

Formative Assessment Lesson

Introduction to Formative Feedback (for Students)

Background Information

Lesson Description

This initial lesson on Formative Feedback introduces students to the characteristics of formative feedback and provides examples and nonexamples to help build understanding of the characteristics of formative feedback.

Characteristics of Formative Feedback (for Teacher Reference)

In this lesson students will learn that formative feedback:

- points out success criteria (SC) that have been met;
- points out SC that have not been met;
- includes a hint, model, or question to help the person know what to do next to meet the learning intention (LI);
- is stated in language that's accessible to the person; and
- encourages the person to act on the feedback.

Prior to this lesson, students should have had experiences with lessons that use Learning Intention and Success Criteria (LISC). They should have had some experience looking at examples of student work (their own or others) in relation to SC. Since this lesson uses the Frayer Model¹ and concept attainment strategies, it is helpful if students used these strategies prior to this lesson.²

Learning Intention and Success Criteria

The LISC for this lesson are shown below. Guidelines for sharing these and referring back to them in the lesson are provided later.

LI: I will begin to understand how formative feedback helps students move their learning forward.

SC:

- 1 I can identify at least 4 characteristics of formative feedback.
- 2 I can identify which characteristics of formative feedback are evident in a given statement.

Materials/Preparation

- Frayer Model Feedback Template (create on whiteboard or chart paper using Handout 4 as model)
- LISC (create poster or write on whiteboard)

¹The Frayer Model is a vocabulary-building tool developed by Dorothy Frayer and her colleagues at the University of Wisconsin. The model organizes information visually to help students develop an understanding not only of what something is but also what it is *not*.

²See *Mathematics Formative Assessment* (2011) by Keeley and Tobey for more about these strategies.

Retrieved from the companion website for *Bringing Math Students Into the Formative Assessment Equation: Tools and Strategies for the Middle Grades* by Susan Janssen Creighton, Cheryl Rose Tobey, Eric Karnowski, and Emily R. Fagan. Copyright © 2015 by Corwin. Thousand Oaks, CA: Corwin, www.corwin.com

- Feedback Poster (see image at the right) or chart paper poster with the characteristics from lesson description above

Give Useful Feedback to Someone Else

Use the criteria and say something like this:



You met the criteria when you did / said _____.
You didn't meet the criteria when you did / said _____.
Here's a hint to help you meet the criteria: _____.

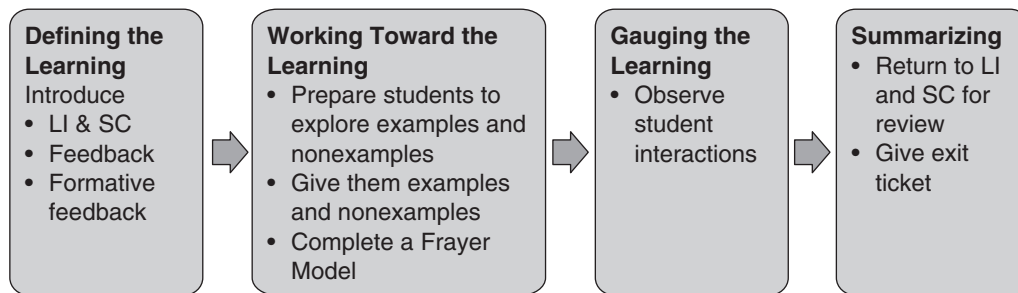
When giving your feedback, remember to:

- State it in language that the person can understand
- Encourage the person to use the feedback to improve his or her work



- Handouts (one per student or pair):
 - 1: Math buddy scenario
 - 2: Student work #1 (to save paper, this can be copied on the back of Handout 1 or projected)
 - 3: Student work #2 (optional, can be projected)
 - 4: Formative feedback template
 - 5: Examples/nonexamples sort
 - 6: Exit ticket
- Cards for sorting (Copied on 3 different colors as shown on Resource 1 and cut out)

Snapshot



Lesson Activities

Defining the Learning

1. Introduce and briefly discuss the learning intention and success criteria.

Before moving on, ask for volunteers to describe what they think feedback means. Repeat with formative feedback. Do not go into detail about formative feedback at this time.

