypothetical audience or have them role play within a problem-solving situation to help focus student performance.
- Provide a context that does not require specialized knowledge (such as terminology related to a particular profession).
- Be aware that complex or extraneous contexts can distract from the task. Be sure the context enhances or clarifies.

Tips for Evaluating Context

Ask yourself:

- Does the context make the problem or task easier and clearer for students or does it unnecessarily complicate it?

- Does this context serve merely to generate interest or does it truly enhance the quality of the assessment?

Tips for Refining Assessment Criteria

- Adjust criteria for individual students as necessary to allow for an appropriate level of challenge, including opportunities to go beyond.
- Limit the scope of assessment to the same standards-based concepts and skills that drove the related instruction.
- Enlist students' participation in devising or finalizing criteria or rubrics.
- Share criteria with students prior to their beginning of the task.
- Provide students with sample responses or products.
- Show an incorrect method or inaccurate response and discuss with students why it does not meet the criteria.

Tips for Evaluating Assessment Criteria

- Can the criteria be linked directly to specific benchmarks and indicators?
- Apply criteria or rubric to sample and derive a score. How clear and easy is the scoring?
- Ask students to explain the criteria in their own words to check for understanding.
- Identify any consistent gaps between the products you envisioned and those students produced. Where did they fall short of established criteria?

(Adapted from NCTM, 2000, with additional information from Marzano & Kendall, 1996)

Informal Assessments and Observations: Tips for Developing and Using

Select a focus. Plan to observe particular students in particular ways, such as:

- How does the student understand, define or explain the task?
- How does the student approach the task? Which organizational patterns, tools or resources does the student utilize?
- Does the student plan ahead or look back?
- Does the student monitor and adapt his or her processes, actions and progress in response to success or difficulty?
- Is the student able to identify and describe the strategies he or she is using?
- Does the student make connections or see relationships? Does he or she relate the task to previous knowledge or skills?
- Can the student provide evidence for an answer?
- Can the student generalize results?
- How does the student interact with others or engage in cooperative group work?

Conduct observations regularly. For unplanned observations, keep handy some effective informal tools, such as checklists or logs. For planned observations, tailor a checklist or log to the questions you want to answer about students.

(Adapted from NCTM, 2000, with additional information from Marzano & Kendall, 1996)

Self-Assessment and Reflection: Tips for Developing and Using

- Use a variety of formats, including journals, group reflection, portfolio reviews and self-scoring.
- Encourage students to communicate freely and openly, but let them know upfront that you will be collecting and reviewing their work regularly so that you can better understand their thinking.
- Allow some opportunities for free-writing and open discussion within groups, but also provide structure when you want to elicit specific results or information. Ask students to respond in their own way to pointed prompts or questions, such as:

1. Explain the procedures you followed to solve this problem. You can use pictures or diagrams to explain.
2. How did this task help you to improve your skills?
3. What did this task teach you about yourself?
4. What was the best part of working on this task? Why was it positive?
5. What frustrations did you experience while working on this project?
6. What connections can you make between this task and your life outside of school? When else might you use these skills? What does this remind you of?
7. How did you contribute to the overall success of the group?
8. What were the strengths and weakness of the group as a whole?

- Encourage students to return to reflective work they did previously to add new ideas, insights or comments. Make sure that they don't erase, but instead make additions and cite the date of the new entry.
- Self-assessment can be useful before and after, as well as during an activity or task. One way to encourage reflection while students engage in a process is to have them work within divided pages. One half of the page can be for problem solving or planning and the other for self-commentary.
- Plan regular interviews with students to gather reflective information. Prepare pointed questions ahead of time. Though this is a more formal arrangement, be sure to keep the tone of the interview informal and conversational to put students at ease and encourage them to share more about themselves.

