



SECOND EDITION

TEACHERS GUIDE
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Number Corner November

November Sample Display & Daily Planner

November Introduction 1

November Calendar Grid Telling Time to the Quarter Hour 5

Introducing the November Calendar Markers Day 1 7

Patterns & Predictions Days 5, 9 9

Telling Time to the Hour & Half-Hour Day 6 11

Telling Time to the Quarter-Hour Day 14 12

More Patterns & Predictions Day 15 14

Completing the Telling Time Page Optional 15

November Calendar Collector Measuring Length with Different Units 17

Introducing the Calendar Collector Day 2 18

Adding to the Collection Days 6, 8, 12 21

Thinking About the Collection Day 13 22

November Daily Rectangle Rows & Columns 23

The Rows & Columns Game Days 4, 7, 11 24

November Computational Fluency Doubles & Halves 27

Introducing Doubles & Doubles Plus or Minus One Facts Day 3 28

The Doubles Up Game Days 5, 8 31

Finding Doubles & More on the Table Day 11 32

Take All & Take Half Facts Day 12 34

Completing the Scout Out Doubles & Halves Page Day 15 36

November Number Line The Fifth Century 39

Celebrating the Fifth Century Day Day 10 40

Number Corner Student Book Pages

Page numbers correspond to those in the consumable books.

Telling Time on Two Kinds of Clocks 23

Measure It Twice Record Sheet 25

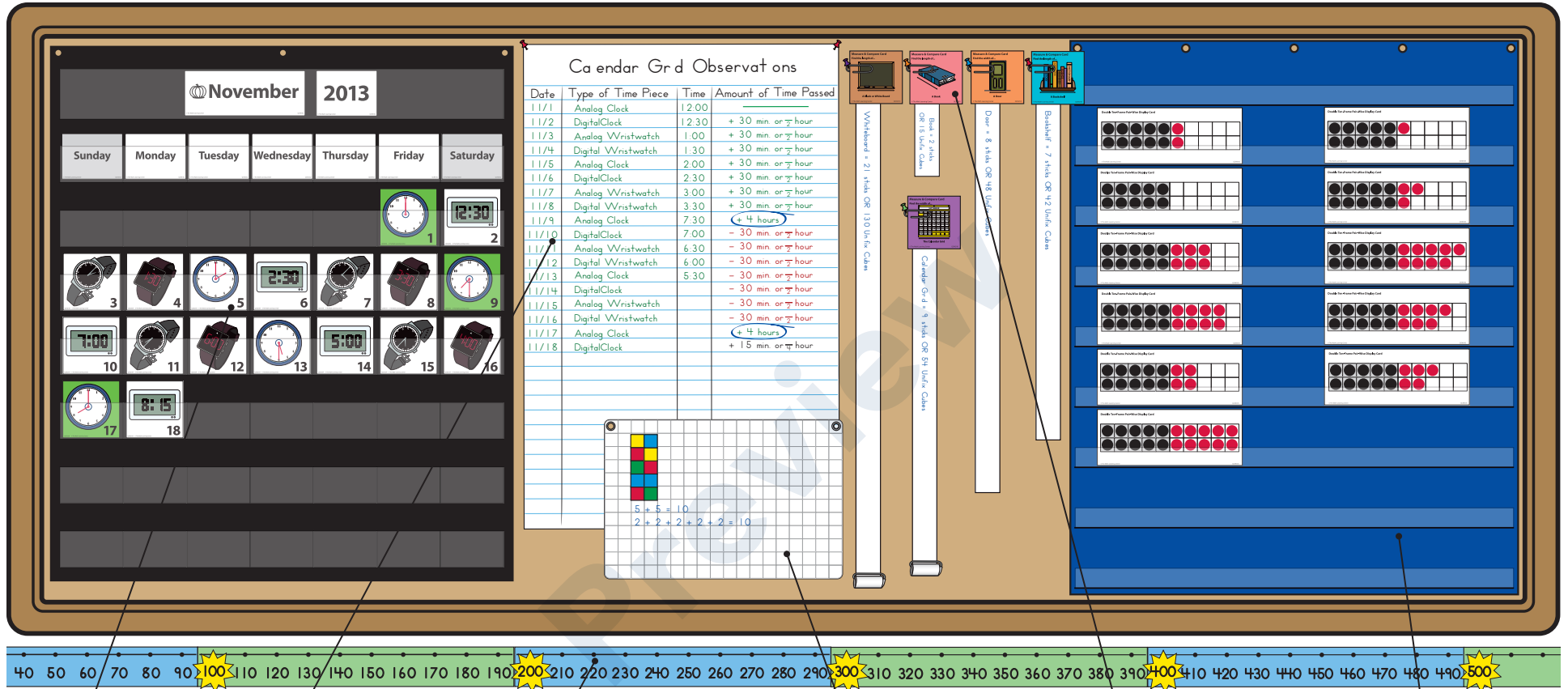
Doubles Up 27

Scout Out Doubles & Halves 29

The Fifth Century Day 30

November Sample Display

Of the items shown below, some are ready-made and included in your kit; you'll prepare others from classroom materials and the included teacher masters. Refer to the Preparation section in each workout for details about preparing the items shown. The display layout shown fits on a 10' x 4' bulletin board or on two 6' x 4' bulletin boards. Sheets of tagboard or pieces of cloth make good backgrounds for the displays.



Calendar Grid Pocket Chart

Remember to consult a calendar for the starting day of the month and year.

Calendar Grid Observations Chart

You might use 24" x 36" chart paper. If you laminated a sheet in previous months, you can erase and reuse it this month.

Classroom Number Line

As you accumulate strips, you may need to move them to another location in the classroom. If possible, keep the number line where students can interact with it.

Magic Wall & Magnetic Tiles

You'll use these in Daily Rectangle activities this month.

Calendar Collector Display

You'll make the display from lengths of adding machine tape and the Measure & Compare Cards.

Standard Pocket Chart & Double Ten-Frame Display Cards

You'll post the Double Ten-Frame Display Cards during Computational Fluency Activities 1 & 4 this month. You can use a standard pocket chart or similar chart to hold the cards.

November Daily Planner

Day	Date	Calendar Grid	Calendar Collector	Daily Rectangle	Computational Fluency	Number Line
1		Activity 1 Introducing the November Calendar Markers (p. 7)				Update
2		Update	Activity 1 Introducing the Calendar Collector (p. 18)			Update
3		Update			Activity 1 Introducing Doubles & Doubles Plus or Minus One Facts (p. 28)	Update
4		Update		Activity 1 The Rows & Columns Game (p. 24)		Update
5		Activity 2 Patterns & Predictions (p. 9)			Activity 2 The Doubles Up Game (p. 31)	Update
6		Activity 3 Telling Time to the Hour & Half-Hour (p. 11)	Activity 2 Adding to the Collection (p. 21)			Update
7		Update		Activity 1 The Rows & Columns Game (p. 24)		Update
8		Update	Activity 2 Adding to the Collection (p. 21)		Activity 2 The Doubles Up Game (p. 31)	Update
9		Activity 2 Patterns & Predictions (p. 9)				Update
10		Update				Activity 1 Celebrating the Fifth Century Day (p. 40)
11		Update		Activity 1 The Rows & Columns Game (p. 24)	Activity 3 Finding Doubles & More on the Table (p. 32)	Update
12		Update	Activity 2 Adding to the Collection (p. 21)		Activity 4 Take All & Take Half Facts (p. 34)	Update
13		Update	Activity 3 Thinking About the Collection (p. 22)			Update
14		Activity 4 Telling Time to the Quarter-Hour (p. 12)				Update
15		Activity 5 More Patterns & Predictions (p. 14)			Activity 5 Completing the Scout Out Doubles & Halves Page (p. 36)	Update
		Activity 6 Completing the Telling Time Page (optional, p. 15)				

Note On days when the Calendar Grid and Number Line are not featured in an activity, student helpers will update them. Summaries of the update procedures appear below.

Calendar Grid – Post the day's marker.

Number Line – Write the next multiple of 10 on the Classroom Number Line.

Number Corner

November

Overview

This month the Calendar Markers pick up where the Calendar Collector left off last month, as students review telling time to the hour and half-hour and learn to tell time to the quarter-hour on analog and digital clocks. The Calendar Collector turns to length measurement, and students review Doubles and Doubles Plus or Minus One as well as the related subtraction combinations during the Computational Fluency workout. The Daily Rectangle features a game involving rows and columns, and students celebrate the Fifth Century Day during the Number Line workout.

Activities

Workouts	Day	Activities	D	G	SB
Calendar Grid Telling Time to the Quarter Hour This month's Calendar Grid pattern focuses on telling time to the hour, the half-hour, and the quarter-hour using both digital and analog clocks. Along with observing and describing a number of different patterns in the sequence of markers, students also practice a "say, set, scribe" routine by reading the times on the markers, setting their mini-clocks to match, and writing the time to the hour, the half-hour, and the quarter-hour.	1	1 Introducing the November Calendar Markers	●		
	5, 9	2 Patterns & Predictions	●		
	6	3 Telling Time to the Hour & Half-Hour	●		
	14	4 Telling Time to the Quarter-Hour	●		
	15	5 More Patterns & Predictions	●		
	opt.	6 Completing the Telling Time Page (Optional)			●
Calendar Collector Measuring Length with Different Units This month's Calendar Collector focuses on measuring length—specifically, measuring an object twice with two different units, one longer than the other, and comparing the results. Over the course of five activities, students measure different objects around the classroom. They estimate the length of each item in craft sticks and measure it to find the actual length. They then use that information to estimate the length of the same item in Unifix cubes, measure to find the actual length, and compare the two measurements, coming to understand that the reported length of an object depends on the size of the unit.	2	1 Introducing the Calendar Collector	●		
	6, 8, 12	2 Adding to the Collection	●		●
	13	3 Thinking About the Collection	●		●
Daily Rectangle Rows & Columns This month's activities are not related to the date. Instead, several times over the course of the month students and teacher play a game involving rows and columns. In the Rows & Columns game, teams take turns building arrays, writing addition equations to represent their arrays, and comparing their results. A more/less die is rolled to determine the winner of each round with the best out of five winning the game.	4, 7, 11	1 The Rows & Columns Game		●	
Computational Fluency Doubles & Halves During the Computational Fluency workout this month, students review all the Doubles & Doubles Plus or Minus One addition facts, with a strong focus on combinations between 10 and 20. Students also work with the related subtraction combinations—the Take All facts (e.g., $12 - 12$ or $15 - 15$) and the Take Half facts (e.g., $12 - 6$, $14 - 7$).	3	1 Introducing Doubles & Doubles Plus or Minus One Facts	●		
	5, 8	2 The Doubles Up Game		●	
	11	3 Finding Doubles & More on the Table	●		●
	12	4 Take All & Take Half Facts	●		
	15	5 Completing the Scout Out Doubles & Halves Page			●
Number Line The Fifth Century The Number Line takes a back seat to some of the other workouts during this short month. Student helpers continue to update the Classroom Number Line each day, and on the 50th day of school, the class celebrates the Fifth Century Day.	10	1 Celebrating the Fifth Century Day	●		●

D – Discussion, **G** – Game, **SB** – Number Corner Student Book

Teaching Tips

November frequently has fewer teaching days than previous months due to holidays, and in some districts, parent-teacher conferences. For this reason there are only 15 Number Corner sessions on this month's planner. If you have additional teaching days this month, consider playing another round of the Rows & Columns Game or the Doubles Up Game (additional recording sheets can be made using your teacher master), or having the students complete the Telling Time on Two Kinds of Clocks page in their Number Corner Student Book.

Target Skills

The table below shows the major skills and concepts addressed this month. It is meant to provide a quick snapshot of the expectations for students' learning during this month of Number Corner.

Major Skills/Concepts Addressed	CG	CC	DR	CF	NL
2.OA.2 Fluently add and subtract with sums and minuends to 20 using mental strategies				●	
2.OA.4 Find the total number of objects in an array with up to 5 rows and 5 columns, using addition			●		
2.OA.4 Write an equation to represent the total number of objects in an array with up to 5 rows and 5 columns as the sum of equal addends			●		
2.NBT.2 Skip-count by 10s and 100s up to 1000					●
2.NBT.3 Read and write numbers to 1000 represented with numerals, words, and in expanded form					●
2.NBT.8 Mentally add 10 or 100 to any 3-digit number between 100 and 900					●
2.MD.2 Measure the length of an object twice, using a different unit each time		●			
2.MD.2 Describe how the size of the unit used to measure an object's length relates to the measurement of the object's length		●			
2.MD.7 Tell and write time to the nearest 5 minutes on an analog and a digital clock	●				
2.MP.2 Reason abstractly and quantitatively	●	●		●	
2.MP.4 Model with mathematics			●	●	●
2.MP.6 Attend to precision	●	●			
2.MP.7 Look for and make use of structure	●	●	●	●	●
2.MP.8 Look for and express regularity in repeated reasoning		●		●	

CG – Calendar Grid, **CC** – Calendar Collector, **DR** – Daily Rectangle, **CF** – Computational Fluency, **NL** – Number Line

Materials Preparation

Each workout includes a list of required materials by activity. You can use the table below to prepare materials ahead of time for the entire month.

Task		Done															
Copies	Run a single display copy of Number Corner Student Book pages 23–31.																
	If students do not have their own Number Corner Student Books, run a class set of pages 23–31.																
Charts	Erase the entries on the Calendar Grid Observations Chart from last month. Then redraw the lines to create four columns and label them as shown here for use with this month's markers.																
	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Calendar Grid Observations</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Date</th> <th style="padding: 5px;">Type of Time Piece</th> <th style="padding: 5px;">Time</th> <th style="padding: 5px;">Amount of Time Passed</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> </div>	Date	Type of Time Piece	Time	Amount of Time Passed												
Date	Type of Time Piece	Time	Amount of Time Passed														
Special Items	Make 40 trains of 10 Unifix cubes, each train in a single color. Divide the stacks evenly between 2 small baskets or other containers.																
	Each student pair will need 25 colored tiles each time you play the Rows & Columns game with the class this month. You can either divide your set of tiles into 6 or 7 baskets or other containers, or you can pre-count tiles into sets of 25. If you choose the second option, place each set of 25 tiles into a zip-top bag or a small container such as an 8-ounce margarine or yogurt tub.																
	Use rubber bands to bundle 500 craft sticks into 50 sets of 10. (This is a good job for students to do before or after school, or during recess a couple of days before you conduct the Number Line workout.)																