This initial step is to elicit students' ideas about the meaning of "feedback" and "formative feedback." "Feedback" will likely be familiar, but they may not be able to do more than guess about "formative feedback." The lesson will help them understand this term, so it's best to leave the definition unsettled at this time.

Working Toward the Learning

2. Distribute Handouts 1 through 3 and go over them with students in sequence:

Handout 1: Talk through the scenario. Have the students work out the math problem and discuss their answers and the strategies they used.

Handout 2: Provide some context for this handout: *I asked the third grade teacher if I could collect some examples of third grade student work on this problem. First let's look at some examples or work that meets the success criteria.* Give students time to review these samples of third grade solutions that have met the criteria.

Handout 3: Provide some context for this handout: *Next, let's look at some examples of work that does not yet meet the criteria.* Give students time to review these samples of third grade solutions that have NOT met the criteria.

3. Distribute a set of blue cards (Evan), created from Resource 1, to each pair or small group of students, along with Handout 5, *Looking at Examples and Nonexamples of Feedback*.

Go over the Instructions on the handout:

- Spread out all of the *Evan* cards (blue) so that the *Example* cards are all together in one area and the *Nonexample* cards are together in another area.
 - a. Individually, read through all of the *Example* cards.
 - b. Individually, read through all of the *Nonexample* cards.
 - c. Discuss with your partner, and write your answer to the questions: **What characteristics do you notice in the *Example* cards that you DON'T see in the *Nonexample* cards?**
- Now look at the *Kim* cards (green).
 - a. First, read the *Example* cards to see if your ideas above hold TRUE for these examples.
 - b. Next, read all of the *Kim* cards, *Examples* and *Nonexamples*, and add any new ideas you have for characteristics to your list above.
- Finally, repeat with the *Janaya* cards (yellow).

As a final summary step, ask students to review one last time all of the examples across the three students to add any additional ideas to Handout 5.

Students need some time to become familiar with the activity as well as the sample student work, before you can ask them to analyze potential feedback.

Third grade examples are chosen here to provide math content that is accessible to all students; students' attention should be on learning about feedback rather than grappling with the math content in the example.

As students compare and contrast the examples and nonexamples, they will develop ideas about characteristics of formative feedback stated in their own wording. Their analysis and discussion should bring out the characteristics for the students in a more meaningful and memorable way than simply presenting them.

Gauging the Learning

As students are working in pairs or groups to develop the characteristics, observe their interactions and listen for ideas that correspond to one or more of the characteristics of formative feedback. (See the list in the Lesson Description on the first page of this lesson.) Note any particular student examples that you might want to highlight later in the whole class discussion.

Also note the language and specificity they are using to help you determine any whole-class feedback you can offer about describing the characteristics. (See "Completing the Frayer Model" below.)

Completing the Frayer Model Feedback Poster

4. Return to the Frayer Model Feedback Template you created on whiteboard/chart paper.

Elicit one idea about a characteristic from each group, and record their ideas on the blocks. Probe students further if they provide characteristics that are not about the meaning of formative feedback. For example, if students suggest, “the examples are longer,” ask the group to think about what makes them longer, to bring out underlying features of the examples that help identify the characteristics.

Ask student to look at the Evan Example 4 blue card and identify where all of these characteristics are.

After all ideas have been captured, unveil the feedback poster (or characteristic chart paper) prepared before the lesson. Lead a discussion about how the list matches what was created as a class. Help students make connections between their wording and the wording on the poster so that they see the how their own ideas are incorporated. Have students add characteristics to their copy of Handout 4.

