



NUMBER WORLDS™

Accelerate Math Success



Understanding the Analog Clock

Week at a Glance

This week students begin *Number Worlds*, Week 31 and continue working in Circle Land.

Background

In Circle Land, students continue to explore numbers by examining dials. Students develop spatial intuitions in Circle Land that become the foundation for understanding many concepts in mathematics that deal with circular motion, such as time.

Teaching for Understanding

As students engage in these activities, they learn that changes in quantity can be represented as movement around a clock dial, not just along a line. Students must keep track of distance from a given starting point.

Observe closely while evaluating the Engage activities assigned for this week.

- Are students counting correctly?
- Are students making comparisons that identify more and less?
- Are students using information they discover to solve problems and answer questions?

Skills Focus

- Learn the base-12 analog clock.
- Read hour times.
- Identify the purpose of the hour hand.
- Observe the movement of the hour hand.
- Learn that an hour is much longer than a minute.

Weekly Planner

| Lesson | Learning Objectives | |
|---------------------------------|---|--|
| 1 pages 438–439 | Students become acquainted with the base-12 analog clock and read hour times on the clock. | |
| 2 pages 440–441 | Students determine the hours that have gone by on a clock. | |
| 3 pages 442–443 | Students explore smaller and greater passages of hours. | |
| 4 pages 444–445 | Students compare the passage of 1 minute with the passage of 1 hour. | |
| 5 pages 446–447 | Review and Assess Students will review and reinforce skills and concepts learned this week and in previous weeks. | |
| Project pages 448–449 | Students count forward from a given time on a clock. | |

Math at Home

Give one copy of the Letter to Home, page 31, to each student. Encourage students to share and complete the activity with their caregivers.



How Students Learn

As they begin this week's activities, students should understand that numbers can be viewed on a clock face, and that these numbers can be used to represent the passage of time.

By the end of the week, they should be expanding that understanding to include the relative amounts of hours that have passed, and comparisons of hours to minutes.

Key Standard for the Week

Domain: Counting and Cardinality
Cluster: Know number names and the count sequence.
K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).



| Materials | | Technology |
|---|--|--------------------------|
| Program Materials Analog Clock, 1 per student and teacher | Additional Materials tape | <i>Teacher Dashboard</i> |
| Program Materials <ul style="list-style-type: none">Analog Clock6 Counters | | <i>Teacher Dashboard</i> |
| Program Materials Analog Clock | Additional Materials <ul style="list-style-type: none">chalkboard or IWBchalk or markers | <i>Teacher Dashboard</i> |
| Materials <ul style="list-style-type: none">chalkboard or IWBchalk or markers | | <i>Teacher Dashboard</i> |
| Program Materials <ul style="list-style-type: none">Analog Clock6 CountersAssessment, pp. 72–73 | Additional Materials <ul style="list-style-type: none">chalkboard or IWBchalk or markerstape | <i>Teacher Dashboard</i> |
| Program Materials Analog Clock | Additional Materials <ul style="list-style-type: none">paper platesconstruction papermetal bradmarkers | |

Conceptual Development Activity

Activity 29, p. 20: Students relate activities to a time period by identifying concepts such as *day*, *night*, *morning*, and *afternoon*.

Lesson 1

Objective

Students become acquainted with the base-12 analog clock and read hour times on the clock.

Standard



K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

Vocabulary

Clock: A special dial for telling the time

Creating Context

Young students may not yet know how to tell time on a clock, but there are many other dials they may be familiar with such as the dial on the radio. Suggest that students look for and draw pictures of dials they have seen at home, in the classroom, or in the school.

Materials

Warm Up

Analog Clock, 1 per student and teacher

Engage

- Analog Clock, 1 per student and teacher
- tape

1 WARM UP

Dial Differences

Before beginning the whole-class activity **Hour after Hour**, use the **Dial Differences** activity with the whole class.

Purpose

Students examine a new type of dial with 2 hands and 12 numbers called a clock.

Clock Land

WARM-UP

19

Dial Differences

Objectives

- Students become acquainted with the base-12 analog clock.
- Students can recognize how the analog clock differs from the base-10 dial.
- Students can read hour times on the analog clock.