Preview

November Calendar Grid

Telling Time to the Quarter Hour

Overview

This month's Calendar Grid pattern focuses on telling time to the hour, the half-hour, and the quarter-hour using both digital and analog clocks. The markers feature four different kinds of timepieces, two analog and two digital. Time progresses forward by 30 minutes a day for the first 8 days of the month, takes a jump of 4 hours ahead, and then moves backward by 30 minutes a day for the next 7 days. On the 17th, the time takes another big jump of 4 hours, and then progresses forward 15 minutes a day through the 24th. On the 25th, the time takes a final jump of 4 hours, and then moves backward 15 minutes a day through the end of the month. Students observe and discuss these patterns, and also practice a "say, set, scribe" routine by reading the times on the markers, setting their mini-clocks to match, and writing the time to the hour, the half-hour, and the quarter-hour.

Skills & Concepts

- Extend a growing pattern (supports 2.OA)
- Skip-count by 5s within 1000 (2.NBT.2)
- Tell and write time to the nearest 5 minutes on an analog and a digital clock (2.MD.7)
- Solve problems involving measurement and estimation of intervals of time (3.MD.1)
- Partition a circle into 2 and 4 equal parts. Use the terms halves, half of, fourths, quarters, and a quarter of to talk about the 2 or 4 equal parts into which the circle has been partitioned (2.G.3)
- Reason abstractly and quantitatively (2.MP.2)
- Attend to precision (2.MP.6)
- Look for and make use of structure (2.MP.7)

Materials

Activities	Day	Copies	Kit Materials	Classroom Materials
Activity 1 Introducing the November Calendar Markers	1		<ul style="list-style-type: none"> • Used in all November Calendar Grid activities: <ul style="list-style-type: none"> » Calendar Grid pocket chart » Analog and Digital Clock Calendar Markers 	<ul style="list-style-type: none"> • large teacher display clock • erasable markers in black and red • Calendar Grid Observations Chart (see Preparation)
Activity 2 Patterns & Predictions	5, 9			
Activity 3 Telling Time to the Hour & Half-Hour	6		<ul style="list-style-type: none"> • student clocks (class set) 	<ul style="list-style-type: none"> • large teacher display clock • chart paper • marker • student whiteboards, markers, and erasers (class set)
Activity 4 Telling Time to the Quarter-Hour	14		<ul style="list-style-type: none"> • Hour & Minute Clock • student clocks (class set) 	
Activity 5 More Patterns & Predictions	15			<ul style="list-style-type: none"> • large teacher display clock • erasable markers in black and red • Calendar Grid Observations Chart (see Preparation)
Activity 6 (optional) Completing the Telling Time Page		NCSB 23–24* Telling Time on Two Kinds of Clocks	<ul style="list-style-type: none"> • student clocks as needed 	

Vocabulary

An asterisk [*] identifies those terms for which Word Resource Cards are available.

analog clock*
backward
digital clock*
forward
half-hour*
hour (hr.)*
quarter hour*
minute (min.)*

TM – Teacher Master, NCSB – Number Corner Student Book
Copy instructions are located at the top of each teacher master.

* Run 1 copy of this page for display.

Preparation

Calendar Grid Observations Chart

Erase the entries on the chart from last month. Then redraw the lines to create four columns and label them as shown here for use with this month's markers. Post the chart near your Calendar Grid pocket chart for use starting in Activity 1.

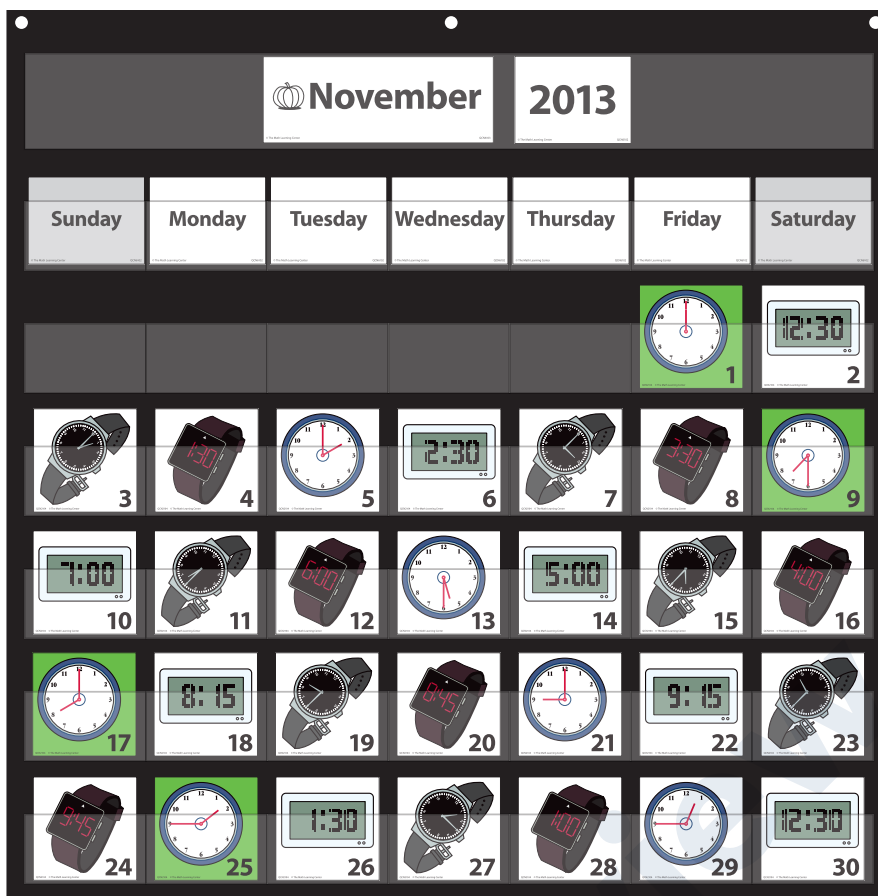
Calendar Grid Observations			
Date	Type of Time Piece	Time	Amount of Time Passed

About the Pattern

Following is a description of the patterns found in the November calendar marker set.

Revealing one calendar marker each day allows students to make and test predictions and to discover the pattern as new markers are added and their predictions are confirmed or proven false. Don't tell them what the patterns are: instead, allow them to pursue their own ideas and investigations.

- There is an ABCD pattern in the timepieces shown on the markers this month: analog clock, digital clock, analog wristwatch, digital wristwatch; analog clock, digital clock, analog wristwatch, digital wristwatch; and so on.
- There is an ABAB pattern in the time display—analog, digital; analog, digital; and so on.
- The time starts at 12:00 and moves forward by 30 minutes a day for the next seven markers. On the ninth marker, the time jumps ahead 4 hours, and then moves backward by 30 minutes a day for the next seven markers. On the 17th marker, the time again jumps ahead 4 hours, and then moves forward by 15 minutes a day for the next seven markers. On the 25th, the time takes a final jump of 4 hours forward, and then moves backward by 15 minutes a day for the remaining days of the month.
- Every eighth marker, starting with 1, then 9, 17, and 25, has a green background, signaling a "big jump" of 4 hours from the previous marker.



Update

Have a student helper follow this update procedure every day that the Calendar Grid is not a featured activity.

Procedure

- Post one or more calendar markers so that the Calendar Grid is complete up to the current date.



Activity 1



Activity Preparation

You will need to post the Calendar Grid Observations Chart near the Calendar Grid pocket chart before today's activity. You will also need to have your large teacher display clock close at hand.

Introducing the November Calendar Markers

Day 1

- 1 Introduce the new calendar markers.
 - Seat students close to the Number Corner display.
 - Post today's calendar marker and any markers that come before it if you are not starting on the first of the month.
- 2 Read the date aloud while pointing to the labels for the day of the week, the month, the date (the day's marker), and the year. Then invite students to repeat with you.

Today is Friday, November first, 2013.

- 3 Write the date on the class whiteboard, using the abbreviation for November. Then review the fact that there is an abbreviated or shortcut way to write the date.

- Ask students to say the months, January through November, with you while holding up fingers to count.
- Explain that November is the 11th month of the year, and use the information to record the short form of the date.

Nov. 1, 2013
11/1/13

- 4 Discuss the calendar markers posted so far.

- If you are starting on the first of the month, add another two markers to the chart so students are able to consider at least three markers the first time they make observations.
- Point to the markers and ask students to look at them quietly and give thumbs up when they have something to share.
- Have students share their observations with a partner and then as a class.

Students There are clocks this month.

That third marker is a watch like my dad's, but it's still about time.

I think the whole month is going to be about clocks and stuff.

Maybe the next marker will be another watch, so it'll go clock, clock, then watch, watch.

I think the next marker will have a clock, and it'll start over.

- 5 Draw students' attention to the Calendar Grid Observations Chart. Work with input from the class to fill in the information for the markers on display, starting with Marker 1.

- As you fill in the first few entries with the class, explain that an *analog* timepiece, such as a clock or a watch, is an instrument with the numbers 1 to 12 around the face, and rotating hands that show the hours, minutes, and sometimes the seconds. A *digital* clock or watch is an instrument that uses only numerals to show the time.
- Explain that the time on the first marker, 12:00, is the starting time for this sequence, so there's no need to fill in the last column in the first row.
- When you make the entries on the chart for the second marker, ask students how much time has passed between the time shown on the first clock and the time shown on the second.
- Confirm their thinking by setting your large teacher display clock at 12:00 to match the time on the first marker. Then count the minutes by 5s with the class as you advance the minute hand to match the time shown on the second clock—12:30.
- When there is general agreement that the amount is 30 minutes, record that in the last column, and then ask the students to report the amount in hours. What part of an hour is 30 minutes? Why do people refer to 30 minutes as half an hour?
- Continue in this manner until you fill in the rows for all the markers displayed right now.

Key Questions

Learning to search for, describe, and extend patterns facilitates algebraic thinking. Use these questions to help your students investigate this month's pattern.

- What time does each marker show?
- What kind of timepiece (time-telling tool) is shown on each marker?
- On which markers will you see an analog clock (digital clock, analog wristwatch, digital wristwatch)? How do you know?
- What kind of timepiece will you see on the 10th (13th, 16th, 19th, and so on)? How do you know?
- How much time has passed between Marker 1 and Marker 2 (or between any pair of markers)?
- Is time moving forward or backward on the markers right now? Do you predict that the next marker will show a time that is later or earlier than the marker you see right now? Why?
- How much time has passed between Marker 8 and Marker 9? How much time has passed between Marker 16 and Marker 17? Do you think there will be another "big jump" this month. When? How do you know?
- Can time really move backward?
- What would happen if time moved backward for a day? A month? A year?

Student E I think it will be a regular watch and it will be 3:00 because I think the time is going up and up. It started on 12:00, right? Then it went up to 12:30.

Teacher Let's have everyone read the times on our markers so far, ready?

Students 12:00, 12:30, 1:00, 1:30, 2:00, 2:30.

Teacher Do you all agree that if the time keeps moving ahead by 30 minutes each day, the time on today's marker will be 3:00? Let's set the my big clock to 2:30 and move the minute hand ahead 30 minutes to find out for sure.

- When students have had ample opportunity to make predictions, have your student helper post the marker for the day, read the date with the class, and record the date on the whiteboard.
- Work with input from the class to bring the Observations Chart up to date. Then invite students to continue searching for patterns in the sequence of markers posted so far.
 - Does today's marker, the one just posted, serve to confirm any of their theories about possible patterns in the sequence?
 - Based on their observations so far, when might they see the next marker with an analog watch? How do they know? What about a digital watch or an analog clock?
 - Based on the pattern so far, what time will the marker for the day after tomorrow show?

Note Between markers 5 and 9, the patterns of clocks and watches, analog and digital, will remain steady. The change in time from one marker to the next will shift radically, however, between the 8th and 9th markers. The time increases by 30 minutes each day for the first eight days of the month. On November 9th, however, the time jumps ahead by 4 hours, and then decreases by 30 minutes each day through November 16th. When you conduct this activity on Day 9, use your large teacher display clock to help students determine how much time has elapsed between the 8th and 9th marker, and then on each marker thereafter. One way to highlight the shift is to go back and mark each increase in time with an addition sign. You might also circle the 4-hour time jump in blue to match the 9th marker. Record decreases in time with a red erasable marker, and mark each with a subtraction sign. While potentially confusing, the pattern shift will likely keep students' interest high.

Date	Type of Time Piece	Time	Amount of Time Passed
11/1	Analog Clock	12:00	
11/2	Digital Clock	12:30	+ 30 min or + hour
11/3	Analog Wristwatch	1:00	+ 30 min or + hour
11/4	Digital Wristwatch	1:30	+ 30 min or + hour
11/5	Analog Clock	2:00	+ 30 min or + hour
11/6	Digital Clock	2:30	+ 30 min or + hour
11/7	Analog Wristwatch	3:00	+ 30 min or + hour
11/8	Digital Wristwatch	3:30	+ 30 min or + hour
11/9	Analog Clock	7:30	+ 4 hours
11/10	Digital Clock	7:00	30 min or + hour
11/11	Analog Wristwatch	6:30	30 min or + hour
11/12	Digital Wristwatch	6:00	30 min or + hour
11/13	Analog Clock	5:30	30 min or + hour



Activity 3



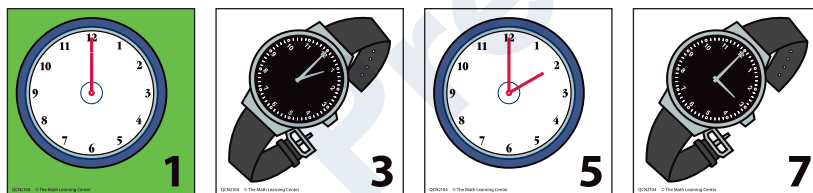
Activity Preparation

Students will each need a student clock, a whiteboard, marker, and eraser for today's activity. Make these materials easily accessible, possibly in several different locations, and have students pick them up on their way to the Number Corner discussion area. You will also need your large teacher display clock close at hand, as well as a piece of chart paper or space on a whiteboard in the discussion area.

