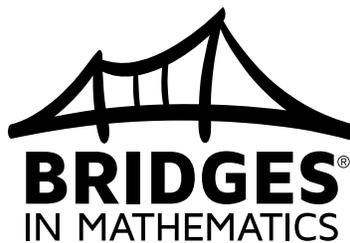


# Teachers Guide

GRADE 1 – UNIT 3 – MODULE 2

Preview





## Module 2

# Combinations with the Number Rack

<b>Session 1</b> Introducing Work Place 3D Tower Race .....	3
<b>Session 2</b> Flash Attack.....	9
<b>Session 3</b> Make Ten .....	15
<b>Session 4</b> Hot Air Balloons .....	19
<b>Session 5</b> Number Rack Subtraction.....	25

### Teacher Masters

*Pages renumber with each module.*

Work Place Guide 3D Tower Race.....	T1
Work Place Instructions 3D Tower Race .....	T2
3D Tower Race Record Sheet .....	T3
Combinations of Ten Checkpoint .....	T4
The Balloon Race .....	T5
Work Place Guide 3E Cats & Mice .....	T6
Work Place Instructions 3E Cats & Mice.....	T7
3E Cats & Mice Record Sheet.....	T8

### Student Book Pages

*Page numbers correspond to those in the consumable books.*

Make Ten .....	13
Hot Air Balloons .....	15

### Home Connections Pages

*Page numbers correspond to those in the consumable books.*

Sixes, Crayons & Coins .....	41
Ten & Twenty .....	43



## Module 2

# Combinations with the Number Rack

### Overview

In Module 2, the focus is again on addition and subtraction facts. The number rack is used to help students recognize number combinations (primarily to 10), subitize (recognize subsets within a given quantity), find the sum of two numbers, and compare two numbers to find the difference between them. This module introduces two Work Place activities, each designed to develop student confidence with number combinations in the range of 0 to 10. Session 4 provides a short written checkpoint assessment.

### Planner

Session & Work Places	P&I	WP	A	HC
<p><b>Session 1</b> Introducing Work Place 3D Tower Race After a warm-up involving combinations of 9, the teacher demonstrates a new game. Players take turns rolling dice, collecting cubes to represent the numbers rolled, and using the cubes to fill a set of towers, 1–10, on a game board. The teacher plays the game with students, and it then becomes Work Place 3D Tower Race.</p> <p><b>Work Place 3D</b> Tower Race Players take turns rolling two dice and collecting cubes in two different colors to represent the numbers rolled. They use the the cubes to fill a set of towers, 1–10, on a game board and write equations to match.</p>	●			
<p><b>Session 2</b> Flash Attack After a quick number rack warm-up, the teacher introduces the Flash Attack game, which encourages students to subitize, or recognize subsets of a given quantity. In the second part of the session, students go out to Work Places, and the teacher introduces and assigns the Sixes, Crayons &amp; Coins Home Connection.</p>	●	●		●
<p><b>Session 3</b> Make Ten This session opens with a whole-group activity in which students use their number racks to show various combinations of 10 and complete a related assignment in their Student Books. The activities are intended to help students internalize these combinations, as well as recognize the relationship between each number less than 10 and 10 itself (8 is 2 less than 10, 4 is 6 less than 10, and so on).</p>	●	●		
<p><b>Session 4</b> Hot Air Balloons To begin, the teacher conducts a brief written assessment. The Combinations of Ten Checkpoint is designed to assess students' facility with addition and subtraction combinations for 10. When everyone is finished, the teacher shares a story about a hot air balloon race, a context for part-part-whole relationships (first to 10, and then to 20) that can be modeled with the number rack.</p>	●	●	●	
<p><b>Session 5</b> Number Rack Subtraction This session introduces subtraction as a process of comparing two quantities to find the difference. Using both rows of the number rack to model the minuend and subtrahend, students learn how to compare numbers in the range of 0 to 10, noting the difference between them. The teacher introduces Work Place 3E Cats and Mice, offering more practice with these skills and concepts, and assigns the Ten &amp; Twenty Home Connection.</p> <p><b>Work Place 3E</b> Cats &amp; Mice Partners decide who will be the cat and who will be the mouse. They take turns rolling two dice numbered 0–5 and adding the numbers to get their score. They record the two scores and write a <math>&lt;</math>, <math>=</math>, or <math>&gt;</math> to show whose score is higher.</p>	●	●		●

**P&I** – Problems & Investigations, **WP** – Work Place, **A** – Assessment, **HC** – Home Connection

## Materials Preparation

Each session includes a complete list of the materials you'll need to conduct the session, as well as notes about any preparation you'll need to do in advance. If you would like to prepare materials ahead of time for the entire module, you can use this to-do list.

Task		Done
<b>Copies</b>	Run copies of Teacher Masters T1–T8 according to the instructions at the top of each master.	
	Run a single display copy of Student Book pages 13–16.	
	If students do not have their own Student Books, run a class set of Student Book pages 13–16.	
	If students do not have their own Home Connections books, run a class set of the assignments for this module using pages 41–44 in the Home Connections Book.	
<b>Work Place Preparation</b>	Prepare the materials for Work Places 3D–3E using the lists of materials on the Work Place Guides (Teacher Masters T1 and T6).	
<b>Special Items</b>	Have ready privacy screens (see Preparation for Unit 1, Module 2, Session 5), 1 per student, prior to Session 4.	
	Get a piece of fabric (e.g., a small scarf or bandana) for hiding the demonstration number rack prior to Sessions 2, 3, and 4.	



### Additional Resources

Please see this module's Resources section of the Bridges Educator site for a collection of resources you can use with students to supplement your instruction.

Preview

# Session 1

## Introducing Work Place

### 3D Tower Race

#### Summary

After a warm-up involving combinations of 9, the teacher demonstrates a new game, Tower Race. In this game, players take turns rolling dice, collecting cubes to represent the numbers rolled, and using the cubes to fill a set of towers, 1–10, on a game board. Because the game can be played by an individual as well as in pairs, the teacher works with input from the class to complete a one-sided version of Tower Race. After the game is introduced and added to the set of Work Places, students use any time remaining in the session to go to Work Places.

#### Skills & Concepts

- Decompose numbers less than or equal to 10 into pairs in more than one way (K.OA.3)
- Record decompositions of numbers less than or equal to 10 with drawings and equations (K.OA.3)
- Add fluently with sums to 10 (1.OA.6)
- Solve for the unknown in an addition equation involving 3 whole numbers (1.OA.8)
- Reason abstractly and quantitatively (1.MP.2)
- Look for and make use of structure (1.MP.7)

#### Materials

Copies	Kit Materials	Classroom Materials
<b>Work Places</b> Introducing Work Place 3D Tower Race		
<b>TM T1</b> Work Place Guide 3D Tower Race <b>TM T2</b> Work Place Instructions 3D Tower Race <b>TM T3</b> 3D Tower Race Record Sheet	<ul style="list-style-type: none"> <li>• Tower Race Game Board</li> <li>• 2 dice, one numbered 0–5 and the other dotted 1–6</li> </ul>	<ul style="list-style-type: none"> <li>• 60 Unifix cubes, 30 in one color and 30 in another color</li> <li>• 2 crayons, 1 each in the Unifix cube colors</li> </ul>
<b>Work Places in Use</b>		
<b>2E</b> Spin & Add (introduced in Unit 2, Module 3, Session 3) <b>2F</b> Spin & Subtract (introduced in Unit 2, Module 3, Session 4) <b>3A</b> Drop the Beans (introduced in Unit 3, Module 1, Session 1) <b>3B</b> Make the Sum (introduced in Unit 3, Module 1, Session 2) <b>3C</b> Doubles Plus or Minus One (introduced in Unit 3, Module 1, Session 4) <b>3D</b> Tower Race (introduced in this session)		

**HC** – Home Connection, **SB** – Student Book, **TM** – Teacher Master

*Copy instructions are located at the top of each teacher master.*

#### Preparation

- In today's session, you'll introduce Work Place 3D Tower Race, which replaces Work Place 2D Double It. Before this session, you should review the Work Place Guide and Work Place Instructions and assemble the bin for Work Place 3D using the materials listed on the Guide. The Work Place Guide also includes suggestions for differentiating the game to meet students' needs.

#### Vocabulary

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

add\*  
 addition  
 double  
 equal\*  
 equation\*  
 plus  
 problem solving  
 sum or total\*



## Work Places

### Introducing Work Place 3D Tower Race

- As a quick warm-up, play another game of I Have, You Need with the class, using 10 as the target number and fingers as a supporting tool.
  - Remind students that they played with Unifix cubes, but now they will use their fingers.
  - You'll tell them how many you have, and they will figure out how many more you need to make 10 and show you that many fingers. Use 6 as your starting number, then 9, then several other numbers less than 10 in quick succession.

*Teacher* I have 6. When I give the signal, show me on your fingers how many I need to make 10—wait for my signal! (Gives them some time to figure it out and then gives the signal.) OK!

*Students* You need 4! (Students hold up 4 fingers.)

*Teacher* Can you show us how you got 4?

*Students* I counted 6 fingers and then I put them down, and then I counted what was left and it was 4.

*I just said 6 in my head and then counted on with my fingers—7, 8, 9, 10. See, that's 4.*

*I know there's 5 on one hand and then I need one more from the other hand and then there's 4 more.*

*Teacher* Let's try another one. I have 9. When I give the signal you show me how many I need to make 10... wait for the signal—OK!

*Students* You need 1! (Students hold up 1 finger.)

- Show students the 3D Tower Race Game Board. Give them a few moments to examine the board quietly. Then ask them to share observations, first in pairs and then as a whole group.
  - Explain that the game will give them lots of opportunities to practice making and learning combinations for numbers 1 through 10.
  - Let students know that you will show them how to play and then it will become a Work Place.
- Summarize the game.
  - Players take turns rolling two dice, one numbered 0–5 and the other dotted 1–6, collecting cubes in two different colors to represent the numbers rolled, and using the cubes to fill a set of towers, 1–10, on a game board.
  - The cubes can be used only to completely fill a tower.
  - If a player cannot use his cubes to fill in a tower on one roll, those cubes cannot be played later in the game.
  - The first player to fill all the towers on his board wins the game, but the other player continues rolling and collecting cubes until she has filled her game board.
  - Then both players color in record sheets and write addition facts to match the towers on their game boards.
- On your first turn, roll the dice and take Unifix cubes in two colors to match the numbers you rolled. Then have students find the sum.

*Teacher* Look, I rolled 5 and 3, so I'll take 5 blue cubes and 3 yellow cubes. What is  $5 + 3$ ?

*Students* It's 8!

*Yeah*, 5... 6, 7, 8.

*Teacher* Yes, 5 plus 3 does equal 8.

- 5 Now ask students to determine which towers could be filled and then make a choice. As you discuss with students, let them in on one of the key rules of the game: any tower you fill during a given turn has to be filled completely.

*Teacher* Now let's do some problem solving. I have to figure out what towers I want to fill with my 8 cubes, but I have to follow an important rule, which is that I have to choose towers I can fill up all the way. I can't put these cubes on the 10 tower because there aren't enough to fill the whole tower. So, please talk with the person next to you for a few moments, and then let's hear some of your ideas about how I should use my cubes.

