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# Bringing Math Students Into the Formative Assessment Equation

Tools and Strategies for  
the Middle Grades

## Thank you

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Please enjoy this complimentary excerpt from *Bringing Math Students Into the Formative Assessment Equation*. These two wrap-up strategies feature “reflect-aloud” and “X-marks-the-spot” to help students self-assess..

**LEARN MORE** about this title, including Features, Table of Contents, and Reviews.

# Wrapping-Up Strategy: X-Marks-the-Spot

(See Teacher Summary Card, Student Summary Card)

**T**he **X-Marks-the-Spot Strategy** provides a structured way for students to self-assess their learning against each of the success criteria for a lesson. Initially, as students are learning to use this strategy, they may need some guidance on identifying evidence; possible prompts for doing so are provided below.

## Particular Advantages

- Easily provides information both on individual students or for the class as a whole
- Helps underscore for students how to use the success criteria for themselves
- Can become a process that students internalize and use independently

## How Does the Strategy Work?

1. Prior to handing out the X-Marks-the-Spot Reflection Template, the teacher fills in the success criteria for the lesson, one in each row of the template. A sample row is shown below.

Success Criteria	Self Assessment		Evidence
	I need help. I can't get started.	I'm getting there. I understand and have evidence.	

2. The teacher distributes the template to each student. Students place an X on the line to indicate where they feel they fall with each success criterion.
3. If students have indicated that they understand, they write a brief explanation in the Evidence column to support their claim. To help students know what to write in the Evidence column, a teacher might use one of the following prompts or something similar:
  - *Give an example from your work that shows you understand.*
  - *What's one thing you did in your work that best shows your understanding? (e.g., "I wrote a clear explanation of the idea.")*
  - *What could you do to show me you understand? (e.g., "I could explain two different ways to solve the problem" or "I could explain how \_\_\_ and \_\_\_ are related.")*
4. The teacher collects the students' templates and reviews them after class to inform the next day's instruction.

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## How Does the Strategy Support Formative Assessment?

### Student ownership and involvement

- This strategy gives students an opportunity to practice self-assessing their learning, with a structure that they can eventually internalize.

### Learning intentions and success criteria

- This strategy focuses students' attention on the use of success criteria as a basis for evaluating their own learning.

### Eliciting and interpreting evidence

- This strategy underscores the importance of having evidence of your learning to support any self-assessment you make.

### Environment

- This strategy promotes a classroom culture in which pausing to evaluate your learning is considered an important and worthwhile learning activity.

## How Might You Modify the Strategy, and Why?

- **Act it out** (no template needed): You might choose to have students physically act out their placement on the line, in order to have a whole-class discussion about what the class currently understands and what they need next. After students have completed their individual reflection template, designate a line (real or imaginary) along the floor that represents the self-assessment line on the template. For each success criterion, one at a time, ask students to stand along the line where they marked themselves. Have a brief whole-class discussion about where people are falling along the line and what is being most confusing at this point.
- **Use the strategy as a mid-unit or end-of-unit self-evaluation:** You might choose to use the Whole-Unit part of the X-Marks-the-Spot Template to have students reflect on the collective success criteria for the unit to evaluate where they currently are or to compare their assessment of how well they can meet the success criteria now compared to when they first encountered them.

Success Criteria	Self-Assessment			Evidence
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## X-Marks-the-Spot Whole-Unit Template

Success Criteria	Self-Assessment	Evidence
	<div> <div>I need help.</div> <div>I can't get started.</div> <div>I'm getting there.</div> <div>I understand and have evidence.</div> </div>	
	<div> <div>I need help.</div> <div>I can't get started.</div> <div>I'm getting there.</div> <div>I understand and have evidence.</div> </div>	
	<div> <div>I need help.</div> <div>I can't get started.</div> <div>I'm getting there.</div> <div>I understand and have evidence.</div> </div>	
	<div> <div>I need help.</div> <div>I can't get started.</div> <div>I'm getting there.</div> <div>I understand and have evidence.</div> </div>	
	<div> <div>I need help.</div> <div>I can't get started.</div> <div>I'm getting there.</div> <div>I understand and have evidence.</div> </div>	
	<div> <div>I need help.</div> <div>I can't get started.</div> <div>I'm getting there.</div> <div>I understand and have evidence.</div> </div>	
	<div> <div>I need help.</div> <div>I can't get started.</div> <div>I'm getting there.</div> <div>I understand and have evidence.</div> </div>	
	<div> <div>I need help.</div> <div>I can't get started.</div> <div>I'm getting there.</div> <div>I understand and have evidence.</div> </div>	

Success Criteria	Self-Assessment			Evidence
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	
	I need help. I can't get started.	I'm getting there.	I understand and have evidence.	

**Teacher's Version**

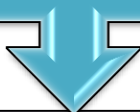
## X Marks the Spot



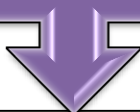
Prepare templates ahead of time.



Give a template to each student.



Students place an X on each line to indicate where they feel they fall with that success criterion.



Students explain their evidence, possibly using a sample prompt.



Collect student responses, and review to plan for the next day's lesson.

## X Marks the Spot



Get a template from your teacher.



Place an X on each line to indicate where you feel you fall with that success criterion.



Explain your evidence.

Give an example from your work that shows you understand.

What's one thing you did in your work that best shows your understanding? (Ex. "I wrote a clear explanation of the idea")

What could you do to show me you understand? (Ex. "I could explain 2 different ways to solve the problem" or "I could explain how \_\_\_ and \_\_\_ are related.")



