Do I Reteach or Move On? A Third Choice: Re-Engagement Lessons

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Callahan Consulting
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Who’s In the Room

Plans for the Session

Brief description of re-engagement lessons and their purpose

Experience 3 re-engagement lessons:

- 5th Grade
- 8th Grade
- HS Geometry

Looking at Student Work

The process of studying student work is a meaningful and challenging way to be data-driven, to reflect critically on our instructional practices, and to identify the research we might study to help us think more deeply and carefully about the challenges our students provide us. Rich, complex work samples show us how students are thinking, the fullness of their factual knowledge, the connections they are making. Talking about them together in an accountable way helps us to learn how to adjust instruction to meet the needs of our students.

Annenberg Institute of School Reform

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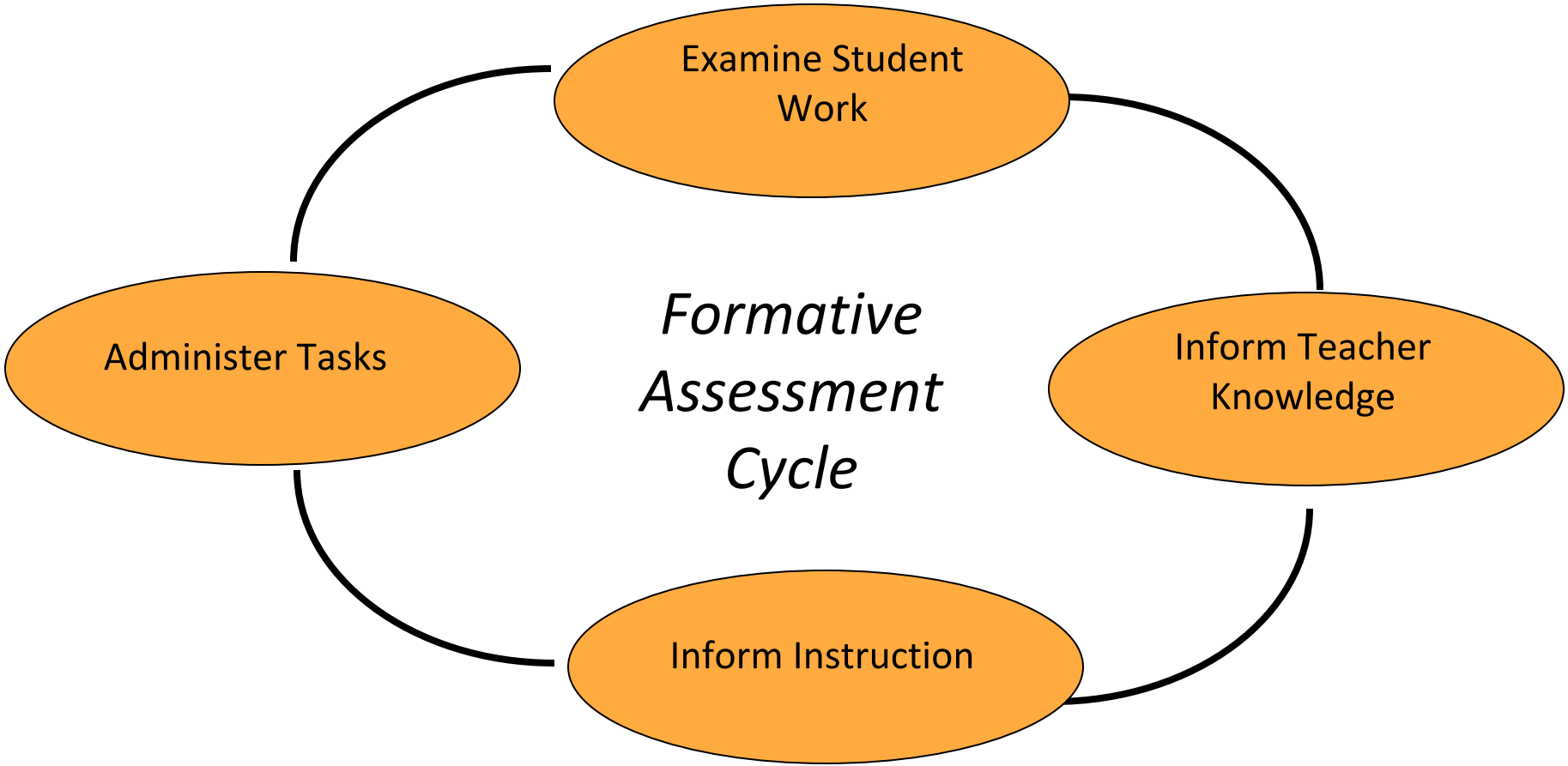
Annenberg Institute of School Reform

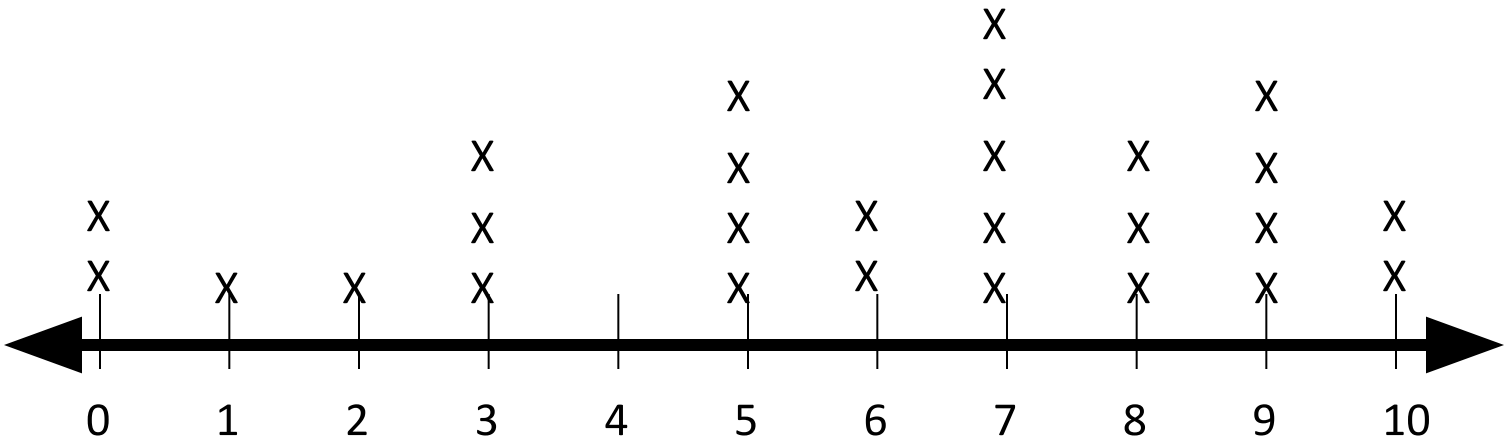
Formative Assessment is:

Students and teachers using evidence of learning to adapt teaching and learning and to meet immediate learning needs; minute-to-minute and day to day.

