

## Just in Time Quick Check

### Standard of Learning 3.MG.3

#### **Strand:** Measurement and Geometry

#### **Standard of Learning 3.MG.3**

The student will demonstrate an understanding of the concept of time to the nearest minute and solve single-step contextual problems involving elapsed time in one-hour increments within a 12-hour period.

*Students will demonstrate the following Knowledge and Skills:*

- a) Tell and write time to the nearest minute, using analog and digital clocks.
- b) Match a written time (e.g., 4:38, 7:09, 12:51) to the time shown on analog and digital clocks to the nearest minute.
- c) Solve single-step contextual problems involving elapsed time in one-hour increments, within a 12-hour period (within a.m. or within p.m.) when given:
  - i) the starting time and the ending time, determine the amount of time that has elapsed;
  - ii) the starting time and amount of elapsed time in one-hour increments, determine the ending time; or
  - iii) the ending time and the amount of elapsed time in one-hour increments, determine the starting time.

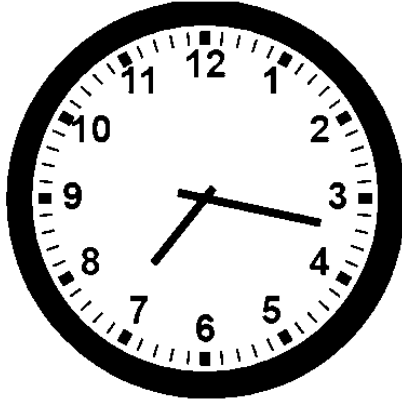
#### Just in Time Quick Check

#### Just in Time Quick Check Teacher Notes

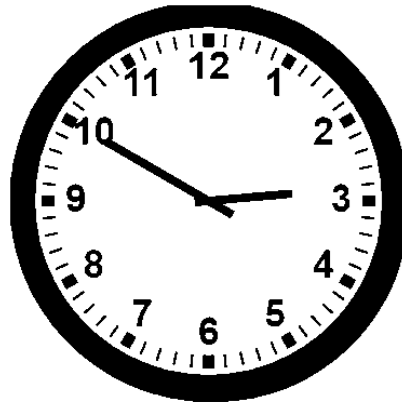
**Supporting and Prerequisite SOL:** 2.MG.2

Just in Time Quick Check 3.MG.3

1. Circle the clock that has the matching digital and analog time.

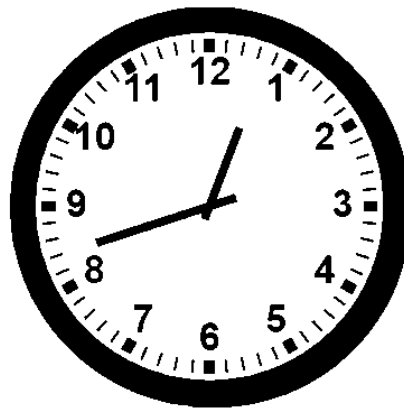
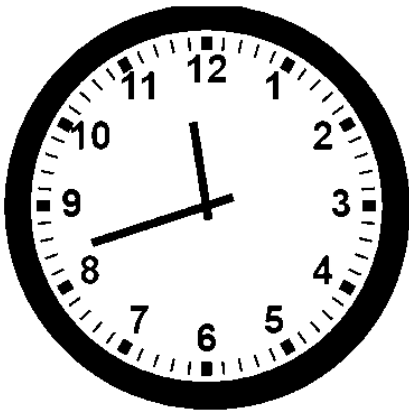


7:17



3:50

2. Circle the clock that best shows 12:42.



Explain how you decided which clock best shows 12:42.

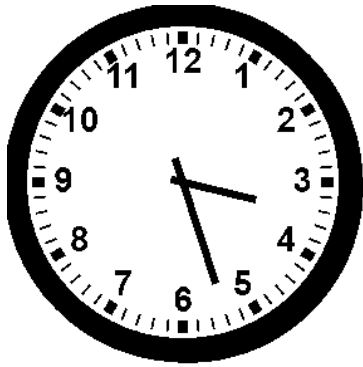
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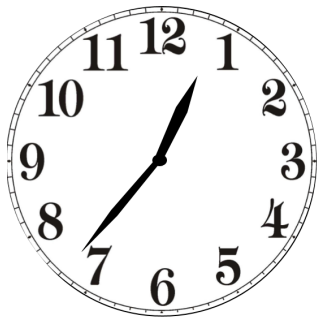
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3. Write the digital time for each analog clock.



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4. A movie started at the time shown on the clock.



It ended at this time.



How long did the movie last?

5. The clock below shows the time Kristen's soccer practice started.



It ended three hours later.

What was the time when Kristen's soccer practice ended?

6. Dara baked cookies with his mother for two hours.

This clock shows the time he finished.

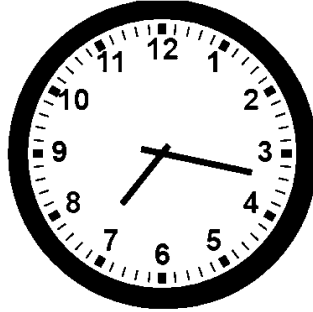


What was the time when Dara started baking cookies with his mother?