*Student A* You can fill up the 5 and the 3, 'cause it's  $5 + 3$ .

*Teacher* Yes, I could fill the 5 and the 3. (Demonstrate this and pick them up again.) What else could I do with 8 cubes?

*Student B* You could just put them all in the 8 tower.

*Teacher* Yes, like this. (Demonstrate this and pick them up again.) Anything else?

*Student C* Could you break them apart, like 5 and 2 and 1?

*Teacher* Can you come up and show us what you mean?

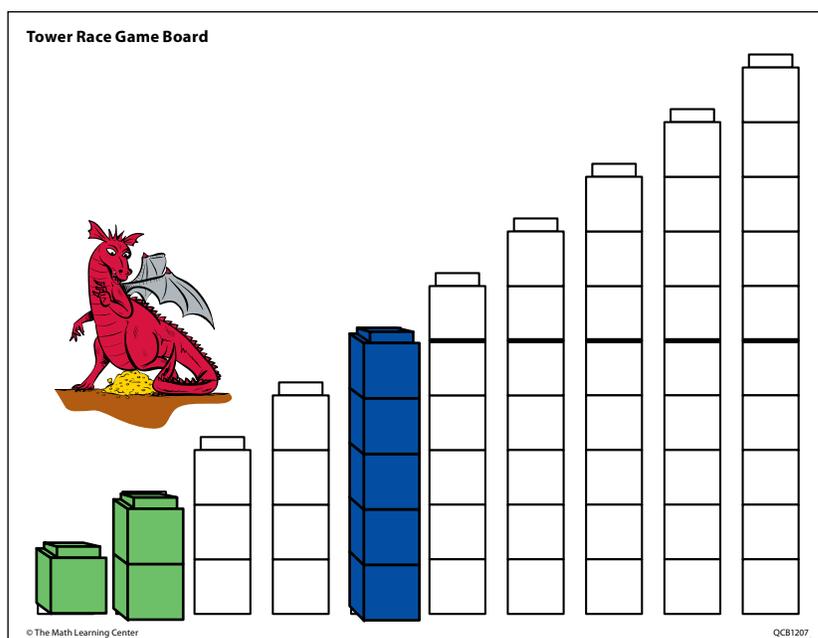
*Student C* See, I'm breaking it here, so I have 5 blues for the 5 tower, and then I'm breaking apart the yellows to go in the 2 tower and the 1 tower.

*Student D* Hey, I know another—you can do 7 and 1!

*Teacher* Can you come up and show us what you mean?

*Student D* I'm putting some blues and yellows together in the 7 tower and this leftover yellow in the 1 tower.

*Teacher* Great problem solving! So I have lots of choices—all 8 on the 8 tower, or fill the 5 and the 3 towers, or fill the 5 and the 2 and the 1 towers, or fill the 7 and 1 towers. I think I'll pick  $5 + 2 + 1$  because I can fill three towers. Now I can't use those towers any more. Now I'll roll again.



Some students might be confused by splitting the cubes three ways, or by splitting up colors. Many will just stick with using all of their cubes in one tower or two same-colored towers. When they play during Work Places, they will arrange them in ways that are comfortable for them.

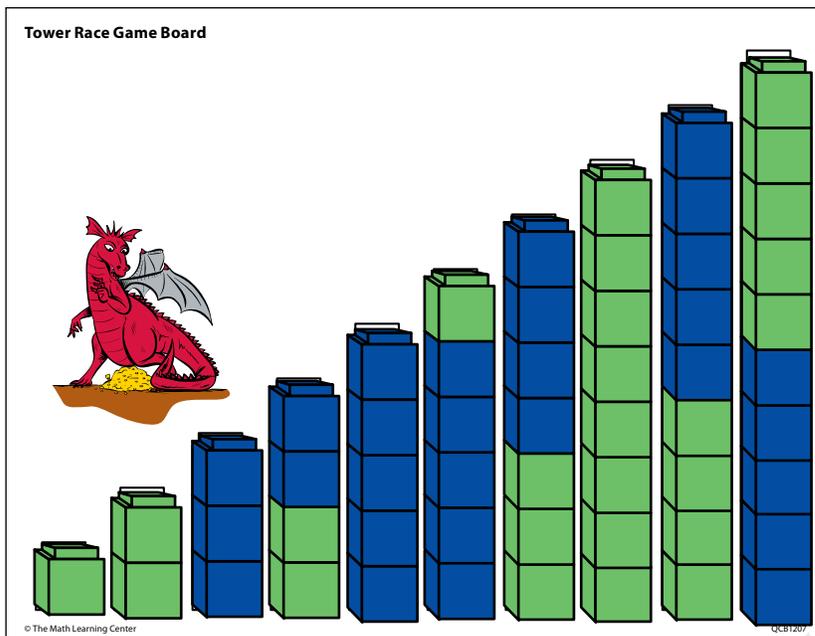
- 6 Continue the game according to the instructions on Work Place Guide 3D Tower Race, until you have filled in every tower. As you roll and fill the towers, challenge students to think of the different combinations and share your own strategies and ideas.
- The first time you roll a combination you can't use, give students time to experiment and discover for themselves that there's no way to use the roll.
  - Then explain that when you can't use a roll, you miss that turn, pass the dice to your partner, and try again on your next turn. You may not play any cubes from a past roll.

*Teacher* I just rolled a 2 and a 0, so I'll get 2 cubes. Talk to the person next to you about where I should put these cubes on my game board. I'll call on people for their ideas in a minute.

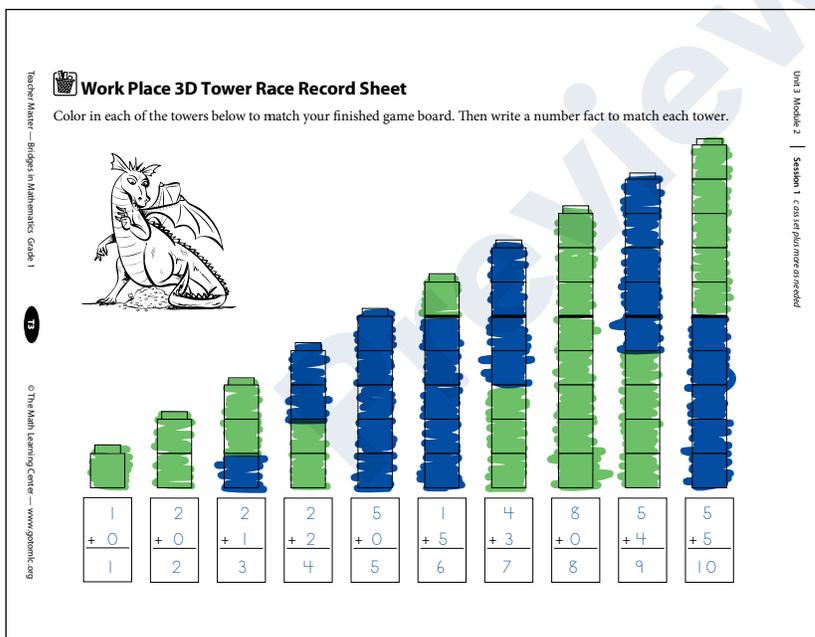
*Students* Put them on the 2 tower!  
But we can't. The 2 tower is already filled up.  
If the 1 wasn't filled up and we had another 1, we could do that.  
Just put them on the 3 tower, and you can fill up the rest on your next turn.

*Teacher* Remember the rule for this game, though. With any tower you choose, you have to fill it up all the way. You can't just fill in part of a tower. There really isn't a way to use this roll. I can't put 2 cubes anywhere. If this was a regular game, I would miss this turn and give the dice to my partner. Since I'm playing alone, I'll just roll the dice and see if I get something I can use next time.

- 7 When you have filled the game board completely, move it to the side without disturbing the cubes, display the 3D Tower Race Record Sheet Teacher Master, and demonstrate how to fill it in.
- Quickly color in the towers to match your game board.
  - Then write an equation to match each tower. For example, if there are 5 blues and 3 yellows in the 8 tower, write  $5 + 3 = 8$ .



Tower Race Game Board



Tower Race Record Sheet filled in to match

- 8 Conclude this part of the session by showing students the contents of the Work Place bin you have prepared for Tower Race, and explaining that they can play Tower Race on their own, but will probably have more fun playing the game with a partner.
- 9 Have students spend the rest of the session at Work Places.
  - Hand out their Work Place folders and have them consider where they will begin today. Point out the picture for the new Work Place.
  - Remind them that they should visit every Work Place at least once.

While they do Work Places, circulate around the room to make observations and provide differentiation as needed. Review the Work Place Guides for differentiation suggestions.

10 Close the session.

- Remind students to mark their Work Place folders to indicate which games or activities they completed today.
- Have students put away the Work Place materials and hand in their Work Place folders.
- Take a moment for students to suggest different combinations for a number or two.

*Teacher* Let's say I'm playing Tower Race and the only tower I have left to cover is the 8. What could I roll on my dice that would make it possible for me to fill the 8 tower? Whisper an idea to the person sitting next to you, and then let's hear from some of you.

*Students* If you roll 5 and 3, you can fill the 8.

You could roll 6 and 2.

If you get 4 on one and 4 on the other, that makes 8.

You could do it with 7 and 1.

But there's no 7 on the dice.

Oh yeah, I forgot.

Preview

## Session 2

# Flash Attack

### Summary

After a quick number rack warm-up, the teacher introduces the Flash Attack game, which encourages students to subitize, or recognize subsets of a given quantity. When looking at 7 beads on the number rack, for example, many students will subitize by seeing a group of 5, plus 2 additional beads, rather than counting each bead one at a time. In the latter part of the session, the teacher sends students out to Work Places. Finally, the teacher introduces and assigns the Sixes, Crayons & Coins Home Connection.

### Skills & Concepts

- Use strategies to add with sums to 20 (1.OA.6)
- Group and count objects by tens, fives, and twos (supports 1.NBT)
- Use appropriate tools strategically (1.MP.5)
- Look for and make use of structure (1.MP.7)

### Materials

Copies	Kit Materials	Classroom Materials
<b>Problems &amp; Investigations</b> Flash Attack		
	<ul style="list-style-type: none"> <li>• demonstration number rack</li> </ul>	<ul style="list-style-type: none"> <li>• student number racks</li> <li>• a piece of copy paper or fabric (e.g., small scarf or bandana) to cover the demonstration number rack</li> </ul>
<b>Work Places in Use</b>		
<b>2E</b> Spin & Add (introduced in Unit 2, Module 3, Session 3) <b>2F</b> Spin & Subtract (introduced in Unit 2, Module 3, Session 4) <b>3A</b> Drop the Beans (introduced in Unit 3, Module 1, Session 1) <b>3B</b> Make the Sum (introduced in Unit 3, Module 1, Session 2) <b>3C</b> Doubles Plus or Minus One (introduced in Unit 3, Module 1, Session 4) <b>3D</b> Tower Race (introduced in Unit 3, Module 2, Session 1)		
<b>Home Connection</b>		
<b>HC 41–42</b> Sixes, Crayons & Coins		

**HC** – Home Connection, **SB** – Student Book, **TM** – Teacher Master  
*Copy instructions are located at the top of each teacher master.*



## Problems & Investigations

### Flash Attack

- 1 Open the session with a quick warm-up in which you show a certain number of beads on your demonstration rack and invite students to determine the total number of beads you've shown.