Dylan Wiliam, University of London


Examine Student Work
Inform Teacher Knowledge
Inform Instruction
Administer Tasks
Formative Assessment Cycle

The Results from an Assessment

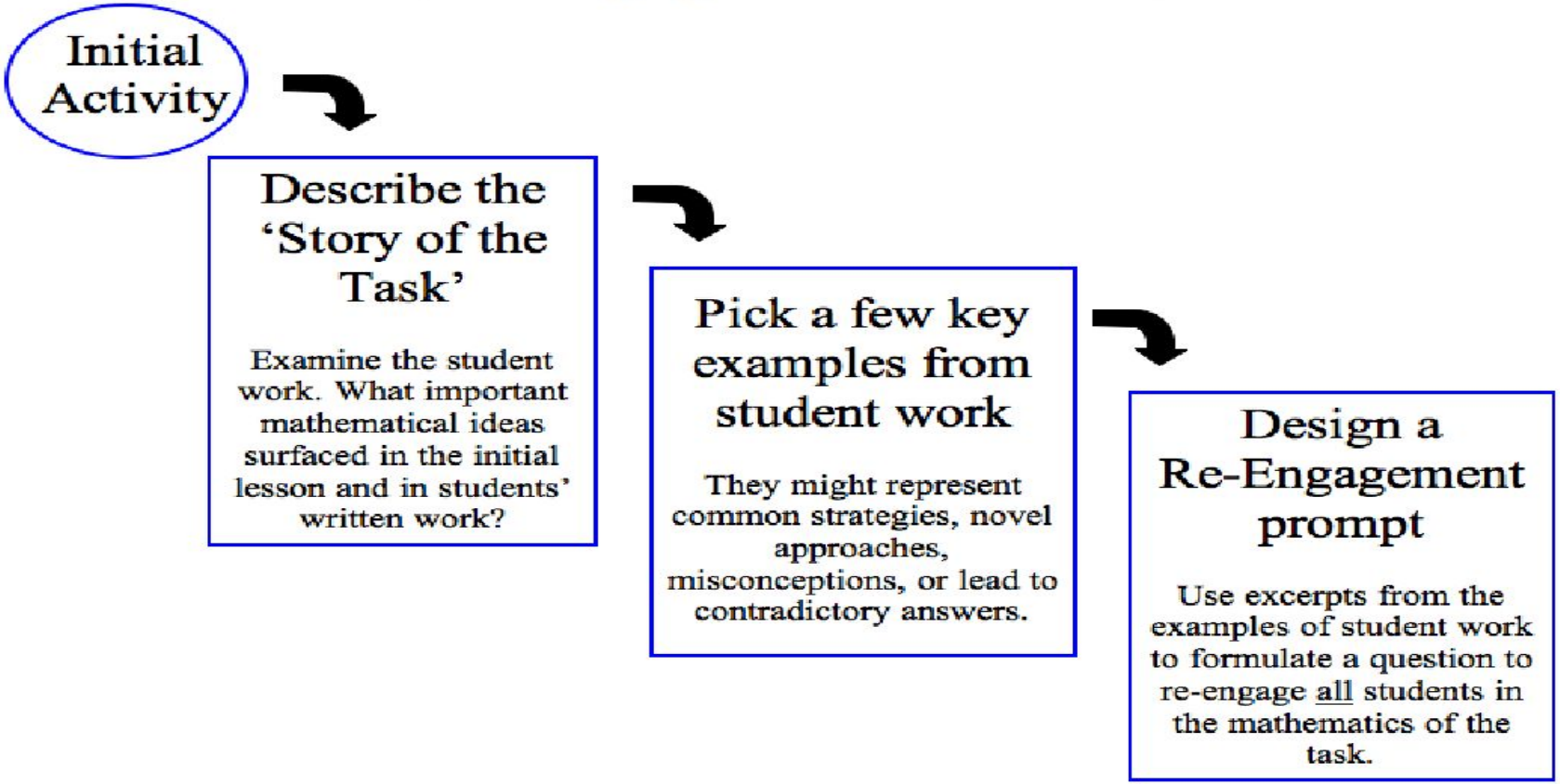


Students' performances are across the continuum

Traditionally Teachers Choose One of Three Options

- Go back and re-teach the topic with the entire class.
- Identify the students needing remediation and find some time/opportunity to re-teach the topic while the rest of the class continues on.
- Feeling the pressure of the over packed curriculum, the teacher ventures on to the next topic.

Re-Engagement Protocol

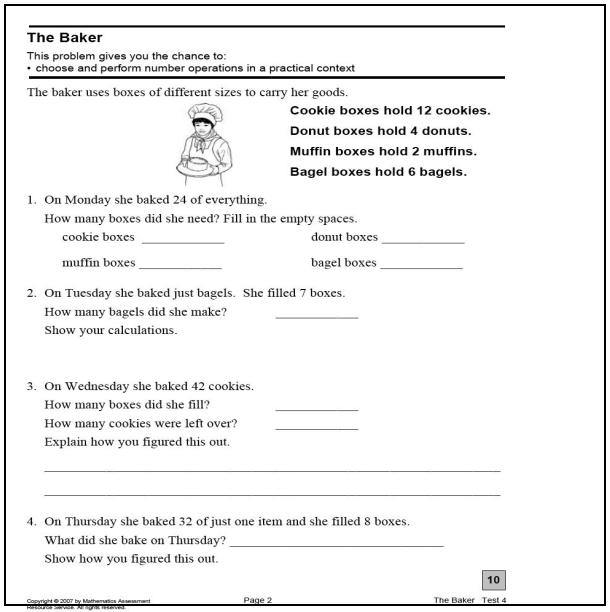


Re-engagement

- Makes use of actual student work - including unique thinking, misconceptions, and strategies.
- Has all students re-work a task from a different perspective.
- Confronts misconceptions, so that they can be dealt with and let go.
- Gives some students strategies for solving a problem.
- Helps other students solidify, connect, and clarify their ideas.

Performance Assessments

To Inform Instruction And Measure Higher Level Thinking



The Baker

This problem gives you the chance to:
- choose and perform number operations in a practical context

The baker uses boxes of different sizes to carry her goods.

