

Math Domain

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|---|--------------------------------------|---|
| <input checked="" type="checkbox"/> Number/Quantity | <input type="checkbox"/> Shape/Space | <input type="checkbox"/> Function/Pattern |
| <input type="checkbox"/> Chance/Data | <input type="checkbox"/> Arrangement | |

Math Actions (possible weights: 0 through 4)

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|--|--|
| <input type="checkbox"/> 2 Modeling/Formulating | <input type="checkbox"/> 3 Manipulating/Transforming |
| <input type="checkbox"/> 3 Inferring/Drawing Conclusions | <input type="checkbox"/> 2 Communicating |

Math Big Ideas

- | | | |
|---|---|--|
| <input type="checkbox"/> Scale | <input checked="" type="checkbox"/> Reference Frame | <input checked="" type="checkbox"/> Representation |
| <input type="checkbox"/> Continuity | <input type="checkbox"/> Boundedness | <input type="checkbox"/> Invariance/Symmetry |
| <input checked="" type="checkbox"/> Equivalence | <input type="checkbox"/> General/Particular | <input type="checkbox"/> Contradiction |
| <input type="checkbox"/> Use of Limits | <input type="checkbox"/> Approximation | <input type="checkbox"/> Other |

1. Students should draw the hands on the clock indicating it is 11:45. The minute hand should be pointing to the 9, and the hour hand should be three-quarters of the way between 11 and 12.

The analog clock should read 11:45.

2. Students should draw hands on the clock indicating it is 2:30. The minute hand should be on the 6, and the hour hand should be halfway between the 2 and the 3.

The analog clock should read 2:30.

There are 55 minutes to the end of school.. Students may count the minutes from 2:30 to 3:25, or might subtract 2:30 from 3:25 to arrive at this answer.

3. Because there are a maximum of 59 minutes which can be shown on a clock without moving to the next hour, the minutes shown must be incorrect. Since there are 60 minutes in each hour, students should subtract that from the 75 minutes and then add the hour they subtracted, to arrive at the answer of 4:15.

	partial level (1 or 2)	full level (3)
Modeling/ Formulating (weight: 2)	Student does not indicate identical times on analog and digital clock examples.	Student indicates identical times on analog and digital clock examples.
Transforming/ Manipulating (weight: 3)	Student gives correct time translations on the digital clocks, but does not place the hands of the analog clock correctly. Student incorrectly calculates 2c	Student gives correct time translations on all of the clock times, and correctly places the minute hand between the appropriate numbers. Student correctly calculates 2c
Inferring/ Drawing Conclusions (weight: 3)	Student is not able to identify what is wrong in question 3 .	Student corrects the time shown in 3 .
Communicating (weight: 2)	Student provides an incomplete written statement of time in 3 , and/or provides partial or unclear reasoning in identifying what is wrong with the clock.	Student provides complete written statement of time in 3 , and exhibits clear reasoning in identifying what is wrong with the clock.