- Begin in the starting position with all beads pushed to the right of the rack.
- Slide 5 red beads to the left.
- Ask students to share with a partner how many beads were moved.
- Invite volunteers to share their answers and explain how they can be sure they are correct.
- Return the beads to the starting position.
- Repeat the process above with 6 beads (5 red, 1 white).

Listen for evidence that students are subitizing. For example, "Well, I know there are 5 red beads. I saw all the reds, plus one more white bead. So I knew there were 6 beads." This is a very different explanation than one from the student who reports, "I counted all the beads. There are 6 beads."

- 2 Then have students show you various quantities of beads on their racks.

- Explain that you will give them a number, and they will show you that number of beads on their number racks.
- Let them know that they can use one or both rows of beads on their racks.
- Have the students move all their beads to the far right into the start position. Then ask them to show you 10 beads.

*Teacher* Now it is your turn. First make sure that all the beads on your rack are in the starting position, over to the far right side. Now, show me 10 beads; slide 10 beads to the left. When you are done, hold up your number rack so everyone can see how you made 10 on your rack.

Some students might show all 10 beads on the top row. Others might show 5 red beads on both the top and bottom row, while a few use beads in both rows to show other combinations of 10, such as 7 and 3, 6 and 4, and so on.

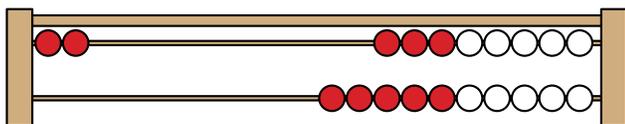
- 3 Repeat step 3 using the following numbers in this order: 9, 4, 5, 7, 8, 6, 9, 10. Encourage students to move the beads in as few pushes as possible.

Reminding students to use as few pushes as possible will encourage them to subitize and to avoid counting individual beads one at a time.

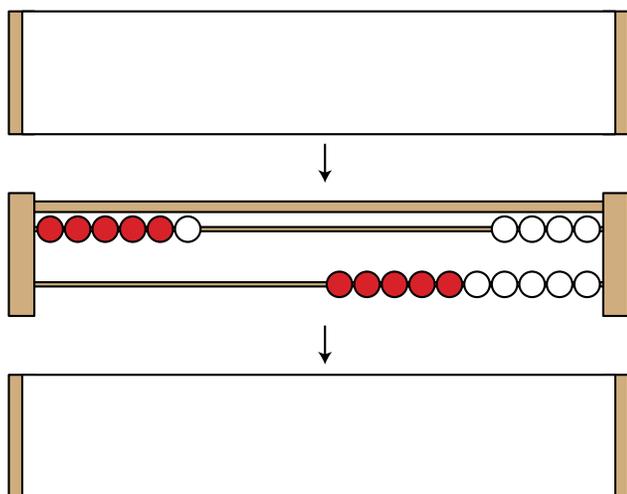
- 4 Now introduce the game Flash Attack.

- Explain that as a whole class you'll play a game with the number rack called Flash Attack.
- You will show some beads on the demonstration number rack and then students will have just a couple of seconds to determine how many beads are shown before you hide them.

- 5 To build students' confidence, show just 2 beads pushed to the left and then, without hiding the rack, ask students how many are shown. Repeat with the numbers 4 and 9.



- 6 Then play a few rounds of Flash Attack with the following numbers: 6, 9, 10, 8, 7, 5, 6, and 3.



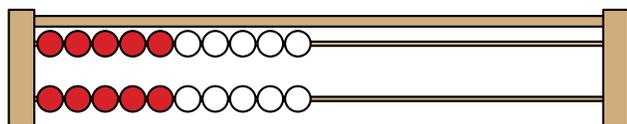
How many beads can you see on the left?

See if you can figure it out in just a couple seconds! Ready ... go!

- Remind students that they will have just 2 or 3 seconds to determine how many beads are shown each time.
- Cover the number rack so that students can't see it.
- Push the featured number of beads to the left in the top row (for example, push over 5 red beads and 1 white bead to show 6).
- Reveal the rack for just a couple of seconds, and then cover it again.
- Ask students to hold up their fingers to indicate how many beads were shown on the left side of the rack.
- Invite a student or two to explain how they knew the numbers of beads without counting them by 1s.

*The purpose of giving students just a couple of seconds to determine how many beads are shown is to encourage them to move away from counting by 1s and toward subitizing. If many students are struggling, reveal the beads for another second or two, and then cover them again. Have students share their strategies: seeing how others can quickly recognize the groups of 5 (and later in the session, 10) will encourage students to adopt this strategy as well. You will likely see rapid improvement in many students.*

- 7 When students are comfortable with numbers between 0 and 10, push all 20 beads in both rows to the left and ask students how many beads are in the top row, how many are in the bottom row, and how many are on the rack altogether.



- 8 Then ask students how many white beads and how many red beads there are on the rack altogether. Be sure they can see the group of 10 red beads (5 on top and 5 on the bottom) and 10 white beads (5 on top and 5 on the bottom).
- 9 Now play Flash Attack, using both rows of the number rack to show the following numbers.



**Math Practices  
in Action 1.MP.7**

When you quickly reveal and then hide the number rack, students must look for and make use of structure (the groups of 2, 5, and 10 beads) in order to determine how many beads are on the left. Working with these groups and combinations lays a strong foundation for addition and subtraction within 20.

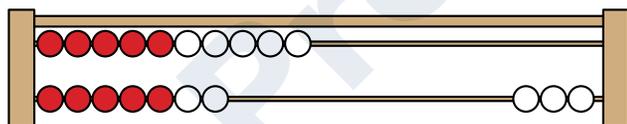
These suggested arrangements of beads emphasize the groups of 5 and 10. Each number is, in a sense, shown as the sum of two numbers: sometimes the greater number is on the top row, and sometimes it is on the bottom row. We show them this way to promote flexibility in students' thinking, while also deliberately using arrangements of beads that invite students to use 5 and 10 as anchors.

- 9: 5 on top, 4 on bottom
- 10: 5 on top, 5 on bottom
- 11: 6 on top, 5 on bottom
- 15: 10 on top, 5 on bottom
- 8: 4 on top, 4 on bottom
- 7: 3 on top, 4 on bottom
- 12: 6 on top, 6 on bottom

As students explain how they are able to recognize the number of beads so quickly, encourage them to use and verbalize some of the addition strategies they might already know. For example, the combinations and configurations listed for 10, 8, and 12 provide opportunities to revisit doubles, while the combinations listed for 9, 11, and 7 do the same for doubles plus or minus 1.

- 10 As students are ready, continue to play Flash Attack with numbers from 10 to 20, inviting students to describe where they see groups of 5, 10, 15, and 20.

- 10: 10 on top, 0 on bottom
- 15: 10 on bottom, 5 on top
- 19: 10 on bottom, 9 on top
- 16: 10 on top, 6 on bottom
- 20: 10 on top, 10 on bottom
- 13: 10 on top, 3 on bottom
- 18: 10 on top, 8 on bottom
- 11: 10 on bottom, 1 on top
- 17: 10 on top, 7 on bottom



Some students might see 3 groups of 5, plus 2 more beads for a total of 17. Others might see a group of 10, a group of 5, and 2 more beads for a total of 17.

- 11 Conclude this part of the lesson by asking students to share some ideas about why you gave them just a couple of seconds to determine how many beads were shown each time.

*Teacher* Why do you think I gave you just a couple of seconds to look at the number rack?

*Student* It makes us do it faster.

*Teacher* Yes, I want you to try to do it faster. So, do you think it's faster to count every bead, or would it be faster to count beads in groups? For example, is it faster to count out 5 red beads one at a time, or is it faster to recognize that if you see all the red ones pushed to the side, that means 5 have been pushed?

*Students* It's a lot quicker to see the beads in groups. You just know when you see all the reds that there are 5.

*Teacher* What's most important is that you learn to see groups of beads together so that you don't get tired having to count every bead each time. Imagine how long it would take to count 100 beads!

**SUPPORT** During Work Places sometime over the next week or so, gather a small group of students who are struggling with this exercise to play a modified version of the game by using numbers between 5 and 10 shown only on the top row of the number rack. Encourage students to subitize by explicitly asking them to count on from 5 to determine how many beads are shown each time. Consider giving students about 5 seconds (rather than just 1 or 2 seconds) to determine each quantity, but take care not to give them too much time: the more time they have, the more likely they are to count the beads by 1s.



## Work Places

- 12 If time allows, give students their folders and send them out to Work Places.
- 13 Close the session.
  - Have students clean up and put away the Work Place bins.
  - To close the class period, discuss the following question with students: “Is it always necessary to count every bead when you are looking at a number rack or a ten-frame? What clues can you use to help you know how many beads or dots are present?”



## Home Connection

- 14 Introduce and assign the Sixes, Crayons & Coins Home Connection, which provides more practice with the following skills:
  - Record decompositions of numbers less than or equal to 10 with equations (K.OA.3)
  - Solve subtraction story problems with minuends to 20 involving situations of taking from, with unknowns in all positions (1.OA.1)
  - Add and subtract fluently within 10 (1.OA.6)
  - Solve for the unknown in an addition equation involving 3 whole numbers (1.OA.8)
  - Determine the value of a collection of coins totaling less than \$1.00 (supports 1.MD)
- 15 Note with students that problem 6 on the second page of the assignment is marked with a challenge icon. You may assign this problem selectively, or invite all the students to try the problem if they like.

## Extensions

Return to Flash Attack frequently over the next few weeks when you have a spare five minutes or so during the day. It makes a good transition or sponge activity.

You might also have students play Flash Attack in pairs using their own number racks. Be sure each partner gets plenty of opportunities to flash the numbers and to determine how many beads are shown.

Preview

## Session 3

# Make Ten

### Summary

This session opens with a whole-group activity in which students use their number racks to show and discuss various combinations of 10. They then complete a related assignment in their Student Books before going out to Work Places. The activities in this session are intended to help students internalize these combinations, as well as recognize the relationship between each number less than 10 and 10 itself (for example, 8 is 2 less than 10, 4 is 6 less than 10).

### Skills & Concepts

- Solve subtraction story problems with minuends to 20 involving situations of taking from with unknowns in all positions (1.OA.1)
- Apply the commutative property of addition to add (1.OA.3)
- Add and subtract fluently with sums and minuends to 10 (1.OA.6)
- Solve for the unknown in an addition equation involving 3 whole numbers (1.OA.8)
- Group and count objects by fives and twos (supports 1.NBT)
- Add with sums to 100 (1.NBT.4)
- Look for and make use of structure (1.MP.7)
- Look for and express regularity in repeated reasoning (1.MP.8)

### Materials

Copies	Kit Materials	Classroom Materials
<b>Problems &amp; Investigations</b> Make Ten		
<b>SB 13–14*</b> Make Ten	<ul style="list-style-type: none"> <li>• demonstration number rack</li> </ul>	<ul style="list-style-type: none"> <li>• student number racks</li> <li>• a piece of cloth such as a scarf or bandana to cover portions of the demonstration number rack (optional, for support suggestion)</li> </ul>
<b>Work Places in Use</b>		
<b>2E</b> Spin & Add (introduced in Unit 2, Module 3, Session 3) <b>2F</b> Spin & Subtract (introduced in Unit 2, Module 3, Session 4) <b>3A</b> Drop the Beans (introduced in Unit 3, Module 1, Session 1) <b>3B</b> Make the Sum (introduced in Unit 3, Module 1, Session 2) <b>3C</b> Doubles Plus or Minus One (introduced in Unit 3, Module 1, Session 4) <b>3D</b> Tower Race (introduced in Unit 3, Module 2, Session 1)		

**HC** – Home Connection, **SB** – Student Book, **TM** – Teacher Master

Copy instructions are located at the top of each teacher master.