Cookie boxes hold 12 cookies.
Donut boxes hold 4 donuts.
Muffin boxes hold 2 muffins.
Bagel boxes hold 6 bagels.

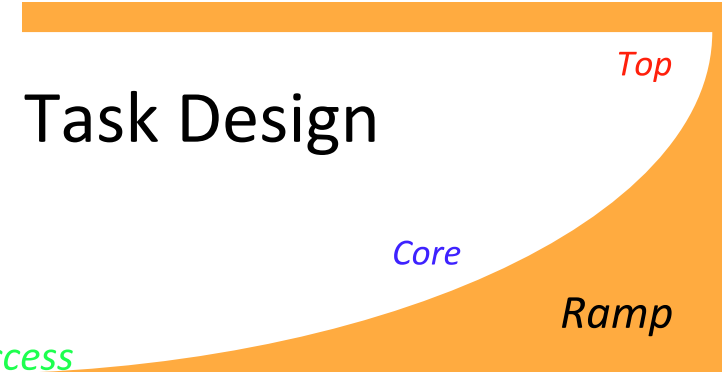
1. On Monday she baked 24 of everything.
   How many boxes did she need? Fill in the empty spaces.
   cookie boxes _____ donut boxes _____
   muffin boxes _____ bagel boxes _____

2. On Tuesday she baked just bagels. She filled 7 boxes.
   How many bagels did she make? _____
   Show your calculations.

3. On Wednesday she baked 42 cookies.
   How many boxes did she fill? _____
   How many cookies were left over? _____
   Explain how you figured this out.

4. On Thursday she baked 32 of just one item and she filled 8 boxes.
   What did she bake on Thursday? _____
   Show how you figured this out.

10



Entry level (access into task)

Core Mathematics - (meeting standards)

Top of Ramp (conceptually deeper, beyond)

- The Mathematics Assessment Resource Service (MARS) is an NSF funded collaboration between U.C. Berkeley and the Shell Centre in Nottingham England.
- The Assessments target grades 2- Geometry and are aligned with the State and NCTM National Math Standards.

SHELL CENTRE

BALANCED ASSESSMENT

MARS

Re-teaching vs. Re-engagement

- Teach the unit again.
- Address basic skills that are missing.
- Do the same or similar problems over.
- Practice more to make sure student learn the procedures.
- Focus mostly on underachievers.
- Cognitive level is usually lower.

- Revisit student thinking.
- Address conceptual understanding.
- Examine task from different perspective.
- Critique student approaches/solutions to make connections.
- The entire class is engaged in the math.
- Cognitive level is usually higher.

5th Grade Lesson: Cape Town, South Africa

Goals for the Activity:

Review a question from a test from yesterday with a focus on understanding our thinking (not focused on the correct answer)

Read three pieces of student thinking

- Let these students know what is correct about their thinking
- Provide each student with some feedback so that they can improve how clear their thinking is

The Original Question

Jesse collects cans for recycling. When he has ____ cans, the recycling center will pick them up from his house. Jesse has ____ bags with about ____ cans in each bag. Should he call the recycling center to arrange a pick-up? Explain how you know.

The Original Question

Jesse collects cans for recycling. When he has ☐ cans, the recycling center will pick them up from his house. Jesse has ☐ bags with about ☐ cans in each bag. Should he call the recycling center to arrange a pick-up? Explain how you know.

Turn to someone near you and let them know **how** you would solve this problem

The Original Question

Jesse collects cans for recycling. When he has ☐ cans, the recycling center will pick them up from his house. Jesse has ☐ bags with about ☐ cans in each bag. Should he call the recycling center to arrange a pick-up? Explain how you know.

Turn to someone near you and let them know how you would **explain** whether or not Jesse should call the recycling center

A Quick Note on Purpose

Allow students to re-enter the problem that they saw on their assessment yesterday

Removing the quantities allows them to focus on sense-making instead of answer-getting

The Original Question

Jesse collects cans for recycling. When he has 1,500 cans, the recycling center will pick them up from his house. Jesse has 120 bags with about 35 cans in each bag. Should he call the recycling center to arrange a pick-up? Explain how you know.

Part 1

Each person will get a handout with the original question and 3 pieces of student work

When you receive your paper, please read the work of Student A, Student B, and Student C (please do this quietly)

Next, please write something that you believe is correct about the thinking of each student (please do this quietly)

You will do all of this on the **front** of the handout

Sharing with a Peer

Find someone near you and share with them what you noticed to be correct about the students' thinking

Make sure to listen to what your partner is saying to understand if you observed the same things

"I think that Student A/B/C is correct in their thinking because _____."

"_____ was correct about Student A/B/C because _____."

Part 2 - Peer Feedback

What does it mean to give someone feedback?

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What does it mean to give someone feedback?

Think of a time when you have appreciated the feedback from someone.

Think of a time when you did not appreciate the feedback from someone.

Part 2 - Peer Feedback

Be specific and share your observations

Avoid opinions

Be thoughtful and considerate

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Avoid opinions

Be thoughtful and considerate

Now please turn to the **back** of the handout

Part 2 - Peer Feedback

Re-read each piece of student thinking and write down some feedback that would make their answer more clear (please do this quietly)

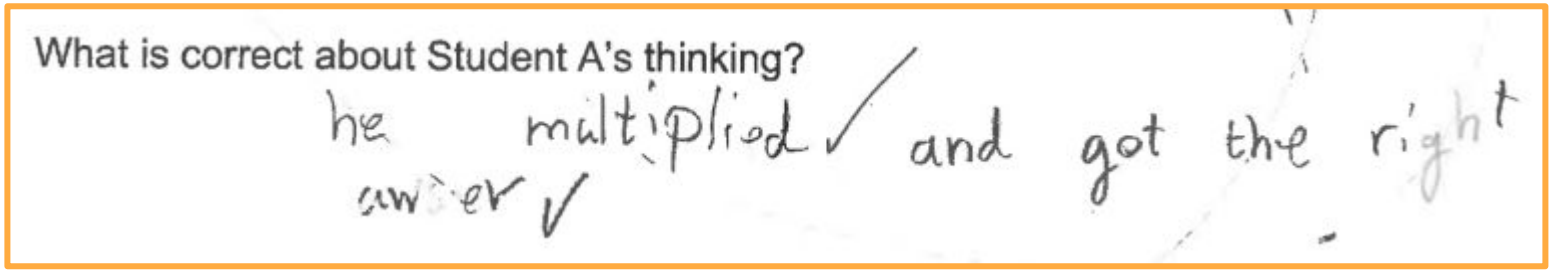
“If you included _____, your explanation would be more clear.”