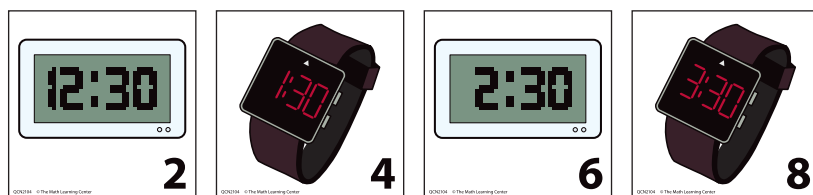
Telling Time to the Hour & Half-Hour

Day 6

- When students are seated in the discussion area, take a minute to have them predict what they'll see on the marker for the day before you post it. Keep the discussion very brief, and don't take time to update the Observations Chart today.
- Then explain that they are going to practice reading or saying the times on some of the markers posted so far, setting their clocks to match, and writing or "scribing" the time on their whiteboards.
Consider writing the sequence of actions—Say, Set, Scribe—on the board or a piece of chart paper before you continue.
- Then remove the first marker from its pocket and show it to students. Ask them to read the time on the clock, set their own clocks to match, and then record that time on their whiteboards.
 - Set the time on your large display clock as students do so on their small clocks.
 - Show students how to write the time. Explain that the colon separates the hour from the minutes. The hour for the first marker is written as 12:00 to show that no minutes after the hour have passed.
 - Have students record the time on their whiteboards.
- Ask students to identify any other markers on display right now that show a time to the exact hour.
 - As they identify each of these, take the markers out of the Calendar Grid pocket chart and set them on a nearby shelf or ledge. As you do so, students may realize that there is a clock or watch set to the hour on each odd-numbered calendar marker so far.



- Repeat the actions described in step 3 for each marker the students have identified.
- Place these markers back into the Calendar Grid pocket chart, and remove the second marker from its pocket. Show it to students and have them say, set, and scribe the time shown on this marker.
 - Work with some of the other half-hour markers as time allows.
 - If you have students identify these markers, and then take them out of the Calendar Grid pocket chart as you did with the hour markers in step 4, some students will likely notice that there is a clock or watch set to a half-hour time on every even-numbered marker.



- As you have students say, set, and scribe the half-hour times, be sure they notice that the hour hand is halfway between the two numbers, and that the minute hand has gone halfway around the clock face. Explain that for these reasons, people sometimes refer to half-hour times as *half-past the hour*, reading 1:30 as “one-thirty” or “half-past one.”



Activity 4



Activity Preparation

Students will each need a student clock, a whiteboard, marker, and eraser for today's activity. Make these materials easily accessible, possibly in several different locations, and have students pick them up on their way to the Number Corner discussion area. You will also need your large teacher display clock and the Hour & Minute Clock from the Number Corner kit close at hand, as well as a piece of chart paper or space on a whiteboard in the discussion area.

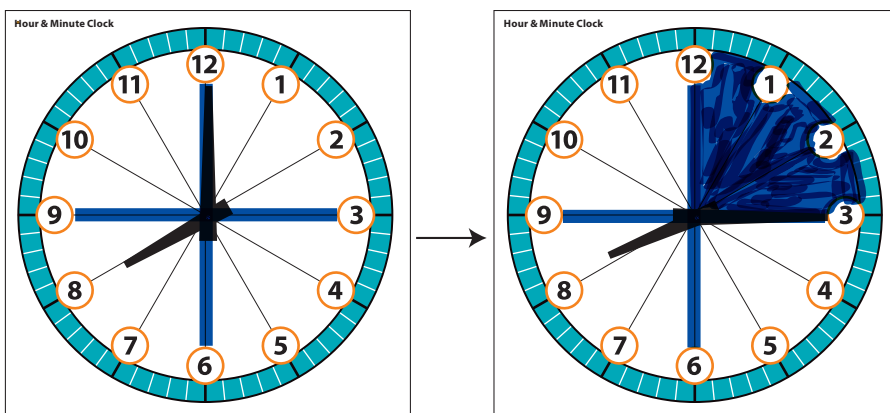
Telling Time to the Quarter-Hour

Day 14

- 1 When students are seated in the discussion area, take a few minutes to discuss the markers that have been posted since the last Calendar Grid activity, and ask students to predict what they'll see on the marker for the day before you post it.

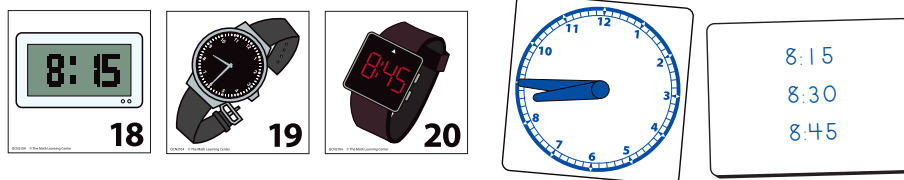
Note The date on which instructional day 14 occurs will vary from one year to the next. Post the markers through at least November 19th for this activity and have students make predictions about Marker 20, even if it means giving them a sneak preview a couple of days ahead.

 - Note with students that the background on Marker 17 is green, signaling a big jump. Use your large teacher display clock to help students determine how much time elapsed between the 16th and 17th marker, and then on each marker to date after that.
 - Note with students that on the markers after the 17th, time has started to move forward again. The question is, by how much each day? Is it 30 minutes, or some other amount per day?
- 2 Remove the Marker 18, which shows 8:15 in digital form, from its pocket. Hold it up for students to see, and have them read the time together. Then work with input from the class to set your large display clock to 8:15.
 - Ask students to pair-share where each of the hands will be on the display clock when it is set to 8:15.
 - Invite a couple of volunteers to share their thinking with the class.
 - Then set the display clock to 8:00, and advance the minute hand 15 minutes, counting by 5s with students as you do so. Where did the minute hand end up?
 - Repeat this action, and ask students to watch the hour hand very carefully. Where does it end up?
- 3 Then use the Hour & Minute Clock to introduce the idea of a quarter-hour.
 - Set the time to 8:00.
 - With a colored, erasable pen, draw lines to divide the circle into four parts—fourths.
 - Advance the minute hand 15 minutes, counting by 5s with the class as you do so.
 - Shade in the first quarter of the circle to show that the minute hand has traversed a fourth of the clock face.



- 4 To reinforce the idea, have students each draw a circle on their whiteboards, divide it in half, and divide it in half again to form fourths. Ask them to shade in the first quarter of the circle.
- Then explain that because the minute hand has gone a quarter of the way around the clock, people sometimes read 8:15 as a *quarter past 8*.
- 5 Help students practice setting their mini-clocks on each of the quarter of an hour times, saying those times, and writing them on their whiteboards.
- Ask students to erase their whiteboards.
 - Then have them set their student clocks to 8:15, read the time, and write it on their whiteboards.
 - Next, hold up Marker 19 and have students change the time on their clocks to 8:30 as you do so on your large display clock. How many minutes does the minute hand have to travel to get from 8:15 to 8:30? What part of the clock has the hand traversed? (a half, or two fourths).
 - Then have them read the time (8:30) and write it on their whiteboards.
 - Repeat these actions for Marker 20 and any other markers you have posted to date.

As you work with the class, continue to reinforce the idea of the quarter-hour. At 8:15, the minute hand has moved a quarter of the way around the clock. At 8:30, it has moved one-half or two-quarters of the way around the clock. At 8:45, it has moved three-quarters, or three-fourths of the way around the clock.



- 6 Ask students to examine the markers and the Observations Chart carefully, and share any patterns they notice, first in pairs and then as a whole group.

Students' comments will probably range all the way from spotting and describing the diagonals that have emerged as more markers were added to the grid to much more sophisticated observations about the time changes over the course of the month.



Activity 6

Completing the Telling Time Page

Optional

- 1 If time allows at the end of the month, have students complete the Telling Time on Two Kinds of Clocks in their Number Corner Student Books.
- Display your copies as students find the corresponding pages in their own books.
 - Review and clarify the instructions as necessary.
 - Make student clocks available to students who want to use them. (You might also make your large teacher display clock available to a small group of students.)
 - Give students time to complete the two pages.

Note These two pages ask students to read and write times to the hour, half-hour and quarter-hour on analog and digital clocks. As such, they may provide you with information about students' current time-telling skills.

Preview

Preview

November Calendar Collector

Measuring Length with Different Units

Overview

This month's Calendar Collector focuses on measuring length—specifically, measuring an object twice with two different units, one longer than the other, and comparing the results. Over the course of five activities, students measure different objects around the classroom, one or two per activity. They estimate the length of each item in craft sticks and then measure it to find the actual length. They use that information to estimate the length of the same item in Unifix cubes, measure to find the actual length, and compare the two measurements, coming to understand that the reported length of an object depends on the size of the unit.

Skills & Concepts

- Measure the length of an object twice, using a different unit each time (2.MD.2)
- Describe how the size of the unit used to measure an object's length relates to the measurement of the object's length (2.MD.2)
- Reason abstractly and quantitatively (2.MD.2)
- Attend to precision (2.MP.6)
- Look for and make use of structure (2.MP.7)
- Look for and express regularity in repeated reasoning (2.MP.8)

Materials

Activities	Day	Copies	Kit Materials	Classroom Materials
Activity 1 Introducing the Calendar Collector	2		<ul style="list-style-type: none"> • adding machine tape (1 roll) • Measure & Compare Cards (1 set, see Preparation) • craft sticks (see Preparation) 	<ul style="list-style-type: none"> • Unifix cubes (see Preparation) • 4 small baskets or other containers (see Preparation) • scissors • masking tape • chart paper (several pieces) • marker • large paperclips (6–10)
Activity 2 Adding to the Collection	6, 8, 12	NCSB 25–26* Measuring Length with Different Units Record Sheet		
Activity 3 Thinking About the Collection	13			

TM – Teacher Master, NCSB – Number Corner Student Book
Copy instructions are located at the top of each teacher master.

* Run 1 copy of this page for display.

Vocabulary

An asterisk [*] identifies those terms for which Word Resource Cards are available.

compare*
height*
length*
measure
size
twice
units
width

Preparation

- After you locate a set of twelve Measure & Compare Cards in your Number Corner kit, remove the card that involves finding the width of a table and the card that involves finding the width of a book. Set these two cards aside. Mix the other ten cards thoroughly and keep them near your Number Corner display this month.
- Place a large handful (50 or more) craft sticks in each of two small baskets or other containers to keep in the Number Corner area.
- Make 40 trains of 10 Unifix cubes, each train in a single color. Divide the stacks evenly between two small baskets or other containers.

Activity 1

Key Questions

Introducing the Calendar Collector

Day 2

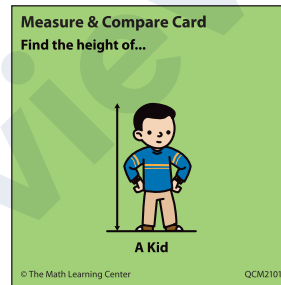
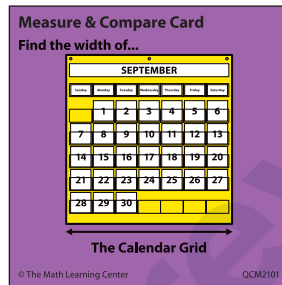
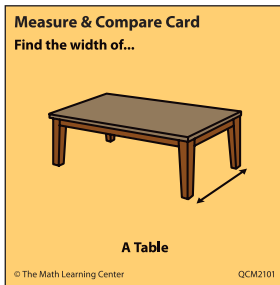
1 To introduce the new Calendar Collector, explain that this month’s collection will focus on length.

- Write the word *length* on the board. Read it with the class and ask students to share anything they already know about length, first in pairs and then as a class. Here are some questions to spark students’ thinking:

- » What is length?
- » How do people measure length?
- » Why do people measure length?
- » What kinds of tools do people use to measure length?

2 After a brief discussion, show students a few of the Measure & Compare Cards, and explain that during each Calendar Collector activity this month, the class will measure one or two of the objects pictured on the cards.

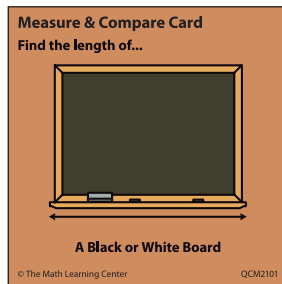
Several of the cards in the set ask students to measure the width or the height of an object. You might show students one of each type of card right away in order to introduce these terms, both so closely related to length.



3 Explain that you will choose today’s card, but after today, students will choose the measuring cards by drawing them from the collection.

Mix all ten cards as students watch, and hold them fanned out, backs of the cards facing the class, to demonstrate what you mean when you say that they will draw cards from the collection in upcoming activities.

4 Then find the card that pictures the blackboard and show it to the class, setting the other cards aside for now.



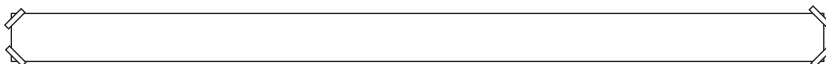
If you have more than one blackboard or whiteboard in the room, work with input from students to decide which one to measure.

Use the following questions to guide students’ discussion about the Calendar Collector this month:

- How many craft sticks do you think we’ll have to lay end-to-end to measure the length of this object?
- Can we use one or more sticks laid end-to-end to help make a good estimate before we actually measure?
- Once you know the length of the object in sticks, can you use that information to estimate the number of Unifix cubes it will take to measure the length of the same object?
- How many Unifix cubes snapped together does it take to make a train the same length as one craft stick?
- When you measure the same object with sticks and then again with Unifix cubes, how do the two quantities compare?
- Does it take more sticks or more cubes to measure the length of the object? Why? Will it always work this way? How do you know?
- Do we get a more accurate measure with the cubes or with the sticks? What makes you think so?

