

**Virginia Essentialized Standards of Learning  
Instruction Resource  
Mathematics Sample Activities**

**Grade3- Measurement and Geometry**

<b>VESOL Code</b>	<b>VESOL Reporting Category</b>	<b>VESOL Text</b>	<b>Complexity Continuum</b>
<b>M-3 13</b>	Measurement and Geometry	Tell time in whole hour increments using a digital clock including with context.	Times could be on the hour, in a.m. or p.m., and the terms noon and midnight could be included. Contexts will relate the time to an appropriate activity.

**Instructional Example**

**Objective:**

Student(s) will tell time to the nearest hour.

**Vocabulary:**

hour, AM, PM minute, time, noon, midnight

**Materials:** *Sample activities range across a continuum of complexity and may include materials such as: Manipulative clock ([judy clock](#)), digital clock, visual representations of digital clocks on paper, pictures of household items with a digital clock face, visual representations of digital clocks on paper paired with visuals of periods of the day scenarios, such as lunchtime, sunrise/breakfast, bedtime, eating dinner, etc.*

**Procedures for Instruction:**

*These instructional activities can be used at various points on the complexity continuum, depending upon student ability. Many possibilities exist for lesson creation between the examples presented here. It is important to start instruction where the student is currently functioning and implement the appropriate instructional strategy with them. Once data indicate that the student is ready for the next level of instruction, proceed to it after reviewing the level the student has mastered. Let the data be your guide.*

**Sample Activity 1**

Students will identify the hour display when given a digital clock.

1. Use evidence-based systematic instruction, (i.e. discrete trial teaching, time delay, least intrusive prompts etc.) to teach students where the hour display is on a digital clock

- hour = numbers on the clock . Show the student an analog clock. Allow students to manipulate the clock hands to different numbers on the clock face. Each time the student moves the small arrow to a new number on the clock, state the time to model naming the hour, such as, “Yes, clocks tell time and **this number** (point to number at end of small arrow) tells us the hour. The clock says it is \_\_\_:00.”
  - hour = box on the left. Show the students a digital clock. Move the numbers in the hours section on the clock to show how the numbers change. With each click to a new number, state the time to model naming the hour, such as “Yes, clocks tell time and **this number** (point to number in left hand box) tells us the hour. The clock says it is \_\_\_:00.”
  - Repeat several times moving hands or digits to display different hours, always modeling that clocks tell time and the **number here** (pointing to the left side of the digital clock) tells us the hour.”
2. Show students an analog clock pointing to a number, naming the hour. Ask students to use their means of communication to select from a field of 3 real clocks, pictures or symbols representations **where the hour is found on a digital clock** ( choices might include a picture with the number on the left side of the clock, on the right side of clock, or on a knob/button/dial of the clock).
  3. Possible generalization (match analog clock time to digital clock time)
    - Show students an analog clock face displaying time on the hour. Ask students to select which digital clock face (from a field of three) shows the correct time (choices vary with time being on the left side, right side, and/or varied numbers on the left side of the clock).
    - Show students an analog clock face displaying time on the hour. Students select the matching number (1-12) from a field of three choices and place their choice in the left hand corner of the digital clock to answer, “What time is it?”

## Sample Activity 2

Students will identify 3:00, 6:00, and 9:00 when given a picture of a digital clock set to one of those times. *In this sample, students learn the term “o’clock” and will identify 3:00, 6:00, and 9:00.*

1. Provide students with manipulative analog clocks, explaining “This is a clock. We use clocks to tell time.” Allow time for students to manipulate their clocks, turning the dials and moving the clock hands. Collect clocks or have students set them aside.
2. Show the students a digital clock. Move the numbers in the hours section on the clock to show how the numbers change on a digital clock just like the hands move on a round clock. Show and explain that the number on the left side of the clock tells the hour, so we say, “It is 3:00 (6, 9, 12).
3. **Using a real digital clock:** Show the students a number 3, then, with the big hand remaining on the 12, move the small hand to the number 3 on the analog clock, and say “The hour is 3. It’s 3:00.” Show the students the digital clock and say “this clock can also show us 3:00.” Move the hour display on the digital clock to a 3 to show 3:00. Repeat, ‘The hour is 3. It’s 3:00.” Invite

students to move the knob on a digital clock until it displays 3:00. Ask “what time is it?” and provide a response model, such as “The hour is 3; it is 3:00.”

