TEACHING WITH PRIMARY SOURCES—MTSU
Lesson Plan: Telling Time with Analog Clocks

Grades: 2-3
Subjects: Mathematics
Time required: 1-2 class periods
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OVERVIEW
We tell time every day, whether it is by looking at our cell phones, watches, or a clock on the wall. Before cell phones and the popularity of digital clocks, we used analog clocks to tell time. We still use analog clocks today, especially in public places. What is an analog clock?

UNDERSTANDING GOAL
Using primary source images of analog clocks in public places from the Library of Congress, students will explain how analog clocks tell time.

OBJECTIVES
- Students will tell time on standard analog clocks.
- Students will tell time on analog clocks with Roman Numerals or without numbers

INVESTIGATIVE QUESTION
How do we tell time on analog clocks? Why is it important to be able to tell time?

MATERIALS AND RESOURCES
Primary Sources: Library of Congress
- One of what were 55 street clocks in Seattle, Washington, which was known as the "City of Clocks" [ca. 1980-2006]
- Miscellaneous subjects, Upper half of clock or watch face, [ca. 1920-1950]
- One of what were 55 street clocks in Seattle, Washington, which was known as the "City of Clocks" [ca. 1980-2006]
- Perspective view of one of Columbia’s two street clocks - Columbia Street Clock, On Hampton Street, near the intersection of Main and Hampton streets, Columbia, Richland County, SC [After 1933]
- Street clock, Seattle, Washington [ca. 1980-2006]
- One of what were 55 street clocks in Seattle, Washington, which was known as the "City of Clocks" [ca. 1980-2006]
- An old bank clock that once stood outside the First National Bank in downtown Cisco, Texas [2014]

CURRICULUM STANDARDS
2nd Grade Mathematics
- Measurement and Data 7: Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

3rd Grade Mathematics
- Measurement and Data 1: Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
**PROCEDURE**

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Print the primary sources found under Materials (For directions, see <a href="#">How to Save &amp; Print Primary Sources from the Library of Congress Web Site</a>).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>What is the difference between a digital clock and an analog clock? Why is it important to know how to read both types? What do the three hands on an analog clock measure? Analog clocks indicate time using angles. The most common clock face uses a fixed numbered dial or dials and moving hand or hands. It usually has a circular scale of 12 hours, which can also serve as a scale of 60 minutes, and 60 seconds if the clock has a second hand.</td>
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<tr>
<td>Step 3</td>
<td>Project <a href="#">Perspective view of one of Columbia’s two street clocks - Columbia Street Clock, On Hampton Street, near the intersection of Main and Hampton streets, Columbia, Richland County, SC</a> on the overhead screen. As a class, view the image and prompt them with the following questions: What do you see? How do you know it’s a clock? Why is it so large? Where is the minute hand pointing? Where is the hour hand pointing? Is there a second hand? What time is shown on this clock?</td>
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<tr>
<td>Step 4</td>
<td>Project <a href="#">Miscellaneous subjects. Upper half of clock or watch face</a> on the overhead screen. As a class, answer the following questions: What is missing from this picture? How many numbers do you see? How many numbers are missing? Are you still able to tell what time it is without the other numbers? Why or why not? Is there anything missing in this picture besides numbers? If so, what is missing?</td>
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<tr>
<td>Step 5</td>
<td>Divide your students and distribute three primary sources to each small group. Each group will receive either “Collection A” or “Collection B.” Each collection features two clocks with numbers and one clock with Roman numerals. Explain what Roman numerals are and provide students with this key to deciphering them. See below:</td>
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</tbody>
</table>

### Collection A

<table>
<thead>
<tr>
<th>Image 1</th>
<th>Image 2</th>
<th>Image 3</th>
</tr>
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<tbody>
<tr>
<td>One of what were 55 street clocks in Seattle, Washington, which was known as the &quot;City of Clocks&quot; [ca. 1980-2006]</td>
<td>Perspective view of one of Columbia’s two street clocks - Columbia Street Clock, On Hampton Street, near the intersection of Main and Hampton streets, Columbia, Richland County, SC [After 1933]</td>
<td>Courtroom clock, James T. Foley U.S. Post Office and Courthouse, Albany, New York [2007]</td>
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</table>
# Collection B

<table>
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<tr>
<th>Image 1</th>
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<th>Image 3</th>
</tr>
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<tr>
<td>Street clock, Seattle, Washington [ca. 1980-2006]</td>
<td>One of what were 55 street clocks in Seattle, Washington, which was known as the &quot;City of Clocks&quot; [ca. 1980-2006]</td>
<td>An old bank clock that once stood outside the First National Bank in downtown Cisco, Texas [2014]</td>
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## Step 6
As a class, review the six images using the overhead projector. Allow students to present their findings, including the time for each clock. Was it difficult to tell the time on the clock without numbers? How were they able to tell the time without the numbers in front of them? What are the symbols called that stand in place of the numbers? What do all three of your clocks have in common?

## Step 7
Explain to your students that now that they can read a clock with Roman Numerals, they can read any clock like it. Introduce them to “Wall clock. Library of Congress John Adams Building, Washington, D.C.” How would you find the time on this clock, with only images instead of numbers or Roman Numerals? Why do you think there are triangles in certain places and rectangles in others?


### EVALUATION
1) The level of insight and effort in the small group activity (40%) and
2) Participation and presenting to the class (60%).

### EXTENSION
- What if the analog clock was a square instead of a circle? How would that change how you tell time? Would it be easier or more difficult to tell time with a square clock? Why or why not?