- 5 Then explain that you want everyone to see what's going on, so you're going to cut a length of adding machine tape to match the length of the board and lay it on the floor in the Number Corner discussion area.

- Acknowledge the fact that you could have everyone gather around the board, but explain that bringing the length to the discussion area will give everyone a better view and an equal opportunity to participate in the measuring process.
- Ask a student to walk over to the board with you. Work with that student to pull out and cut a length of adding machine tape equal to the length of the board.



- 6 Return to the discussion area, and lay the length of adding machine tape in the middle of the floor. Have the class form a wide circle around the paper strip so everyone can see.

If necessary, anchor both ends to the floor with bits of masking tape so the strip of paper will lay flat.

- 7 Show students one of the baskets of craft sticks you prepared, and explain that you're going to measure the length of adding machine tape with sticks.

- Starting at one end, lay several sticks alongside the paper strip.



- Ask students to estimate the number of sticks it will take to measure the entire length. Have them pair-share ideas, and then call on volunteers to share their estimates while you record them on a piece of chart paper.
- If two or more students make the same estimate, underline the number on the chart paper (more than once, if necessary).
- Remind students that an estimate is a good guess, based on the information available. Encourage them to use the sticks you set next to the tape as a visual benchmark. Reinforce their efforts by making and recording an estimate of your own.

How long is the whiteboard?				
Stick Estimates				
<u>50</u>	<u>26</u>	15	10	70
14	<u>20</u>	<u>32</u>	19	28
100	31	<u>25</u>	18	43

- 8 Have several students lay sticks alongside the paper strip. When they finish, have them rejoin their classmates in the circle, and ask students to show thumbs up if they agree that the sticks are placed properly.

Take time to address the issue of measuring to the nearest whole stick if necessary.

Teacher Please take a good look at the way our helpers set out sticks to measure the paper strip. Do the sticks go all the way from one end to the other? Are they placed so there are no holes or gaps anywhere? Show thumbs up if you think we're good to go.

Literature Connections

If you have access to these books, or similar publications, consider sharing them with your students this month.

How Big is a Foot? by Rolf Myller

Measuring Penny by Loreen Leedy

If You Hopped Like a Frog by David Schwartz

Student I think we need to put another stick on the end.

Teacher Why?

Student Because the paper is a little bit longer. The sticks don't reach all the way to the end.

Teacher OK, why don't you go ahead and add one more stick?

Students Now the sticks are sticking out too far!

They go past the paper now! I think we should take that stick off. It was better before.

Teacher We're going to measure lengths the best we can with our sticks, but it's probably not going to come out perfectly most of the time. Let's look at both arrangements and choose the one that is closest to the actual length of the strip.

Students The first way!

Yeah, let's not use the extra stick!

- 9 Count the sticks with the class. Pause midway through and ask students if they see any estimates on the chart that should be eliminated given the information available now.
 - Call on students who propose to eliminate an estimate from the chart. Press them to explain their reasoning.
 - Use a different colored marker to cross out any estimates the students agree to eliminate.
- 10 Finish counting the sticks with the class, and record the actual measure on the strip of adding machine tape.
- 11 Leaving the craft sticks in position, place a train of 10 Unifix cubes at one end of the paper strip. Explain that you're going to measure the strip again, this time with the cubes.

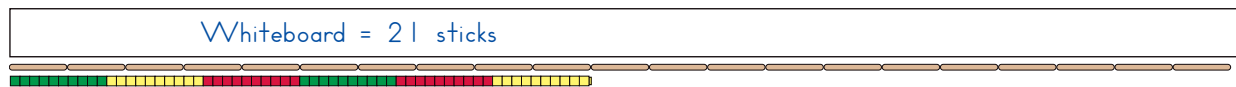
Briefly discuss this prospect with the class. Pose the following questions:

 - Will it take more or fewer cubes than sticks to measure the length of the strip? How do you know?
 - Can we use the information we already have about the length of the strip in sticks to help estimate the number of cubes it will take to measure the same strip?

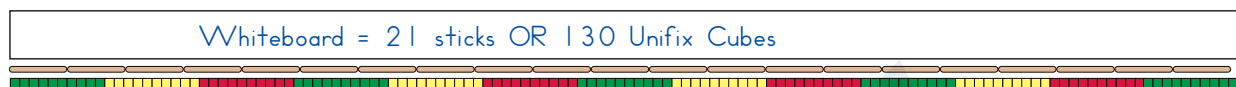
Whiteboard = 2 | sticks

- 12 Solicit estimates for the number of cubes it will take to measure the length of the paper strip, and record them on the same piece of chart paper you used for the stick estimates.
- 13 Ask several students to connect enough trains of 10 to stretch about half-way down the length of the adding machine tape.
 - Have them use trains of different colors so it's easy to see where one ends and the next begins.

- Stop the students when the train is close to the midway point, and have the class eliminate estimates from the chart that no longer make sense.



- Finally, have students build the rest of the train. Count the cubes by 10s with the class and record the actual measure on the strip of adding machine tape.
- Wrap up the activity by posing the following questions:
 - Did it take more cubes or more sticks to measure the length of the paper strip? Why?
 - Which measurement do you think is more accurate? Why?
 - Does it help to know what the length is in sticks before you try to estimate the length in cubes? How does that information help?
 - Would our long train of cubes match the length of the whiteboard? How do you know?



- Have students help gather and put away the sticks and cubes. Use a paperclip to fasten the Measure & Compare Card to the length of adding machine tape, and hang the strip on your Number Corner display board.

Activity 2

Adding to the Collection

Days 6, 8, 12

- Ask students to each bring their Number Corner Student Book and a pencil when they join you in the Number Corner area.
- Display a copy of both Measuring Length with Different Units Record Sheets and have students find the corresponding pages in their books.
- Give them a few moments to examine the pages, and then explain that the class will estimate and measure in sticks and then cubes one or two of the objects, as time allows.
Let them know that the objects pictured on the pages in their book match the objects on the Measure & Compare Cards.
- Mix the remaining Measure & Compare Cards as students watch, and then fan them out in your hand with the backs of the cards facing the students.
- Invite your student helper for the day to draw a card from your hand. Show it to the class, and then follow the procedure described in Activity 1 to estimate and measure the length of the object pictured in sticks and then cubes.
 - This time, have students record their estimates and the actual measures in their books.
 - Depending on the first card drawn, you may or may not have time to repeat the tasks with a second object. Some of the objects are small, while others, like the whiteboard, are longer and will take more time.
 - As you move through the actions required to estimate and measure the length of a given object twice, continue to pose Key Questions as applicable.

Note Toward the end of the month, you should have a collection of five or more strips of adding machine tape displayed in the Number Corner, each labeled with the name of the object, the actual measure in sticks and cubes, and the Measure & Compare Card.



Activity 3

Thinking About the Collection

Day 13

- 1 Ask students to each bring their Number Corner Student Book and a pencil with them when they join you in the Number Corner area.
- 2 Follow the actions described in Activities 1 and 2 to select and measure two more objects.
- 3 Display the second page of the Measuring Length with Different Units Record Sheet. Read and clarify the two questions toward the bottom of the page.
 - Give students a few minutes to record their responses.
 - Ask them to share and compare their answers with at least one other person.
 - If possible, take a minute or two to discuss students' responses as a class.

You might also collect students' Number Corner Student Books and have a look at each student's responses to the two questions. This will provide you with information about how well students understood the concepts addressed during Calendar Collector this month.

Extensions

If interest in the Calendar Collector has been high this month, you might consider conducting one or more of these extension activities with your class.

- Have students order the strips of adding machine tape by length, from shortest to longest. Display these in the hallway with an explanation of the project, so students, parents, and other teachers can see and appreciate the work.
- Have them compare some of the lengths to one another. Can they compare two lengths using a different unit for each? Why or why not? (In other words, is it fair to compare the length of the bookshelf measured in cubes to the length of the whiteboard measured in sticks?)
- Propose to take all the strips down and lay them end-to-end to see how far they stretch. Will there be enough room in your classroom to do this? If not, what about the corridor or the gym? If students opt for the corridor, have them estimate where the endpoint will be if you start at your classroom door, and mark that point with a piece of blue masking tape before laying out the strips.
- Ask students to calculate the length of all the strips laid end-to-end in sticks and then in Unifix cubes. Do they have to re-measure the entire length in both units to find the total? Why or why not?

November Daily Rectangle

Rows & Columns

Overview

This month's Daily Rectangle activities are not related to the date. Instead, students and teacher play a game involving rows and columns several times over the course of the month. In the Rows & Columns game, teams take turns building arrays, writing addition equations to represent their arrays, and comparing their results. A more/less die is rolled to determine the winner of each round with the best out of five winning the game.

Skills & Concepts

- Find the total number of objects in an array with up to 5 rows and 5 columns, using addition (2.OA.4)
- Write an equation to represent the total number of objects in an array with up to 5 rows and 5 columns as the sum of equal addends (2.OA.4)
- Compare pairs of numbers and use $>$, $=$, and $<$ signs to record the comparisons (2.NBT.4)
- Model with mathematics (2.MP.4)
- Look for and make use of structure (2.MP.7)

Materials

Activities	Day	Copies	Kit Materials	Classroom Materials
Activity 1 The Rows & Columns Game	4, 7, 11		<ul style="list-style-type: none"> • Magic Wall • magnetic colored tiles (full set, all 4 colors) • Number Cards (1 deck, see Preparation) • more/less die • colored tiles (25 tiles per student pair, see Preparation) 	<ul style="list-style-type: none"> • erasable marker • chart paper • regular marker • student whiteboards, markers, and erasers (class set)

TM – Teacher Master, NCSB – Number Corner Student Book
Copy instructions are located at the top of each teacher master.

Preparation

Number Cards

Remove the 0s, 6s–10s, and wild cards from a deck of Number Cards and set them aside. You should have a small deck of 20 cards, with four each of the numbers 1–5. Shuffle these well.

Colored Tiles

Each student pair will need 25 colored tiles each time you play the Rows & Columns game with the class this month. You can either divide your set of tiles into 6 or 7 baskets or other containers, or you can pre-count tiles into sets of 25. If you choose the second option, place each set of 25 tiles into a zip-top bag or a small container such as an 8-ounce margarine or yogurt tub. Make enough sets of 25 for each student pair to have one to use during this activity.










Mathematical Background

An array is a systematic arrangement of objects, usually in rows and columns. The Rows & Columns game is designed to help students focus on the rows and columns within arrays by having them build arrays to specifications determined by the cards they draw. In this game, teams take turns drawing two cards. The first card tells how many rows are in the team's array. The second card tells how many columns. For example, if a team draws a 4 and then a 2, they will need to build an array with 4 rows and 2 columns. While some students may be able to envision such an array and build it without further instruction, others may need to work from the parts to the whole. There are different ways to approach this task, but here's one way to go about helping students.

Vocabulary

An asterisk [*] identifies those terms for which Word Resource Cards are available.

add*
addends
array*
column*
equal*
equation*
rectangle*
row*
sum or total*

Step 1 Draw the first number card, and set out that many rows of tiles, 1 tile per row.	
<i>We got a 4, so we put out 4 rows with 1 tile in each row.</i>	Row 1  Row 2  Row 3  Row 4 
Step 2 Push the tiles together.	
<i>Now we push the tiles together.</i>	Row 1  Row 2  Row 3  Row 4 
Step 3 Draw a second number card and build that many columns.	
<i>We got a 2, so we build 2 columns of 4 tiles. Now we can see that there are 4 rows, and each row has 2 tiles. We can also see that there are 2 columns, and each column has 4 tiles.</i>	

Activity 1

The Rows & Columns Game

Days 4, 7, 11

- Ask students to join you in the discussion area with their whiteboards, markers, and erasers.
- When they are seated with their materials placed safely on the floor in front of them, explain that you are going to play a new game with them called Rows & Columns.
 - Let them know that this game will help them learn more about rectangular arrays.
 - Explain that they will work together as a team, and you will be the other team.
- Briefly describe the game.
 - Show students the deck of Number Cards you prepared, and let them know that there are 20 cards in the set, numbered from 1 through 5. Shuffle the deck thoroughly as they watch, and place it face-down where you and students can access it easily.
 - Explain that each team will take a turn to draw two cards, build an array to match the cards, and write an equation to represent their array.
 - When each team has had a turn, the class will compare the number of tiles in the two arrays and roll a more/less die to determine the winner of the round. The winning team will score 1 point.
 - You will play five rounds and the team with the higher score after five rounds wins the game.
- Demonstrate how the game works by taking the first turn.
 - Draw the first card from the top of the face-down stack. Hold it up for the class to see, and explain that this card tells you how many rows to make.
 - Using magnetic tiles on the Magic Wall, set out that number of rows, and explain that for now, each row only has 1 tile in it.



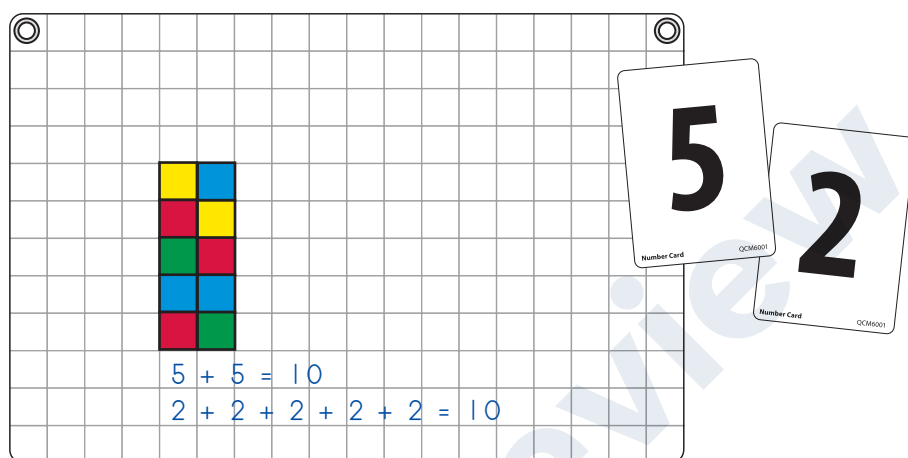
Activity Preparation

This activity is described as it would be played with students seated in the Number Corner discussion area. If you prefer to have students work at their tables during the game, you will need to make some modifications. To play as described here, you will use magnetic tiles on the Magic Wall. You will need an erasable marker, the deck of Number Cards you prepared, the more/less die, and the containers of tiles for students close at hand. You will also need a piece of chart paper posted on a teaching easel or the wall in the Number Corner area, or space on a whiteboard in or very close to the Number Corner area.