Materials

- Analog Clock
- Classroom Dial

Play

- Show students the Classroom Dial and the Analog Clock.
- Set the minute hand at 12 and the hour hand at 3.
- Both of these things are called **dials**, and yet they are different in several ways.
- What differences can you see in these two dials?
- Give students adequate time to notice and describe the differences on their own.
- Provide answers: One of them looks like a clock. One of them has one hand and the other one has two hands. The numbers go up to nine on one of them and up to twelve on the other one. The numbers are at the bottom on one and the number six is at the bottom on the other. The number zero is at the top on one and the number twelve is at the top on the other.

Warm-Up Card 19

2 ENGAGE

Hour after Hour

“Today we are going to look at a clock to see how the hour hand moves and tells us what hour it is.”

Follow the instructions on the Activity Card **Hour after Hour**.

Purpose

Students see how the hour hand moves around the face of an analog clock and read hour times on the clock.

Clock Land

ACTIVITY

43

Hour after Hour

Objectives

- Students become acquainted with the base-12 analog clock.
- Students can read hour times on the clock.

Materials

- Analog Clocks
- 1 per student and teacher

Introduce the Activity

- Hold up an Analog Clock and point to the longer hand.
- The long hand on this clock is called the **minute hand**.
- When it moves around the clock, it tells us how many minutes have passed.
- When it is at the top—pointing to the number 12—it means 0 minutes have passed.

Play

- Hand out clocks to each student or each small group.
- Move the minute hand—the longer hand—so it is pointing to the number 12, and make sure it stays there for this whole lesson.
- Today we want to focus on reading hour times on the clock.
- Remember, when the minute hand is pointing straight at the number

Activity Card 43

Progress Monitoring

- If... students have difficulty identifying the hour shown on the clock,
- Then... allow them to touch or trace over the numeral.



Interactive Differentiation

Consult the **Teacher Dashboard** for Differentiated Instruction groupings. You can also use performance on the Engage activity to guide students.

Independent Practice

Students should practice identifying the hours shown by using their Analog Clocks. Students will take turns placing the hour hand to a particular hour. The other students will discuss and tell what hour is being shown on the clock.

Supported Practice

For additional support in telling the hour, students will work with their Analog Clocks.

- Give each student a turn to be the leader.
- The leader sets his or her clock to a particular hour.
- Then another student is chosen to tell what time is shown.
- The rest of the group verifies the response or explains why the answer is incorrect.

Teacher's Note



Encourage students to discuss when and where they have seen clocks. Have them discuss when clocks have been used in their homes, such as the hour they get up to get ready for school.

3 REFLECT

Extended Response

Ask questions such as the following:

- **Why do you think the numbers on the clock are in a certain order?**
The numbers are in counting order from 1 to 12.
- **How do you know which hour comes right after a certain hour?**
I know because when I count, I know which number comes next.

4 ASSESS

Informal Assessment

Use the Student Assessment Record, **Assessment**, page 100, to record informal observations.

Below the informal assessment questions are some tips on how you might teach these skills in future lessons.


| Dial Differences | Hour after Hour |
|---|---|
| Did the student | Did the student |
| <input type="checkbox"/> respond accurately? | <input type="checkbox"/> make important observations? |
| <input type="checkbox"/> respond quickly? | <input type="checkbox"/> extend or generalize learning? |
| <input type="checkbox"/> respond with confidence? | <input type="checkbox"/> provide insightful answers? |
| <input type="checkbox"/> self-correct? | <input type="checkbox"/> pose insightful questions? |
| <ul style="list-style-type: none">• Build quickness of responses by repeating a particular hour shown on the clock before moving on to another hour.• Build confidence by allowing students to lead and ask the class what hour is shown on the clock.• Improve self-correcting by giving students sufficient wait time to think about their responses. | <ul style="list-style-type: none">• Build observational skills by allowing students to verify one another's answers.• Generalize learning by discussing how telling the hour is used at home.• Improve insightfulness of questions by having students set their own clocks and ask each other what hour is shown. |



Analog Clock

Lesson 2

Objective
Students determine the hours that have gone by on a clock.

Standard 
K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

Vocabulary
Clock: A special dial for telling the time

Creating Context
Ask English Learners to demonstrate their understanding with manipulatives, models, illustrations, and gestures. Check students’ understanding by asking them to show, to demonstrate, or to point to the answer.

