

DMT Questions and Prompts

1 Taking Students' Ideas Seriously

- ▶ How does this connect to what you already know?
- ▶ Explain your thinking. Why does that work?
- ▶ How did you figure that out?
- ▶ What is the total? What are the quantities (parts)? What is known? What is missing?
- ▶ Why did you use this method? Where in your model is each number from the story?
- ▶ Who knows what the presenter is going to do next?
- ▶ What do you already know that you could build this from?
- ▶ Take a minute: what do you know, and what do you not know?
- ▶ Repeat what you just heard [name] say.

3 Pressing Students Conceptually

- ▶ Draw a model of this idea. You choose the unit, the endpoints, and the labels.
- ▶ How do the numbers relate back to the problem context? What does each part of your model represent? One what?
- ▶ Does this approach always work? How do you know?
- ▶ For what types of numbers does this approach work?
- ▶ What is changing, and what is staying the same?
- ▶ How does your model match the equation? Show the same idea on two different models.
- ▶ How many of these would it take to compose one?
- ▶ Draw the model. What part of the story is still unclear?

5 Addressing Misconceptions

- ▶ When does this idea work, and when doesn't it? Can you find a case where it doesn't?
- ▶ Why doesn't this approach work?
- ▶ Go back to the unit and rebuild from there. Where did the reasoning come apart?
- ▶ What common mistakes might someone make with this problem?
- ▶ Say what was done incorrectly, then name the specific error.
- ▶ Is this correct? If it is not, write the correct solution next to it.
- ▶ Are you adding, or are you scaling?

2 Encouraging Multiple Strategies and Models

- ▶ How is your model similar or different from this strategy or model? How do both models show the same relationship?
- ▶ How could someone solve this differently and get the same answer?
- ▶ Does anyone have a different way to explain this?
- ▶ Which numbers are easier to work with? How could you decompose this into parts you already know?
- ▶ Solve this on a number line, or with a bar model, before you write the equation.
- ▶ Here are three ways students solved this. Which is most efficient, and why?
- ▶ Write a story problem that this model could represent.

4 Focusing on the Structure of Mathematics

- ▶ Use the words Unit, Compose, Decompose, Iterate, Partition, and Equal to explain your ideas. Rephrase that using a word from our word bank.
- ▶ What does this idea or symbol mean in the problem/model? What does the equals sign tell you here?
- ▶ What assumptions are you making?
- ▶ How would you convince someone else this is correct? Convince us with your model.
- ▶ If we change the numbers, does your model still work?
- ▶ What are the key mathematical ideas that come out of solving this problem?
- ▶ What is the unit here? One what? Are we in the same unit?
- ▶ Is this asking how many units fit in the total, or how big each share is?

THE DMT FRAMEWORK