\* Run one copy of this page for display.

### Preparation

If you don't have a whiteboard in your discussion area, post a piece of chart paper within easy reach instead.

### Vocabulary

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

add\*  
addition  
combinations  
equal\*



## Problems & Investigations

### Make Ten

- 1 Ask students to get their number racks and join you in the discussion area. When they are seated with their racks placed on the floor in front of them, explain that you are going to spend some time today working on all the different ways to make 10.
- 2 Using the demonstration number rack, move 5 red beads on the top row to the left of the number rack. Ask students how many more beads you need to slide to the left to make 10 in all.
  - Have students pair-share ideas, and then report out the answer on your signal.
  - Ask several volunteers to come up to the rack and show different ways to move 5 more beads to the left for a total of 10.
  - Ask students to discuss and illustrate more than one way to make 10. For example:
    - » Move the remaining 5 white beads on the top row to the left, making one row of 10.
    - » Move 5 red beads on the bottom row for a total of 10 red beads, split among two rows.
    - » Move 4 white beads on the top row and 1 white bead on the bottom row to the left for a total of 10.
- 3 Move all the beads on the demonstration rack back to the start position. Then repeat step 2, starting with 6 and then 4.
 

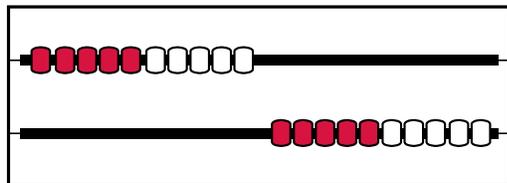
**SUPPORT** If it appears that a lot of students in the group are struggling with this activity, stop and slide all the beads on the rack to the right. Then slide the 5 red beads on the top row to the left, and cover the white beads on the top row and all the beads on the second row. Working with just the 5 red beads on the top row, begin by covering one bead with your hand, leaving the other four visible. Ask the student to determine how many beads are under your hand. Continue with the various examples up to 5. Once students are comfortable with number relationships from 0–5, you may then return to the larger range of numbers (0–10), doing so with the number rack.

**CHALLENGE** The activity of “making 10” can be made more challenging by splitting the starting value among both rows of beads. For example, instead of showing a starting value of 6 solely on the top row, one might place 2 beads on top, 4 beads on the bottom, and then ask, “How many more to make 10?” Additionally, advanced students may be asked to show combinations between 10 and 20. Focusing first on combinations to 15 is a good first extension, followed by combinations to 20. Finally, teachers can promote visualization skills by asking students to explain how they would represent a number on the number rack without actually doing so.
- 4 Continue working with students to make 10 on their number racks, but this time start by writing out the word *seven* on the board or chart paper.
  - Have the students to pick up their number racks and make sure all the beads are over to the far right in the start position.
  - Ask the class to read the word aloud together. Then write the corresponding numeral beside the word to confirm their thinking.
  - Ask them to move that many beads on the top row of their rack to the left, using just one or two pushes.
- 5 Now ask students to determine how many more beads they need to move on their racks in order to make 10 beads.

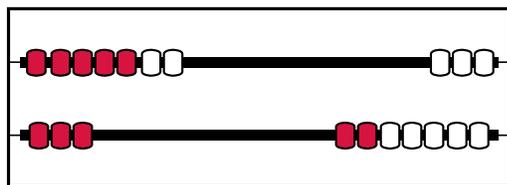
### About This Session

When students can decompose numbers fluidly (particularly the number 10), they are much more apt to develop not only facility with operations on whole numbers but conceptual understanding as well. The number rack, with its powerful visual and representational qualities, can be instrumental in helping students partition numbers based on relationships that they already know. Comfort with combinations of 10 will transfer to the recall of other number facts as well as computational strategies to be applied to sums with larger numbers.

- Have them whisper the answer to the person sitting next to them, and then show it on their fingers at your signal.
- Then have them slide that many beads over to the left to confirm their thinking. Do they now have a total of 10?
- Invite a couple of volunteers to come up to the demonstration rack and show how they moved 3 more beads to the left for a total of 10.



I just moved over 3 more on the top row.



I moved 3 on the bottom row. I can tell it's 10 because 3 and 3 is 6, and then 4 more makes 10.

- Repeat steps 4 and 5 using the following start numbers: 3, 8, 2, 9, and 1.
- Next, tell students that they are going to do some more work with combinations of 10 in their Student Books.  
Have them take their number racks back to their tables and get out their pencils and Student Books.
- Display your copy of the Make Ten Student Book page as students locate the corresponding page in their Student Books. Read and review the instructions with the class, and clarify as needed. When students understand what to do, have them go to work.
  - Note with students that the last problem on the second page is marked as a challenge. You can either assign this to selected students, or invite all the students to solve it if they like, while requiring certain students to do so.
  - Circulate as students work to provide support and assistance as needed.
- Ask students to compare and discuss their answers with at least one classmate when they have finished the assignment.  
Encourage students to take responsibility for resolving any differences on their papers. If some of their answers differ, ask them to work together to decide which are correct and make the needed corrections to their own papers.



## Work Places

- 10 Students who finish the assignment in their Student Books before the end of the math period can get their Work Place folder and choose a Work Place game or activity.
- 11 Close the session.
  - Have students clean up and put away the Work Place bins.
  - Give students one last problem to solve mentally, without the use of the number rack.

*Teacher* Imagine you have your number rack in front of you.  
Visualize 6 on the left side of the number rack. How many more beads do you need to move to the left in order to have 10 beads?  
Can anybody explain what you saw in your mind as you completed this problem?

Preview

## Session 4

# Hot Air Balloons

### Summary

To begin, the teacher conducts a brief written assessment with the whole class. The Combinations of Ten Checkpoint is designed to assess students' facility with addition and subtraction combinations for 10. When everyone is finished, the teacher shares a story about a hot air balloon race in which 10 balloons (two teams of 5) are floating in the sky. This context is used to explore part-part-whole relationships (first to 10, and then to 20). After using number racks to solve several problems and complete a related worksheet, students go out to Work Places.

### Skills & Concepts

- Solve addition story problems with sums to 20 involving situations of adding to and putting together, with unknowns in all positions (1.OA.1)
- Use strategies to add and subtract within 20 (1.OA.6)
- Demonstrate an understanding that the equal sign indicates equivalence (1.OA.7)
- Solve for the unknown in an addition or subtraction equation involving 3 whole numbers (1.OA.8)
- Make sense of problems and persevere in solving them (1.MP.1)
- Look for and make use of structure (1.MP.7)

### Materials

Copies	Kit Materials	Classroom Materials
<b>Assessment</b> Combinations of Ten Checkpoint		
<b>TM T4</b> Combinations of Ten Checkpoint	<ul style="list-style-type: none"> <li>• demonstration number rack</li> </ul>	<ul style="list-style-type: none"> <li>• privacy screens, 1 per student (see Preparation for Unit 1, Module 2, Session 5)</li> <li>• a piece of cloth such as a scarf, towel, or bandana to cover portions of the demonstration number rack</li> </ul>
<b>Problems &amp; Investigations</b> Hot Air Balloons		
<b>TM T5</b> The Balloon Race <b>SB 15–16*</b> Hot Air Balloons	<ul style="list-style-type: none"> <li>• demonstration number rack</li> </ul>	<ul style="list-style-type: none"> <li>• student number racks</li> <li>• a piece of cloth such as a scarf, towel, or bandana to cover portions of the demonstration number rack</li> <li>• a piece of copy paper to mask portions of the teacher master</li> <li>• Unifix cubes (optional, for support suggestion)</li> </ul>
<b>Work Places in Use</b>		
<p><b>2E</b> Spin &amp; Add (introduced in Unit 2, Module 3, Session 3)  <b>2F</b> Spin &amp; Subtract (introduced in Unit 2, Module 3, Session 4)  <b>3A</b> Drop the Beans (introduced in Unit 3, Module 1, Session 1)  <b>3B</b> Make the Sum (introduced in Unit 3, Module 1, Session 2)  <b>3C</b> Doubles Plus or Minus One (introduced in Unit 3, Module 1, Session 4)  <b>3D</b> Tower Race (introduced in Unit 3, Module 2, Session 1)</p>		

**HC** – Home Connection, **SB** – Student Book, **TM** – Teacher Master

Copy instructions are located at the top of each teacher master.

\* Run 1 copy of these pages for display.

### Vocabulary

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

add\*  
addition  
combinations  
equal\*

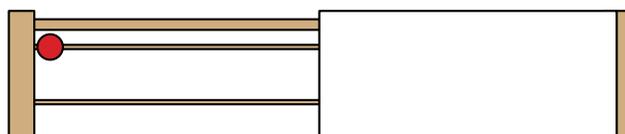


## Assessment

### Combinations of Ten Checkpoint

- 1 Let students know that you're going to begin today's session with a quick written checkpoint to see how they're doing with addition and subtraction combinations for 10. When everyone is finished, you will do some more work with combinations of 10 and 20 as a whole group, and then give students an assignment to complete in class.
- 2 Have students get out their pencils in preparation for completing the checkpoint, as you set the demonstration number rack in a place where they can all see it clearly.
  - Remind the class that when you conduct an assessment like this, you need to see what students can each do on their own.
  - Change the seating arrangements to spread students apart if necessary, and give them each a privacy screen. Show them how to use the screen to shield their work, and explain that even though you usually ask them to work together, this time they need to do their own work.
- 3 When students are situated with their pencils and privacy screens, give them each a copy of the Combinations of Ten Checkpoint Teacher Master and place a copy on display. Explain that you're going to do the first problem together, and then they'll work on their own to complete the rest of the sheet.
- 4 Draw students' attention to the demonstration number rack on which all the beads are in the start position over at the far right, and ask them how many beads are on the top row of the number rack.  
Have them whisper the answer (10) to the people sitting next to them, and then hold up their fingers to show on your signal.
- 5 Then cover the right side of the number rack with a cloth so that no beads are visible. Ask students how many beads are on the top row of the number rack, now hidden under the bandana.  
Again, have them whisper the answer (10) to the people sitting next to them, and then hold up their fingers to show on your signal.
- 6 Without removing the cloth, slide 1 bead in the top row to the left end of the number rack, leaving the remaining 9 beads under the bandana. Ask students how many beads are under the cloth in the top row.
  - Have them whisper the answer (9) to the people sitting next to them, and then hold up their fingers to show on your signal.
  - Lift the cloth and confirm with students that there are 9 beads under the cloth. Then put the cloth back over the 9 beads.