- Materials**
- Warm Up**
Analog Clock
- Engage**
- 6 Counters
 - Analog Clock

1 WARM UP

Around the Clock
Before beginning the whole-class activity **Time Flies**, use the **Around the Clock** activity with the whole class.

Purpose
Students will become familiar with and count the numerals around the face of an analog clock.

Circle Land

WARM-UP

20

Around the Clock

Objective
Students can count the hour numbers around a clock.

Materials
Analog Clock

Introduce the Activity
Today we are going to practice counting by using a clock.

Play


- Hold up the Analog Clock with the minute hand fixed and pointing to the 12.
- Place the hour hand at 1.
- Who can start at 1 and name all the numbers on this clock?
- Move the hour hand slowly around the dial as one student names each number.
- Give several students a turn, making sure you move the hour hand each time to correspond to the number naming process.
- Give the students who struggle time to self-correct, or let them get help from a classmate.

Warm-Up Card 20

Progress Monitoring

If... students have difficulty counting the sequence 1 to 12,

Then... encourage them to count up as far as they can, and then have another student finish the sequence.

Teacher’s Note 

Students can share other times when they have counted a sequence, such as counting off when choosing teams in gym class.

2 ENGAGE

Time Flies
“Today we are going to practice our counting skills and count the hours that have gone by on our clock.”
Follow the instructions on the Activity Card **Time Flies**.

Purpose
Students revisit their counting skills and discuss what happens when 1 more Counter is added to a set. They go on to discuss what the movement of the hour hand means. Then they use these skills to answer questions about adding 1 or 2 more hours to a certain time.

Circle Land

ACTIVITY

44

Time Flies

Objective
Students understand that each movement of the hour hand means that one hour has passed.

Materials

- 6 Counters
- Analog Clock

Introduce the Activity


- Show students a set of 5 Counters.
- Let’s count these Counters together.
- Point to each of the 5 Counters in turn, and count along with them saying, “One, two, three?”
- Then place another Counter in the row.
- If I add one more Counter to this set, how many will I have?
- Give students time to answer.
- Place another Counter in the row.
- If I add one more Counter to these four Counters, how many will I have?
- Give students time to answer.
- What if I add one more Counter to this set of five Counters? How many will I have?

Activity Card 44

Progress Monitoring

If... students have difficulty transferring counting skills to the hours on a clock,

Then... have them place the Counters around the clock so they can count objects as they count hours.

Interactive Differentiation 
Consult the **Teacher Dashboard** for Differentiated Instruction groupings. You can also use performance on the Engage activity to guide students.

Independent Practice
Students should practice “1 more hour” by using their Analog Clocks. They will take turns showing a time on the clock and telling a story about something that will happen in 1 or 2 more hours. The other students will tell what hour will be shown on the clock when that event occurs.

Supported Practice
For additional support in telling how many hours have gone by, students will work with their Analog Clocks.

- Give each student a turn using an Analog Clock that shows 12 o’clock.
- The student moves the hour hand to a number of his or her choice.
- The other students discuss and tell how many hours have gone by.
- If there is disagreement, have a student count the numerals to the given hour to verify the correct answer.

3 REFLECT

Extended Response

Ask questions such as the following:

- If I tell you a time, how can you show it on the clock? I would move the hour hand so it points to the number you told me.
- How do you know how many hours have gone by from one hour to another? Answers will vary. Students may say that they add, or that they count the numerals from one time to the other.

4 ASSESS

Informal Assessment

Use the Student Assessment Record, *Assessment*, page 100, to record informal observations.

Below the informal assessment questions are some tips on how you might teach these skills in future lessons.

| Around the Clock | Time Flies |
|---|--|
| Did the student | Did the student |
| <input type="checkbox"/> respond accurately? | <input type="checkbox"/> pay attention to the contributions of others? |
| <input type="checkbox"/> respond quickly? | <input type="checkbox"/> contribute information and ideas? |
| <input type="checkbox"/> respond with confidence? | <input type="checkbox"/> improve on a strategy? |
| <input type="checkbox"/> self-correct? | <input type="checkbox"/> reflect on and check accuracy of work? |
| <ul style="list-style-type: none">• Improve accuracy of responses by allowing students to explain how they know their answer is correct. | <ul style="list-style-type: none">• Improve attention to others by having students verify each other's responses. |
| <ul style="list-style-type: none">• Build confidence by asking a student the same question that he or she answered incorrectly, only when you are sure he or she will answer correctly. | <ul style="list-style-type: none">• Build contribution of ideas by encouraging students to make up stories about an hour or two passing. |
| <ul style="list-style-type: none">• Build self-correcting skills by allowing students to discuss incorrect answers with a classmate. | <ul style="list-style-type: none">• Build accuracy of work by allowing student to explain how they know the answer to a question. |



Analog Clock

Lesson 3

Objective

Students explore smaller and greater passages of hours.