Have students pick an example and a nonexample from the set that they would find helpful for remembering what formative feedback is and is *not* and ask them to write it on their Handout 4.

Have students generate possibilities for a definition of formative feedback. You can either have them build a definition together or provide a definition for them, such as: *Formative feedback is using the success criteria to give comments that will help another person improve his or her work, so that the person can meet the learning intention for a lesson.* Have them add the definition to their Handout 4.

Summarizing

Return to LI and SC for Review

Return to the LI and SC, and review students’ progress. You might want to give students feedback on what you observed at this time.

Exit Tickets

Ask students to complete and turn in the exit ticket (Handout 6). Their responses to the exit ticket will help you assess progress toward the lesson’s learning intention.

The Frayer Model helps you organize your students’ ideas into one display. When the students can see all the ideas together, the discussion can center on consolidating students’ ideas into a common understanding of the meaning and characteristics of “formative feedback” that is developed and shared by the whole class.

Follow-Up

In the weeks that follow this initial lesson, model formative feedback by providing feedback in whole-group settings; point out to students how your feedback follows the ideas in the feedback poster. (Students will need to see direct connections between the characteristics in the poster and your use of those characteristics in the feedback you provide to them.)

During these discussions, ask for student volunteers to offer suggestions for formative feedback, making sure that the feedback aligns with the characteristics learned in that first lesson.

Once you feel that students have had sufficient time to see examples of feedback, move on to teaching Formative Assessment Lesson 2–Peer Feedback. This lesson gives them an opportunity to practice providing formative feedback to other students.

Math Buddy Scenario

Our school has started a *Math Buddy* program. Each of you will be working with a third grader once every 2 weeks. In order to help your buddies, you will be learning how to give feedback to your buddies to support them with their math.

Last year when we worked with the third graders, they were working on word problems involving addition and subtraction.

The teacher had posted the following learning intentions and success criteria on the board:

LI: I will better understand how word problems can be solved using addition or subtraction strategies.

SC 1: I can determine a strategy to use in solving a word problem.

SC 2: I can correctly use addition or subtraction to solve the problem.

SC 3: I can use words or numbers to show or explain how I solved the problem.

While we were there, the students were working on the following word problem:

A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class?

Use words or numbers to show your work or explain how you know.

How would you go about answering this problem? Show your work below.

We collected some examples of third-grade student work on this problem. Next, we'll review several pieces of work that meet much of the success criteria and discuss why the work meets the criteria.

Student Work That Has Met the Criteria

A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class?

Use words or numbers to show your work or explain how you know.

Alison

second grade has 75 students

first $63 + 12 = 75$

How has this student met the success criteria?

Tyrone

75

$$\begin{array}{r} 63 \\ + 12 \\ \hline 75 \end{array}$$

How has this student met the success criteria?

Isabelle

$$63 + 10 + 2 = 75$$

How has this student met the success criteria?

Student Work That Has Not Met the Criteria

A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class?

Use words or numbers to show your work or explain how you know.

Evan

$$63 + 12 = 71$$

How has this student not met the success criteria?

