

Module 3: Where the learner is now, Part 2: Using formative assessments during or after instruction to elicit evidence of student strengths and learning needs

*Micro-Course 1:
Learning Acceleration Using Formative Assessment Processes in the
Classroom (Introductory Version)*



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Warm-Up

Which of these examples represent a formative assessment process and

- A. Teachers analyze student math tests to evaluate the quality of their math curriculum.
- B. A school tests students every 12 weeks to predict which students are “on track” to score proficient on the end-of-year state test.
- C. Exit ticket question after a lesson: “What is the difference between mass and weight?”
- D. Teacher instructs students to use white boards to “Sketch the graph of $y=2x + 5$. Then turn and talk to explain your thinking to your elbow partner.”

Two Main Types of Classroom Assessment Processes

	Summative Classroom Assessments	Formative Classroom Assessments
Purpose	Document student achievement of state content standards at a point in time (assessment <i>of</i> learning)	Elicit evidence of student learning to adjust teaching and learning to better meet students' needs (assessment <i>for</i> learning)
Administration	Typically administered at the end of a unit of instruction	On-going; occurs before, during, and after instruction
Feedback Mechanisms	Graded and reported to parents and students	Not graded; feedback shared with students

Embedded Formative Assessment Strategies

	Where the learner is going	Where the learner is now	How to get there
Teacher	Clarifying, sharing, and understanding learning intentions and success criteria	Engineering effective discussions, tasks, and activities that elicit evidence of learning	Providing feedback that moves learning forward
Peer		Activating students as learning resources for one another	
Learner		Activating students as owners of their own learning	

William, D. (2018). *Embedded formative assessment, 2nd ed.* Bloomington, IN: Solution Tree Press.

Eliciting Evidence of Learning

There is no single way to elicit evidence of student learning!

Techniques can include:

- Strategies questioning
- Observations
- Instructional activities/tasks that require representations, explanations, performances, or problem-solving
- Anecdotal teacher notes
- And so on....

Key point: Formative assessment processes enable the teacher to access information about what students know, understand, and can do so they can use that information to improve and target their instructional strategies.

A Note About Eliciting Evidence

Dylan Wiliam (2018) states that there are only two good reasons to ask questions in class:

- 1) to cause thinking, and
- 2) to provide information for the teacher about what to do next instructionally.

William, D. (2018). Embedded Formative Assessment. Bloomington, IN: Solution Tree Press, pp. 90-91.

The formative assessments identified for a lesson should allow students' thinking to be made visible and provide actionable information.

Strategic Questioning

Increase student accountability when responding to complex questions
by

1. Planning questions in advance of the lesson
2. Promoting “[productive struggle](#)”
3. Requiring “wait time” and collegial conversations

Example question stems:

- *What might you infer from...?*
- *What evidence supports ...? Why?*
- *What approach/strategy could you use to...?*
- *How might we prove or confirm...?*

Additional resources:

- [Understanding by Design](#) (1998) by Grant Wiggins and Jay McTighe (p.167)
- [Embedded Formative Assessment](#) (2018) by Dylan Wiliam
- [Formative Assessment: Making it Happen in the Classroom](#) (2010) by Margaret Heritage

Selecting Formative Assessments

Unit Goals: Gr 3 Math

3.NBT.1: Use place value understanding to round whole numbers to the nearest 10 or 100.

3.NBT.2: Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

3.MD.1: Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

3.MD.2: Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

Selecting Formative Assessments: Gr 3 Math Example

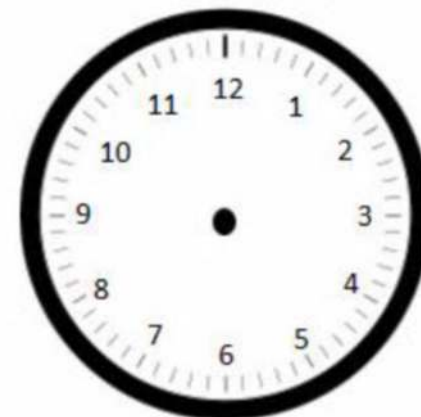
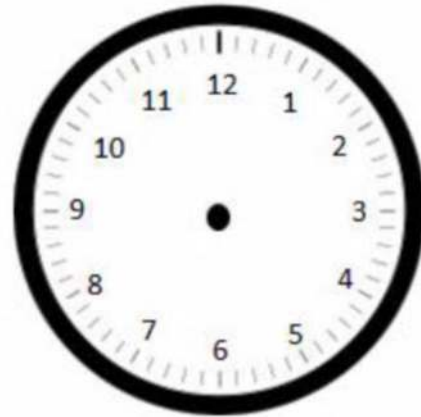
Standards	Topics and Objectives		Days
3.NBT.2 3.MD.1	A	<p>Time Measurement and Problem Solving</p> <p>Lesson 1: Explore time as a continuous measurement using a stopwatch.</p> <p>Lesson 2: Relate skip-counting by fives on the clock and telling time to a continuous measurement model, the number line.</p> <p>Lesson 3: Count by fives and ones on the number line as a strategy to tell time to the nearest minute on the clock.</p> <p>Lesson 4: Solve word problems involving time intervals within 1 hour by counting backward and forward using the number line and clock.</p> <p>Lesson 5: Solve word problems involving time intervals within 1 hour by adding and subtracting on the number line.</p>	5

Selecting Formative Assessments: Gr 3 Math Example

Label the 5-minute intervals.