Standard



K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

Vocabulary

Clock: A special dial for telling the time

Creating Context

English Learners often understand math concepts better when they interact with students who speak the same primary language. Pair students who speak the same primary language so they can check understanding with each other.

Materials

Warm Up

- Analog Clock
- chalkboard or IWB
- chalk or markers

Engage

- chalkboard or IWB
- chalk or markers

1 WARM UP

It's that Time Already

Before beginning the whole-class activity **More Time or Less**, use the **It's that Time Already** activity with the whole class.

Purpose

Students will discuss activities that they engage in during the day. Students will begin to associate these activities with times on a clock.

Circle Land

WARM-UP

21

It's that Time Already

Objective
Students can recognize movement of the hour hand around the clock with the passage of time.

Materials
Analog Clock

Additional Materials
• chalkboard or IWB

Introduce the Activity
Today we are going to talk about what you do at different times throughout the day.

Play
• Ask students to describe what they do after lunch each day, and help them put these activities in order.
• When you are at school, what do you do right after lunch every day?
• Use students' answers to create a list of activities that span the time until they go to bed.
• Draw a clock face on the board. At 12 o'clock, draw an icon (e.g., a sandwich) to stand for eating lunch.
• This clock shows 12 o'clock. This is the time you eat lunch.

Warm-Up Card 21

Progress Monitoring

If... students cannot think of an activity for a certain hour of the day,

Then... tell them what you do during that hour and discuss whether they might do the same thing.

Teacher's Note



Encourage students to discuss several things that could be done at the same time. For example, some students may be dressing for school at 8 o'clock while other may be at the bus stop.

2 ENGAGE

More Time or Less

"Today we are going to talk about things that we do during the day. We will think about whether something is a long time away or a short time away."

Purpose

Students use the movement of the hour hand to show the passage of time. Students will discuss smaller and greater movement from the same starting point.

Circle Land

ACTIVITY

45

More Time or Less

Objectives
• Students can recognize movement of the hour hand around the clock with the passage of time.
• Students understand smaller movements and greater movements from the same starting point.

Materials
• Chalkboard or IWB
• chalk or markers

Play
• The hour hand on a clock starts at 12 and goes all the way around the clock two times every day.
• Demonstrate the movement of the hour hand around the clock.
• For now, we are going to think about only one of those times: from 12 noon—close to lunchtime—until you go to bed.
• Point to your classroom clock.
• Which is longer: the time that goes by between lunch and going home from school, or the time that goes by between lunch and your bedtime?
• Indicate the passage of the hour hand around the dial for the first span of time. Then draw the second time, which should be about twice as long as the first. Draw a second line from the starting point at noon to each of the end points.
• Let several students answer the question, and ask them to explain why.

Activity Card 45

Progress Monitoring

If... students have difficulty in recognizing smaller and greater movements of the hour hand,

Then... allow them to touch the numerals as they count both passages of time to show which amount is greater or smaller.

Interactive Differentiation



Consult the **Teacher Dashboard** for Differentiated Instruction groupings. You can also use performance on the Engage activity to guide students.

Independent Practice

Students should experiment with the passage of time by using their Analog Clocks. They will take turns showing two hour times on separate Analog Clocks. The other students will discuss and tell how many hours have passed for each clock, and which clock shows the longer passage of time.

Supported Practice

For additional support in telling the passage of time, students will work with their Analog Clocks.

- Have two students set two different hour times on their clocks.
- Ensure that the times are different.
- Allow the rest of the group to discuss and tell how many hours have passed on each clock.
- Have the group discuss and explain how they know which clock shows the longer passage of time.

3 REFLECT

Extended Response

Ask questions such as the following:

- **How does a clock show how many hours have passed?** Students should explain the movement of the hour hand.
- **How do you know how many hours have passed?** Students should explain that they used some form of counting from 12 to the hour shown.