- Then draw a second card from the top of the stack. Hold it up for the class to see, and explain that this card tells you how many columns to make.
- Build the designated number of columns, and push the tiles together to form an array. Then work with students to confirm that you have built an array with the number of rows and columns specified by the cards you drew.

5 Work with input from the class to write an equation (or more than one equation) that represents the array you built. Use an erasable pen to write directly on the Magic Wall.

- Ask students to pair-share the total number of tiles in your array. Encourage them to do this without counting the tiles one-by-one.
- After a few moments, invite two or three volunteers to share their thinking with the class. Use their ideas to generate and record one or more equations to represent the number of tiles in each row and the number of rows, or the number of tiles in each column and the number of columns.



Student A It's 10 because I see 5 on one side, and 5 on the other.

Teacher So there are 2 columns of 5. I can write that as $5 + 5 = 10$. Did someone have a different way to count the tiles in my array?

Student B I looked at the rows. If you go across in each row, you can see 2, so I just went 2, 4, 6, 8, 10.

Teacher OK, so you were counting the number of tiles in each row, and you counted by 2s five times, right? I can write that as $2 + 2 + 2 + 2 + 2 = 10$.

Teacher Are both of these equations true? How are they alike? How are they different?

Students They both add up to 10!

They use the same numbers you got with the cards—5 and 2.

The first way is shorter.

They're kind of alike—the first one has two 5s, and the other one has five 2s!

6 Now have the students take their first turn.

- Have them pair up, and work with a helper to set out tiles where it is easily accessible, or give each pair a set of tiles.
- Call on one student to draw the first card for the class and show it to the class.
- Ask students to work with their partners to lay out that many rows of tiles, with 1 tile in each row, and then push their tiles together.

Key Questions

Use questions such as these to help your students learn to see, understand, and symbolize the rows and columns in the arrays they build.

- How many rows does the first card tell you to set out?
- How many columns does the second card tell you to build?
- Now that your array is complete, how many tiles are there in each row? How many are there in each column?
- Can you find out how many tiles there are in this array without counting them by 1s?
- Can you write an equation to show how many tiles there are in each row?
- Can you write an equation to show how many tiles there are in each column?
- How are these two equations alike? How are they different?
- How do the answers to your two equations compare? Why are they the same?

- Then have another student draw a second card for the class. Ask student pairs to build that many columns, with the same number of tiles in each.

SUPPORT Model the steps involved in building the array as students build along with you. There may be particular points of confusion as students try to keep the terms *row* and *column* separate. Drawing a 1 may further confuse some students, and you will probably need to clarify. If the first card they draw is a 1, they need to lay out 1 row with 1 tile in that row. If the second card they draw is a 1, they will already have built 1 column. If students draw a 1 both times, they will wind up with an array that has exactly 1 row and 1 column.

- Have one student come up to the Magic Wall and build the array with magnetic tiles. Work with students to confirm that this array matches the cards they have drawn, and ask them to check around them to make sure that everyone has built the array correctly.
- Then ask students to each pick up their whiteboard, write an equation, or more than one equation to represent their array, and hold up their board for everyone else to see.
- Ask a couple of volunteers to read out their equation while you record them at the Magic Wall.



- 7 Work with students to compare the two array totals and write an inequality statement starting with your total. Then have one of the students roll the more/less die to determine the winner of this round.
- Record this information on a piece of chart paper.
 - Have students record the inequality statement with you and circle the winner after the more/less die is rolled.
 - Then record the score at the top of the paper.

Score Card	
(10) > 12	Mrs. R Kids

Students I thought for sure we were going to win!
Too bad the die landed on less.
Anyone can win—not just the one who gets the most.

- 8 Then continue playing the game.
- Erase the Magic Wall and clear the board of tiles as students erase their whiteboards and clear their arrays.
 - Repeat steps 4–7 until you have played five rounds of Rows & Columns. The team with the most points after 5 rounds wins the game.

If you run out of time before you complete five rounds, especially the first time you play this game with the class, stop at three or four rounds instead of going to five. Promise students that you will play the game again this month.

November Computational Fluency

Doubles & Halves

Overview

During the Computational Fluency workout this month, students review all the Doubles and Doubles Plus or Minus One addition facts, with a strong focus on combinations between 10 and 20. Students also work with the related subtraction combinations—the Take All facts (e.g., $12 - 12$ or $15 - 15$) and the Take Half facts (e.g., $12 - 6$, $14 - 7$, and so on).

Skills & Concepts

- Use the relationship between addition and subtraction to add and subtract within 20 (1.OA.6)
- Fluently add and subtract with sums and minuends to 20 using mental strategies (2.OA.2)
- Determine whether a group of objects has an odd or even number of members (2.OA.3)
- Write an equation to express an even number as a sum of two equal addends (2.OA.3)
- Reason abstractly and quantitatively (2.MP.2)
- Model with mathematics (2.MP.4)
- Look for and make use of structure (2.MP.7)
- Look for and express regularity in repeated reasoning (2.MP.8)

Materials

Activities	Day	Copies	Kit Materials	Classroom Materials
Activity 1 Introducing Doubles & Doubles Plus or Minus One Facts	3		<ul style="list-style-type: none"> • Double Ten-Frame Pair-Wise Display Cards, in order from 10 through 20 • Magic Wall • red and blue magnetic tiles 	<ul style="list-style-type: none"> • standard pocket chart • markers • student whiteboards, markers, and erasers (class set)
Activity 2 The Doubles Up Game	5, 8	NCSB 27–28* Doubles Up	<ul style="list-style-type: none"> • 2 dice numbered 4–9 	<ul style="list-style-type: none"> • small paper cup (optional)
Activity 3 Finding Doubles & More on the Table	11	NCSB 8 Addition Table from September (plus your copy from last month, partly filled in, for display)		<ul style="list-style-type: none"> • purple and red crayons (class set, plus 1 of each color for the teacher)
Activity 4 Take All & Take Half Facts	12		<ul style="list-style-type: none"> • Double Ten-Frame Pair-Wise Display Cards, in order from 10 through 20 	<ul style="list-style-type: none"> • student whiteboards, markers, and erasers (class set) • piece of $4\frac{1}{2}'' \times 12''$ construction paper • standard pocket chart
Activity 5 Completing the Scout Out Doubles & Halves Page	15	NCSB 29* Scout Out Doubles & Halves		<ul style="list-style-type: none"> • blue and red crayons (1 of each color per student)

TM – Teacher Master, NCSB – Number Corner Student Book
Copy instructions are located at the top of each teacher master.

* Run 1 copy of this page for display.

Vocabulary

An asterisk [*] identifies those terms for which Word Resource Cards are available.

addend(s)
addition
addition table
commutative property
difference*
facts
subtract*
subtraction
sum or total*

Mathematical Background

All the strategies included in this month's Computational Fluency activities are based on Doubles facts. Our task in second grade is to help students memorize the Doubles facts between 10 and 20, and make use of those facts to solve the closely related Doubles Plus or Minus One facts. A student who knows the Doubles facts through 20, for example, is in a good position to reason that $7 + 8 = 15$ because $7 + 7$ is 14, and 1 more is 15, or because $8 + 8$ is 16, and 1 less is 15.

Subtraction doubles, or *Take All* facts, such as $10 - 10$, $11 - 11$, $12 - 12$, and so on, are obvious to most students. The challenge students face is to communicate clearly why such a strategy works, how it works, and when to use it. In solving *Take Half* facts, students subtract half of a given number. Combinations like $10 - 5 = 5$ and $12 - 6 = 6$ are relatively easy for students who are comfortable with the addition Doubles facts, and also serve to reinforce the relationship between addition and subtraction.



Activity 1



Activity Preparation

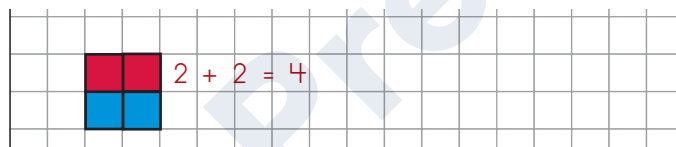
Students will need whiteboards, markers, and erasers. You will need your Double Ten-Frame Pair-Wise Display Cards ordered from 10 through 20 and a regular pocket chart. You will also use the Magic Wall and the magnetic tiles.

Introducing Doubles &

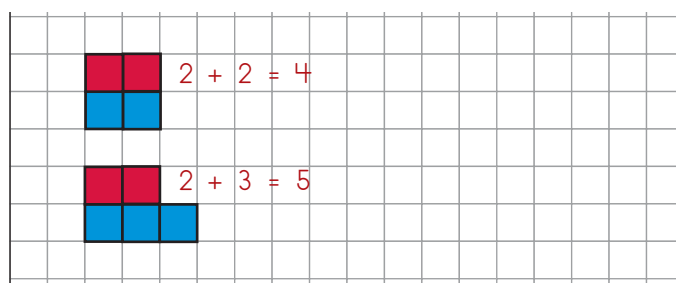
Doubles Plus or Minus One Facts

Day 3

- As students watch, place 2 red tiles side-by-side on the Magic Wall in the fourth row down, and 2 blue tiles in a row directly below the red tiles.
- Ask students to pair-share an equation that could be used to tell how many tiles there are in the top row and how many there are in the bottom row.
 - Invite everyone to share the equation aloud as you record it on the Magic Wall.
 - Review the idea that even arrangements such as this, which feature the same number of tiles in the top and bottom row are also pictures of Doubles addition facts.



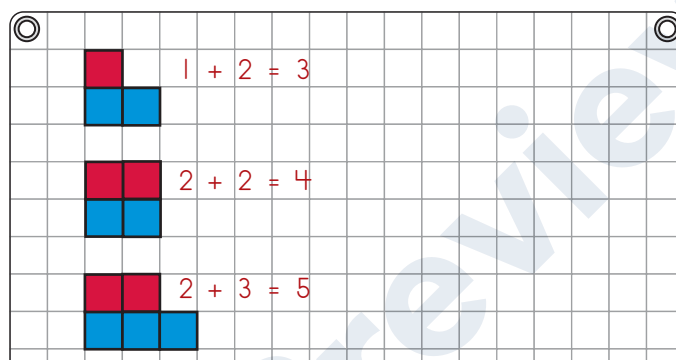
- Build another copy of the array, and add a blue tile to the bottom row as students watch.
- Ask students to record an addition equation on their whiteboards to represent the number of tiles in the top and bottom row of this arrangement.
 - On your signal, have everyone read the equation they have written aloud as you write it on the Magic Wall.
 - Ask students to pair-share observations about the two tile arrangements and equations. How are they alike? How are they different? After a few moments, invite volunteers to share their observations with the class.



- 5 If it doesn't emerge from the students' observations, explain that $2 + 3$ is an example of a Doubles Plus or Minus One fact. It is very much like $2 + 2$ except one of the addends is 1 more than the other. It is also very much like $3 + 3$, except one of the addends is 1 less than the other.

SUPPORT Build and record the equation for an array that has 3 red tiles in the top row and 3 blue tiles in the bottom row directly below the second arrangement on the Magic Wall so students can see $2 + 3$ sandwiched in-between the two related Doubles.

- 6 Draw students' attention back to the original arrangement, 2 red and 2 blue tiles, and ask them what would happen if you removed the red tile from the right side of the array.
- How would the resulting arrangement look?
 - Would it be odd or even?
 - After students have had a few moments to think about it, build the arrangement directly above the 2 by 2 square, and ask students to write an equation to match on their whiteboards.
 - Then have them read their equation aloud as you write it on the Magic Wall.
 - Discuss the results with the class. Is this equation a Doubles or a Doubles Plus or Minus One fact? How do they know?



Students I think all the Doubles have to be even numbers because there will always be the same on the top and the bottom. That's a Double Plus or Minus One because it's like $2 + 2$, but it's just 1 less.

- 7 Investigate $4 + 4$ and its related Doubles Plus or Minus One facts with the class.
- As students watch, clear the Magic Wall of tiles and erase the equations.
 - Then, in the middle of the Magic Wall, build an array with 4 red tiles in the top row and 4 in the bottom row, and write $4 + 4 = 8$ beside the array.
 - Work with input from the class to build the arrangement and record the equation for the related Double Plus or Minus One fact on either side of $4 + 4$. Encourage students to "see" the related Double in $3 + 4$ and $4 + 5$, and to verbalize how knowledge of the solution to $4 + 4$ could be used to figure out the answers to the two Doubles Plus or Minus One facts.

Key Questions

Use questions like those below to challenge students throughout this month:

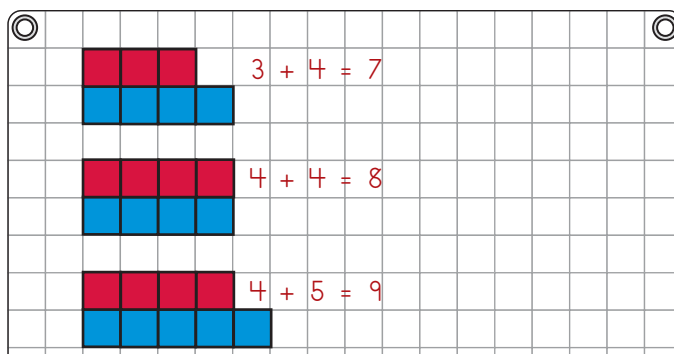
- How do we know if a particular number is a double?
- How do we know if a particular number is a near double?
- Is there any connection between even and odd numbers and the Doubles and Doubles Plus or Minus One facts? What is it?
- What do you understand about the Take All facts? What about the Take Half facts?
- When do these strategies work?
- How do you know when to use a particular strategy to solve a combination?
- What is half of _____? How do you know?