**SUPPORT** If students seem to have a hard time focusing on just the top row of the rack, fold a piece of white construction paper in half lengthwise and place it over the second row as a way to signal that the beads in that row are completely out of play right now.



- 7 Now read the instructions for the first problem on the checkpoint as students follow along on their copies of the sheet: *Write the number that shows how many beads are hidden on the top row of the number rack.*
- Have students find the practice box at the top of the sheet (marked with a ladybug). Ask them to write in the box the number that shows how many beads are hidden on the top row of the number rack right now (9).
  - Lift the cloth again to confirm that there are 9 beads under the cloth, and write the number 9 in the practice box on your copy of the checkpoint.
- 8 Push the bead back under the cloth on the right side of the rack. Then explain that you are going to do this several more times. Each time you pull some of the beads out from under the cloth, the students will write the number in one of the lettered boxes to show how many beads are hidden in the top row.
- 9 Administer each problem, 1a–e.
- a) Slide 5 beads out from under the cloth; leave 5 hidden.
  - b) Slide 8 beads out from under the cloth; leave 2 hidden.
  - c) Slide 6 beads out from under the cloth; leave 4 hidden.
  - d) Slide 7 beads out from under the cloth; leave 3 hidden.
  - e) Slide 3 beads out from under the cloth; leave 7 hidden.
    - » Slide all of the beads back under the cloth between each problem.
    - » This item is not timed in any way. Give students enough time to determine how many beads are showing and figure out how many are hidden under the cloth. Ask students to lay their pencils down between each problem so you can see that they're ready to move on to the next.
- 10 Read and review the instructions for the other two problems on the checkpoint.
- Remind students that although they don't have cubes or their own number racks, they can use their fingers or the visual provided by the demonstration number rack to help solve the subtraction combinations in problem 2.
  - When you review problem 3 with the class, explain that students need to write three more equations for 10. Write the example from the problem,  $5 + 5 = 10$ , on the board to review what's meant by writing an equation. Be sure students understand that they can use addition or subtraction, as well as more than 2 addends, as long as the answer is 10.
  - Let students know where to put their sheets when they're finished, and what to do until everyone else is done.
  - When students understand what to do, let them go to work.
  - Circulate and assist as needed. Take note of those students who seem to be struggling with the subtraction problems.
- Note** If a few students are still working when most have finished, you might collect their papers and let them finish up at another time.

**Note**

See the Grade 1 Assessment Guide for scoring and intervention suggestions.



## Problems & Investigations

### Hot Air Balloons

- 11 Take a quick stretch and wiggle break, and then display the text at the top of The Balloon Race Teacher Master, keeping the rest of sheet masked for now. Read the sentence with the students and give them a minute to imagine the picture that will come next.

*Teacher* Let's read this sentence together, ready? How many hot air balloons do you see sailing through the sky? In a minute, I'm going to show you the picture that goes with this question. Talk with the person next to you. What do you think you'll see?

*Students* Balloons!

*The kind that float up in the air.*

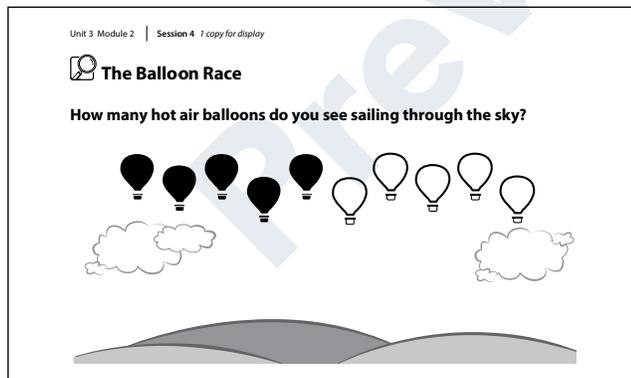
*I think a hot air balloon is one of those kind with a basket you can ride in.*

*They're going to be up in the sky.*

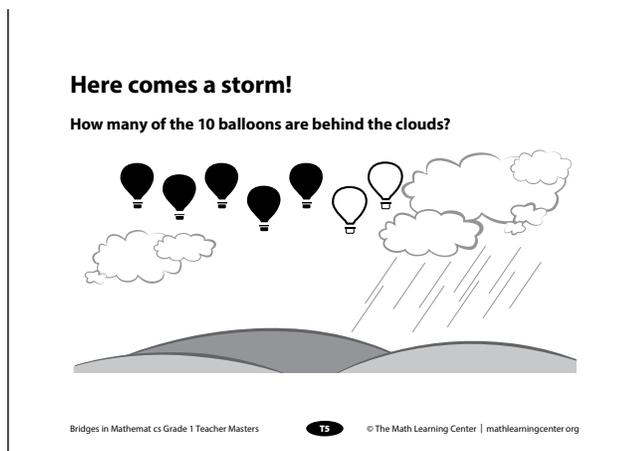
*Maybe there will be a rainbow or a sun, too.*

- 12 Now reveal the first illustration on The Balloon Race Teacher Master. Give students a moment to examine it quietly. Then ask them to share, first in pairs and then as a whole group, how many hot air balloons they see, as well as any other mathematical observations they can make about the picture.

Be sure students note that there are 10 hot air balloons in all, 5 black and 5 white. Explain that these are two teams racing each other to the goal.



- 13 Reveal the next two sentences on the Balloon Race Teacher Master. Again, read them with the class and give students a moment to anticipate what the illustration will show.
- 14 Reveal the entire Teacher Master now. Ask students to determine how many balloons are hidden behind the clouds. Solicit students' thinking strategies. Listen for and affirm strategies that include part-part-whole reasoning.



- 15 Remove the teacher master and display your copy of the Hot Air Balloons Student Book page, as students find the corresponding page in their Student Books. Read and review the instructions on both pages, and clarify as needed. Note with students that the last problem on the second page is marked as a challenge. You can either assign this to selected students, or invite all the students to solve it if they like, while requiring certain students to do so.
- 16 Work problems 1a and 1b on the first page together, sharing solutions and strategies for 1b. Then have students work independently or in pairs to complete the rest of the assignment.
- Encourage students who need to do so to use their own number racks to help solve the problems.
  - Circulate as students work to provide support and assistance as needed.
- SUPPORT** If you know that some of your students will need considerable support to complete this assignment, consider pulling a small group aside to work with you in a quiet corner of the room as the others work on their own. Ask these students to bring their number racks with them, and use your demonstration rack to help them model and solve each of the problems. Allow them to separate the beads based on the problem details, but do not cover the beads on the right (those that would have been in the clouds). Students who still struggle with these problems might need to begin with screening activities within the range of 0–5. You might use a number rack with just one string, 5 beads showing for this intervention. Or, you can use a collection of 5 Unifix cubes, hiding some of them under the palm of your hand. Ask students to determine how many objects they see, and then how many must therefore be under your hand.
- 17 Ask students to compare and discuss their answers with at least one classmate when they have finished the assignment. Encourage students to take responsibility for resolving any differences on their papers. If some of their answers differ, ask them to work together to decide which are correct and make the needed corrections to their own papers.



## Work Places

- 18 Students who finish the assignment in their Student Books before the end of the math period can get their Work Place folder and choose a Work Place game or activity.
- 19 Close the session.
  - Have students clean up and put away the Work Place bins.
  - Give them one last balloon problem to solve mentally.

*Teacher* Imagine there are 20 balloons in the race. You look up, and you can see 12 of those balloons. How many of the balloons are hidden in the clouds? Show me on your fingers.

Preview

## Session 5

# Number Rack Subtraction

### Summary

This session introduces subtraction as a process of comparing two quantities to find the difference. Using both rows of the number rack to model the minuend and subtrahend, students learn how to compare numbers in the range of 0 to 10, noting the difference between them. The lesson continues with an introduction of Work Place 3E, Cats and Mice, which offers more practice with the skills and concepts taught during the first part of the session. When students understand how to play the game, they go to Work Places. Finally, the teacher introduces the Ten & Twenty Home Connection.

### Skills & Concepts

- Solve subtraction story problems with minuends to 20 involving situations of comparing, with unknowns in all positions (1.OA.1)
- Add and subtract fluently within 10 (1.OA.6)
- Use  $>$ ,  $=$ , and  $<$  symbols to record comparisons of two numbers (1.NBT.3)
- Organize, represent, and interpret data with 2 categories (1.MD.3)
- Answer questions about how many more or fewer data points are each category in a set of data with 2 categories (1.MD.4)
- Model with mathematics (1.MP.4)
- Use appropriate tools strategically (1.MP.5)

### Materials

Copies	Kit Materials	Classroom Materials
<b>Problems &amp; Investigations</b> Number Rack Subtraction		
	• demonstration number rack	• student number racks
<b>Work Places</b> Introducing Work Place 3E Cats & Mice		
<b>TM T6</b> Work Place Guide 3E Cats & Mice <b>TM T7</b> Work Place Instructions 3E Cats & Mice <b>TM T8</b> 3E Cats & Mice Record Sheet	• 2 dice numbered 0–5	• student number racks • 2 crayons or colored pencils, in two different colors
<b>Work Places in Use</b>		
<b>2F</b> Spin & Subtract (introduced in Unit 2, Module 3, Session 4) <b>3A</b> Drop the Beans (introduced in Unit 3, Module 1, Session 1) <b>3B</b> Make the Sum (introduced in Unit 3, Module 1, Session 2) <b>3C</b> Doubles Plus or Minus One (introduced in Unit 3, Module 1, Session 4) <b>3D</b> Tower Race (introduced in Unit 3, Module 2, Session 1) <b>3E</b> Cats & Mice (introduced in this session)		
<b>Home Connection</b>		
<b>HC 43–44</b> Ten & Twenty		

**HC** – Home Connection, **SB** – Student Book, **TM** – Teacher Master  
 Copy instructions are located at the top of each teacher master.

### Vocabulary

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

difference\*  
 minus  
 subtract\*  
 subtraction

## Preparation

- If you don't have a whiteboard in your discussion area, post a piece of chart paper within easy reach instead.
- In today's session, you'll introduce Work Place 3E Cats & Mice, which replaces Work Place 2E Spin & Add. Before this session, you should review the Work Place Guide and Work Place Instructions and assemble the bin for Work Place 3E using the materials listed on the Guide. The Work Place Guide also includes suggestions for differentiating the game to meet students' needs.



## Problems & Investigations

### Number Rack Subtraction

- 1 Ask students to get their number racks and join you in the discussion area. When they are seated with their racks placed on the floor in front of them, explain that you are going to solve some story problems together. Then you'll introduce a new Work Place, and they'll have time to visit Work Places today after that.
- 2 Share the following story problem:
 

*The gym teacher has 7 soccer balls and 5 basketballs for the kids to use at recess. How many more soccer balls than basketballs does she have?*
- 3 Repeat the problem a second time, and record the relevant information on the board or a piece of chart paper.



- 4 Give students a few moments to think quietly about the problem. Then ask them to share, first in pairs and then as a whole group, their ideas about the solution or how they might arrive at it.

*Student A* It's 12 because 7 and 5 makes 12.