4 ASSESS

Informal Assessment

Use the Student Assessment Record, **Assessment**, page 100, to record informal observations.

Below the informal assessment questions are some tips on how you might teach these skills in future lessons.

| It's that Time Already | More Time or Less |
|---|---|
| <p>Did the student</p> <ul style="list-style-type: none"><input type="checkbox"/> respond accurately?<input type="checkbox"/> respond quickly?<input type="checkbox"/> respond with confidence?<input type="checkbox"/> self-correct? <ul style="list-style-type: none">• Build accuracy of responses by having pairs of students discuss and respond to questions.• Build confidence by allowing students to ask their classmates questions about the passage of time shown on two Analog Clocks.• Improve self-correcting skills by asking students to explain how they knew to change their answer. | <p>Did the student</p> <ul style="list-style-type: none"><input type="checkbox"/> make important observations?<input type="checkbox"/> extend or generalize learning?<input type="checkbox"/> provide insightful answers?<input type="checkbox"/> pose insightful questions? <ul style="list-style-type: none">• Build observational skills by allowing students to verify the answers of their classmates.• Generalize learning by asking students to share instances when they had to wait a long time or a short time for something to happen.• Improve insightfulness of answers by having students describe what a short amount of time and a long amount of time mean to them. |




Analog Clock

Lesson 4

Objective

Students compare the passage of 1 minute with the passage of 1 hour.

Standard

 K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

Vocabulary

- hour:** The time that passes when the hour hand moves from one number to the next number.
- minute:** The time that passes when the minute hand move from one mark to the next mark.

Creating Context

It is important for students to develop the skill of making comparisons. Show students large amounts and small amounts of something that is on hand in the classroom. Help English Learners use common comparing words.

Materials

Engage

- chalkboard or IWB
- chalk or markers

1 WARM UP

Just a Minute

Before beginning the whole-class activity **In a Minute**, use the **Just a Minute** activity with the whole class.

Purpose

Students will discover and discuss that an hour is a much longer period of time than a minute.

Circle Land

WARM-UP

22

Just a Minute

Objective
Students understand that an hour is a much longer period of time than a minute.

Play

- Which is longer: one hour or one minute?
- Let several students answer and provide plenty of time for discussion.
- Ask students how they know and why they think so.
- Is one hour a lot longer than a minute or just a little bit longer?
- Once again, let several students answer, and allow time for discussion.

Materials
No materials are needed.

Warm-Up Card 22

Progress Monitoring

If... students have difficulty understanding the difference between a minute and an hour,

Then... give examples of things they may have done for each period of time, such as tie their shoes and ride to town.

Teacher's Note

Discuss expressions that use the words *minute* and *hour*. Such as, "I'll be there in a minute," or "The TV show was an hour long."

2 ENGAGE

In a Minute

"Today we are going to talk about things that take a short time to do and other things that take a much longer time to do."

Follow the instructions on the Activity Card **In a Minute**.

Purpose

Students will think of things that take about 1 minute to do and things that take about 1 hour.

Circle Land

ACTIVITY

46

In a Minute

Objective
Students understand that an hour is a much longer period of time than a minute.

Play

- Let's think of all the things we can do in about one minute. I will list your answers to see how many things we can think of.
- Let several students answer and record their answers on the board.
- Challenge unreasonable answers by asking the class whether they agree with the suggestion. If they do not, ask them to explain why.
- Using one minute, have the students perform one of the listed tasks.
- Let's think of all the things we can do in one hour. Again, I will list your answers to see how many things we can think of.
- Let several students answer and record the good answers on the board.
- Challenge unreasonable answers as before.
- Conclude by affirming that 1 hour is a lot longer than 1 minute.
- There are 60 minutes in 1 hour. That's a lot of minutes.

Activity Card 46

Progress Monitoring

If... students cannot think of things that take 1 minute or 1 hour to accomplish,

Then... let them verify that they do some of the same activities as their classmates have suggested.



Consult the **Teacher Dashboard** for Differentiated Instruction groupings. You can also use performance on the Engage activity to guide students.

Independent Practice

Students should practice comparing 1 minute to 1 hour by discussing activities that they do during a day. Students will take turns describing an activity like brushing their teeth. The group will decide whether the activity is one that would take about 1 minute or about 1 hour.

