Lesson 10 – Writing to Communicate
In this lesson, students will work with Numberless Word Problems to focus on writing equations that match their math drawings and writing to communicate their thinking.

Resources:

Materials:
- Dot card (for Number Talks)
- RD2W Anchor Chart
- RD2W Graphic Organizer
- Selection of Numberless Word Problems ([https://bstockus.wordpress.com/numberless-word-problems/](https://bstockus.wordpress.com/numberless-word-problems/))

 Procedure:
Part 1 – Number Talk (10 min.)
- “Good morning, Mathematicians! Once again, we will begin today with a Number Talk. (Transition to the Meeting Area.)
- “Ok, Mathematicians. Get ready!” Show the dot card briefly, then hide it. Ask students to share their initial answers.
- Repeat the procedure, reminding students that it is OK if they want to revise their first answer. That’s a sign that their brain is growing!
- Ask students to share how they saw the dots. Record student ideas in drawings and equations.

Part 2 – Mathematical Writing (30 min.)
- Connect
  - “Mathematicians, we have been learning about a useful process for helping us to organize our thinking while solving problems, called the RD2W Process. Let’s review the parts of the process together.”
  - Review the RD2W Process anchor chart, probing students to explain parts of the process further. This can be done in partners or with the whole group.
- Teaching Point
  - “Today, we are going to focus on the third and fourth parts of the process – Writing. It is very important for mathematicians to communicate their thinking verbally, by writing words, and by writing math symbols. (Refer back to the Math Mindset Charter to make a connection.) We are going to do this today using some more Numberless Problems.”
- Modeling
  - “Now I am going to model how I write while solving a Numberless Problem.”
Choose a simple word problem and demonstrate the 3 reads briefly, then thinking through using the information to create a few different representations (i.e., Tape Diagram, Number Bond, Number Line, etc.). Then, model using the drawings to write an equation that matches the drawing. Finally, model writing a brief statement about your conclusions. Ask students to revoice and justify your actions using the Notice and Wonder routine.

- What do you see?
- What did I do? Why did I do it?
- What did _____ just say?

Active Engagement

- Distribute the RD2W Organizer and Recording Chart
- “Now, Mathematicians, we are going to represent another problem together using Math Writing. Remember, first you need to read the problem carefully and record important information on your recording chart and use that information to draw at least 2 representations.”
- Present another simple word problem using projector or document camera, if available. Write it on the board if not.
- Alternate between having students work independently, with a partner, and discussing with the whole class through a Notice and Wonder of the problem or problems you choose.

Part 3 – Independent Practice (20 min.)

- “Mathematicians, now you are going to have a chance to practice reading and making sense of problems on your own. During this independent work time, I’d like you to focus on the habits of productive problem solvers, asking your tablemates for ideas or feedback and using the charts we have made.”
- “There are three levels of challenge for the problems I am going to give you. The easy level problems are simple, like the ones we did together. The middle level problems are a bit more challenging, and the challenge level problems are the most challenging. You may choose which level of challenge you feel that you are ready to start with.”
- Give students 20 minutes to work, circulating while observing, probing student thinking. Also, refer to the Math Mindset Charter to praise student efforts.
- Today’s practice time is not about getting answers correct. It is about giving students an opportunity to practice reading and making sense of problems and using the habits of productive problem solvers.

Part 4 – Closure (5 min.)

- “Mathematicians, you worked very hard today to write to communicate your thinking during problem solving. Think for a moment about the entire RD2W Process. What do you think you have done really well with and what do you think you need to practice more?” Give 20-30 sec. wait time.
- Ask students to share something they feel they are doing well with and something they feel they need more practice with regarding the RD2W Process.