Kim

$$\begin{array}{r} 63 \\ - 12 \\ \hline 51 \end{array}$$

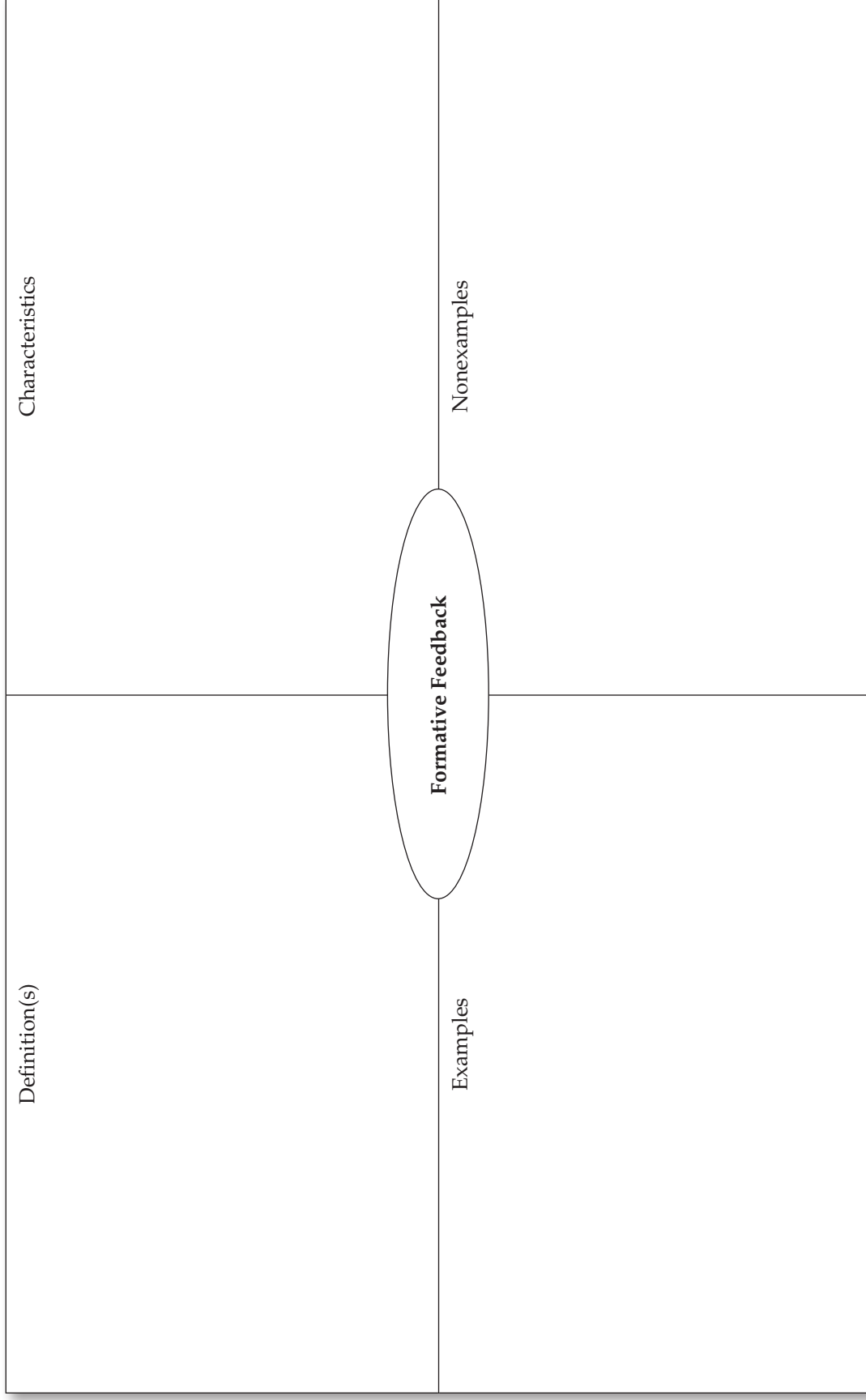
How has this student not met the success criteria?

Janaya

$$75$$

How has this student not met the success criteria?

Frayer Model



Adapted Frayer model: Fredrick, Wayne C. and Klausmeier, Herbert J. April 1969. *A Schema for Testing the Level of Concept Mastery* (Working Paper No. 16). University of Wisconsin Center for Educational Research.

Looking at Examples and Nonexamples of Feedback

Instructions:

1. Spread out all of the *Evan* cards (blue) so that the *Example* cards are all together in one area, and the *Nonexample* cards are together in another area.
2. On your own, read through all of the *Example* cards.
3. On your own, read through all of the *Nonexample* cards.
4. Discuss the question below with your partner, and write your answers.