Plot the time 5:31 p.m.

During Instruction



Work with a partner to find the difference between 5:31 p.m. and 5:43 p.m. using the number line.



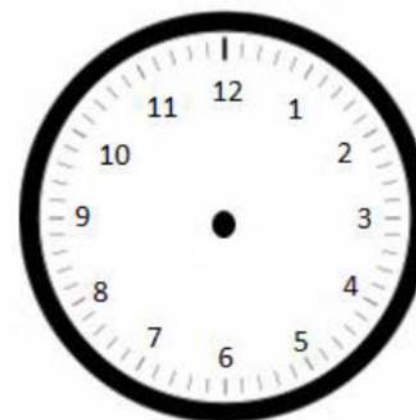
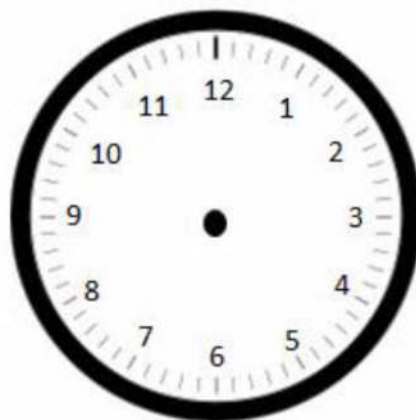
Selecting Formative Assessments: Gr 3 Math Example

Independent reading time starts at 1:34 p.m. It ends at 1:56 p.m.

1. Draw the start time on the clock below.

2. Draw the end time on the clock below.

After Instruction



3. How many minutes does independent reading time last?

Selecting Formative Assessments: Gr 6 Sci

Example

Unit Goals: 6.1 Light & Matter--Why do we sometimes see different things when looking at the same object?

NGSS Performance Expectation (PE) Standards:

MS-PS4-2: Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

MS-LS1-8: Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

Selecting Formative Assessments: Gr 6 Sci Example

In this lesson, students will:

1.A Develop a model to identify the important parts of the system and how those parts interact that could cause an object to look different in different light conditions.

1.B Ask questions that arise from observations of a phenomenon in which an object appears different depending on the light conditions within the defined system.

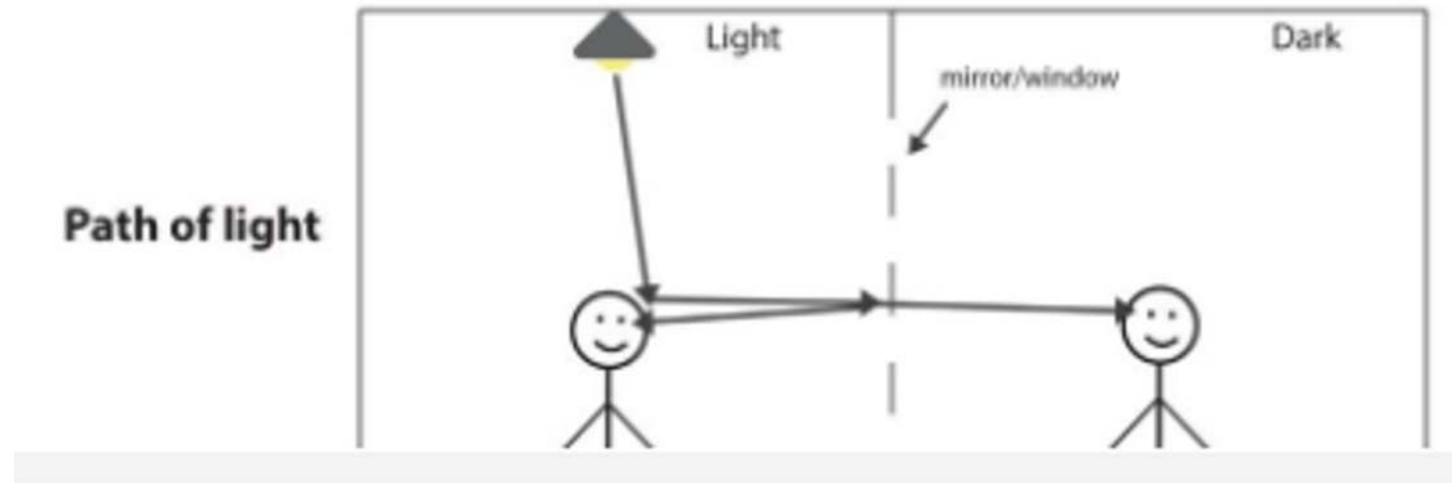
Selecting Formative Assessments: Gr 6 Sci

Example

Diagram interactions between the important parts.

Once students get all the important parts into the diagram and labeled, ask them to add pictures, symbols, and words to show how the parts work and interact to answer the two questions, as their initial attempt to explain the phenomenon.