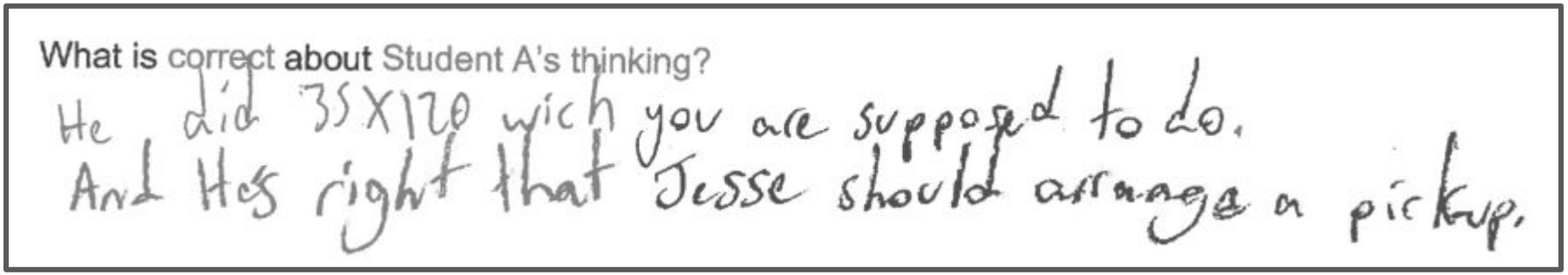
“I don’t understand _____, can you please explain?”

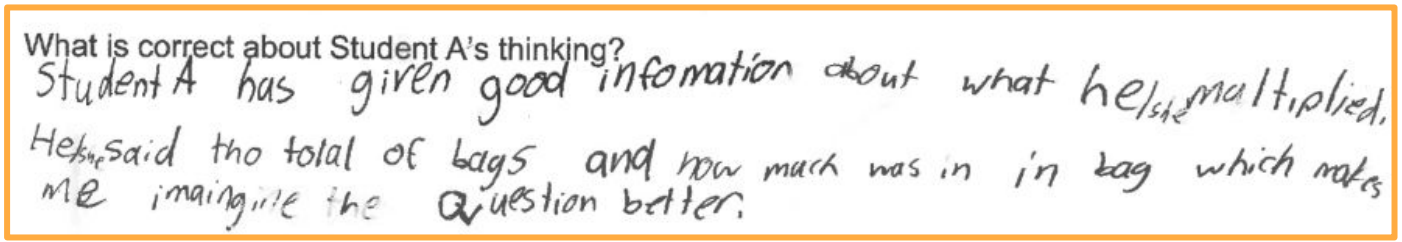
“I understand _____, but can you please help me understand _____?”

“Your explanation would be a little bit clearer if _____.”

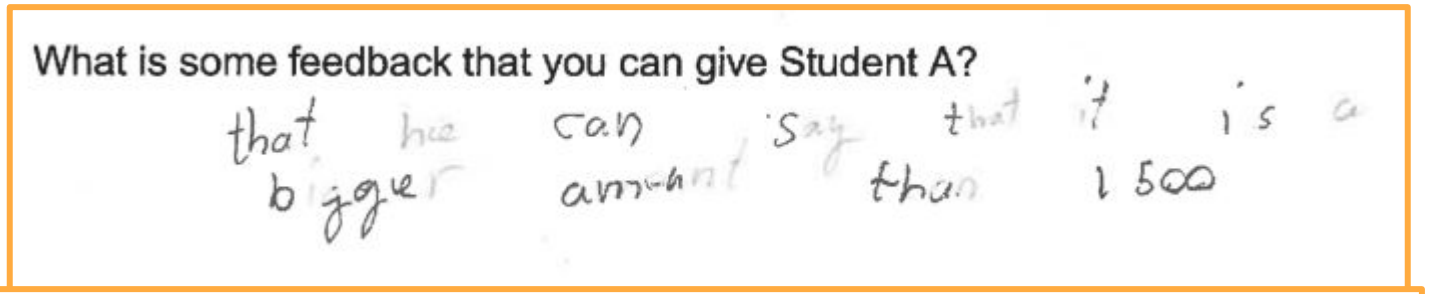
What did students write about Student A?

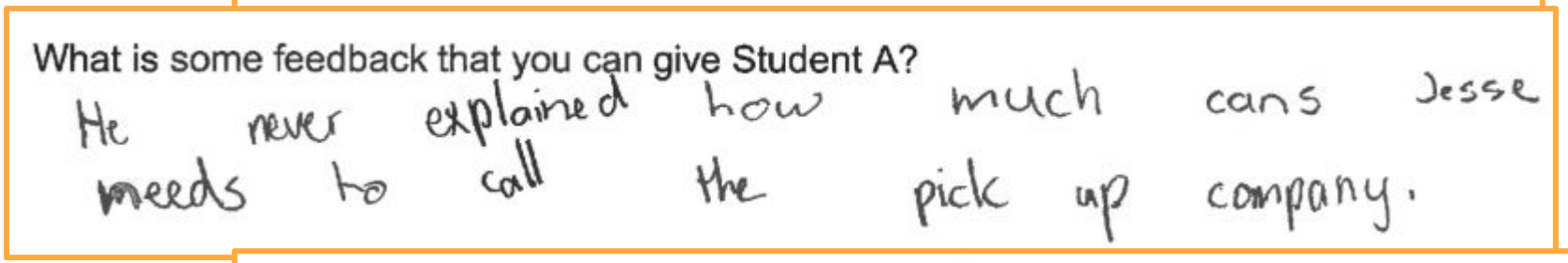


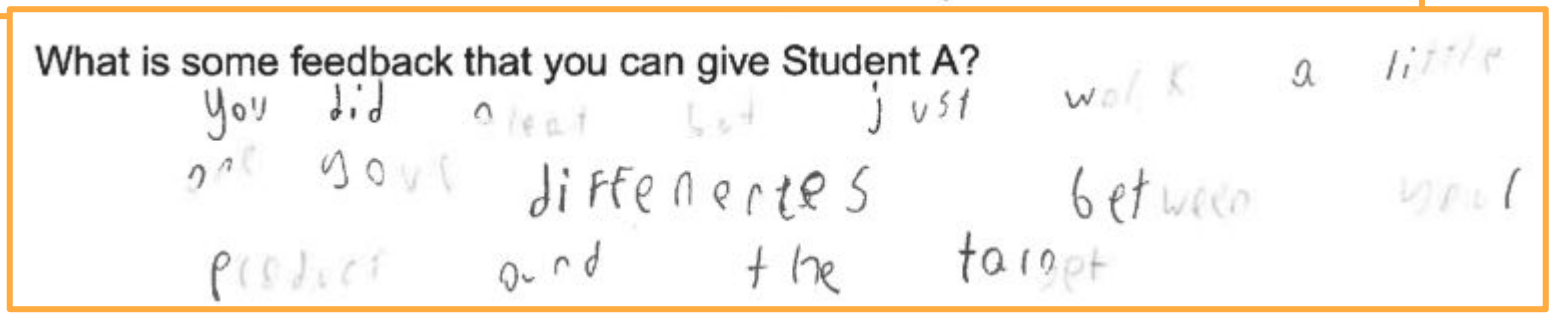




What feedback did kids give Student A?