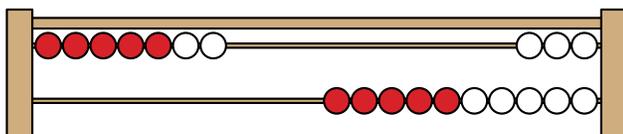
*Student B* I respectfully disagree. It's about how many more soccer balls there are.

*Student C* I think maybe it's 2 because you can go 5... 6, 7, so it's kind of like 2 extra.

*Student D* I don't get it.

- 5 Work with input from the class to model the problem on the demonstration number rack.

*Teacher* Let's show this problem on the number rack. How many soccer balls did the gym teacher have? Right, 7. Can someone come up to the rack and slide 7 beads over to the left in the top row using only 1 or 2 pushes?



**Teacher** OK! Thumbs up if you agree that we have 7 beads showing on the left side of the rack now. OK, I noticed that you pushed all 7 beads over with just 2 pushes. How did you do that?

**Student** I just pushed over 5 and then 2 more. That's 7.

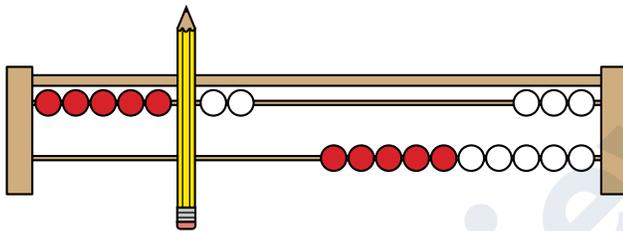
**Teacher** What do these 7 beads stand for in our story problem?

**Students** The basketballs.

**Teacher** Now, let's have someone come and show how many basketballs the gym teacher had. Since we're comparing the two quantities, let's put the beads for the basketballs on the bottom row. Can you use just one push to show 5 beads on the bottom row of our rack?

- 6 Once the situation has been modeled on the rack, restate the problem for the class, and ask students to use the visual information to solve it.

**SUPPORT** When you restate the problem, place a pencil between the beads as shown to highlight the difference between the two quantities, as well as the fact that the problem necessitates finding the difference, rather than adding the quantities.



**Teacher** The gym teacher has 7 soccer balls and 5 basketballs for the kids to use at recess. How many more soccer balls than basketballs does she have? Take a close look at the model we've set up on the number rack and tell the person next to you how many more soccer balls there are.

**Students** Two!

You can see it's two extra.

She has more soccer balls because more kids like to play soccer!

- 7 On the board, write an equation to represent the problem:  $7 - 5 = 2$ . Explain that one of the ways people describe the difference between two numbers is to use a subtraction equation. Then read the equation to the students, and have them repeat it with you a second time: *The difference between 7 and 5 is 2.*

*Despite frequent opportunities to compare quantities throughout kindergarten and first grade, many students will interpret the subtraction sign as a signal to take away or remove one or more items from a collection. The fact that subtraction can also be interpreted as the operation of finding the difference between two quantities is not easy to grasp. Fortunately, first graders do not have to master the formal notation for differencing, so this information is presented during the session simply to give students exposure.*

- 8 Now pose a second story problem to the class, and ask them to picture the situation in their minds.

*There was once an old apple tree with two long branches. There were 8 apples hanging on the top branch, and 7 apples hanging on the bottom branch. How many more apples were there on the top branch of the tree?*

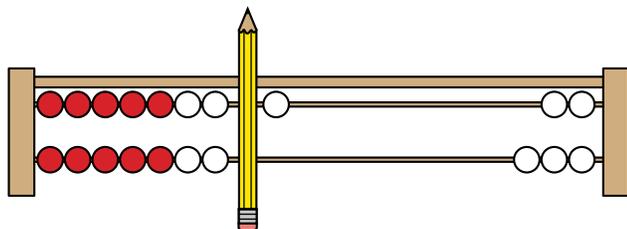


**Math Practices  
in Action 1.MP.4**

In this activity, students model mathematical situations with the number rack and equations. These models, and the connections students draw between them, help students understand the operation of subtraction in greater depth and begin to develop fluency with subtraction within 20.

- 9 Work with help from two different students to model the problem on the demonstration number rack. Then restate the problem for the class, and ask students to use the visual information to solve it.

**SUPPORT** When you restate the problem, place a pencil between the beads as shown to highlight the difference between the two quantities, as well as the fact that the problem necessitates finding the difference, rather than adding the quantities.



**Teacher** *There were 8 apples hanging on the top branch of the old apple tree, and 7 apples hanging on the bottom branch. How many more apples were there on the top branch of the tree? Take a close look at the model we've set up on the number rack and tell the person next to you how many more apples there are on there are on top.*

**Students** *One!*

*There's one more on top.*

*I knew it! Eight is just one more than 7.*

- 10 On the board, write an equation to represent the problem:  $8 - 7 = 1$ . Then read the equation to the class, and have them repeat it with you a second time: The difference between 8 and 7 is 1.
- 11 Repeat steps 8–10 with the following differencing problems, but this time, have the students work along with you to model and solve each problem on their own number racks.
- There were 6 frogs on the log, and 5 fish in the water. How many more frogs were there on the log than fish in the water?
  - There were 3 hot air balloons in the sky, and 2 hot air balloons on the ground waiting to take off. How many more hot air balloons were there in the sky than on the ground?
  - The people at the bakery are busy making special birthday cookies. They put 8 cookies on the top rack of their oven and 3 cookies on the bottom rack. How many more cookies are there on the top rack than on the bottom rack?

**SUPPORT** Repeat each problem a second time, and record the relevant information, in the form of numbers and drawings on the board or a piece of chart paper, before working with the students to solve it.

 6 frogs on a log  
 5 fish in the water

 3 balloons in the sky  
 2 balloons on the ground

 8 cookies on top rack  
 3 cookies on bottom rack

- 12 Take a quick stretch and wiggle break, and let students know that you are going to teach them how to play a new Work Place game that will give them more practice finding differences.



## Work Places

### Introducing Work Place 3E Cats & Mice

- 13 With students seated where they can see the projector screen, introduce the game by displaying the 3E Cats & Mice Record Sheet Teacher Masters and giving students a few moments to share observations about the sheet with their neighbor.
- 14 Explain that the cats and the mice are going to play a game, and students will keep track of the scores on their number racks while you fill in the record sheet. Summarize the game.
- Partners decide who will be the cat and who will be the mouse. They take turns rolling two dice numbered 0–5 and adding the numbers to get their score. They record the two scores on their record sheets, decide whose score is higher, and write a  $<$ ,  $=$ , or  $>$  sign between the scores. Then they figure out how many more points the winner had. They play three rounds; best out of three wins the game.
- 15 Divide the class into two teams, the Cats and the Mice.
- 16 Play the game according to the instructions on the Work Place Guide 3E Cats & Mice Teacher Master, but have students show the scores on their number racks while you demonstrate how to fill in the record sheet.
- Have one student from the Cats team roll the two 0–5 dice, and let the class figure out the sum. They can use the top row of their number racks to do this.

*Teacher* Look, the Cats rolled 2 plus 5. All of you use the top row of your number racks to figure out the cat's score.

*Students* It's 7!

*Teacher* How did you figure that out?

*Students* I moved 2 beads and then I moved 5 more and then I counted them all and it was 7.

*I just knew 'cause 5 plus 2 is 7.*

*I did the beads, too, but I moved 5 first and then 2 — that's the same as 2 first and then 5.*

- Now show students how to color in the Cats' score on the top row of the record sheet.
- Repeat the process for the Mice team, having students use the bottom row of their number racks.

Unit 3 Module 2 | Session 5 class set p us more as needed stored in the Work Place b n

**3E Cats & Mice Record Sheet**

Who's ahead? By how much?

	1	2	3	4	5	6	7	8	9	10	The winner by:

\_\_\_\_\_ \_\_\_\_\_

- Ask students to repeat the scores while you write them next to the pictures of the cat and the mouse.

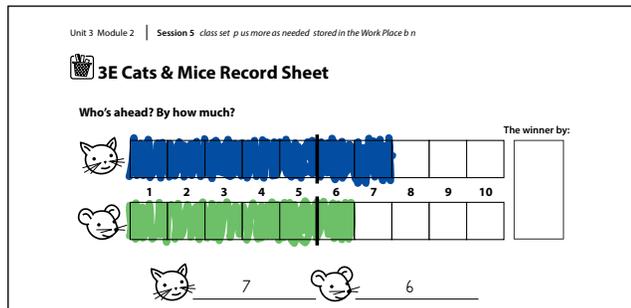
**Teacher** OK, both teams have had their turns. What’s your score, Cats?

**Students** Seven! We won!

**Teacher** I’ll write 7 next to your picture, Cats. And what’s your score, Mice?

**Students** Six!

**Teacher** So I’ll write 6 next to your picture, Mice.



- Then have students determine which score is greater and which sign should be used between the scores (<, =, or >) and write it.

**Teacher** I heard the Cats say that they won. How do you know you won?

**Students** ‘Cause 7 is more than 6. You can see it on your paper—the Cats’ row is longer. Yeah, and it’s on our number racks, too.

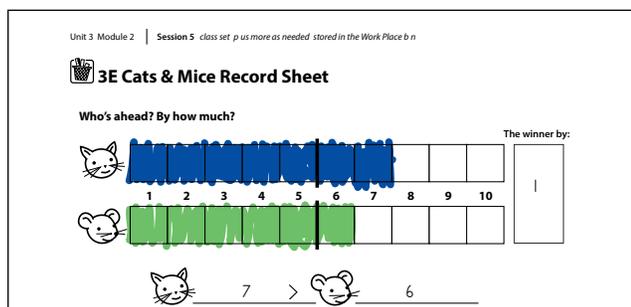
**Teacher** Look, here it says 7 and here it says 6 (pointing to the two scores on the record sheet). Is 7 greater than, less than, or equal to 6?

**Students** Greater than!

**Teacher** So what sign should I put here in the middle?

**Students** Greater than!

- Finally, help students determine how many more points the winner had. Write that number in the “The winner by” box and also the name of the winner—Cats or Mice.



- Play at least one more round, depending on time.
- Conclude this part of the session by showing students the contents of the Work Place bin you have prepared for Cats & Mice. Explain that when they play during Work Places, one partner will be the cat and one will be the mouse, and they will each fill in their own record sheets.

- 19 Invite students to spend the rest of the session at Work Places.
- Hand out their folders and have them consider where they will begin today. Point out the picture for the new Work Place.
  - Remind them that they should visit every Work Place at least once.
- 20 Close the session.
- Remind students to mark their Work Place folders to indicate which games or activities they completed today.
  - Have students put away the Work Place materials and hand in their Work Place folders.