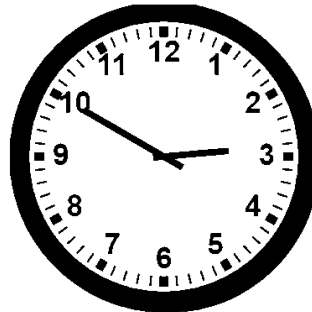
### 3.MG.3 Just in Time Quick Check Teacher Notes

#### Common Errors/Misconceptions and their Possible Indications

1. Circle the clock that has the matching digital and analog time.



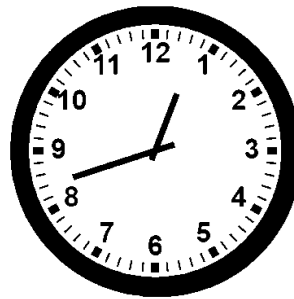
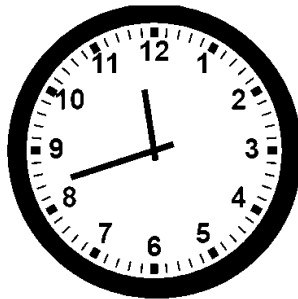
7:17



3:50

*Students may incorrectly choose the pair where the analog clock shows 2:50 and the digital clock shows 3:50 because the hour hand is closer to the number 3 than to the number 2. This error may indicate that students think that the hour hand must be directly on the number, not recognizing that 50 minutes past 3 means that the hour has almost passed and it is close to 4:00. The hour hand should be closer to the four for this clock to display 3:50. Students need experiences to develop a better understanding of how the hour hand and minute hand work together. “Gear type” clocks used during instruction can serve as models of how the hour and minute hands work (i.e., as the minute hand moves around the clock one full turn, the hour hand moves from one number to the next). It may be beneficial for students to hear the reasoning of their peers as they tell the time shown on clocks throughout the school day.*

2. Circle the clock that best shows 12:42.

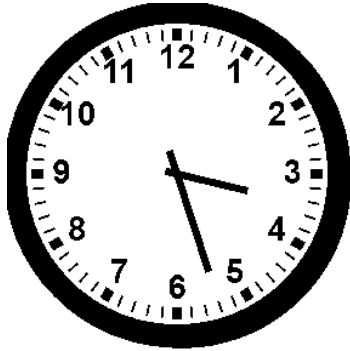


Explain how you decided which clock best shows 12:42.

*Students may incorrectly choose the clock that shows 11:42. This error may indicate that students believe that because the hour hand in 11:42 is closer to the 12 than the hour hand in 12:42, the first clock must be showing 12:42. It may be helpful to have students look at clocks*

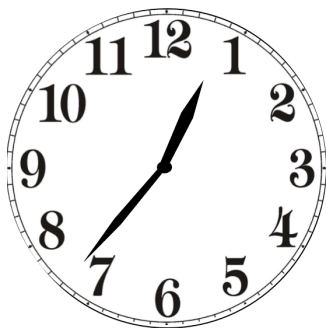
*such as these and share what is the same and what is different. Having students compare the two clocks will allow them to see that the position of the hour hand changes the time and that these two clocks do not display the same time. Students may also benefit from hearing the reasoning of their peers as to which clock best shows 12:42.*

3. Write the digital time for each analog clock.



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*Two common errors some students may make are copying the numbers they see on the clock or using the numbers closest to the hands to determine a time (e.g., writing the time as 3:5). Students may not have yet developed an understanding of how to read the time on a clock, or they may not understand that there are 60 minutes in one hour. It may be helpful to go back to using just the hour hand and work with students to brainstorm what happens at different hours during the day (e.g., at 8:00 wake up, 9:00 start school, 12:00 have lunch). Once students are more comfortable using and reading the hour hand, incorporate opportunities to work with the minute hand. Ask students what the tick marks mean, how many minutes pass between each number, and then work with them on counting by fives to read the different amounts past the hour.*



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*Some students will read this time as 7:04 because they have confused the hour hand and the minute hand. These students will need additional opportunities to read just the hour and be reminded that the hour hand is the shorter of the two hands. It may be helpful to create and*

*display an anchor chart with graphics and the words “hour” and “minute” for the students to reference as they build this understanding.*

4. A movie started at the time shown on the clock.



It ended at this time.



How long did the movie last?

*Some students may write 5:03 or 8:03 because they do not understand they need to find the amount of elapsed time that occurs between the start time and the end time. These students may need more opportunities to determine elapsed time in practical situations. Students may find geared analog clocks and/or timelines helpful in determining elapsed time by counting on from the beginning time or counting back from the ending time. Other students may not read the analog clock correctly which will impact their understanding of the elapsed time.*

5. The clock below shows the time Kristen’s soccer practice started.



It ended three hours later.

What was the time when Kristen’s soccer practice ended?

*Some students may answer 1:30 because they worked backwards three hours to find the “start” time and did not realize that the start time is already given. These students will benefit from opportunities to solve elapsed time problems in collaboration with their peers. Listening to their peers’ strategies and reasoning will help students begin to make sense of strategies for solving*

*practical problems associated with using the skills of telling time and determining elapsed time. Additionally, the use of a timeline or graphic organizer, such as the one shown below, may also be beneficial to help students organize the information in the problem.*

Start Time	Elapsed Time	End Time

6. Dara baked cookies with his mother for two hours.  
This clock shows the time he finished.



What was the time when Dara started baking cookies with his mother? 3:42, 1:42

*Some students may answer 5:42 because they worked forwards to find the “end” time and did not realize that the end time is already given. Another common error is for students to write 2:42 because they counted back and used the time on the clock as the first hour (i.e., they counted back by stating 3:42, 2:42). These students may need additional opportunities to determine the start time when the ending time and elapsed time have been given. Students may also benefit from being provided with or creating a timeline or graphic organizer like the one shown below to keep track of all the components of a practical problem involving elapsed time.*

Start Time	Elapsed Time	End Time