Supported Practice

For additional support in understanding the difference between a minute and an hour, students will discuss various activities and the time it takes to accomplish them.

- Ask students to think about things they do that take a long time and other things that take a short time.
- Give the students examples of something that takes 1 minute and something else that takes 1 hour.
- Ask volunteers to describe an activity.
- Have the rest of the group discuss the activity and decide whether it is a 1 minute activity or a 1 hour activity.

3 REFLECT

Extended Response

Ask questions such as the following:

- **How would you explain to someone how long a minute is?** *Answers will vary.*
- **How would you explain to someone how long an hour is?** *Answers will vary.*

4 ASSESS

Informal Assessment

Use the Student Assessment Record, **Assessment**, page 100, to record informal observations.

Below the informal assessment questions are some tips on how you might teach these skills in future lessons.

| Just a Minute | In a Minute |
|--|---|
| Did the student | Did the student |
| <input type="checkbox"/> respond accurately? | <input type="checkbox"/> pay attention to the contribution of others? |
| <input type="checkbox"/> respond quickly? | <input type="checkbox"/> contribute information and ideas? |
| <input type="checkbox"/> respond with confidence? | <input type="checkbox"/> improve on a strategy? |
| <input type="checkbox"/> self-correct? | <input type="checkbox"/> reflect on and check accuracy of work? |
| <ul style="list-style-type: none">• Improve quickness of responses by silently counting down before asking another question. | <ul style="list-style-type: none">• Build attention to others by having students verify whether an answer is correct. |
| <ul style="list-style-type: none">• Build confidence by allowing classmates to provide praise for correct responses. | <ul style="list-style-type: none">• Improve strategic thinking by asking students to describe how they know whether an activity will take 1 minute or 1 hour. |
| <ul style="list-style-type: none">• Improve self-correcting skills by providing sufficient wait time before offering assistance. | <ul style="list-style-type: none">• Reflect on accuracy of work by encouraging pairs of students to discuss and answer questions cooperatively. |

Lesson 5

Review

Objective

Students will review and reinforce skills and concepts learned this week and in previous weeks.

Standard



K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

Creating Context

When you assess the students’ understanding of an analog clock, also assess their use of the vocabulary of telling time.

Materials

Warm Up

- Analog Clock
- chalkboard or IWB
- chalk or markers

Engage

- 6 Counters
- Analog Clock
- tape
- chalkboard or IWB
- chalk or markers

1

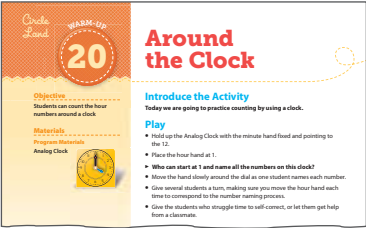
WARM UP

Around the Clock

Before beginning the **Free-Choice** activity, use the **Around the Clock** activity with the whole class.

Purpose

Students will review counting the numbers around the dial of an analog clock.



Warm-Up Card 20

Progress Monitoring

- If... students have difficulty counting to 12,
- ▶ Then... have them count as high as they are able, and then count the rest of the numerals together.

2

ENGAGE

Free-Choice Activity

For the last day of the week, allow students to choose an activity from the previous days. Some activities they may choose include the following:

- Circle Land: **Hour after Hour**
- Circle Land: **Time Flies**
- Circle Land: **In a minute**

Progress Monitoring

- If... students would benefit from practice on specific skills,
- ▶ Then... choose an activity for them.

Interactive Differentiation



Consult the **Teacher Dashboard** for Differentiated Instruction groupings. You can also use performance on the Engage activity to guide students.

Independent Practice

Students should discuss passage of time by using an Analog Clock. They will take turns describing a task that takes one or more hours, such as cleaning their rooms. One student tells how much time the task will take, and another student shows this passage of time on an Analog Clock. For example, “I started cleaning my room at 6 o’clock and it took me 2 hours.”

Supported Practice

For additional support in using an Analog Clock, students will show hours passing on a clock.

- Have students take turns showing times on the clock.
- One classmate calls out a time and he or she moves the hour hand appropriately.
- The group decides whether the time shown is correct.
- Then tell students that 1 or 2 hours more have passed.
- Have the group decide on how the clock should appear then.