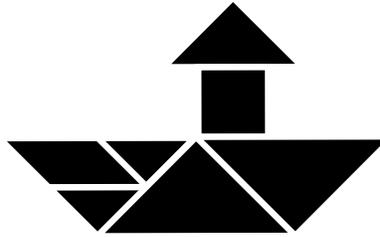


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## Home Connection

- 21 Introduce and assign the Ten & Twenty Home Connection, which provides more practice with the following skills:
- Solve story problems involving addition of 3 whole numbers whose sum is less than or equal to 20 (1.OA.2)
  - Add within 20 (1.OA.6)
  - Demonstrate an understanding that the equal sign indicates equivalence (1.OA.7)
  - Determine whether addition equations are true (1.OA.7)
  - Solve for the unknown in an addition equation involving 3 whole numbers (2 addends and a sum) (1.OA.8)

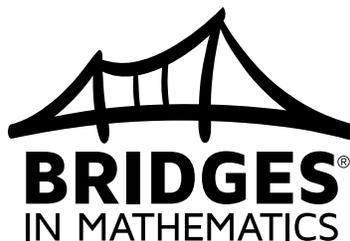
Preview



# Teacher Masters

GRADE 1 – UNIT 3 – MODULE 2

Preview







## Work Place Guide 3D Tower Race

### Summary

This is a game for two players. Players take turns rolling two dice, collecting cubes in two different colors to represent the numbers rolled, and using the cubes to fill a set of towers, 1–10, on a game board. The first player to fill all the towers on his board wins the game, but the other player continues rolling and collecting cubes until she has filled her game board. Then both players color in record sheets and write equations to match the towers on their game boards.

### Skills & Concepts

- Decompose numbers less than or equal to 10 into pairs in more than one way (K.OA.3)
- Record decompositions of numbers less than or equal to 10 with drawings and equations (K.OA.3)
- Add fluently with sums to 10 (1.OA.6)
- Solve for the unknown in an addition equation involving 3 whole numbers (1.OA.8)

### Materials

Copies	Kit Materials	Classroom Materials
<b>TM T1</b> Work Place Guide 3D Tower Race <b>TM T2</b> Work Place Instructions 3D Tower Race <b>TM T3</b> 3D Tower Race Record Sheet	<ul style="list-style-type: none"> <li>• 6 Tower Race Game Boards</li> <li>• 3 dice numbered 0–5</li> <li>• 3 dice dotted 1–6</li> </ul>	<ul style="list-style-type: none"> <li>• 360 Unifix cubes snapped into 36 single-colored ten-trains (each player needs 3 ten-trains in one color and 3 in another)</li> <li>• crayons or colored pencils in the Unifix cube colors</li> </ul>

### Assessment & Differentiation

Here are some quick observational assessments you can make as students begin to play this game on their own. Use the results to differentiate as needed.

If you see that...	Differentiate	Example
Students are struggling to make combinations to 10.	<b>SUPPORT</b> Pull small groups of students who are struggling, and play the game with them. Help them count out the cubes for each number they roll, and guide them to determine which tower or towers could be filled.	If a student rolls a 5 and 3, have them build a tower in a different color for each number. Then have them check to see where these two towers would fit on their board, both separately and combined (either the 8 tower or the 5 and 3 towers). Keep it simple by filling only one or two towers on each turn, even if it means students sometimes miss a turn.
Students are able to play the game easily and could benefit from a challenge.	<b>CHALLENGE</b> Invite these students to devise and test strategies for winning the game. (When they're working at this level, you might want to let them play a number of games without completing a record sheet each time.)	These students might investigate such questions as: <ul style="list-style-type: none"> <li>• Does it matter if you start first or second?</li> <li>• Does it help if you fill the larger towers as soon as possible?</li> <li>• Should you try to fill the smallest towers early in the game?</li> </ul>



## Work Place Instructions 3D Tower Race

- Each player needs a game board, a record sheet, 6 ten-trains of Unifix cubes (3 in one color and 3 in another) and 2 crayons to match the color of the cubes. Players share 2 dice, one numbered 0–5 and the other dotted 1–6.
- Players each roll the same die to determine who goes first; the player with the higher number starts.
- The first player rolls the two dice and takes Unifix cubes in two colors to match the numbers rolled. (For example, if the player rolls 5 and 3, he takes 5 blue cubes and 3 yellow cubes.)
- The player determines how many cubes he has in all, and then considers the different ways he can fill in towers, bearing in mind the rule that any tower has to be filled completely on a given turn.
  - The player can put all his cubes into a single tower if he can fill it completely. (In this case, he could fill the 8 tower.)
  - The player can use each color to fill a different tower. (If he has 5 blue cubes and 3 yellow cubes, he can fill the 5 tower and the 3 tower.)
  - The player can split up the cubes to fill two or more towers, regardless of color. (If he has 5 blue cubes and 3 yellow cubes, he can use them to fill the 1, 3, and the 4 towers, or the 1, 2, and 5 towers, or the 2 and 6 towers, or the 1 and 7 towers.)
- The second player takes a turn, and then play continues until all of the towers are filled in. The first player to fill all the towers on her game board wins the game, but the other player continues to roll and collect cubes until all of his towers are filled.
- If a player rolls and collects a number of cubes he can't use, he misses that turn and must wait until his next turn to try again.
  - There might be times toward the end of the game when players must pass the dice back and forth lots of times as they try to get combinations to fill their last few towers.
  - If a player is not able to use all his cubes in one roll, he may not use those cubes in a future turn.
- When both players have filled their boards completely, they each color in the towers on a record sheet to match the game board.
- Finally, the players each write an equation to represent each of the towers on their record sheet. The equations should reflect the colors in the towers. (If the 8 tower has 3 yellow and 5 blue colored in, the equation should read  $3 + 5 = 8$ . If the 5 tower has 5 blue colored in, the equation should read  $5 + 0 = 5$ .)

**Tower Race Game Board**

**Work Place 3D Tower Race Record Sheet**

Color in each of the towers below to match your finished game board. Then write a number fact to match each tower.

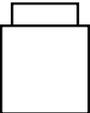
1	2	3	4	5	6	7	8	9	10
+ 0	+ 0	+ 1	+ 2	+ 0	+ 5	+ 3	+ 0	+ 4	+ 5
1	2	3	4	5	6	7	8	9	10

- When the game is over, players rebuild the trains of ten Unifix cubes that they started with.

# 3D Tower Race Record Sheet

Color in each of the towers below to match your finished game board. Then write a number fact to match each tower.



									
$\frac{\quad}{+}$	$\frac{\quad}{+}$	$\frac{\quad}{+}$	$\frac{\quad}{+}$	$\frac{\quad}{+}$	$\frac{\quad}{+}$	$\frac{\quad}{+}$	$\frac{\quad}{+}$	$\frac{\quad}{+}$	$\frac{\quad}{+}$

NAME \_\_\_\_\_

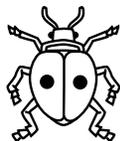
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## Combinations of Ten Checkpoint

- 1 Write the number that shows how many beads are hidden on the top row of the number rack.

### Practice



a	b	c	d	e

- 2 Subtract.

$$\begin{array}{r} 10 \\ - 6 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ - 5 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ - 4 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ - 7 \\ \hline \end{array}$$

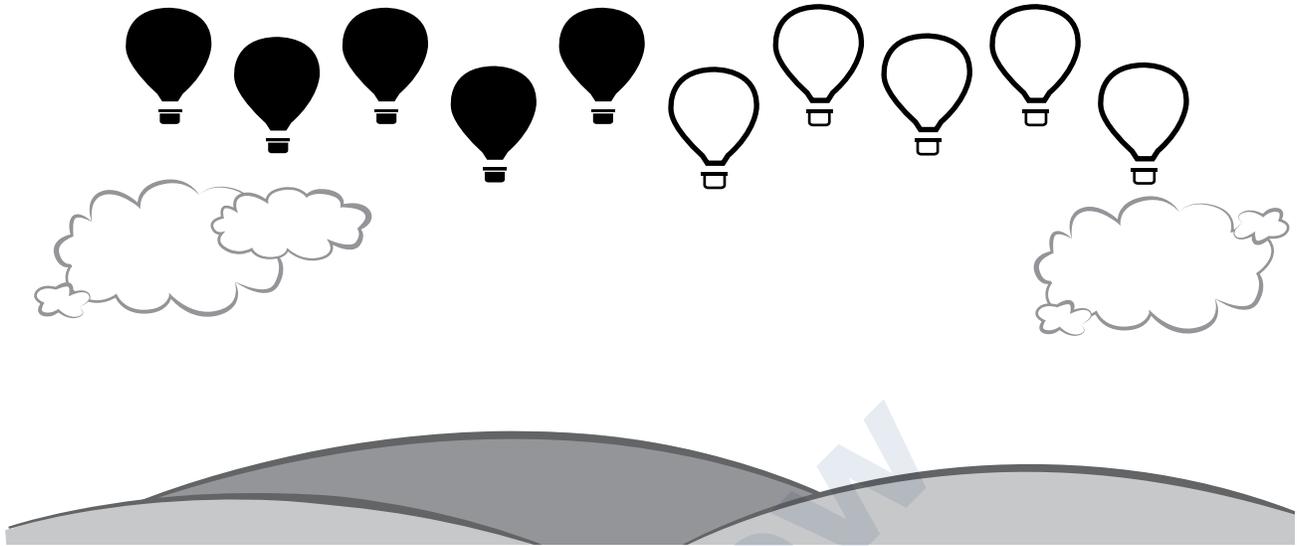
$$\begin{array}{r} 10 \\ - 8 \\ \hline \end{array}$$

- 3  $5 + 5$  is one way to make 10. Show three other ways to make 10. You can use addition or subtraction equations.



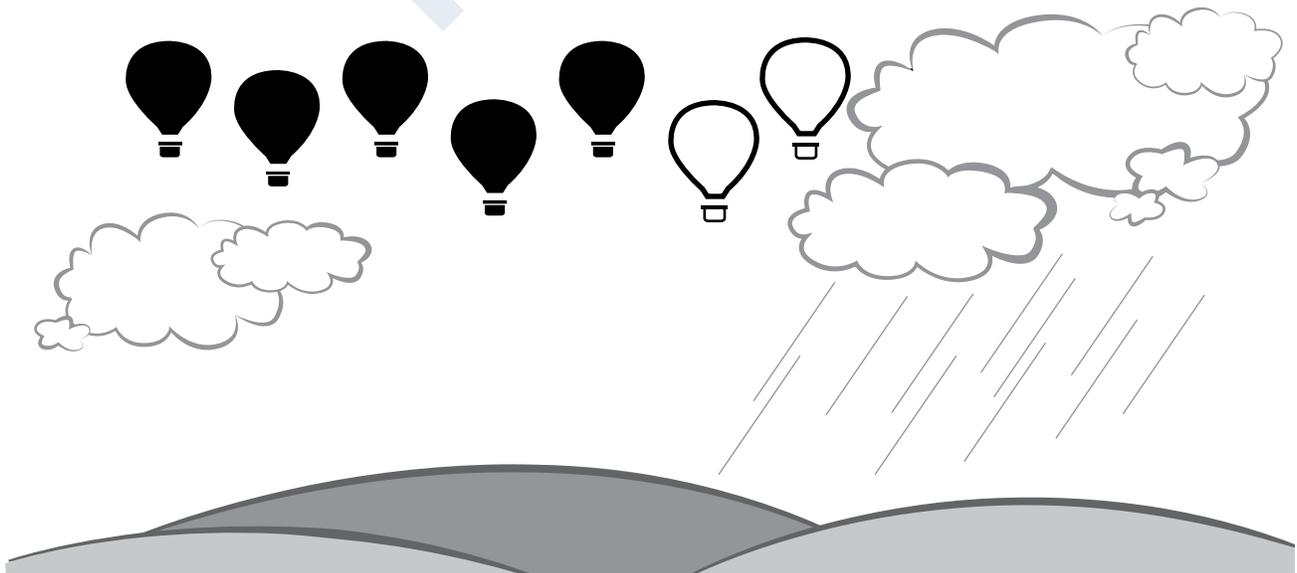
# The Balloon Race

How many hot air balloons do you see sailing through the sky?



