SCAFFOLDING TASK: LET'S TALK ABOUT TIME

Adapted from North Carolina's Core Essentials Mathematics Program

APPROXIMATE TIME: 3-5 Days

STANDARDS FOR MATHEMATICAL CONTENT

MCC. 3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

STANDARDS FOR MATHEMATICAL PRACTICE

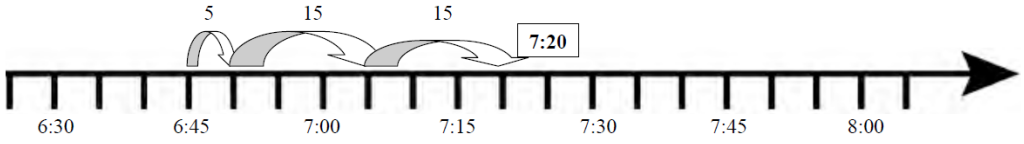
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
8. Look for and express regularity in repeated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

BACKGROUND

One expectation in the third grade is for students to solve elapsed time, including word problems. Students could use clock models or number lines to solve. On the number line, students should be given the opportunities to determine the intervals and size of jumps on their number line. Students could use pre-determined number lines (intervals every 5 or 15 minutes) or open number lines (intervals determined by students).

Example:

Tonya wakes up at 6:45 a.m. It takes her 5 minutes to shower, 15 minutes to get dressed, and 15 minutes to eat breakfast. What time will she be ready for school?



ESSENTIAL QUESTIONS

- What does it mean to tell time to the nearest minute?
- What strategies can I use to help me tell and write time to the nearest minute and measure time intervals in minutes?
- What connections can I make between a clock and a number line?
- How can I use what I know about number lines to help me figure out how much time has passed between two events?

- How can we determine the amount of time that passes between two events?
- What part does elapsed time play in our daily living?

MATERIALS

- clock
- number lines (teacher created or previously made)
- math journals (or paper)
- manipulatives/cut outs (to help students create models for their problems)

GROUPING

Students may be grouped individually, in pairs, or in small groups at the teacher's discretion.

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Part I (Whole Group)

As a class, create a list of people/places that use schedules on a regular basis. Talk about why time to the minute and elapsed time are important. Try these activities to build understanding of time to the minute and elapsed time. Discuss and clarify misunderstandings and misconceptions.

- What strategies can you use to help you figure out time to the minute?
  - Ask students to figure out the time to the minute for various analog clock faces.
  - Using a clock, have students show a selected time while thinking aloud.
- How is figuring out elapsed time like giving back change or counting on? What strategies do you use? Show with pictures, numbers, and words.
- What time is it three hours and thirty minutes before 12:36? Four hours after?

Part II (Small Group)

"TV Time!"

In small groups, solve this problem. Use pictures, numbers, models, and words to prove your thinking. When you are finished, compare your findings with other groups.

Make a list of your favorite TV shows and the length of time of each. If you watched all of these shows in one week, how much time did you spend watching TV? *Share your findings with a friend.*

Part III (Partner Task)

Look at your classroom clock. Create a number line from 1 to 12. Use your number line to help fill in the movie schedule below for Hollywood 12 Cinema.

Movie	Start Time	End Time	Duration
Alvin and the Chipmunks	**12:15**		**1 hour, 10 minutes**
Harry Potter	**2:34**	**4:34**	
Ice Age	**4:30**		**90 minutes**
The Muppets		**7:20**	**1 hour, 20 minutes**
The Smurfs	**7:30**	**8:47**	

FORMATIVE ASSESSMENT QUESTIONS

- How did you determine a start time when the end time and duration were given?
- How did you determine the end time, when the start time and duration were given?
- How did you determine the total time you spent in one week watching T.V?

DIFFERENTIATION

Extension

- Imagine that you have a friend who can tell time to the nearest five minutes, but cannot tell time to the minute. Write a letter to him/or her explaining how to do it. Try to explain it to them in at least two different ways.
- Larry reads an average of 20 pages in an hour. How many hours will it take him to read 160 pages? 200?

Intervention

- Write your daily schedule from the time you wake up, until the time you go to bed. Tell how much time elapses from event to event.
- It takes Nancy 15 minutes to walk one mile. How many miles would she walk in one and a half hours?