What characteristics do you notice in the *Example* cards that you DON'T see in the *Nonexample* cards?

5. Now look at the *Kim* cards (green).
 - a. First, read the Example cards to see if your ideas above hold TRUE for these examples.
 - b. Next, read all of the Kim cards, Examples and Nonexamples, and add any new ideas you have for characteristics to your list above.
6. Finally, repeat with the *Janaya* cards (yellow).

Exit Ticket—Eric's Work

The Math Problem: A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class. How many students are in the second-grade class? Use words or numbers to show your work or explain how you know.

Eric's Answer to the Problem: Since 2nd grade has more they have 75

Tina gives Eric this feedback:

You have gotten the correct answer but I am not sure how you got it. The words you use don't say how.

1. Identify the characteristics of useful feedback that are in Feedback Example 1. Does it
 - a) Point out success criteria that have been met? Yes _____ No _____
 - b) Point out success criteria that have *not* been met? Yes _____ No _____
 - c) Include a hint, model, or question to help Eric know what to do next to meet LI? Yes _____ No _____
 - d) Use language that Eric can understand? Yes _____ No _____
 - e) Encourage Eric to take some steps to improve his work? Yes _____ No _____
2. Explain your answers to b and e.

Kyle says to Eric:

Think back to how you solved the problem, and use words or numbers to tell how you got the correct answer.

3. Identify the characteristics of useful feedback that are in Feedback Example 1. Does it
 - f) Point out success criteria that have been met? Yes _____ No _____
 - g) Point out success criteria that have not been met? Yes _____ No _____
 - h) Include a hint, model, or question to help Eric know what to do next to meet LI? Yes _____ No _____
 - i) Use language that Eric can understand? Yes _____ No _____
 - j) Encourage Eric to take some steps to improve his work? Yes _____ No _____
4. Explain your answers to f and h.

Feedback Cards for EVAN: Print on Blue Paper/Card Stock

<p>EVAN $63 + 12 = 71$ Example 1</p> <p><i>You have a strategy to solve the problem. You didn't meet SC#2. Check your adding of tens and ones.</i></p>	<p>EVAN $63 + 12 = 71$ Example 2</p> <p><i>You found a correct way to solve the problem, but the answer isn't 71. Think about $63 + 10$. This is more than 71. How could you use this to solve $63 + 12$?</i></p>
<p>EVAN $63 + 12 = 71$ Example 3</p> <p><i>You picked a good operation, but something is wrong with your addition. Check again how you added $63 + 12$.</i></p>	<p>EVAN $63 + 12 = 71$ Example 4</p> <p><i>You showed how you solved the problem with numbers. The problem is that $63 + 12$ isn't 71. If you show the way you added, you might find your mistake.</i></p>
<p>EVAN $63 + 12 = 71$ Example 5</p> <p><i>I see how you decided to solve the problem so you met SC# 1 and 3. You didn't meet SC#2 because the answer isn't right. Look at your numbers in the ones place; is $3 + 2 = 1$?</i></p>	

<p>EVAN $63 + 12 = 71$ Nonexample 1</p> <p><i>Check your answer. Something isn't right.</i></p>	<p>EVAN $63 + 12 = 71$ Nonexample 2</p> <p><i>Good try. You used neat handwriting to write out your equation. Too bad the answer is wrong because otherwise it would be really good.</i></p>
<p>EVAN $63 + 12 = 71$ Nonexample 3</p> <p><i>$63 + 12 = 75$. Change your answer then all the SC will be met.</i></p>	<p>EVAN $63 + 12 = 71$ Nonexample 4</p> <p><i>You met SC #1 because you chose a strategy. You met SC#3 because you showed all your work.</i></p>