# Wrapping-Up Strategy: Reflect-Aloud

(See Teacher Summary Card)

**T**he **Reflect-Aloud Strategy** is a way for teachers to model for students how to reflect on their learning in relation to the learning intention (LI) and success criteria (SC). In this strategy, the teacher represents a sample typical student in the class when she reflects aloud about her understanding of the LI and SC, modeling for students the kind of internal dialogue that goes on in a self-assessment reflection. The reflection can sometimes serve the dual purpose of also reviewing some of the key ideas of the lesson. It can also segue into an opportunity for the teacher to give whole-class feedback on the success criteria.

## Particular Advantages

- Can be particularly effective at a midway point in a lesson as well as at the end of a lesson
- Helps develop students' ability to articulate their own self-assessments of their learning by modeling a sample internal dialogue
- Can be paired very effectively with the Taking Stock strategy

## How Does the Strategy Work?

Use the following steps for this strategy. An example is provided at each step, using the following sample learning intention and success criteria for a lesson:

LI: By the end of the lesson, you will understand why the area of any triangle is  $\frac{1}{2}bh$ .

SC: I can relate the shape of a triangle to the shape of a rectangle with the same base and height.

SC: I can explain why the area of a triangle is half the area of a rectangle with the same base and height, for right triangles, acute triangles, and obtuse triangles.

1. Review one of the success criteria, and reflect aloud how to rephrase the success criteria into your own words.	<p>A teacher might say:</p> <p><i>Let's see . . . the first success criterion says that I can relate the shape of a triangle to the shape of a rectangle with the same base and height. So that means when I've got these two shapes, and they have the same base and height, I need to be able to relate the way the triangle looks—or relates to—the way the rectangle looks.</i></p>
2. Describe a self-assessment of your ability to meet the success criteria, representing what you consider to be the majority of the class. Your description of what you can do (that is, what you expect most of your students can do) also serves as a summary of some key ideas of the lesson.	<p><i>I'm pretty sure I can do that. I can see that sometimes the shape of the triangle fits in half of the rectangle. For other triangles (points to diagrams on the board of acute triangles), I can see that if I cut up the triangle and rearrange the pieces, I can make a triangle that's still half a rectangle.</i></p> <p><i>But I'm really not very sure yet what to do with these kinds of triangles (points to obtuse triangles drawn on the board for which the height is outside the interior of the triangle) because I'm not sure how to cut them to rearrange the pieces in the same way, and I'm not sure what the height is.</i></p>

(Continued)

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(Continued)

3. Check your dialogue with your students to see who feels the dialogue represents them reasonably accurately.	<i>Who feels like that's what they could say about themselves for that success criterion? (A number of hands go up.) For others who didn't feel like that dialogue fit them, what would be different for you? (Students offer comments, and teacher rephrases as needed to model language of self-assessment.)</i>
4. Repeats steps 1 through 3 with the remaining success criteria.	
5. Summarize a self-assessment of the learning intention.	<i>I feel like I'm meeting the first and second success criteria for many triangles, but there are certain triangles for which I'm still unsure what to do. In terms of the learning intention, I think I'm understanding why the area is <math>\frac{1}{2}</math> base times height some of the time. But for some other examples, I'm still figuring out why this works</i>

## How Does the Strategy Support Formative Assessment?

### Student ownership and involvement

- Use of this strategy can help develop students' ability to articulate their own self-assessment of their learning by modeling a sample internal dialogue.

### Learning intentions and success criteria

- This strategy focuses students' attention on the use of success criteria as a basis for evaluating their own learning.

### Environment

- This strategy promotes a classroom culture in which pausing to consolidate your learning is considered an important and worthwhile learning activity.

## How Might You Modify the Strategy, and Why?

As students become familiar with the strategy, you might call on students to do the reflect-aloud.

## What Are Some Considerations for Using the Strategy?

As with other strategies, there is a risk of overusing this strategy so that it becomes tedious for students to listen to. Think about ways to gradually release responsibility to students. You could model one success criterion and ask students to reflect-aloud as partners for the second success criteria.

## Reflect Aloud



Review one of the SC and reflect aloud on how to rephrase it (as if you were a student).



Describe your self-assessment for the SC as if you were where you think the majority of your students would be.



Check with your students to see who feels you described them reasonably well.

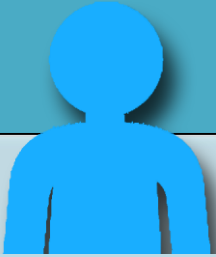


Repeat with the other SC.



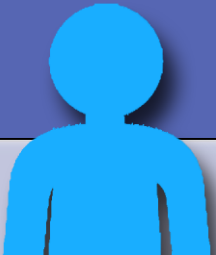
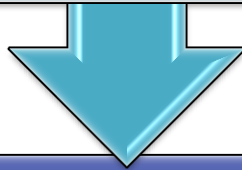
Summarize with a self-assessment of the learning intention based on the SC self-assessments.

### 3-Read



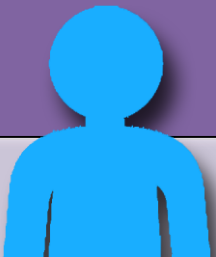
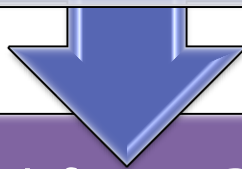
Read for *CONTEXT*

What's the general math topic?



Read for *CONTENT*

What about the math topic am I supposed to learn?



Read for *FOCUS*

How will I show I've learned it?  
(Will I be solving a problem, doing some calculation,  
explaining or showing my work . . . ?)