Performance Task: Missed Bedtime

Approximately 1-2 days

STANDARDS FOR MATHEMATICAL CONTENT

MCC2.MD.7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

*****Mathematical Practices 1 and 6 should be evident in EVERY lesson. *****

BACKGROUND KNOWLEDGE

Students will need to have an understanding of the duration of time, the differences between AM and PM, and have had experiences solving problems for this task. Students should understand the importance of explaining their thinking and be able to express all of their thoughts on their task sheet through pictures, diagrams, words, and numbers.

ESSENTIAL QUESTIONS

- How do we show our thinking with pictures and words?

MATERIALS

- "Time for Bed!" Student Task Sheet
- *It's About Time!* By Stuart J. Murphy, or another similar book about time

GROUPING

Large group, individual

TASK DESCRIPTION, DEVELOPMENT, AND DISCUSSION

Gather students together in a common area. Read *It's About Time!* by Stuart J. Murphy or another similar book about time. Discuss and model scenarios from the story by asking students to identify a time during the day (am or pm), show it on an analog clock and write it on the board as they would see it on a digital clock, and name an event that would occur during that time.

Present the following problem on a Smartboard, chart paper, document cam or overhead projector:

Julie was very grumpy at school because she had little sleep last night. She told her teacher that she went to bed long after her bed time of 8p.m. What time could Julie have gone to bed? Show the time on an analog clock and explain why you think it is the time Julie went to bed.

Discuss how this problem can be solved (using a clock, making a chart, drawing a number line, etc.) Discuss different plans for solving the problems. Allow students to share strategies such as draw a diagram, make a list, guess and check, find a pattern, create a chart, work backwards, etc.

Have students work with a partner to carry out a plan. The teacher should ask student pairs about their plan including if the plans make sense, etc. Ask questions such as: What led you to choose this particular plan? How do you know your plan makes sense? Tell me about these numbers, what do they represent? Hours, minutes, seconds, or something else?

Observe students as they work. Have the students record strategies and solutions on their paper. They should use pictures, words, and numbers to explain the solutions and justify their thinking.

After ample work time, have students share their ideas. Discuss the similar plans and the unique plans. This is an open-ended question and will have different combinations of responses. Include discussion of how each solution works.

FORMATIVE ASSESSMENT QUESTIONS

- What is your plan to solve this problem?
- How did drawing pictures help you solve this problem?
- Can you write a number sentence or use words to communicate your thinking?
- What do the numbers represent in this problem?
- What did you have to know in order to solve this problem?

DIFFERENTIATION

Extension

- Present this problem to the students:

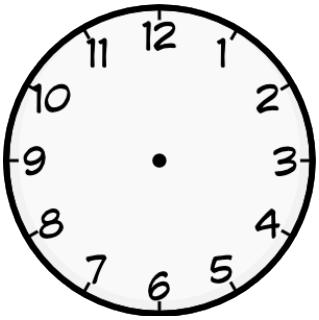
  Julie was very grumpy at school because she had little sleep last night. She told her teacher that she went to bed long after her bed time. What time do you think is her

bedtime? Why? What time could Julie have gone to bed? Show the time on an analog clock and explain why you think it is the time Julie went to bed.

Intervention

- Provide students with this problem that attaches a unit to the problem:

  Julie was very grumpy at school because she had little sleep last night. She told her teacher that she went to bed long after her bed time of 8p.m. What time could Julie have gone to bed? Show the time on an analog clock and explain why you think it is the time Julie went to bed.



Name:_____ **Date:_____**

Missed Bedtime

Julie was very grumpy at school because she did not get enough sleep last night. She told her teacher that she went to bed long after her bed time of 8p.m. What time could Julie have gone to bed? Show the time on an analog clock and explain why you think it is the time Julie went to bed.