3 REFLECT

Extended Response

Ask questions such as the following:

- What was your favorite part of learning about clocks?
- What was the easiest part about learning how to use a clock?
- How is using a clock the same as other counting you have done?
- How would you describe a clock to someone who has never seen one?

4 ASSESS

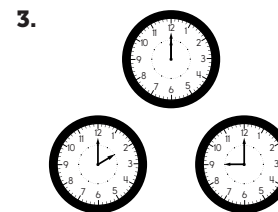
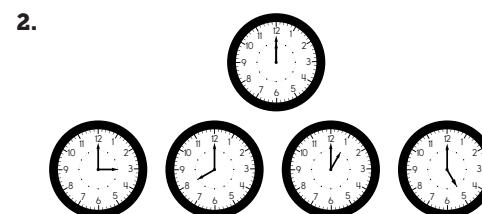
Formal Assessment ✓

Have students complete the weekly test on **Assessment**, page 73.
Record formal assessment scores on the Student Assessment Record,
Assessment, page 100.

Name _____ Date _____

Test

WEEK 31



Copyright © McGraw-Hill Education. Permission is granted to reproduce for classroom use.

Week 31 Test Understanding the Analog Clock 73

Assessment, p. 73

Project Preview

This week students learned about telling time. In this week’s project, students will tell times for the store to open and close by using an analog clock. They will read hour times, explore how a clock works, and identify the purpose of the hour hand.

Project-Based Learning

Standards-driven Project-Based Learning is effective in building deep content understanding. Project-Based Learning increases long-term retention of concepts and has been shown to be more effective than traditional instruction. By completing a project to answer an essential question, students are challenged to apply and demonstrate mastery of concepts and skills by expressing understanding through discussion, research, and presentation.

Essential Question

How can numbers be used in different ways in the real world?

Project Evaluation Criteria

Review project evaluation criteria with students prior to beginning the project.

| |
|--|
| Exceeds Expectations |
| <div><input type="checkbox"/> Advanced math vocabulary is used.</div> <div><input type="checkbox"/> Student shows a full knowledge and understanding of the math concepts.</div> <div><input type="checkbox"/> Student is able to answer all questions about the math concepts.</div> <div><input type="checkbox"/> Project is exceptionally prepared for sharing.</div> <div><input type="checkbox"/> Project is correctly organized, includes all required elements, and has additional information.</div> |
| Meets Expectations |
| <div><input type="checkbox"/> Math vocabulary is used correctly.</div> <div><input type="checkbox"/> Student shows knowledge and understanding of the math concepts most of the time.</div> <div><input type="checkbox"/> Student is able to answer most questions about the math concepts.</div> <div><input type="checkbox"/> Project is prepared for sharing.</div> <div><input type="checkbox"/> Project is correctly organized, and all required elements are included.</div> |
| Does Not Meet Expectations |
| <div><input type="checkbox"/> Math vocabulary is not used correctly.</div> <div><input type="checkbox"/> Student does not show knowledge and understanding of the math concepts.</div> <div><input type="checkbox"/> Student is unable to answer questions about the math concepts.</div> <div><input type="checkbox"/> Project is not prepared for sharing.</div> <div><input type="checkbox"/> Project is not correctly organized, and some elements are missing.</div> |

Time to Open

Objective

Students count forward from a given time on a clock.

Standard



K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

Materials

Program Materials
Analog Clock

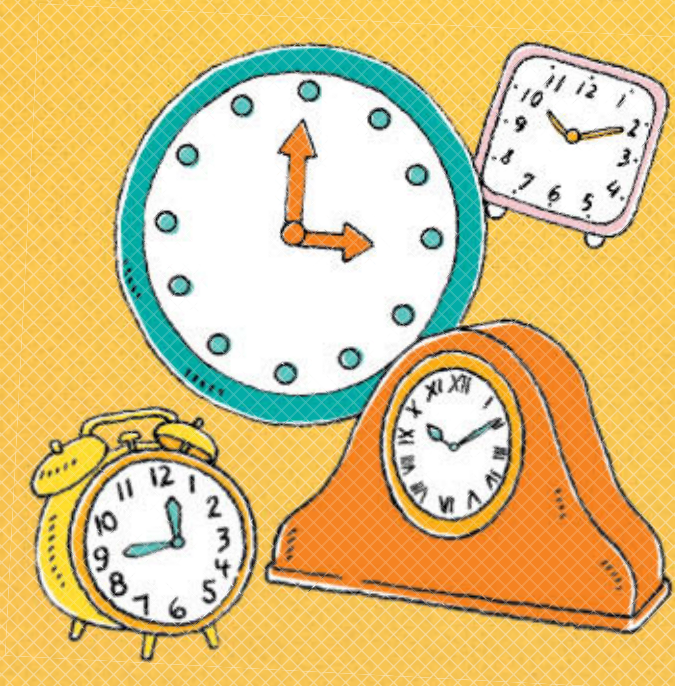
- Additional Materials
- paper plates
 - construction paper
 - metal brad
 - markers