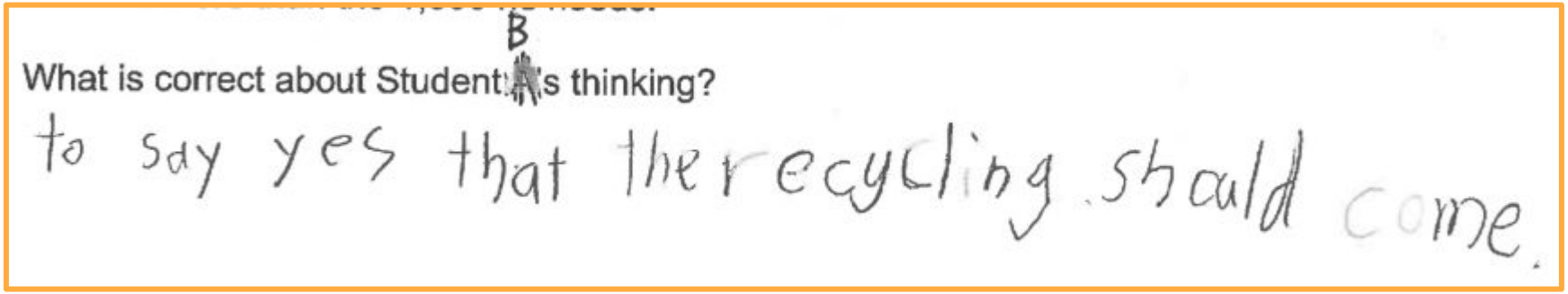


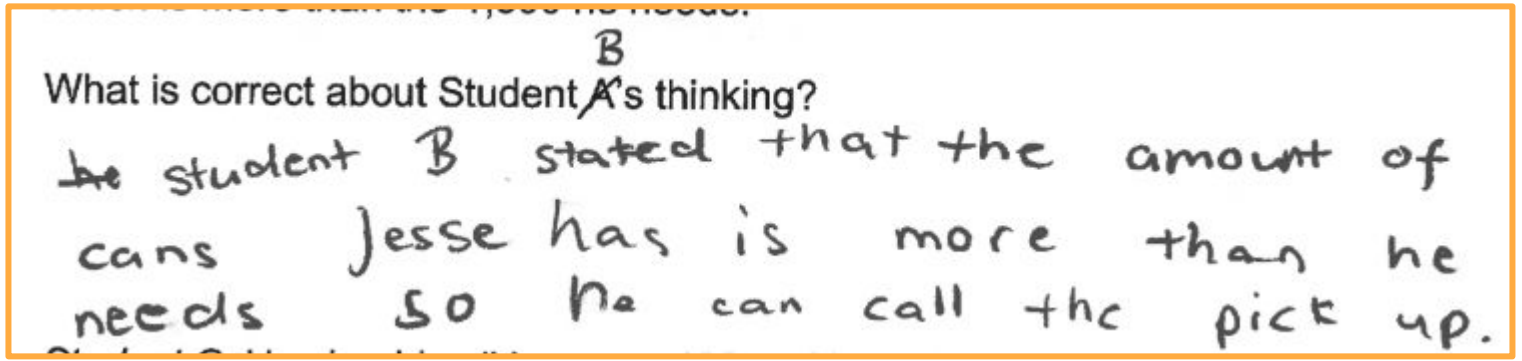




"You did great but just work a little on your differences between your product and the target."

What did students write about Student B?





What feedback did kids give Student B?

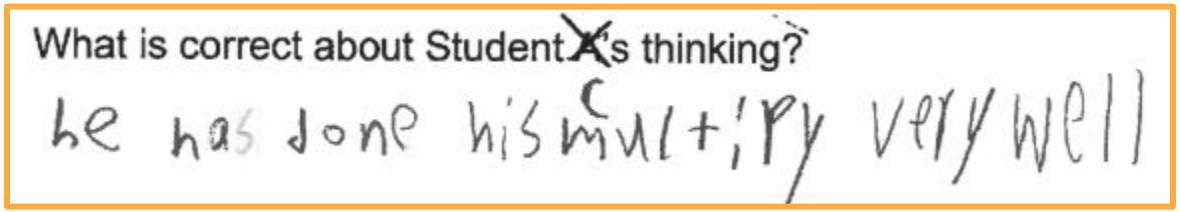
What is some feedback that you can give Student B?

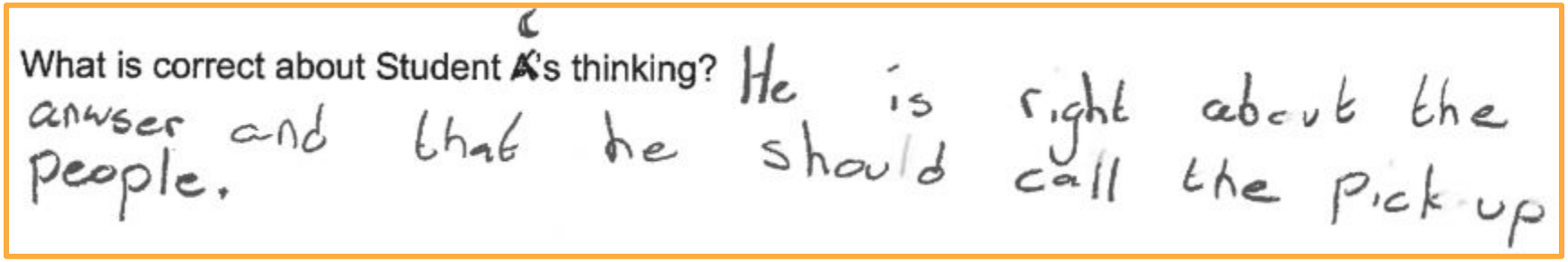
you did the right thing saying "3700 cars, which is more than 1500 he needs, and you wrote the number sentece, but I think you should check your calculations.

