

## Do you Know What Time It Is?: Grade 3

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### Lesson Overview

In this lesson, students will use analog and digital clocks to determine and record time to the nearest minute, using a.m. and p.m., measure time intervals in minutes, solve problems involving elapsed time integrated with the science concept related to changes in heat and states of matter.

### Alignment

#### **Math Standards**

**3.MDA.1** Use analog and digital clocks to determine and record time to the nearest minute, using a.m. and p.m.; measure time intervals in minutes; and solve problems involving addition and subtraction of time intervals within 60 minutes.

#### **Math Process Standards**

- 6.** Communicate mathematically and approach mathematical situations with precision.
- Express numerical answers with the degree of precision appropriate for the context of a situation.
  - Represent numbers in an appropriate form according to the context of the situation.
  - Use appropriate and precise mathematical language.
  - Use appropriate units, scales, and labels.

#### **ELA Writing**

Standard 1: Write arguments to support claims with clear reasons and relevant evidence.

#### **ELA Communication**

Meaning and Context

Standard 1: Interact with others to explore ideas and concepts, communicate meaning, and develop logical interpretations through collaborative conversations; build upon the ideas of others to clearly express one's own views while respecting diverse perspectives.

### Connections

#### **Content Area Connections**

- Science
- Math

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Math and science are connected through this math lesson on time and the science lesson, Change: Heat and States of Matter addressing **3.P.2A.3** Plan and conduct scientific

investigations to determine how changes in heat (increase or decrease) change matter from one state to another (including melting, freezing, condensing, boiling, and evaporating).

### Active Learning Strategies (for Purposeful Reading, Meaningful Writing, and Productive Dialogue)

[Brainstorm](#), [Partner Talk](#), [Pairs Squared](#)

### Computational Thinking

- Logically organizing and analyzing data with their daily schedule
- Generalizing and transferring this problem solving process to a wide variety of problems when they transfer their understanding of elapsed time to other situations.

*These skills are supported and enhanced by a number of dispositions or attitudes that are essential dimensions of CT. These **dispositions or attitudes** include:*

- The ability to communicate and work with others to achieve a common goal or solution

### Lesson Plan

#### Part A

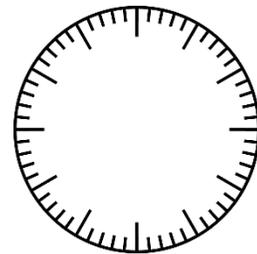
Time Required: One 90 minute math class

Disciplinary Vocabulary: elapsed time, analog, digital, states of matter

Materials Needed: clock manipulative, number lines

#### Engage

- Give students a blank clock and these directions:
  - Label the clock with the correct numbers
  - Brainstorm everything else you remember about telling time on an analog clock.
- Observe the students' work for
  - Accurate labeling of hours to the ½ hour and hour (1<sup>st</sup> Grade); accurate labeling to the 5 min. (2<sup>nd</sup> grade)
  - In brainstorm, students should remember a.m. and p.m. (2<sup>nd</sup> Grade)



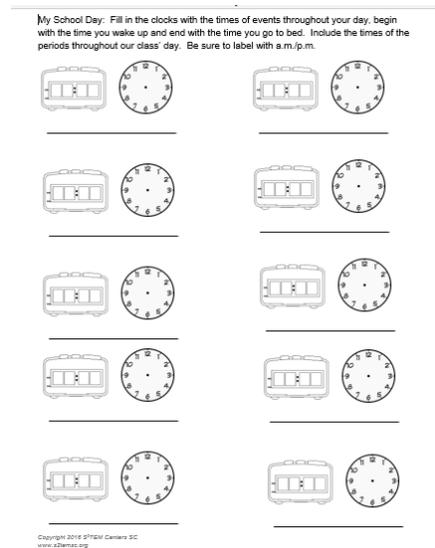
#### Explore

- Review the students' brainstorming and correct misconceptions
- Make sure students understand

- that a digital clock shows the current time only
- that an analog clock shows past, present and future times
- that five minutes intervals contain five individual marks – each representing one minute
- the meaning of “closest to” or “nearest to”
- that the a.m. hours run from just after midnight to just before noon and p.m. runs from just after noon to just before midnight.
- Now, have students label their clocks in minutes between the 5-minute intervals - :01, :02, :03, :04, ... :58, :59
- Ask: How many minutes are in one hour? How many seconds are in one minute?
- Explore the students’ daily schedule by completing the *My School Day* handout.
- Give students an analog clock manipulative to interact with and/or utilize an online analog clock <http://www.visnos.com/demos/clock> for students to check the accuracy of their pictures on the *My School Day* handout.
- Watch for students who get confused with how to draw the hands on the clock.
- Check the accuracy of student’s handout