**Using pictures/drawings of a digital clock:** Provide a drawing of a digital clock face and a field of three choices. Ask the student to select and select the number the small arrow is pointing to on an analog clock and place that number in the left hour space on the digital clock face. With the number in place, ask the student “What time is it?” Model the answer by pointing to the number on the left side of the digital clock and saying, “This number is 3. It is 3:00 just like on the round clock. Use EBPs (least intrusive prompting, wait time, errorless learning etc.) to scaffold success so that the student answers correctly, “It’s 3:00.”

4. Use evidence-based systematic instruction to teach students to match the time displayed on an analog round clock face to the same time on a digital clock. When mastery is reached for naming 3:00 on a digital clock, move to 6:00 and repeat the task. When the student can identify the time as 6:00 on a variety of digital clocks, introduce discriminations between 3:00 and 6:00. If the student has the motor function, you can ask them to manipulate the clock between 3:00 and 6:00 to demonstrate the difference. As always, practice the task with the student before asking them to complete it independently. When the student has mastered 3:00 and 6:00, move on to 9:00, completing the above activity with 9:00. Practice this several times changing the number and hour display on the digital clock (3, 6, and 9). Finally, repeat the procedure for 12:00 and randomized presentations of “what time is it?” with digital clock faces showing 3, 6, 9 or 12:00.
5. Generalization: Using their means of communication students respond to the question, “What time is it?” when shown a digital clock face with 3, 6, 9 or 12:00.
6. Assessment practice: Show students an analog clock face paired with the written time it displays, saying, “This clock says it is \_\_\_:00.” Present three digital clock faces, one with the correct time, one with the same number, but on the wrong side of the digital clock, and one with a different number. Ask “Which clock says \_\_\_:00?” Students use their means of communication to answer the question.

### **Sample Activity 3**

Students will identify 1:00, 2:00, 4:00, 5:00, 7:00, 8:00, 10:00, and 11:00 when given a picture of a digital clock set to one of those times.

1. Repeat the steps as described above for Sample Activity 2 but add in additional times for 1:00, 2:00, 4:00, 5:00, 7:00, 8:00, 10:00, and 11:00.
2. As each new time is introduced, check for understanding by presenting a field of at least 3 choices for the student to select the correct time requested.
3. Move to paper representations and repeat the activity to mastery.

### **Sample Activity 4**

Students will identify noon as 12:00 in the day. Students will identify a time as AM or PM given a scenario and the time.

1. Follow the steps in sample lesson 3 for identifying time to the hour on a digital clock
2. Present students with a digital clock displaying 12:00. Ask the student to tell you the time.