What is some feedback that you can give Student B?

I dont understand how 120x35 is 3,700.

What did students write about Student C?





What feedback did kids give Student C?

What is some feedback that you can give Student C?

He did everything correct, but, He didn't explain why he did 140 by 35.

What is some feedback that you can give Student C? I think you can add the unit and difference but besides that this is ~~flawless~~ Great

What is some feedback that you can give Student A?

If you said that Jesse has more than 1,500 cans and that's why he should call your explanation would be more clearer.

Student B: 120 x 35 = 3700. Yes he should call them because he's got 3700 cans, which is more than the 1,500 he needs.

What is some feedback that you can give Student B?

You might have got the wrong answer but you did a good explanation. You explained why he should call.

Student C: He should call because 120 multiplied by 35 is 4,200 which is more than 1,500.

What is some feedback that you can give Student C?

You got the right product but I think you should have explained which number is the number of bags and which is the number of cans in each bag.

8th Grade Performance Task: Los Angeles

Goals for the Activity:

Look at some student work to understand how other students were thinking about the apple cider problem

Agree on a correct solution path

Review your own solution from the original assessment and revise your thinking

Mr. Baker's class made ☐ ounces of apple cider to pour into glasses that hold ☐ and ☐ ounces.

La clase del Sr. Baker hizo ☐ onzas de sidra de manzana para servir en vasos de ☐ onzas y un ☐.

Question 1A: How many glasses will be needed to hold all the apple cider?

Question 1A: ¿Cuántos vasos se necesitarán para servir toda la sidra de manzana?

Mr. Baker's class made 160 ounces of apple cider to pour into glasses that hold 8 and 1/4 ounces.

La clase del Sr. Baker hizo 160 onzas de sidra de manzana para servir en vasos de 8 onzas y un 1/4.

Question 1A: How many glasses will be needed to hold all the apple cider?

Question 1A: ¿Cuántos vasos se necesitarán para servir toda la sidra de manzana?

Handout

Name: _____

Apple Cider Re-Engagement Activity

Date: _____ Period: _____

Original Question: Mr. Baker's class made 160 ounces of apple cider to pour into glasses that hold 8 ¼ ounces. How many glasses will be needed to hold all of apple cider? Explain how you know.

Your Task: Use the student work below to determine how each student approached the calculations necessary for finding how many glasses would be needed for the apple cider.

Making Sense of Student Work - Read Independently

Student A: 19 glasses. I know because 160 divided by 8.25 is 19.39 repeating. I rounded down to 19 because that is the closest whole number to 19.39.

Student B: 20 glasses because 160/8.25=19.4. I knew that this was a little more than 19 whole glasses, so I would need 20 glasses to hold all of the cider.

Student C: They will need 20 glasses. I divided 160 ounces of cider by 8 ounces per glass and I got 20 total glasses.

Sharing Out Based on Evidence

“We noticed _____, which made us think that Student A/B/C _____.”

“We saw _____, so we thought _____.”

“Student A/B/C was thinking about the problem _____, because _____.”

So, Who's Right? How Do You Know? Back of Handout

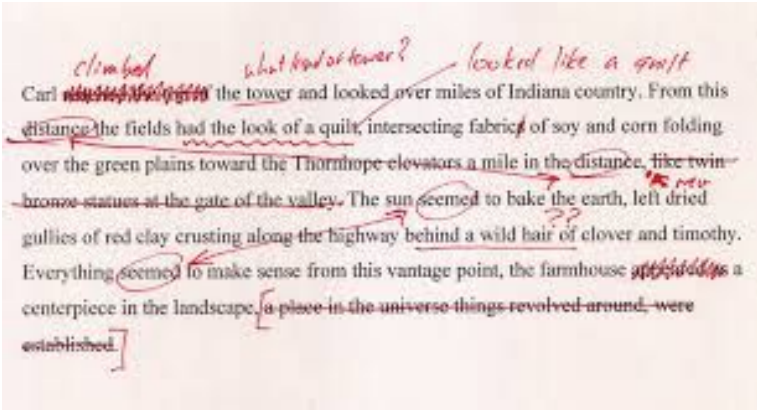
Your Task: After making sense of each student's thinking, who do you think used correct thinking in calculating the number of glasses needed for the apple cider?

I believe Student _____ correctly determined the number of glasses needed because

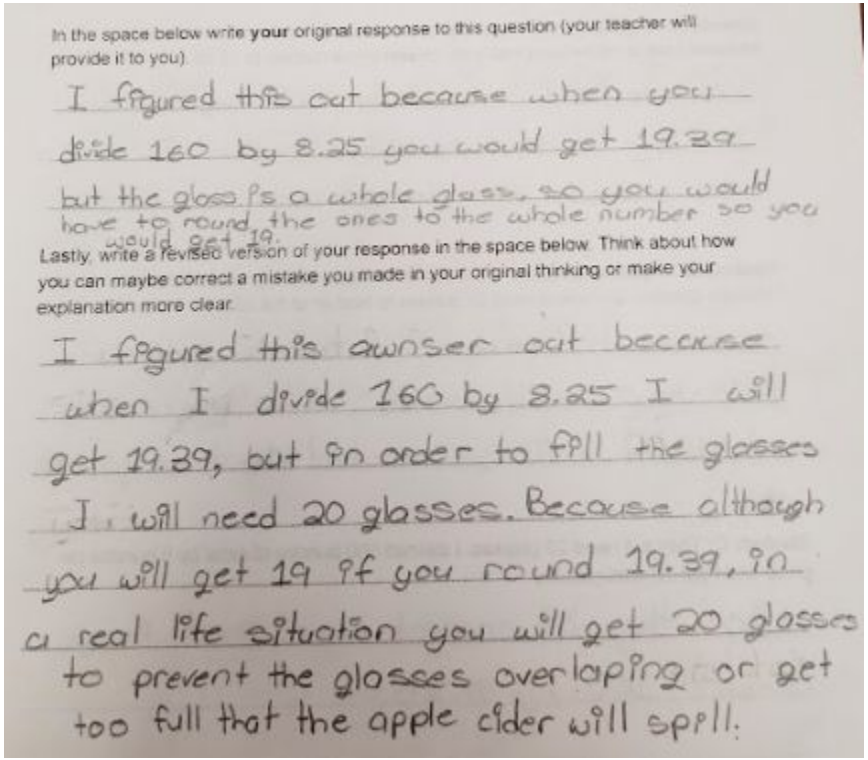
Last Step

Take a look at your original response/first draft (please write it on the back of your paper)

Using the activity that we just went through, revise your original response by making your answer more clear and accurate



How Did Students Revise Their Thinking?