(Adapted from NCTM, 2000, with additional information from Marzano & Kendall, 1996)

Closed Tasks: Tips for Developing and Using

- Use closed tasks to assess straightforward, factual information.
- Use a variety of formats that include multiple-choice, fill-in-the blank, true/false, matching and short-answer items.
- Provide enough context within the stem (the part of the item that poses the question) for students to identify the correct response.
- Phrase items in the most direct way and avoid excessive or ambiguous wording.
- Target a single fact or skill for each item; don't confuse the objective by tackling too much information within a single item.
- Prior to administering the assessment to students, enlist another person to take it in order to determine that there is clearly only correct response for each item.

(Adapted from NCTM, 2000, with additional information from Marzano & Kendall, 1996)

Steps involved in designing and using scoring rubrics

Rubrics are an effective method to use in scoring many open-ended and performance assessment tasks.

There are different types of rubrics. One type is a holistic rubric that describes the qualities of performance for each performance level (for example, each score point from 0 to 4). Another type is an analytic rubric that assigns scores to different components of a task. An analytic rubric might assign separate scores of 0 to 4 on characteristics of writing such as:

- Focus on purpose, idea development and organization;
- Audience focus and style;
- Language-in-use and conventions.

Whatever type of rubric an educator is developing, there are a number of steps that should be followed during development:

1. Determine the essential learning objectives that will be measured with the rubric. Using the Academic Content Standards will help to ensure that the assessment is aligned with the standards.

2. Describe what evidence students will need to produce to show that they have mastered the learning objectives.
3. Make sure that the learning objectives and performance expectations are clearly communicated for students on the assessment task.
4. Determine the number of levels in the rubric. In general, a three-point rubric is not very effective since scorers tend to lump responses in the middle, reserving the high and low score points for the very best and worst responses. A four-point rubric is more effective at forcing distinctions between responses.
5. Describe the performance expected at each score point in each characteristic.
6. Score some student responses with the rubric to make sure that it is fair, easy to use and effective at making the appropriate distinctions between levels of performance. Revise as needed.
7. Explain to students how they will be scored on the task.
8. Compare student work against the rubric.

If the assessment instrument will be used across classrooms or for school or district accountability, reliable scoring across different scorers will be particularly important. This consistency between different scorers is referred to as inter-rater reliability. There are some simple steps that scorers can take to score more reliably and consistently, including:

- Assign different scorers to practice using the rubric to score the same several samples of student work.
- Compare the scores received, discuss differences and come to agreement.
- Select "model" or "anchor" student samples that exemplify each score point on the rubric. These can be used by scorers when they are working independently to keep on track.

How can educators evaluate assessment tasks?

Evaluating Assessment Tasks

Taking an assessment yourself or enlisting the help of a colleague will help when making decisions about whether to use or modify a given assessment task. The following questions may also be useful:

- **What am I trying to find out?**

An assessment to measure whether students can perform a given set of skills or have knowledge of specific content will look different from an assessment designed to assess students' communication or process.

- **What are my criteria for success?**

Will a correct answer provide adequate information or do I want to allow for multiple responses? An assessment measure that allows for one correct answer, such as true/false questions, multiple-choice items or matching items, provides a different level of evidence than one that allows for multiple possible correct responses, applications of skills or communication or justification of reasoning or strategies.

- **How do I want to use the evidence?**

Do I want an assessment that I will use for instructional planning only or one that will result in a student grade that may be reported to both students and parents? Assessments used only for instructional purposes can have less formal scoring criteria, while assessments used for grading or reporting need to have valid and reliable scoring criteria that can be clearly communicated to others.

Adapted in part from Bush and Leinwand, 2000:

Bush, W. S. & Leinwand, S. (Eds.) (2000). *Mathematics Assessment: A Practical Handbook for Grades 6-8*. Reston, VA: National Council of Teachers of Mathematics.

How can classroom teachers most effectively use assessment data to make instructional decisions?

Ideally, all data that results from classroom assessments will help teachers plan focused instruction. Data should help teachers make decisions about both individual student needs and about whole-class needs.