Give students up to 5 minutes to work individually to diagram what they think is happening. Use this diagram as a formative assessment to monitor students' initial ideas about how we see objects; specifically, the extent to which their models reflect a "line of sight" or a "path of light."



Selecting Formative Assessments: Gr 6 Sci

Example

Specific Look Fors:

(1) Agreement on key components or parts to include, such as two rooms or sides, a mirror-window between the sides, one side being lit, one side being dark; (2) uncertainty or disagreement on whether the people or eyes are an important part; and (3) use of a “path of light” model, “line of sight” model, or combination, which can be indicated by the way students use or do not use arrows in their diagrams:

- arrows pointing away from the eyes, or
- arrows pointing away from the source of the light and bouncing away from objects, and arrows pointing into the eyes, or
- a combination of the above

Arrows pointing away from the light source may be a representation of the “path of light” (POL). If students also include an arrow entering the eyes, this may indicate a clear understanding of the 4th-grade model of light, tracing the light from a source, then bouncing off objects and into our eyes. Arrows pointing away from the eyes may be a representation of what is seen, or the “line of sight” (LOS). A combination of arrows may map partially onto both POL and LOS models.

This curriculum even provides specific ‘look for’ recommendations to teachers.

Selecting Formative Assessments: Gr 11 English Example

Unit Goals:

CCSS.ELA-LITERACY.RL.11-12.1: Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

CCSS.ELA-LITERACY.RL.11-12.2: Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

CCSS.ELA-LITERACY.RL.11-12.3: Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).

CCSS.ELA-LITERACY.RL.11-12.4: Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful. (Include Shakespeare as well as other authors.)

CCSS.ELA-LITERACY.RL.11-12.5: Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact.

Selecting Formative Assessments: Gr 11 English Example

In this lesson students will be able to:

1. Discuss four types of allusion: religious/biblical, mythological, literary, historical.
1. Examine examples of each type of allusion via visuals. Identify types of allusion and discuss why the allusion was used.

Selecting Formative Assessments: Gr 11 English Example



Musee des Beaux Arts

W. H. Auden

About suffering they were never wrong,
The old Masters: how well they understood
Its human position: how it takes place
While someone else is eating or opening a window or just walking dully along;
How, when the aged are reverently, passionately waiting
For the miraculous birth, there always must be
Children who did not specially want it to happen, skating
On a pond at the edge of the wood:
They never forgot
That even the dreadful martyrdom must run its course
Anyhow in a corner, some untidy spot
Where the dogs go on with their doggy life and the torturer's horse
Scratches its innocent behind on a tree.

In Breughel's Icarus, for instance: how everything turns away
Quite leisurely from the disaster; the ploughman may
Have heard the splash, the forsaken cry,
But for him it was not an important failure; the sun shone
As it had to on the white legs disappearing into the green
Water, and the expensive delicate ship that must have seen
Something amazing, a boy falling out of the sky,
Had somewhere to get to and sailed calmly on.

Selecting Formative Assessments: Gr 11 English Example

After reading the myth, Daedalus and Icarus, examine the painting, Peter Bruegel's *Landscape with the Fall of Icarus* and read the poem *Musee des Beaux Arts* by W.H. Auden.

Respond to the following questions and then discuss with a partner:

1. What is the painting showing us about Icarus' suffering?
2. How would you describe the tone of this painting?
3. Who are the "masters?"
4. What is the author trying to communicate in this poem?
5. What is the tone of the poem?
6. Describe the allusions in the painting and the poem?
7. How does Auden's reading of "Landscape with the Fall of Icarus" compare with your reading of the painting considering the tone and allusions?
8. Why did the artist and poet use allusions? Explain your thinking.

Selecting Formative Assessments: Gr 11 English Example

1. **During Instruction:** the teacher circulates to clarify misconceptions about the literary elements.
1. **After Instruction:** At the end of the lesson, she collects student responses to determine students strengths and needs with respect to demonstrating comprehension and knowledge of allusions in two diverse texts.

Warm-Up Revisited

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Going Deeper

Module 1

- **Overview:** Formative assessment processes and learning acceleration (Introduction)

Module 2

- **Where the learner is now, Part 1:** Using quick pre-assessments to elicit evidence of student strengths and learning needs

Module 3

- **Where the learner is now, Part 2:** Using formative assessments during or after instruction to elicit evidence of student strengths and learning needs

Module 4

- **Closing the gap, Part 1:** Using evidence of learning to adjust instruction and better meet students' needs



Reflection Questions

1. Describe how to engineer effective discussions, tasks, and activities to elicit evidence of student learning *during* instruction.
2. Describe how to engineer effective discussions, tasks, and activities to elicit evidence of student learning *after* instruction.
3. Explain how creating strategic questions as part of the formative assessment process allows for instructional decision-making and differentiation.
4. Review the planned formative assessment questions or assignments for one of your units, do they make all students' thinking visible and provide actionable information? Explain how or create new questions/activities if they do not.
5. What is one key takeaway and one lingering question you have after listening to this module?