Prepare Ahead

You will need to cut two clock hands from construction paper to make a paper plate clock for each student. You may want to assemble them ahead of time, and let students write the numbers during the activity. Affix the hands with a metal brad.

Best Practices

- Meet individual student needs, and allow individualized solutions.
- Organize the materials before the lesson.
- Vary the seating arrangement for functionality.



Introduce

- **Think about all of the different clocks you have seen.**
- **Tell where you have seen clocks before.** Possible answers: I have a watch; There is a clock in our kitchen; There is a clock in our classroom.
- **Why do we have clocks?** Possible answers: We have clocks so we know what time it is; We can tell whether we are on time to get somewhere.
- **What numbers are on a clock?** There are the numbers one to twelve.

Explore

- **For our project today, we will be deciding what time to open our pretend classroom store and what time to close it. You will be making a clock so customers will know when they can come in.**

Point out the Analog Clock.

- **What do you notice about the clock?** Possible answers: There are two pointers that move; There are numbers in a circle.

Give each student a paper plate clock that has the hands attached. Explain that the pointers are the hands of the clock, and students will write the numbers to complete their clocks.

- **Look at the clock that I am holding. What number is at the top?** twelve
What number is at the bottom? six
- **Write twelve and six where they belong on your paper clocks.**

Help students write the other numbers in the correct places on their clocks.

Once the clocks are complete, have students count from 1 to 12 around the clock, pointing to each number as they count.

- **To show hours, the long hand points to the twelve.**
Have students point the long hand to the 12.
- **The short hand points to the hour.**
Have students move the short hand on their paper clocks to point to 9.
- **Can anyone tell us what time is shown?** nine o'clock
- **That's right! The time shows nine o'clock. Let's use this time to show that our store will open at nine o'clock.**
- **What do you think we need to do to make the clock show ten o'clock?**
We should move the short hand to point to ten.

Use the Analog Clock to show ten o'clock. Have half the students move their clocks to show ten o'clock.

- **You can use your clocks to show that the store will open at nine o'clock and close at ten o'clock.**

Continue using the Analog Clock to have students show other hour times on their paper clocks.

- **What happens to the numbers as we move around the clock?**
Possible answer: Each number is one more as we count around.

Wrap Up

If students have difficulty writing the numbers in a circle, you can provide stickers, cutout numbers to glue in place, or have them write on squares of paper to glue in place.

Over the course of the day, have students observe the movement of the classroom clock.

- **Which hand moves faster around the clock: the hour hand (the shorter one) or the minute hand (the longer one)?**

Have them discuss whether the minute hand or the hour hand moves faster around the clock.

Lead them to understand that a minute is shorter than an hour.

If time permits, allow students to do something for one minute to get a sense of how long it is, and discuss what they can do in one hour.

Teacher Reflect

- ☐ Did students show knowledge of how their project related to the major concept?
- ☐ Did students organize their ideas?
- ☐ Did I supply the necessary materials?

LEVEL

B

SRA Number Worlds™

Accelerate Math Success

Teacher Edition

Help struggling students accelerate math success with a proven approach.

- **PREPARE** students to meet rigorous Common Core standards with proven curriculum and enhanced planning tools.
- **ENGAGE** students with project-based learning and embedded games, activities, and digital resources.
- **ASSESS** student achievement with dynamic digital assessment and reporting.



www.mheonline.com

MHID 0-02-129414-3
978-0-02-129414-5



EAN

B

Mc
Graw
Hill
Education