Feedback Cards for KIM: Print on Green Paper/Card Stock

<p>KIM Example 1</p> $\begin{array}{r} 63 \\ - 12 \\ \hline 51 \end{array}$ <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-top: 20px; width: 80%; margin-left: auto; margin-right: auto;"> <p><i>You showed work with numbers, which is good. Subtracting 63 and 12 doesn't get you the right answer though. If second grade has more than third grade, does 51 make sense for second grade?</i></p> </div>	<p>KIM Example 2</p> $\begin{array}{r} 63 \\ - 12 \\ \hline 51 \end{array}$ <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-top: 20px; width: 80%; margin-left: auto; margin-right: auto;"> <p><i>You met SC#3—I see your number sentence. You didn't meet SC#2 because the way you chose to find the answer isn't correct. Think about this, if our class has 25 students, and the class next door has 10 more than we do, how many students are next door?</i></p> </div>
<p>KIM Example 3</p> $\begin{array}{r} 63 \\ - 12 \\ \hline 51 \end{array}$ <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-top: 20px; width: 80%; margin-left: auto; margin-right: auto;"> <p><i>You found the numbers to use in the problem and showed your work. Good job. Check the way you decided to do the problem because your answer isn't right yet. Think 10 then 5 more than 10. What would this answer be?</i></p> </div>	<p>KIM Nonexample 1</p> $\begin{array}{r} 63 \\ - 12 \\ \hline 51 \end{array}$ <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-top: 20px; width: 80%; margin-left: auto; margin-right: auto;"> <p><i>I'm not sure what you were thinking when you chose subtraction. Do the work over again.</i></p> </div>

<p>KIM</p> $\begin{array}{r} 63 \\ - 12 \\ \hline 51 \end{array}$ <p>Nonexample 2</p> <p><i>Great try. You met SC#1 and SC#3.</i></p>	<p>KIM</p> $\begin{array}{r} 63 \\ - 12 \\ \hline 51 \end{array}$ <p>Nonexample 3</p> <p><i>Check your work. You made a mistake. See me if you want more help.</i></p>
<p>KIM</p> $\begin{array}{r} 63 \\ - 12 \\ \hline 51 \end{array}$ <p>Nonexample 4</p> <p><i>I like how your numbers are written so big. What you really need to do is add:</i></p> $\begin{array}{r} 63 \\ + 12 \\ \hline 75 \end{array}$ <p><i>See it's easy!</i></p>	<p>KIM</p> $\begin{array}{r} 63 \\ - 12 \\ \hline 51 \end{array}$ <p>Nonexample 5</p> <p><i>I think you read the problem wrong, which is an honest mistake.</i></p>

Feedback Cards for JANAYA: Print on Yellow Paper/Card Stock

<p style="text-align: center;">JANAYA 75 Example 1</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <p><i>You got the right answer. I don't see words or numbers that show how you got your answer. How can you show what you did?</i></p> </div>	<p style="text-align: center;">JANAYA 75 Example 2</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <p><i>Your answer is correct (SC#2). Review SC#1 and SC#3 to think about what you might show in order to meet these SCs.</i></p> </div>
<p style="text-align: center;">JANAYA 75 Example 3</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <p><i>You used a strategy to get the right answer, but I don't know what your strategy was because there are no words or numbers. How did you get 75?</i></p> </div>	<p style="text-align: center;">JANAYA 75 Example 4</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <p><i>Your solution is correct, so you met SC#2. I would like to see how you got your answer. What was your strategy (SC#1), and how could you use words or numbers to show what you did (SC#3)?</i></p> </div>

<p>JANAYA 75 Nonexample 1</p> <p><i>Read the directions! You should know how to show your work by now.</i></p>	<p>JANAYA 75 Nonexample 2</p> <p><i>Great job. You got it right.</i></p>
<p>JANAYA 75 Nonexample 3</p> <p><i>Show that you added $63+12$ to get the 75 you wrote down. Then you would show that you met all 3 of the SCs.</i></p>	<p>JANAYA 75 Nonexample 4</p> <p><i>You should ALWAYS show your work. Do this over.</i></p>