CONSTRUCTING/PERFORMANCE TASK: It's Time – Part III

Approximately 4-5 days

STANDARDS FOR MATHEMATICAL CONTENT

MCC1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

BACKGROUND INFORMATION

Students should have an understanding of 5 as a benchmark number and have had experience with number patterns for this activity. They will also need to have a strong understanding of the role of the hour hand in order to develop an understanding of its relationship to the minute hand for this task. Duration of time is discussed within in this task, but it is not required by the standard for mastery. However, it is concept that will naturally be included in your conversations as you communicate the concept of a half-hour in relation to a whole hour.

ESSENTIAL QUESTIONS

- What does the hour hand on a clock tell us?
- What does the minute hand on a clock tell us?
- Why is it important to know the difference between the two hands?
- Why do we need to be able to tell time?

MATERIALS

- It's Time, Part III: Foldable Clock Templates
- Analog and Digital Clock Recording Sheet, 2 per student
- One paper plate, per student
- Markers
- Minute and hour hand for student clocks
- Brass fasteners (one for each student)
- *The Clock Struck One: A Time-telling Tale,* by Trudy Harris

- **GROUPING**

Large or small group

TASK DESCRIPTION, DEVELOPMENT, AND DISCUSSION

Part I
Begin the lesson by gathering students in a common place. Read *The Clock Struck One: A Time-telling Tale*, by Trudy Harris (or similar time story.) Discuss the progression of the story over a 12 hour period.

Part II
Lead the students in a discussion of using 5 as a benchmark number. How does it make it easier to count using 5? What experiences have they had using groups of 5? Allow them to share their experiences, and then as a group count by 5's.

Part III
Review the number line that was created in *It's Time: Part I.* Refer to student examples from the previous task and discuss each. Next, review with students how many minutes are in an hour and then have students predict how many minutes are in half of an hour. Explain, if needed, that 30 is half of 60.

Make another number line using time to the hour, but leave an extra space in between each hour to include time to the half hour. Once the number line is displayed, ask students to predict what time they think will go in between each hour and to explain their reasoning. Lead students to an understanding that, at the midpoint between each hour, a half hour has passed. Write several examples of time to the half hour, in digital form, on an index card. Have student volunteers place the time card on the number line. As students are placing the time cards on the number line, emphasize that the time they are posting is halfway between the two hours. The discussion of the concept of time to the half hour needs to occur during this activity and not afterwards, so be sure to monitor students closely as they place the times, to address any misconceptions as they occur.

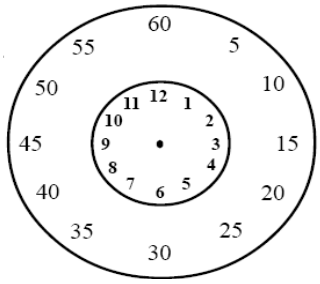
Give students the opportunity to demonstrate their understanding of the concept of a half hour being between two hours, by having them create a number line as they did in *It's Time: Part I.* Students will select events to display on a number line and assign a time that they would participate in each. They will write the time on the analog and digital clocks and write an explanation of the event. You can choose to have students select ten separate events or leave it open ended for those students who may have an understanding of duration of time to display one event starting at a half-hour and ending at the following half-hour or continuing across a few hours [For example, Elliott's game is scheduled for 9:30 and lasts an hour. She will display her number line to reflect her basketball game starting at 9:30 and continuing at 10:00, and ending at 10:30. OR, you may have some students who display two events within one hour (ex: Eating

lunch from 11:00-11:30 and Recess from 11:30-12:00), going to a movie at 5:00 that ends at 7:00, etc.].

There are multiple ways students could display their understanding of time for this activity, so only limit the number of events students could choose for the children who may be overwhelmed with the task of selecting appropriate events.

Part IV
Review the understanding of minutes, as units of 5, from the previous activity. Show students the foldable clock and explain that they will make one to practice time to the hour and half hour. Students will begin by making the clock face with dotted lines to represent the hours on the face of a clock. Each student will write the hour, starting with 1, in between the dotted lines (see pictures for clarification). Cut the tabs on the dotted lines. Next, they will write the minutes, in units of 5, in between the solid lines on the second clock face. Students should not cut the solid lines on the minute clock. Place the clocks with the hours on top of the clock face with the minutes (see example below).

Part V
To help with understanding the relationship between the minute and hour hands show students a paper plate clock constructed as follows:



The teacher will give all students one paper plate. Students will write the numbers for the minute hand on the ribbed edge of the plate and the numbers for the hour within the flat circular space in the middle of the plate. Have students cut out and attach the hour and minute hands with a brass fastener.

- Have the students skip count by fives at least up to sixty.
- Allow students to move the minute hand as they skip count by fives. Allow them time to practice moving both the hour and minute hands as they skip count. (Students should

understand that the reason they are doing this is because there are five minutes between consecutive integers on the clock face.)

- After students understand that there are sixty minutes in an hour, it is a good time for them to recognize the relationship between the hour hand's movement and the movement of the minute hand. This is a good time to reinforce on a demonstration clock that one full circle of the minute hand will cause the hour hand to move from one hour to the next.

Part VI

Allow time for students write in their math journal about number relationships and patterns they noticed during the lesson. After students have had a sufficient amount of time to record their thoughts, allow them to share their thinking with a partner and then with the class.

FORMATIVE ASSESSMENT QUESTIONS

- How do the minute and hour hands help us tell time?
- Does it matter which hand we read first?
- Why do we need to be able to tell time?

DIFFERENTIATION

Extension

- Have the children make time cards using index cards. Create one card with an analog clock on it and then create a corresponding card with a digital clock. Make several examples like this and allow the children to play "Time Memory." All of the cards with the times on them, both analog and digital clock cards, will be mixed up and turned face down. They take turns turning 2 cards over at a time and try to find a match. For example, the analog clock will read 2:00 and the digital clock will say 2:00. If they get a match they get to keep the cards and go again. If they do not find a match, they turn the cards back over and their turn ends.

Intervention

- For students who seem overwhelmed with the task of selecting events to add to their timeline, give them a set of 10 pictures representing daily activities and have them assign a time for each and place on a number line.

- In addition to giving students pictures to use as prompts, also make time cards for them to match to the pictures and then place on a number line.

It's Time-Part III (Clock Hands)