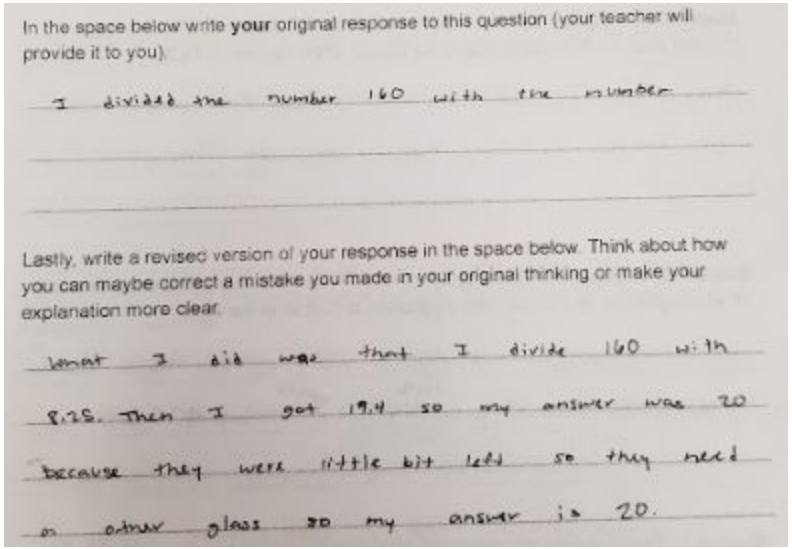


In the space below write **your** original response to this question (your teacher will provide it to you).

I figured this out because when you divide 160 by 8.25 you would get 19.39 but the glass is a whole glass, so you would have to round the ones to the whole number so you would get 19.

Lastly, write a revised version of your response in the space below. Think about how you can maybe correct a mistake you made in your original thinking or make your explanation more clear.

I figured this awnser out because when I divide 160 by 8.25 I will get 19.39, but in order to fill the glasses I will need 20 glasses. Because although you will get 19 if you round 19.39, in a real life situation you will get 20 glasses to prevent the glasses overlaping or get too full that the apple cider will spill.



In the space below write **your** original response to this question (your teacher will provide it to you).

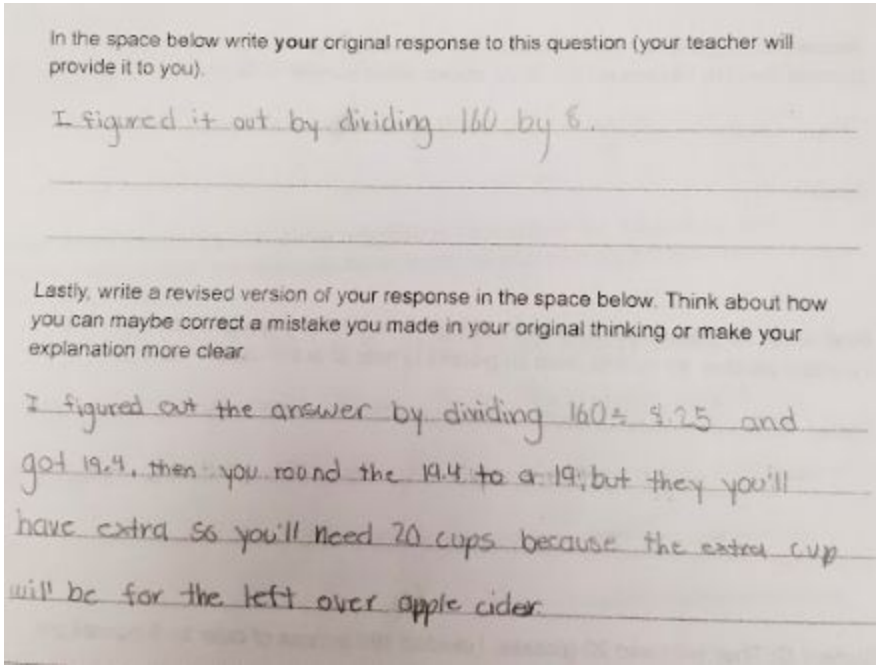
I divided the number 160 with the number

Lastly, write a revised version of your response in the space below. Think about how you can maybe correct a mistake you made in your original thinking or make your explanation more clear.

What I did was that I divide 160 with 8.25. Then I got 19.4 so my answer was 20 because they were little bit left so they need an other glass so my answer is 20.

Original: “I divided the number 160 with the number”

Revised: “What I did was that I divide 160 with 8.25. Then I got 19.4 so my answer was 20 because they were little bit left so they need an extra glass so my answer is 20.”



In the space below write **your** original response to this question (your teacher will provide it to you).

I figured it out by dividing 160 by 8.

Lastly, write a revised version of your response in the space below. Think about how you can maybe correct a mistake you made in your original thinking or make your explanation more clear.

I figured out the answer by dividing 160÷ 8.25 and got 19.4, then you round the 19.4 to a 19, but they you'll have extra so you'll need 20 cups because the extra cup will be for the left over apple cider.

Original: “I figured it out by dividing 160 by 8.”

Revised: “I figured out the answer by dividing 160 by 8.25 and got 19.4, then you round the 19.4 to 19, but they you’ll have extra so you’ll need 20 cups because the extra cup will be left for the left over apple cider.”

Also from this School

September Performance Task: I got the answer 35 because i divided 1/2 to 3 1/2 and got 7. Then I multiplied it to 5 to know how many minutes it will take me, which is 35.	December Performance Task: She left at 8:25 and stopped at 8:30. So, that means that she'd been riding her bike for 5 minutes. So, I divided 0.75 by 5, to find out how many miles did she ride her bike in a minute. After, I got the answer 0.15. That means she rode her bike for 0.15 mile in a minute. After that, I divided 3.42 by 0.15, in order to find out how many minutes she's going to ride her bike. Then, I got the answer 22.8. That means Emily could arrive at school in approximately 23 minutes. Since she left at her house in 8:25, she'll arrive at her school in 8:48. In conclusion, she'll arrive at her school on time.