Literature Connections

If you have access to these books, or similar publications, consider sharing them with your students this month.

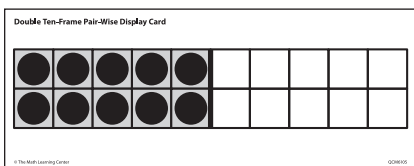
Double the Ducks by Stuart Murphy

Two of Everything by Lily Toy Hong

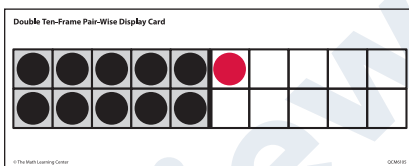


8 Finally, post each of the Double Ten-Frame Pair-Wise Display Cards, from 10 through 20 as students verbalize the combination and the solution.

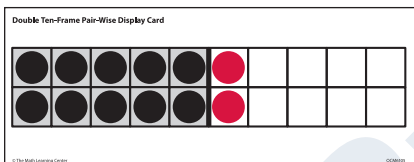
- For each of the cards that shows a Double (10, 12, 14, 16, 18, and 20), have students report the number of dots they see in each row and the total.
- For each of the cards that shows a Double Plus or Minus One (11, 13, 15, 17, and 19), have students report the number of dots they see in each row, and then verbalize the lower of the two related Doubles, add 1 more, and report the total.



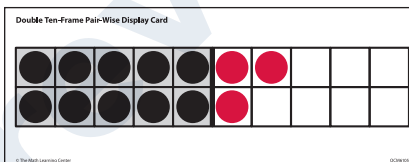
Students Five and 5 is 10.



Students Six and 5—5 and 5 is 10, and 1 more is 11.



Students Six and 6 is 12.



Students Seven and 6—6 and 6 is 12, and 1 more is 13.

SUPPORT. Consider using the Double Ten-Frame Pair-Wise Display Cards for very brief drills over the next week or two. These drills might take place during the 2 minutes before recess, or the last 4 minutes of the day, or as a way to excuse students from the discussion area to get their coats and line up for the bus. During one of these brief drills, you mix the set of 11 cards, and hold them up one-by-one. If the card shows a Doubles fact, students respond by stating the Double and its total. If the card shows a Doubles Plus or Minus One fact, students simply report the lower related Double—the Double they can see in the display. Later in the month, you might write each Double and Doubles Plus or Minus One fact on an index card, so students are responding to the numbers alone without the support of visuals. At this point, you might ask them to verbalize the Double and the total for the Doubles combinations, the related Double Plus One more, and the total for the Doubles Plus or Minus One combinations.

$$\begin{array}{r} 9 \\ + 9 \\ \hline \end{array}$$

9 and 9 is 18

$$\begin{array}{r} 8 \\ + 7 \\ \hline \end{array}$$

8 and 7—7 and 7 is 14 and 1 more is 15

$$\begin{array}{r} 6 \\ + 6 \\ \hline \end{array}$$

6 and 6 is 12.

$$\begin{array}{r} 8 \\ + 9 \\ \hline \end{array}$$

8 and 9—8 and 8 is 16 and 1 more is 17.



Activity 2



Activity Preparation

Students will need their Number Corner Student Books and a pencil for this activity. You will need a pair of dice numbered 4–9. It may be easiest to have students work at their desks or table spots, especially if you have a document camera or other easy way to display your copy of the sheet as well as the pair of dice.

The Doubles Up Game

Days 5, 8

- Display your copy of the Doubles Up page and ask students to find the corresponding page in their Number Corner Student Books.
 - Give them a few moments to examine the page quietly and then briefly share observations with the person sitting next to them.
- Explain that this is a record sheet for a game called Doubles Up, which you are going to play with them right now.
 - Explain that they will work together as a team to try to beat you.
 - To make things easier, you will roll the dice for both teams throughout the game.
 - Each time you roll the dice for yourself or the class, everyone works together to decide whether the combination is a Doubles fact, a Doubles Plus or Minus One fact, or neither.
 - If it is a Doubles fact, the team for whom the roll was made gets to record the combination, along with the answer in the Doubles column on their record sheet.
 - If it is a Doubles Plus or Minus One fact, the team for whom the roll was made gets to record it in the Doubles Plus or Minus One column on their sheet.
 - If the combination is neither a Doubles or a Doubles Plus or Minus One fact, the team for whom it was rolled records it in their Discard column.
 - The first team to fill either the Doubles or the Doubles Plus or Minus One column on their record sheet wins.
 - If one team fills their Discard column before either team fills one of the other two columns, that team automatically loses the game.
- Take the first turn and show students that the combinations will be recorded from the bottom of the sheet up, rather than the top down.
 - Roll the dice in such a way that the class can see the results for themselves if possible. (Consider placing both dice in a small paper cup, shaking them and dumping them gently out of the cup onto the document camera. If this is not possible, write this combination, along with the rest you roll throughout the game, on the board.)
 - Ask students to help you classify the combination as a Doubles fact, a Doubles Plus or Minus One fact, or a Discard.
 - Record the combination in the appropriate column, along with the answer. If the combination is a Discard, share your strategy for solving it with the class.

Teacher I got $7 + 5$. Is that a Doubles fact?

Students No!

Teacher Is it a Doubles Plus or Minus One fact?

Students No!

Teacher You're right. It's close. $7 + 6$ would be a Doubles Plus or Minus One fact, but the addends in $7 + 5$ are too far apart. Rats! I guess I'll have to put it in my discard column. Here I go. Let's see... $7 + 5$ is kind of like $5 + 5$, and then 2 more, so the answer is 12. OK—your turn!

		$7 + 5 = 12$
Doubles	Doubles Plus or Minus One	Discards

(continued on next page)

Number Corner Grade 2 Student Book 27 © The Math Learning Center | mathlearningcenter.org

- 4 Have students take their first turn.
 - Roll the dice for the class. If they can't see the results for themselves, record the combination on the board so they can examine it closely.
 - Ask them to classify it, record it in the appropriate column on their Number Corner Student Book page, and write the answer. If it is a Discard fact, have students pair-share strategies for solving the combination using a strategy more efficient than counting on from the higher number if possible.
- 5 Continue taking turns back and forth with the class until one team has filled either their Doubles or their Doubles Plus or Minus One column to the top.

If one of the teams fills their Discard column to the top before either team has filled one of the other two columns, the game is automatically over, and the other team automatically wins.



Activity 3

Finding Doubles & More on the Table

Day 11

- 1 Explain that you are going to find and mark the Doubles and Doubles Plus or Minus One facts on the Addition Table.
- 2 Review the Doubles by quickly listing the numbers 0 through 10 vertically on the board or a piece of chart paper. Then point to each number as students read it, verbalize its Double, and give the total as you record the information.
- 3 Review the Doubles Plus or Minus One by listing the numbers 0–9 in a column next to the Doubles. Point to each number as students read it, verbalize the number that is 1 more, and give the total as you record the information.

Teacher Let's try something a little different this time. I'll point to each of these numbers. When I do, you read it and give the number that is just 1 more, and report the total. Ready? (Points to the 0 at the top of the list.)

Students Zero plus 1 is 1.

Teacher Great! Try this one (points to the 1).

Students One plus 2 is 3.

This is easy!



Activity Preparation

Students will need their Number Corner Student Books, a pencil, and crayons in red and purple for this activity. They will work at their tables or desks for this part of Number Corner, instead of sitting on the floor in front of the display board.

<u>Doubles</u>	<u>Doubles + or - 1</u>
$0 + 0 = 0$	$0 + 1 = 1$
$1 + 1 = 2$	$1 + 2 = 3$
$2 + 2 = 4$	$2 + 3 = 5$
$3 + 3 = 6$	$3 + 4 = 7$
$4 + 4 = 8$	$4 + 5 = 9$
$5 + 5 = 10$	$5 + 6 = 11$
$6 + 6 = 12$	$6 + 7 = 13$
$7 + 7 = 14$	$7 + 8 = 15$
$8 + 8 = 16$	$8 + 9 = 17$
$9 + 9 = 18$	$9 + 10 = 19$
$10 + 10 = 20$	

- 4 Give students a few moments to examine both sets of facts quietly. Then ask them to compare the two sets, first in pairs and then as a whole class.
- How are these two sets of facts the same?
 - How are they different?
 - If you know the answer to $8 + 8$, can that help you find the answer to $8 + 7$ or $8 + 9$? How?

Teacher Now we have listed all the Doubles and the Doubles Plus or Minus One in order. Talk to the person next to you for a minute. What do you notice about these two sets of combinations? How are they alike? How are they different?

Students The Doubles are always the same number twice, like $1 + 1$ or $3 + 3$ or $10 + 10$.

The Doubles Plus or Minus One are kind of the same, but the second number is always just 1 more, like $1 + 2$ or $5 + 6$, like that.

The answers to the Doubles are counting by 2s—0, 2, 4, 6, 8, 10.

They're all even!

And look! The answers to the Doubles Plus or Minus One are all odd!

They go 1, 3, 5, 7, and keep on going like that.

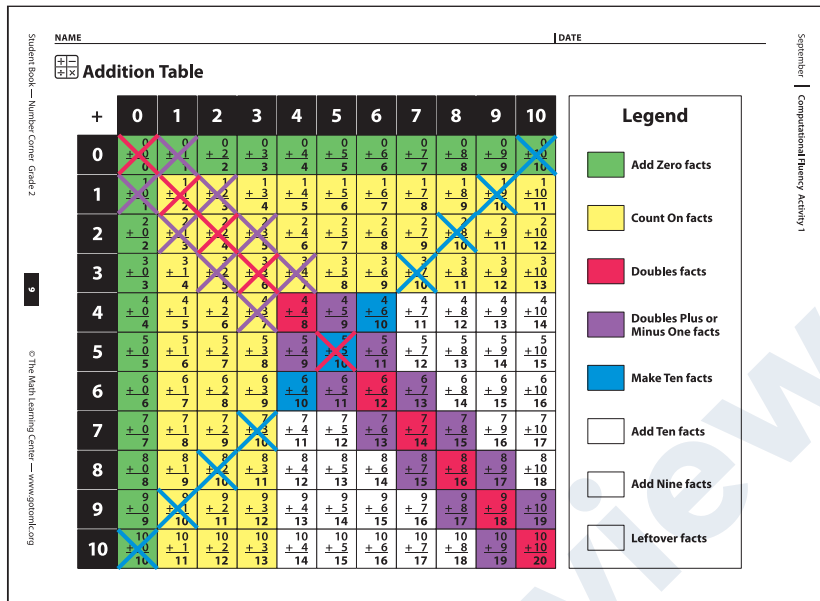
Teacher Interesting observations! Why are the answers to the Doubles all even and the answers to the Doubles Plus or Minus One all odd, do you think?

Student A I think it's like when we made rectangles in two rows. If it's a Double, you're always going to have the same number in each row, like 5 in one row and 5 in the other. They'll always have a partner.

- 5 Display your partially filled copy of the Addition Table page as students find the corresponding page in their books. Then explain that you're going to work together to color in the Doubles facts.
- As they watch, color in the third box in the Legend column red.
 - Then give students a minute to find the 11 Doubles facts on the table. Ask them to work in pairs to help each other search out these facts. After a minute, invite a volunteer to show and explain the location of these facts.

- Note with students that some of the Doubles facts are already shaded. Show them how to mark each of these with a heavy red X, and shade in red the six facts that aren't already marked.
- Repeat steps 5 and 6, working with students to find and color-code the Doubles Plus or Minus One facts in purple.

Before students start their search, let them know that there are 20 Doubles Plus or Minus One facts on the chart. Some have already been shaded in a different color, but many of them haven't yet been touched.



- Have students pair-share observations about the placement of the Doubles Plus/Minus One facts on the chart. Where do they show up relative to the Doubles Facts? Why? Then call on two or three volunteers to share their observations with the class.

Activity 4

Take All & Take Half Facts

Day 12

- Open this activity by writing Take All facts and Take Half facts on the board or chart paper. Explain that these are the names for two sets of subtraction facts that are closely related to the Doubles addition facts.
- Record the following Take All facts on the board: $14 - 14$, $19 - 19$, $12 - 12$, $17 - 17$.
 - After you write each fact, have students record just the answer on their whiteboard.
 - Conduct this exchange in silence.

Activity Preparation

Students will need their whiteboards, markers, and erasers for this activity. You will need the Double Ten-Frame Pair-Wise Display Cards ordered from 10 through 20, a half-sheet of construction paper, your pocket chart, and writing space on a piece of chart paper or a nearby whiteboard.

- 3 Ask students to hold up their whiteboards for everyone to see, and have the class look around. What do they see on all the whiteboards around them? Why?

Students It's all zeros!

Teacher Why?

Student A Because if you have a number and take the same number away, there's nothing left.

Teacher Does this always work?

Student B Yes, I think so. If you have something, like 5 candies, and eat them all, they are all gone!

Teacher Does this work with really large numbers, like $500 - 500$?

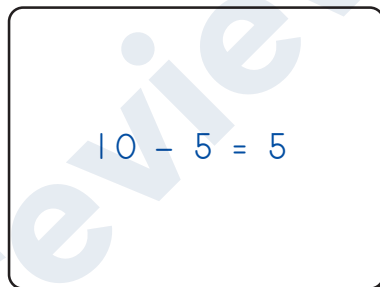
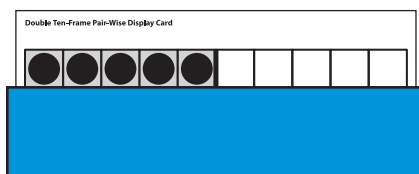
Class Yes!

Teacher The subtraction facts you just solve are called *Take All facts*. Does that name make sense?

Students I think so, because on each one, you're taking all of them away.

