What Time is It?

Reporting Category Measurement

Topic Determining the amount of elapsed time

Primary SOL 5.10 The student will determine the amount of elapsed time in hours and minutes within a 24-hour period.

Materials

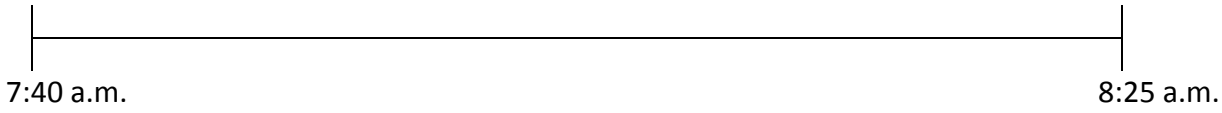
- Classroom demonstration clocks
- Classroom schedule

Vocabulary

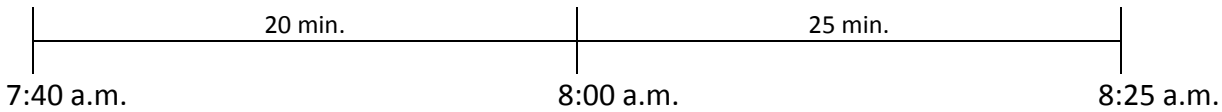
elapsed time, hours, minutes

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Begin by asking students the current time. Then ask what time lunch is (or another transition or subject change in your class schedule). Ask, "How much longer will it be until then?" Lead a class discussion to determine the number of hours and minutes that will pass before that event happens. Show, using a demonstration clock, and record hours and minutes on the board. Allow students to try a similar problem on their own using student demonstration clocks.
2. Create a simple scenario involving minutes only, such as how much time has passed since the school day started. "The bell rang to start school at 7:40 a.m. It is now 8:25 a.m. How much time has elapsed?" Because we don't usually have clocks with movable hands available, we might want to use other methods to figure out elapsed time. Show how this problem can be solved using a timeline:

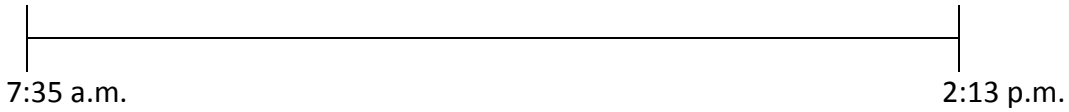


3. Ask students to suggest a landmark time to compute minutes in this problem. For example, adding 20 minutes will get us to the "on-the-hour" landmark of 8:00 a.m. (This can be shown on the demonstration clock.) Thus, mark "8:00 a.m." near the middle of the timeline.

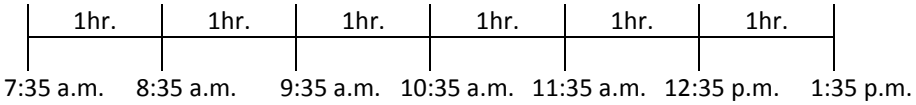


   Getting from 8:00 a.m. to 8:25 a.m. would require an additional 25 minutes. By adding 25 minutes to the previous 20 minutes, the total is 45 minutes. Thus, the amount of elapsed time between 7:40 a.m. and 8:25 a.m. is 45 minutes.

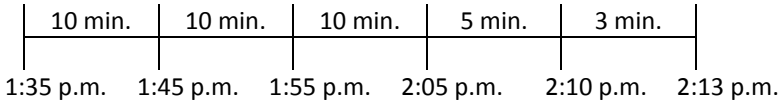
4. Next, create a scenario that involves computing hours and minutes, such as the amount of time you are at school each day. For example, "You arrive at school at 7:35 a.m. each day. You leave school at 2:13 p.m. How long are you at school each day?" Use the timeline strategy for this problem.



5. Begin marking the timeline, counting by hours, marking the new time and how many hours have elapsed. (It will be helpful to emphasize counting the "jumps" rather than the marks.) On the time line, students can count the 6 hours that have passed.



6. Continue the timeline to count minutes. Below is one possible way minutes can be counted. Students can add up the total number of minutes on the timeline (38 minutes).



   Thus, the amount of elapsed time between 7:35 a.m. and 2:13 p.m. is 6 hours, 38 minutes. Allow students to share different ways they computed the time between 7:35 and 2:13 on their timelines.

7. Create several other elapsed time situations for students to explore. For example, give students a start time and ask them to figure out what time it will be after 6 hours and 38 minutes have passed. Allow students to share their solutions.

Assessment

- **Questions**
  - How much time were you awake yesterday? (Compute from the time you woke up to the time you went to sleep.) Show how you figured out your answer.
  - If you get on a train at 9:11 a.m., and your train ride lasts 5 hours and 34 minutes, at what time will you reach your destination? Explain how you figured this out.
- **Journal/Writing Prompts**
  - Explain how you would spend the day if you could do whatever you wanted to do, and money was no obstacle. Describe exactly how much time you would spend on each activity throughout the day.
  - You are in charge of babysitting your three-year-old cousin for the day while her mother is at work. Your day will begin at 8:00 a.m. and will end at 3:45 p.m. Describe how you will entertain her. How much time will you spend with her outside? Inside? Playing? Eating? Napping? What other activities will you do?

Extensions and Connections (for all students)

- Have students create elapsed time situations using television guides from newspapers and magazines. Have students trade problems to solve.
- Randomly, throughout the school day, announce, “Start time!” and have students record the time. Later, announce, “End time!” and have students compute the amount of time elapsed. Do this activity daily for several weeks, and periodically throughout the weeks following elapsed time instruction.

Strategies for Differentiation

- Allow students to continue to use the demonstration clocks as they use the timeline strategies.
- Focus on computing elapsed time only in minutes. Then, focus on computing elapsed time in hours. Incorporate both hours and minutes once students are proficient in both separately.