Note: These were not the same assessments

HS Geometry Formative Assessment: Sonoma County

Goals for the Activity:

Review student work samples and make sense of how each student was thinking about the problem

Please work through problems 1-2b

Glasses

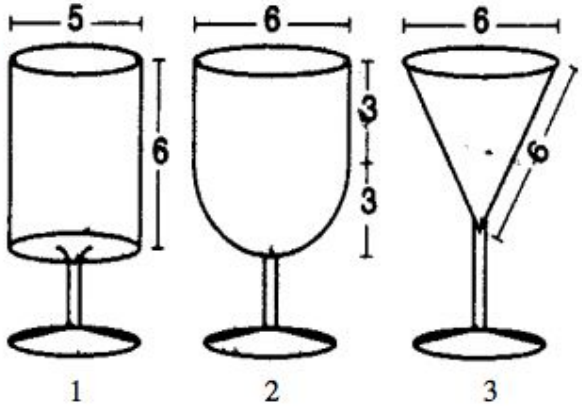
This diagram shows three glasses (not drawn to scale).

The measurements are all in centimeters.

The volume of a cylinder $= \pi r^2 h$

The volume of a sphere $= \frac{4\pi r^3}{3}$

The volume of a cone $= \frac{\pi r^2 h}{3}$



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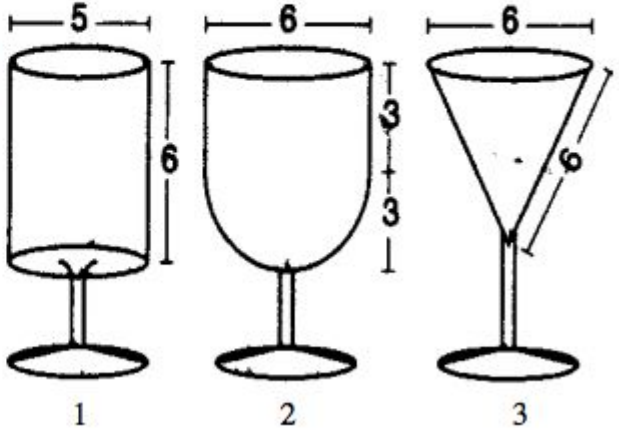


Where did students fall off the ramp? Volume of Glass 2.

Handout

Glasses: Re-Engagement Lesson

Use the student work below to determine how each student approached the calculations necessary for finding the volume of Glass 2.

Student A:

b. Glass 2

$\frac{4\pi 3^3}{3}$ $\frac{4 \cdot 27 \cdot \pi}{3}$ $\frac{108 \cdot \pi}{3} \approx \frac{339.2}{3} = \frac{113.091}{2}$ $V \approx 56.5$ cm^3

Notes: _____

_____

_____

Ask You're Looking at the Student Work...

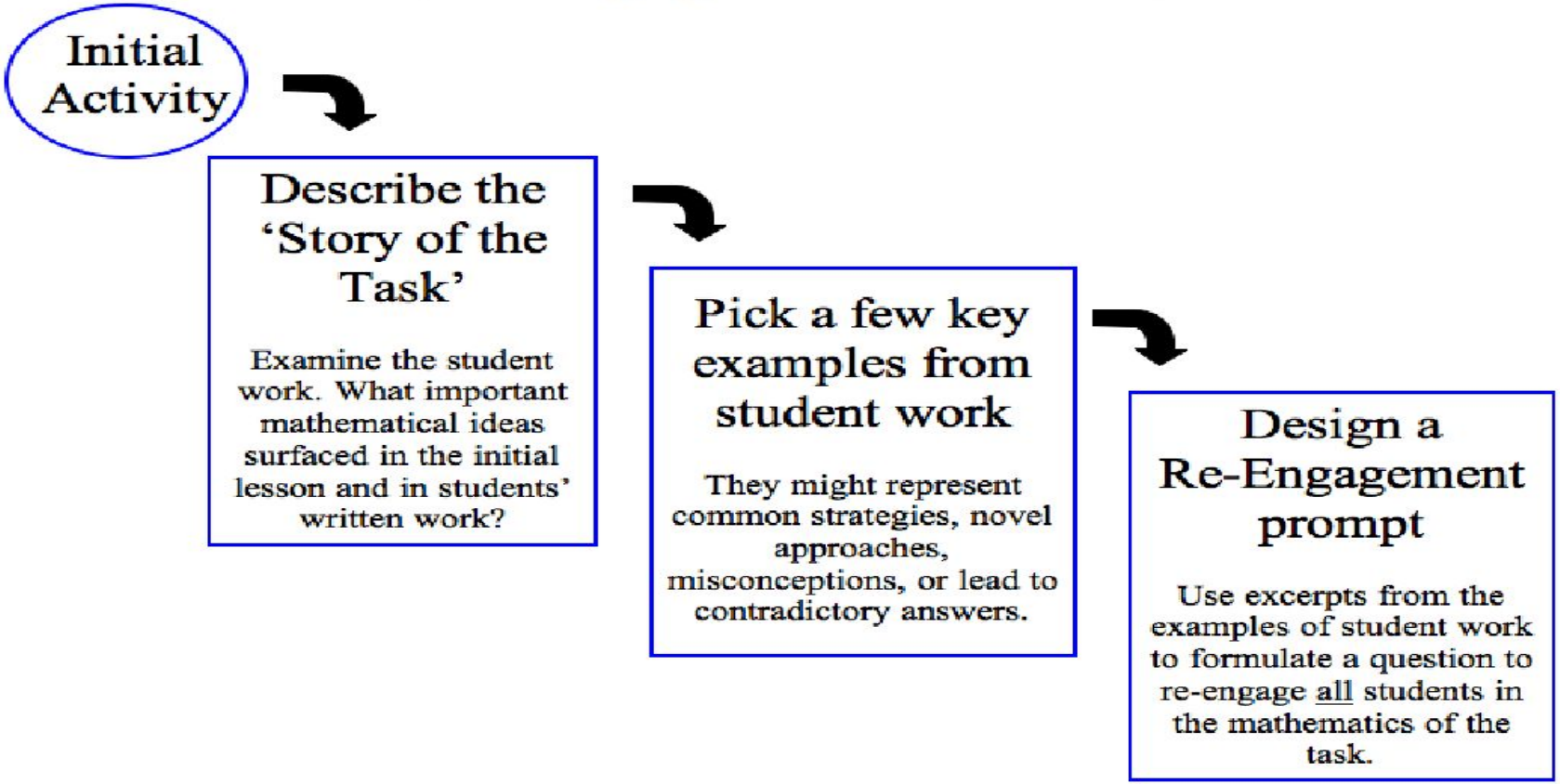
Ask Yourself:

- What was the question they are trying to solve?
- What did they do?
- What did they find?

- Does the process make sense?
- Does the answer make sense?
- Are the calculations correct?

Shout-out to Grace and Amy (authors of Routines for Reasoning) for these prompts

Re-Engagement Protocol



Thank You!

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