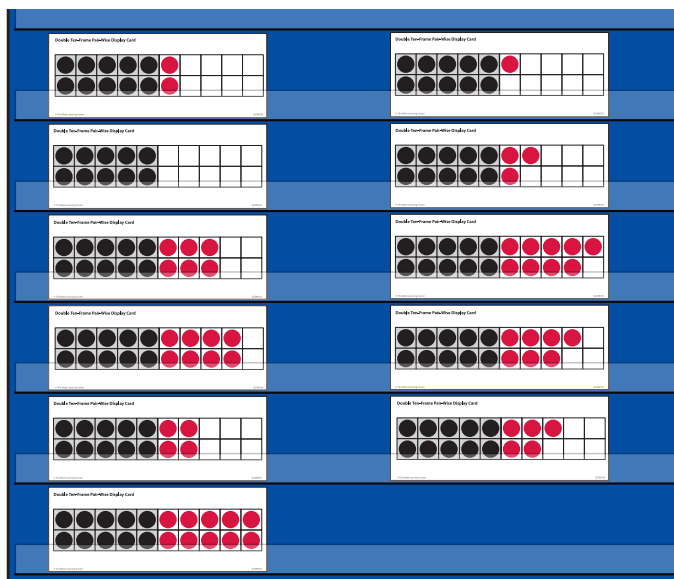
They're easy! The answer is always 0, no matter what.

- 4 Have students erase their whiteboards. Then hold up the Double Ten-Frame Pair-Wise Display Card for 10, screen the dots in the lower row, and ask students to record a subtraction equation to represent the situation.



- 5 Repeat step 4 with the Double Ten-Frame Pair-Wise Display Cards for 12, 14, and 16.
- 6 Have students hold up their whiteboards so everyone around them, including you, can see them. Then point to the phrase *Take Half facts* you wrote on the board earlier, and explain that the equations students have just written are all examples of *Take Half* subtraction facts.
- Ask students to lower their boards and pair-share ideas about why these subtraction equations are called *Take Half facts*, and how these facts relate to the *Doubles* addition facts.
 - When students have had a minute to talk, call on volunteers to share their thinking with the class.
- 7 Press students to make the generalization that *Take Half facts* always involve even numbers.
- Hold up the Double Ten-Frame Pair-Wise Display Card for 11. Ask students if it's possible to show and write a *Take Half fact* for this card. Why or why not? Give them a few moments to pair-share, and then ask volunteers to share their thinking with the class.
- 8 Mix all the Double Ten-Frame Pair-Wise Display Cards as students watch. Then hold them up one-by-one, and have students tell whether or not a *Take Half fact* can be written for the card by saying *yes* or *no*.

- Post the cards in two separate columns in the pocket chart.
- Ask students to comment about the numbers in each column. What do the numbers in each set have in common?



Students You can cut all the numbers in the first column in half, but you can't with the others.

All the ones in the first column going down are even numbers. They have the same on the top and bottom. The ones in the other column going down are all odd.

Teacher Do you think you could write a Take Half combination for any even number? What about 100?

Students Yes!

For 100 it would be $100 - 50 = 50$.

Teacher What about 50?

Student A Nope, that's an odd number, so you can't do it.

Student B I respectfully disagree, because $25 + 25$ makes 50. Plus, if you count by 2s, you land on 50, so it's an even number.



Activity 5



Activity Preparation

Students will need their Number Corner Student Books, a pencil, and crayons in blue and red for this activity. They will work at their tables or desks today, instead of sitting on the floor in front of the Number Corner display board.

Completing the Scout Out Doubles & Halves Page Day 15

- 1 Display your copy of the Scout Out Doubles & Halves page and ask students to find the corresponding page in their books.
- 2 Review the instructions on the page and clarify as needed.
 - As you review the first problem with the class, remind students that Doubles Plus or Minus One facts are addition combinations that are either 1 more or 1 less than the related Doubles facts. For example, the third combination in the first row, $9 + 10$ is 1 more than $9 + 9$ and 1 less than $10 + 10$. Students might also note that while the two addends in a Doubles Fact are always identical, the two addends in a Doubles Plus or Minus One fact are always one apart, almost like next door neighbors.
 - If necessary, work with input from the class to circle in red the Doubles Plus or Minus One facts in the first and second rows on your copy of the sheet.

- As you look at the second problem, remind students that Take All and Take Half facts are exactly as described. In Take All facts, the minuend and the subtrahend are always identical. In Talk Half facts, the subtrahend is always exactly half of the minuend.
 - When you review the third problem on the sheet, give students a few moments to pair-share strategies for finding the missing numbers, and then have two to three volunteers share their thinking with the class.
- 3 When students understand what to do, give them the remaining time to complete the assignment.
 - 4 As students finish, ask them to share and compare answers with a classmate.
If some students aren't able to complete the sheet during Number Corner, have them do so during a designated seatwork period sometime in the next day or two.

Preview

Preview

November Number Line

The Fifth Century

Overview

The Number Line takes a back seat to some of the other workouts during this short month. Student helpers continue to update the Classroom Number Line each day, and on the 50th day of school, the class celebrates the fifth century day.

Skills & Concepts

- Identify, describe, and extend number patterns (supports 2.OA)
- Demonstrate an understanding that 100 can be thought of as a bundle or group of 10 tens, called a hundred (2.NBT.1a)
- Demonstrate an understanding that multiples of 100 from 100 to 900 refer to some number of hundreds and 0 tens and 0 ones (2.NBT.1b)
- Skip-count by 10s and 100s (2.NBT.2)
- Read and write numbers within 1000 represented with numerals, words, and expanded notation (2.NBT.3)
- Add and subtract with sums and minuends to 500 (2.NBT.7)
- Mentally add 10 or 100 to any 3-digit number between 100 and 500 (2.NBT.8)
- Represent whole numbers as lengths on a number line (2.MD.6)
- Model with mathematics (2.MP.4)
- Look for and make use of structure (2.MP.7)

Materials

Activities	Day	Copies	Kit Materials	Classroom Materials
Activity 1 Celebrating the Fifth Century Day	10	NCSB 30–31* The Fifth Century Day	• craft sticks (see Preparation)	<ul style="list-style-type: none"> • sentence strip in the same color as the second in the Classroom Number Line • black wide-tipped erasable marker • kangaroo pointer • 2 baskets or other containers • 50 rubber bands, plus a few extra (see Preparation) • 5 pieces of 9" × 12" construction paper, any color

TM – Teacher Master, NCSB – Number Corner Student Book
Copy instructions are located at the top of each teacher master.

* Run 1 copy of this page for display.

Vocabulary

An asterisk [*] identifies those terms for which Word Resource Cards are available.

bundle
century
hundreds*
ones*
tens*

Preparation

Before Activity 1, use rubber bands to bundle 500 craft sticks into 50 sets of 10. (This is a good job for students to do before or after school, or during recess a couple of days before you conduct the Number Line activity.) Place all 50 bundles into a basket large enough to hold them, but small enough to be passed from student to student as they sit in a circle in the Number Corner discussion area.

Mathematical Background

This month's number line activity focuses on counting by 10s and 100s to 500. Sticks bundled into groups of 10 and arranged into larger groups of 10 bundles convey a sense of quantity, and serve to help students understand that a bundle of 10 is both 10 individual sticks and 1 set of 10. Likewise, a set of 100 composed of 10 bundles of 10 is 100 individual sticks, 10 sets of 10, and 1 set of 100.

Update

Every day class is in session except for day 10, when you will add new strips to the Classroom Number Line.

Procedure

Write the next multiple of 10 on the Classroom Number Line.



Activity 1



Activity Preparation

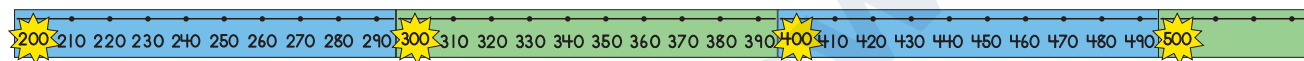
You will need a sixth sentence strip in a color that matches the second as well as your kangaroo pointer. You will also need the basket or other container holding 50 bundles of 10 craft sticks, another empty basket or container, and 5 pieces of 9" × 12" construction paper.

Celebrating the Fifth Century Day

Day 10

- Using the kangaroo pointer, point to each of the numbers on the first sentence strip as students count with you. When you get to 490, stretch the name of the number out long enough to post the sixth strip directly next to the fifth. Then have students tell you what number to write next—500!

Find some way to mark this special number on the line—perhaps with a gold star or a small sticker, or perhaps by circling it or writing it in a different color than the other numbers on the line.



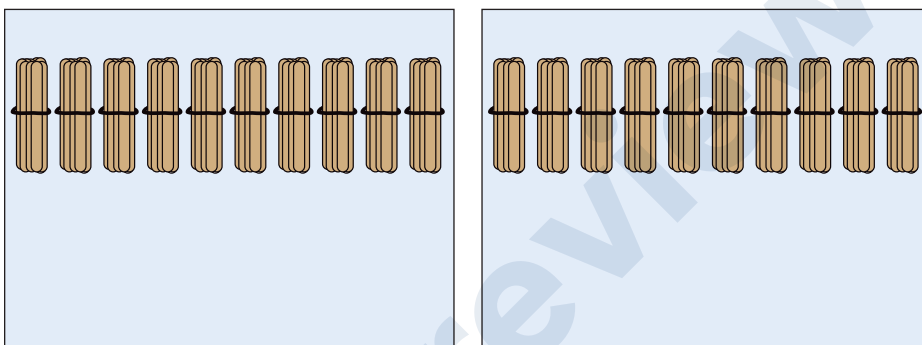
- Let students know that as part of today's Fifth Century celebration, you're going to work together to count out 500 craft sticks.
 - Ask students to seat themselves in a circle.
 - Show them the basket of craft stick bundles you prepared. Take the rubber band off one of the bundles and count the sticks by 1s with the students to confirm that there are 10 in each bundle.
- Explain the counting procedure to the class.
 - Tell students that in a minute, you will give each of them one of the bundles of sticks to hold.
 - After everyone, including you, has a bundle, you will start the count by dropping your bundle into the empty basket as the class counts "10." Then you will pass the basket to the student sitting next to you, who will drop her bundle of sticks in as the class counts "20."
 - That student will pass the basket on to the next person, who will drop his bundle in as the class counts "30," and so it will go around the circle until everyone has placed his or her bundle into the basket.
- Ask students if they will have counted out 500 sticks by the time the basket has gone all the way around the circle one time.

Pose the question, and give students a few moments to pair-share responses. Then call on several volunteers to share and explain their thinking to the class.
- Give each student a bundle of 10 sticks, and take a bundle for yourself. Then start the count.
 - Seat yourself in the circle. Then drop your bundle of 10 sticks into the empty basket as everyone counts, "10."
 - Pass the basket to the student seated next to you. Have her drop her bundle of sticks into the basket as everyone counts, "20."
 - Continue around the circle until one of the students drops the tenth bundle of sticks into the basket and the class counts, "100."

- Then place one of the pieces of construction paper in the middle of the circle and have that student empty the basket by placing all 10 bundles of sticks on the paper.
- Use the kangaroo pointer to re-count the bundles on the piece of paper with the class. When you have clearly established that the piece of paper is holding a group of 100 sticks bundled into sets of 10, have the next student in the circle drop his bundle into the now-empty basket as the class counts, “110.”
- Continue on around the circle (120, 130, 140, 150, and so on) until one of the students drops the twentieth bundle of sticks into the basket as everyone counts, “200.”
- Place a second piece of construction paper in the middle of the circle and have that student empty the basket by placing all 10 bundles of sticks on the paper.

6 Stop the count at this point and have the students examine the collection of sticks on the two pieces of construction paper.

- How many sticks are there on each piece of paper? (100)
- How many sticks have you counted in all so far? (200) How many bundles is that? (20)
- How many more sticks do you have to go until you reach 500? How many more bundles do you have to go until you reach 500? (300 sticks or 30 bundles)
- If you continue around the circle, will the students have counted 500 sticks by the time the basket comes back to you? Why or why not?



7 Continue the count until there are 5 pieces of construction paper in the middle of the circle, each holding 10 bundles of 10 sticks.

- Each time the students collect another set of 10 bundles in the basket, have the student who dropped in the 10th bundle empty the basket onto another piece of construction paper.
- When you have gone all the way around the circle, give out the remaining bundles of sticks, and continue the count.
- Stop the counting process periodically to discuss with the students how many sticks (and bundles) have been counted out so far, and how many more need to be counted to reach a total of 500.
- Throughout this exercise, reinforce the following:
 - » Each bundle represents two things simultaneously: 10 single sticks and 1 set of 10.
 - » Each piece of construction paper shows three things simultaneously: 100 single sticks, 10 sets of 10, and 1 set of 100.
 - » There are 10 tens in 100, 20 tens in 200, 30 tens in 300, and so on.
 - » There is one group of 100 and two groups of 10 in 120, but we can also say that there are 12 tens or 120 ones in 120. Likewise, there are three groups of 100 and five groups of 10 in 350, but we can also say that there are ____ tens or ____ ones in 350.

8 When the count is complete, have a helper use the kangaroo pointer to point to each piece of construction paper as the class counts the sticks by hundreds.

Key Questions

Use these questions to help students access the place value concepts at work in this month's activity:

- What number comes after 490 when you're counting by 10s?
- What number comes after 400 when you're counting by 100s?
- How many individual sticks are there in a bundle of 10?
- How many bundles does it take to make 20 (30, 40, 50, 120, 250, 370, and so on)?
- How many individual sticks are there in 2 bundles (3 bundles, 4 bundles, 10 bundles, 12 bundles, 20 bundles, 25 bundles, 37 bundles, and so on)?
- How many 1s are there in 100 (120, 230, 480, and so on)?
- How many 10s are there in 100 (120, 230, 330, 410, 500 and so on)?
- How many 100s are there in 100 (140, 180, 220, 350, 460, and so on)?

9 Ask students to walk to their desks or table spots, and introduce The Fifth Century Day page.

- Display your copy of the Fifth Century Day page and have students find the corresponding page in their Number Corner Student Books.
- Ask students to look for Cangaroo near the top of the page and to put one finger on her. This allows you to scan the room quickly to make sure that everyone is on the correct page.
- Read the instructions to the class, and clarify as needed.
- When students understand what to do, give them any time remaining to work.