The two tools below may be useful for teachers using assessment data to determine their next instructional steps.
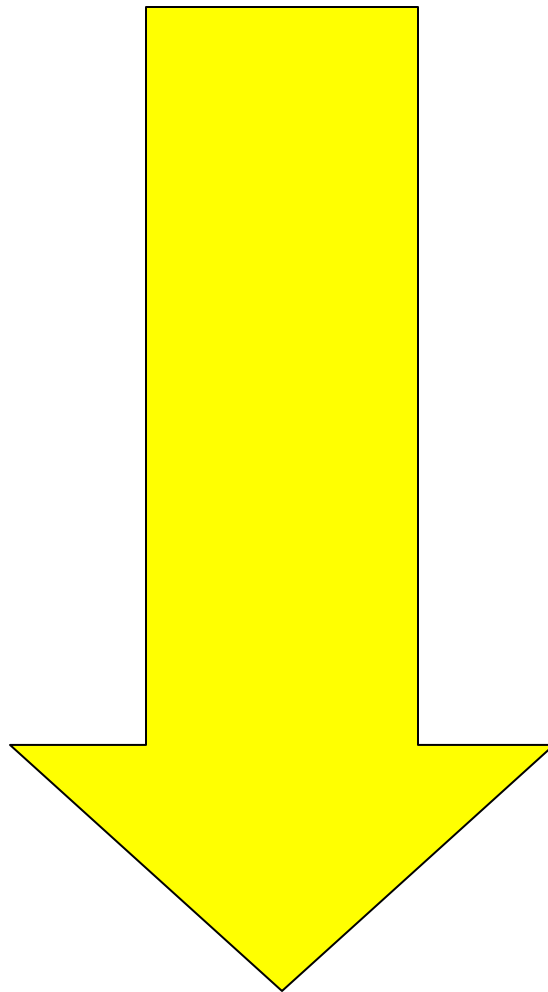
Questions to Guide Data Use for Instructional Decisions

Was student work low enough to suggest problems with instructional strategies or activities?	YES	NO
If YES, what can be changed?		
Does student performance suggest a lack of understanding of the expectations of the assessment?	YES	NO
If YES, what can be done to more clearly communicate expectations to students?		
Were the assessment results high enough to suggest student mastery of the given topic, skill or concept?	YES	NO
If YES, what would make sense as a next step instructionally?		
Do any students lack skills or concepts that will be important as prerequisites for future instruction?	YES	NO
If YES, how can these students learning needs best be met?		
Do students understand their level of performance or achievement as compared to the standards?	YES	NO
If NO, how can this connection be made more explicit?		

Modified from Bush and Leinwand, 2000:

Bush, W. S. & Leinwand, S. (Eds.) (2000). *Mathematics Assessment: A Practical Handbook for Grades 6-8*. Reston, VA: National Council of Teachers of Mathematics.

Class Summary Sheet

Track class performance on a given set of benchmarks or indicators to show at a glance areas where additional whole class instruction may be appropriate and help identify students who may benefit from differentiated instruction.

Mathematical Processes Standard K-2 Grade Band Benchmarks	Not Meeting Benchmark	Basic Performance (Progressing)	Proficient Performance	Mastery of Benchmark
A. Use a variety of strategies to understand problem situations….		Student G	Student A Student C Student D Student E Student F	Student B
B. Identify and restate in own words the question or problem and the information needed to solve the problem.	Student G	Student E Student A	Student C Student D	Student B Student F
C. Generate alternative strategies to solve problems.	Student G	Student A Student E	Student C Student D Student F	Student B
D. Evaluate the reasonableness of predictions, estimations and solutions.	Student G Student E	Student A Student D	Student C Student F	Student B
E. Explain to others how a problem was solved.		Student G	Student A Student C Student D Student E	Student B Student F
F. Draw pictures and use physical models to represent problem situations and solutions.		Student G	Student A Student C Student D Student E Student F	Student B