Elapsed Time Mountain Strategy

You will create a timeline with mountains, hills, and rocks. Fill in the times used as you go.

Mountains = 1 hour   Hills = 5, 10, 15, 20, or 30 minute increments   Rocks = 1 minute increments

Sample Problem: Greg was dropped off at the movies at 4:40pm and his mom picked him up at the theater at 7:37pm. How long was Greg at the theater?

1. Draw a timeline listing your start time at the left-hand side and your end-time at the right-hand side.

4:40   7:37

2. Draw mountains, hills, or rocks to show the time elapsed. Write the time moved inside the drawing. Put the new time where the drawing ends.

Teacher Tip: Starting with elapsed hours every time is easy. You can see which students can move whole hours easily. My teacher talk sounds like this:

If it is 4:40 and we move 1 hour, what time will it be? 5:40. If we move another hour, what time will it be? 6:40. If we move another hour, what time will it be? 7:40. We are only trying to get to 7:37, so 7:40 is too far. We can move 2 hours, but then we will have to change our strategy.

Teacher Tip: Encourage students to move by very simple times first, for example 5 minutes at a time, even if jumping 15 minutes makes sense. Students who can tell time and catch on to the concept quickly jump larger chunks on their own. Show how the problem can be worked with different strategies and still come out the same (for example, some students move minutes first, some move 5 minutes at a time and others move in 15 minute chunks, etc.)

4:40   5:40   6:40   6:50   7:37

1   1   10
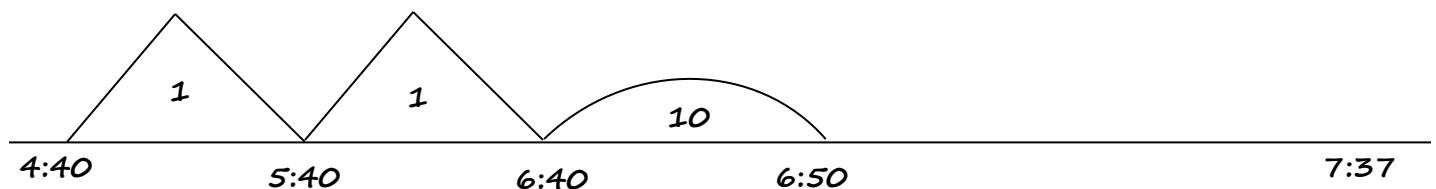
3. Continue until you meet your end time. Add your mountains, hills, and rocks together and you have your elapsed time!
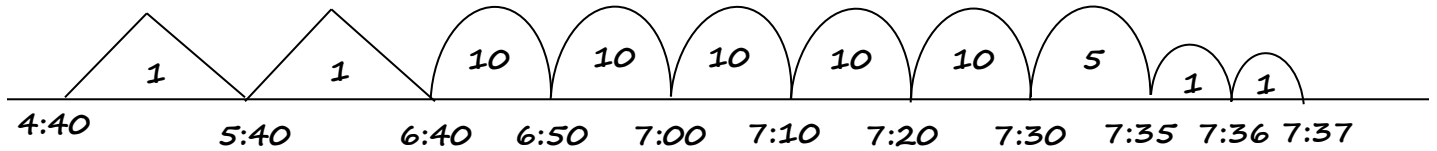
 1 hour + 1 hour = 2 hours

10 min. + 10 min. + 10 min. + 10 min. + 10 min. + 5 min. + 1 min. + 1 min. = 57 minutes

2 hours 57 minutes

Teacher Tip: Add the times using mental math. There is no reason to write it all and they will make mistakes in the transfer. Encourage students to start with the largest times first to ease confusion.

Points to Consider: Students should write in the elapsed time as they go. Make sure they label the new time under the line as they work. If they move a bunch of hills at once and then try to go back, they will often make a mistake. Also look for students not lining up times.

This strategy works well for moving forward or backwards in time. Use the same concepts, but work forward from your start time, or backwards from your end time, as called for in the problem.

Sample Problem: Jenn started her homework at 3:45 and she worked for 2 hours and 37 minutes. What time did she finish her work?

Make your line with the start time at the left, and leave the end time blank. Work left to right adding on mountains, hills, and rocks until you have used all of the 2 hours and 37 minutes. When finished, check that you have moved the required time. The end time will be the final jump.
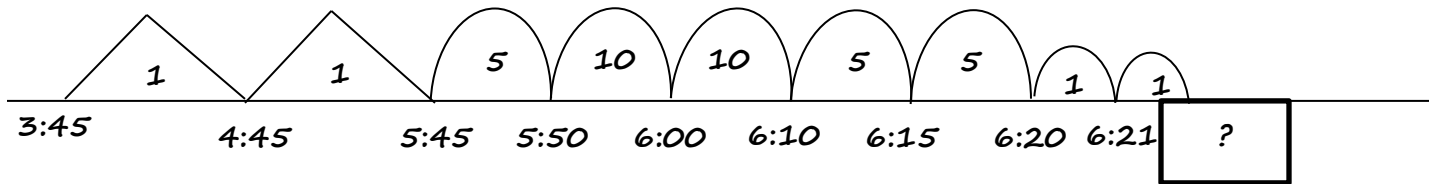
Sample Problem: Harry finished repairing his shower at 7:29pm. He began 3 hours and 45 minutes earlier. What time did Harry begin the job?

Make your line with the end time on the right and leave the start time blank. Work *right to left* adding mountains, hills, and rocks until you have used all of the 3 hours and 45 minutes. When finished, check that you have moved the required time. The start time will be your final jump.