SUPPORT If you feel students need more guidance with the exercises on these sheets, do problems 1–4 as a group. Then explain the fifth problem and let students work independently. Note with the class that the last problem is open to many different responses.

SUPPORT If necessary, provide more time for students to complete the assignment during a designated seatwork period or Work Places today or within the next day or two.

Preview



Student Book

GRADE 2 – NOVEMBER

Preview



NUMBER[®]
CORNER

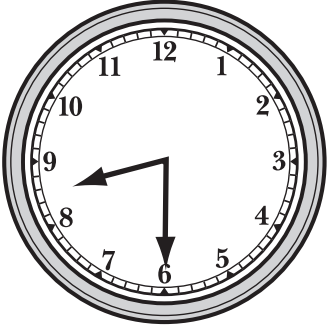

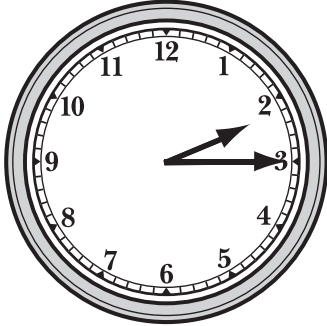
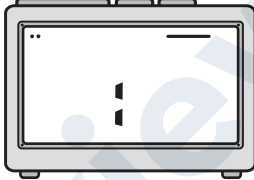
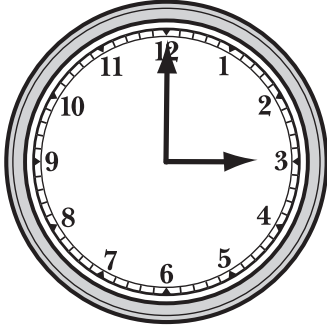
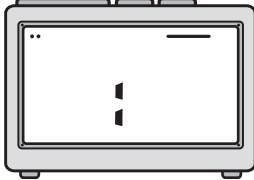
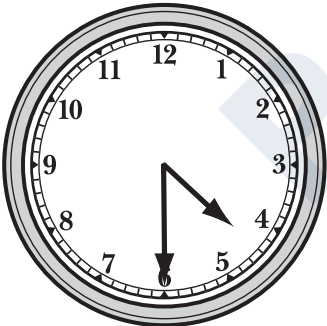
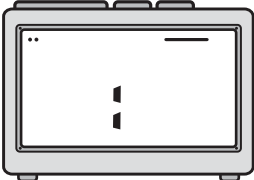
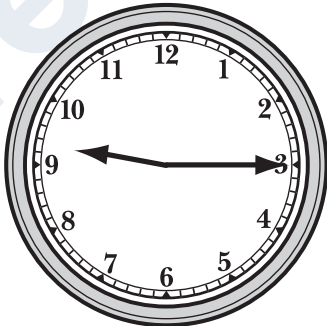
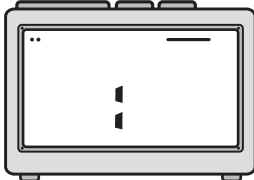
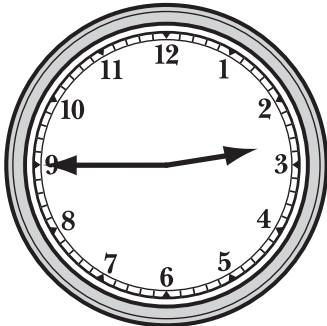
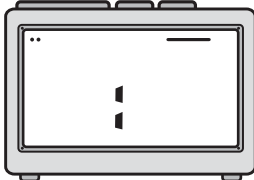
NAME _____

DATE _____



Telling Time on Two Kinds of Clocks page 1 of 2

1 Read each of these clock faces and write the time on the digital clock.

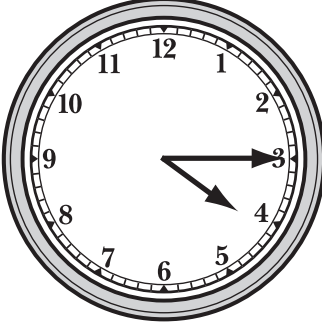

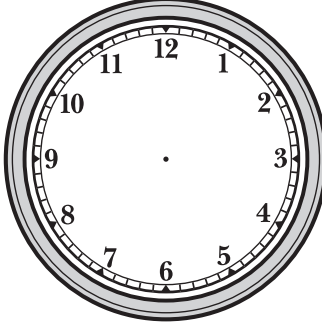

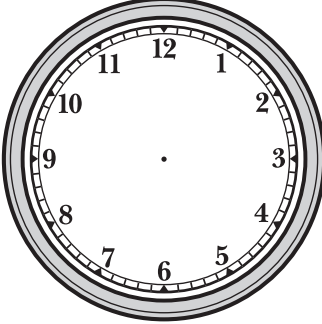

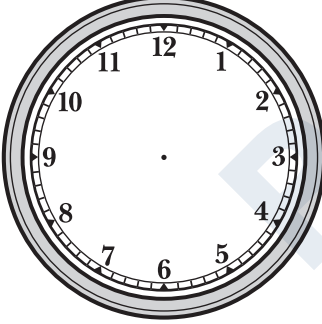

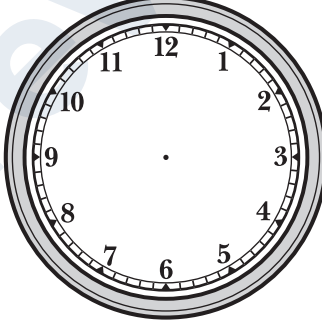
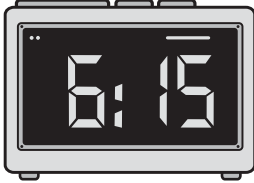
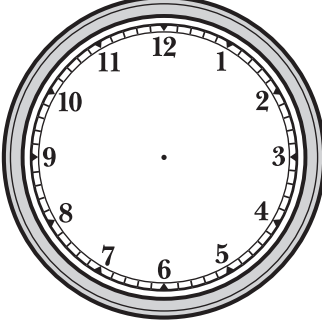
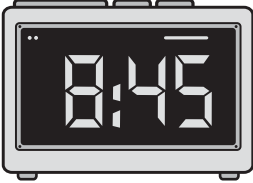
<p>a</p>  	<p>b</p>  	<p>c</p>  
<p>d</p>  	<p>e</p>  	<p>f</p>  

(continued on next page)

NAME _____

DATE _____

Telling Time on Two Kinds of Clocks page 2 of 2**2** Draw hour and minute hands on the clock faces to show the times below.

a  	b  	c  
d  	e  	f  

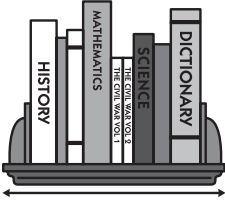



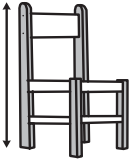
NAME _____

DATE _____



Measure It Twice Record Sheet page 1 of 2

1 Estimate and measure the length, width, or height of each of the objects on this page and the next when the card comes up during Calendar Collector activities this month.

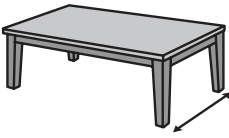
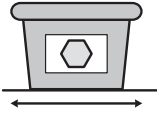
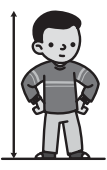
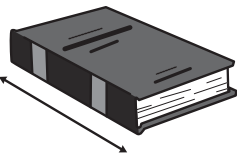
Object to Measure	Estimate (sticks)	Actual Length (sticks)	Estimate (cubes)	Actual Length (cubes)
 <p data-bbox="326 730 477 758">A Bookshelf</p>				
 <p data-bbox="342 1035 461 1062">A Teacher</p>				
 <p data-bbox="306 1312 501 1339">A Calendar Grid</p>				
 <p data-bbox="358 1587 451 1614">A Door</p>				
 <p data-bbox="358 1822 451 1850">A Chair</p>				

(continued on next page)

NAME _____

DATE _____

Measure It Twice Record Sheet page 2 of 2

Object to Measure	Estimate (sticks)	Actual Length (sticks)	Estimate (cubes)	Actual Length (cubes)
 A Table				
 A Work Place Bin				
 A Kid				
 A Book				

2 The second graders used craft sticks to measure their teacher's desk. The desk was 15 sticks long. Then they estimated how long the desk was in cubes. Here are four of their estimates.

a Which estimate makes the best sense?

- 15 cubes
 7 cubes
 85 cubes
 30 cubes

b Why?

3 Anna and Sam measured the length of the same table. Anna says the table is 10 units long. Sam says the table is 60 units long.

a Who was using the longer unit?

b How do you know?

NAME _____

DATE _____

Doubles Up page 2 of 2

Doubles	Doubles Plus or Minus One	Discards

Preview

NAME _____

DATE _____



Scout Out Doubles & Halves

- 1** Circle all the Doubles in blue. Then take a pencil and go back and do them.
Circle all the Doubles Plus or Minus One in red. Then take a pencil and go back and do them.

7	6	9	10	3	8	5
<u>+7</u>	<u>+6</u>	<u>+10</u>	<u>+9</u>	<u>+4</u>	<u>+8</u>	<u>+5</u>

3	4	6	10	2	3	7
<u>+3</u>	<u>+4</u>	<u>+7</u>	<u>+10</u>	<u>+2</u>	<u>+2</u>	<u>+8</u>

7	6	9	8	8	5	4
<u>+6</u>	<u>+5</u>	<u>+9</u>	<u>+7</u>	<u>+9</u>	<u>+6</u>	<u>+5</u>

- 2** Circle all the Take All facts in blue. Then take a pencil and go back and do them.
Circle all the Take Half facts in red. Then take a pencil and go back and do them.

7	10	10	14	12	15	8
<u>-7</u>	<u>-5</u>	<u>-10</u>	<u>-14</u>	<u>-6</u>	<u>-15</u>	<u>-4</u>

14	11	6	16	13	20	18
<u>-7</u>	<u>-11</u>	<u>-3</u>	<u>-8</u>	<u>-13</u>	<u>-10</u>	<u>-9</u>

- 3** Fill in the missing numbers.

$8 + \underline{\quad} = 16$

$6 + \underline{\quad} = 12$

$\underline{\quad} + 9 = 18$

$\underline{\quad} + 10 = 20$

$16 - \underline{\quad} = 0$

$14 - \underline{\quad} = 7$

$10 - \underline{\quad} = 5$

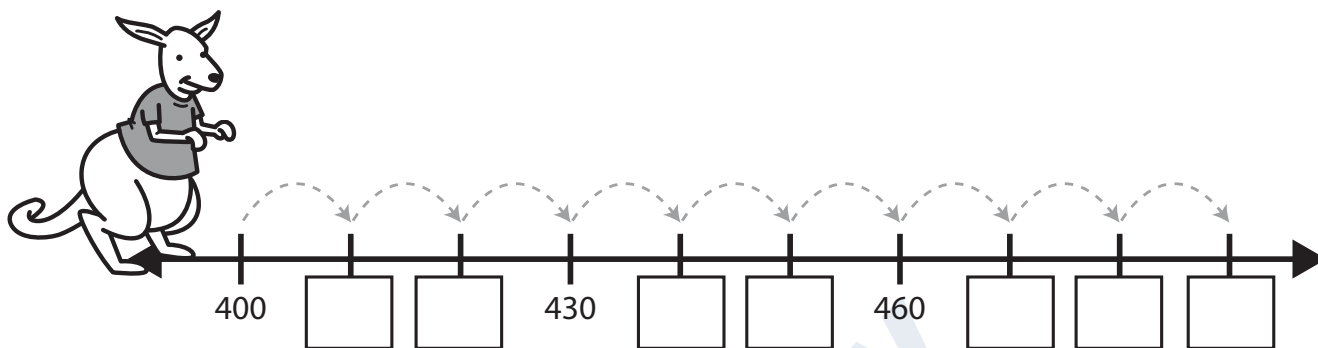
$12 - \underline{\quad} = 0$



The Fifth Century Day page 1 of 2

1 Help Cangaroo hop from 400 to 490.

- First, fill in the missing numbers along the number line.
- Then trace Cangaroo's hops all the way to 490.



2 Trace each of the numbers below. Then draw a line from each number to the description that matches best. (The first one is done for you.)

400	4 hundreds and 50 ones
410	460 ones
420	$400 + 40 + 0$
430	$200 + 200 + 40 + 40$
440	4 hundreds
450	3 hundreds and 12 tens
460	$500 - 10$
470	2 hundreds and 27 tens
480	410 ones
490	4 hundreds and 3 tens

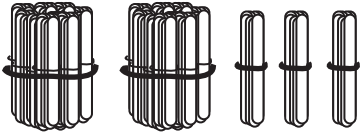
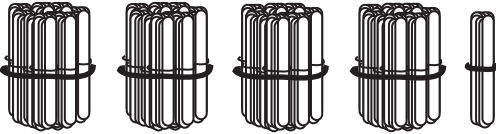
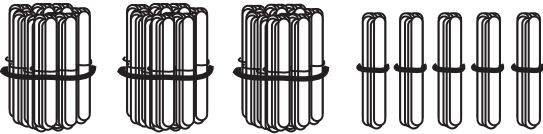
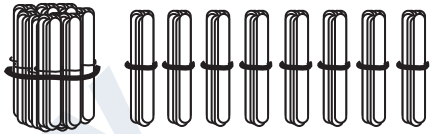
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NAME _____

| DATE _____

The Fifth Century Day page 2 of 2

- 3** What number comes after 400 when you count by hundreds? _____
- 4** Count the collection of sticks in each box and record an equation to show how many there are in all. (There are 100 sticks in each big bundle, and 10 sticks in each small bundle.)

 $200 + 30 = 230$	
	

- 5** Write 4 different equations that have 500 as the answer. You can use addition or subtraction equations.

<div style="text-align: center; font-size: 4em; opacity: 0.3; transform: rotate(-30deg); pointer-events: none;">Preview</div>	