### Explain

- From the completed *My School Day* handouts, have students compute elapsed time based on times the teacher selects and then on times the students select. For example, amount of time between the beginning of math and the beginning of lunch or the amount of time between the end of lunch and the end of our school day.
- Model the process of computing elapsed time using number lines printed on paper or drawn on the board, floor, or sidewalk. Using number lines on the floor or sidewalk and allowing students to walk or jump the intervals supports the kinesthetic learners.
- Engage students in “Time Talks”. Give students intervals of time and have them individually compute the elapsed interval and then justify their process with a partner and then partners share with another pair ([Pairs Squared](#)) and then whole group. Compare the different student methods and discuss which is the most efficient.
- Students take a position and then complete a persuasive writing to the school board on this question: Is the school day too long, too short, or just right? Have them provide

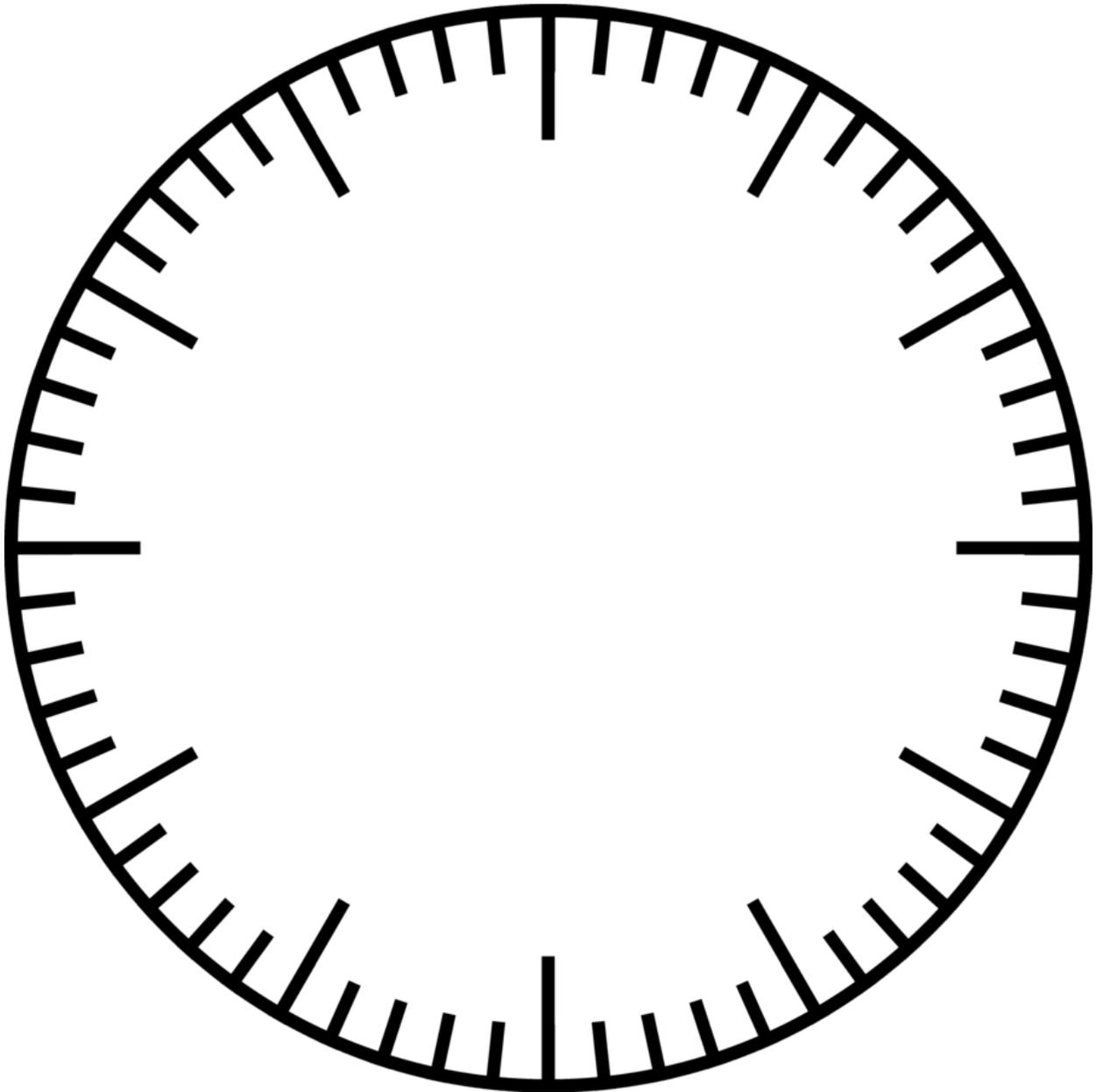


supporting evidence for their claims using data from their completed *My School Day* *handout*.

The teaching and learning of “time” concepts should be ongoing. Ask students throughout the day and throughout the year, “What time is it?, What time will it be in 18 minutes?, How much time before lunch?... Post the class’ schedule using digital and analog clocks.

Science Connection: There is additional elapsed time problem solving in the S<sup>3</sup> science lesson related to the science indicator 3.P.2A.3 as students complete the learning task *“It’s a Matter of Time.”*

Give students a blank clock and have them share with each other all that they remember about time on an analog clock.



My School Day: Fill in the clocks with the times of events throughout your day. Begin with the time you get out of bed and end with the time you go to bed. Include the times of the periods throughout our class' day. Be sure to label with a.m./p.m.