3. Explain to the student that 12:00 in the daytime is called “noon,” and connect it to the activity the student usually participates in at that time of day. Often, lunch is around noon, which gives students a place of relevance for the more abstract concept of “noon” as a time. If the student has a visual schedule, it may also be of use in demonstrating when “noon” is for the student. Show the student a picture of night time and day time with a clock that is set for 12:00. Ask the student to identify which picture shows noon. Repeat to mastery.
4. Once the student has the concept of “noon,” explain to the student that times in the morning, before noon, are AM times. Provide multiple pictures and/or drawings of morning activities with associated times, saying, “This is eating breakfast at 8:00. It is 8:00 AM because it is before noon. It is 8:00 in the morning.”
5. Repeat procedure above, explaining PM is the time after lunch/noon. Show multiple pictures and/or drawings of afternoon and evening activities with associated times, such as “This is doing homework at 8:00. It is 8:00 PM because PM is AFTERnoon and evening.”
6. Model placing several examples on a sorting AM/PM T chart. Describe and place a picture of waking up or going to school on the AM, saying, “This is AM because it happens in the morning,” and then describe and place a picture of brushing teeth in when it is dark outside and say, “this is PM because it happens at night.” Use as many authentic examples as possible, such pictures/symbols from the students daily schedules or photographs of home activities. After placing and describing several examples, remove the pictures and ask the student to complete the sort. Use evidence-based prompting strategies to scaffold success, providing feedback after each response (behavior specific praise when correct, error correction when incorrect). When students master sorting modeled pictures correctly, introduce a new set of pictures for students to sort.
7. Expand sort to include different times of day. For example, present a time, such as 7:00 and ask students to either select from an array of pictures or items what might happen at that time, or to use their means of communication to name activities that happen at 7;00 and 7;00 PM.
8. Repeat above steps with a variety of pictures/symbols to represent a variety of activities, asking students to identify AM or PM, for example, ‘Carlos walks the dog at 8;00 in the morning. Is that 8:00 AM or PM? Embed naming AM and PM throughout the instructional day. For example, ‘Music is after lunch at 1;00 PM’ and ask students to name AM or PM for activities as they occur across the school day..

#### Additional Resources:

#### **Evidence-Based Instructional Practices:**

- Evidence-Based Practices for Students with Significant Cognitive Disabilities
  - [Discrete Trial Teaching AFIRM module](#)
  - [Discrete Trial Teaching Implementation Checklist](#)
  - [Least-to-Most Prompting](#)
  - [Task Analysis Step-by-Step Guide](#)

#### **Communication:**

- [36 Location Universal Core Board](#)
- Core Vocabulary and Math: Core words that can be modeled and targeted during lessons:

- Up/Down
- Same/Different
- Go/Stop
- When
- Before/After
- Later

**Virtual Manipulative Resources:**

- [National Library of Virtual Manipulatives](#)
- [Toy Theater Virtual Manipulatives](#)
- [Math Playground Virtual Manipulatives](#)
- [Geogebra](#)

**Desmos**

- [Desmos Activity Log](#)- an Excel spreadsheet, contains a tab for each grade-level/mathematics course from Grade 2 through Algebra II. Each grade level sheet includes a list of SOL-aligned Desmos activities with a brief description and direct link to the activity on the Desmos website.
  - [Talking Time](#)

**Virginia Department of Education Resources:**

- [Mathematics Vocabulary Word Wall Cards](#) (K-8, Algebra I, Geometry, AFDA, and Algebra II) – provide a display of mathematics content words and associated visual cues to assist in vocabulary development.
- [Rich Mathematical Tasks](#) – (K-8, Algebra I, Geometry, Algebra II) These resources are provided to support teachers in implementing the 2016 *Mathematics Standards of Learning* in their classrooms. Teachers are encouraged to not only use these tasks with their students, but also to endeavor to implement them with fidelity by utilizing the detailed information provided in the task implementation templates.
  - [Rich Mathematical Task – Grade K.10 – Shape Riddles](#)
- [Mathematics Instructional Plans](#) – includes instructional plans aligned to the 2016 *Mathematics Standards of Learning* to assist teachers in aligning instruction to the essential knowledge and skills.
- The [Evidence-Based Specially Designed Instruction in Mathematics Resource Guide](#) (PDF) provides an overview of evidence-based instructional strategies that educators can utilize to support students with mathematics disability or difficulty at any grade.
- The [Students with Disabilities in Mathematics: Frequently Asked Questions](#) (PDF) document provides an overview of the characteristics of mathematics disability as well as information about accommodations, modifications, and assistive technology that can support a student with a disability in mathematics.

- [Mathematics Vertical Articulation Tool](#) - This tool provides support in identifying concepts aligned to the 2016 *Mathematics Standards of Learning* (SOL) that articulate across mathematics grade levels or courses.
- [2016 Mathematics Vertical Articulation Grades K – Algebra II SOL by Strand Concepts](#)- These versions of the MVAT address all five strands across select grade levels and include only references to mathematics SOL by number.