Here comes a storm!

How many of the 10 balloons are behind the clouds?





## Work Place Guide 3E Cats & Mice

### Summary

Partners decide who will be the cat and who will be the mouse. They take turns rolling two dice numbered 0–5 and adding the numbers to get their score. They record the two scores on their record sheets, decide whose score is higher, and write a  $<$ ,  $=$ , or  $>$  sign between the scores. Then they figure out how many more points the winner had. They play three rounds; best out of three wins the game.

### Skills & Concepts

- Add and subtract fluently within 10 (1.OA.6)
- Use  $>$ ,  $=$ , and  $<$  symbols to represent comparisons of two numbers (1.NBT.3)
- Organize, represent, and interpret data with up to 3 categories (1.MD.3)
- Answer questions about how many more or fewer data points are each category in a set of data with up to 3 categories (1.MD.4)

### Materials

Copies	Kit Materials	Classroom Materials
<b>TM T6</b> Work Place Guide 3E Cats & Mice <b>TM T7</b> Work Place Instructions 3E Cats & Mice <b>TM T8</b> 3E Cats & Mice Record Sheet	<ul style="list-style-type: none"> <li>• 6 dice numbered 0–5</li> </ul>	<ul style="list-style-type: none"> <li>• crayons or colored pencils (2 different colors per student)</li> </ul>

### Assessment & Differentiation

Here are some quick observational assessments you can make as students begin to play this game on their own. Use the results to differentiate as needed.

If you see that...	Differentiate	Example
A student is struggling to add the numbers on the dice.	<b>SUPPORT</b> Have the student use a number rack to figure out the totals.	Slide beads over to the left side of the rack to show the number from the first die, and then the second. Find the total by counting on, anchoring on 5 or 10, or using a familiar combination (e.g., $4 + 5$ is 9 because $4 + 4$ is 8, and $4 + 5$ is just 1 more).
Students are struggling with choosing and writing the $<$ , $=$ , and $>$ signs.	<b>SUPPORT</b> Gather students in a small group and review the meaning of the different signs and practice writing them.	Use the “dot method” by placing one dot next to the lesser number and two dots next to the greater number and then drawing lines to connect them.  $8 \cdot :   0 \quad 8 <   0$ <p>We know that 8 is less than 10, don't we? So, let's put 1 dot beside the 8 and 2 dots beside the 10 to show. Then we'll connect the dots. The little sign we see means <i>less than</i> because 8 is less than 10.</p>
Students are able to complete the game with ease and are able to add and subtract larger numbers	<b>CHALLENGE</b> Pair students working at roughly the same level and invite them to try the Game Variation .	



## Work Place Instructions 3E Cats & Mice

- 1 Each player needs a record sheet, pencil, and two crayons. Players share two dice.
- 2 Players roll the dice and add the numbers they roll. The player with the higher sum gets to start first and play as the cat. The other player will play as the mouse.
- 3 Then the first player—the cat—rolls the two dice and adds the numbers to get the sum. Both players color in the cat's score on their record sheets.
- 4 Then second player—the mouse—rolls the two dice and adds the numbers to get the sum. Both players color in the mouse's score with a different color.
- 5 Both players record the score for the cat next to the cat picture and the score for the mouse next to the mouse picture on their record sheets.
- 6 Players compare their scores, writing a  $<$ ,  $=$ , or  $>$  sign in between the cat and the mouse on their record sheets.
- 7 Players work together to determine how many more points the winner of the round had, and record that number in the box to the far right of the sheet.

Who's ahead? By how much?

The winner by: 2

7 < 9

OK, I got 4 and 5. That's 9, so we have to color in 9 boxes for the mouse.  
Seven is less than 9, so the mouse won that round by 2.

- 8 Then they play two more rounds of the game. The player who scores higher in at least two out of the three rounds wins the game.

### Game Variation

- A When the three rounds are complete, add up all three of the cat's scores and all three of the mouse's scores. Then determine whose score is higher and by how much. The player with the higher score wins the game.

# 3E Cats & Mice Record Sheet

Who's ahead? By how much?

The winner by:

										
	1	2	3	4	5	6	7	8	9	10
										

 \_\_\_\_\_
  \_\_\_\_\_

Who's ahead? By how much?

The winner by:

										
	1	2	3	4	5	6	7	8	9	10
										

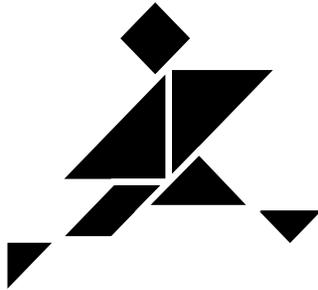
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Who's ahead? By how much?

The winner by:

										
	1	2	3	4	5	6	7	8	9	10
										

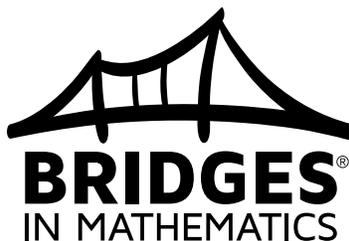
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# Student Book

GRADE 1 – UNIT 3 – MODULE 2

Preview



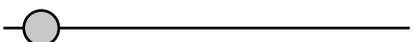
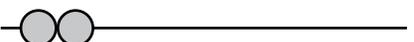
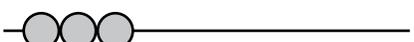
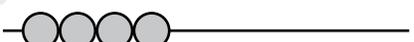
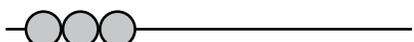
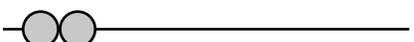
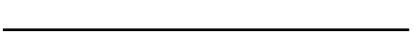


NAME \_\_\_\_\_

DATE \_\_\_\_\_

 **Make Ten** page 1 of 2

**1** Write and solve an addition fact to match each of the number racks.

<p><b>ex</b></p>   <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+</div> <table style="border-collapse: collapse;"> <tr><td style="border: 1px solid black; padding: 5px; text-align: center;">9</td></tr> <tr><td style="border: 1px solid black; padding: 5px; text-align: center;">1</td></tr> <tr><td style="border: 1px solid black; padding: 5px; text-align: center;">10</td></tr> </table> </div>	9	1	10	<p><b>a</b></p>   <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <table style="border-collapse: collapse;"> <tr><td style="border: 1px solid black; width: 30px; height: 30px;"></td></tr> <tr><td style="border: 1px solid black; width: 30px; height: 30px;"></td></tr> <tr><td style="border: 1px solid black; width: 30px; height: 30px;"></td></tr> </table> </div>			
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NAME \_\_\_\_\_

DATE \_\_\_\_\_

**Make Ten** page 2 of 2**2** Solve each of the problems below. Write the answers on the lines.**a** I have six (6) beads. How many more to make ten? \_\_\_\_\_**b** I have three (3) beads. How many more to make ten? \_\_\_\_\_**c** I have eight (8) beads. How many more to make ten? \_\_\_\_\_**d** I have two (2) beads. How many more to make ten? \_\_\_\_\_**e** I have five (5) beads. How many more to make ten? \_\_\_\_\_**3** Subtract. Use your number rack to help if you like.

$$\begin{array}{r} 10 \\ - 5 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ - 5 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ - 3 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ - 3 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ - 6 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ - 6 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ - 10 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ - 4 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ - 4 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ - 8 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ - 8 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ - 7 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ - 7 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ - 1 \\ \hline \end{array}$$

**4** There were some apples in the bowl. The kids ate 3 of them. Now there are only 7 apples left in the bowl. How many apples were in the bowl to start? Show your work.

There were \_\_\_\_\_ apples in the bowl to start.

**5** **CHALLENGE** Sara had some marbles. She got 20 more marbles for her birthday, and she got 30 marbles at the store. Now Sara has 100 marbles. How many marbles did she have to start? Show your work.

Sara had \_\_\_\_\_ marbles to start.



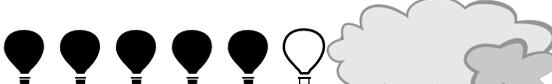
NAME \_\_\_\_\_

DATE \_\_\_\_\_

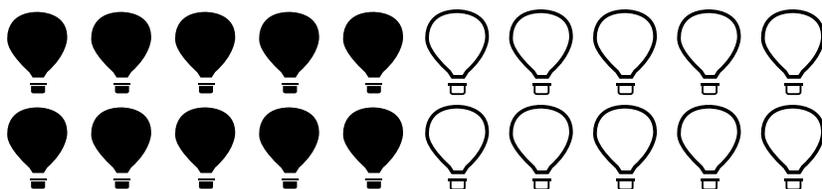
# Hot Air Balloons page 1 of 2

## How many balloons are behind the clouds?

1 Complete the equations to match each of the pictures below. For each one, first record the number of balloons you can see and then the number of balloons that are hidden behind the clouds.

<p><b>a</b> </p>	$10 = \square + \square$
<p><b>b</b> </p>	$10 = \square + \square$
<p><b>c</b> </p>	$10 = \square + \square$
<p><b>d</b> </p>	$10 = \square + \square$
<p><b>e</b> </p>	$10 = \square + \square$
<p><b>f</b> </p>	$10 = \square + \square$
<p><b>g</b> </p>	$10 = \square + \square$

2 How many balloons do you see in this picture? \_\_\_\_\_



*(continued on next page)*

NAME \_\_\_\_\_

DATE \_\_\_\_\_

**Hot Air Balloons** page 2 of 2

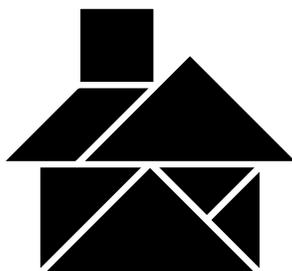
- 3** Complete the equations to match each of the pictures below. For each one, first record the number of balloons you can see and then the number of balloons that are hidden behind the clouds.

<p><b>a</b></p>	$20 = \square + \square$
<p><b>b</b></p>	$20 = \square + \square$
<p><b>c</b></p>	$20 = \square + \square$
<p><b>d</b></p>	$20 = \square + \square$
<p><b>e</b></p>	$20 = \square + \square$

- 4 CHALLENGE** Now imagine 20 hot air balloons racing across the sky, and solve these problems.

How many are hidden behind the clouds?

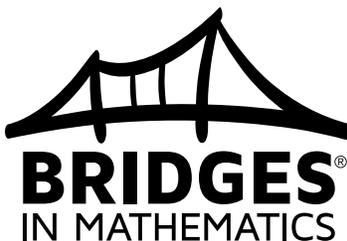
- a** I can see only 13 of the balloons. \_\_\_\_\_
- b** I can see only 9 of the balloons. \_\_\_\_\_
- c** I can see only 16 of the balloons. \_\_\_\_\_
- d** I can see only 8 of the balloons. \_\_\_\_\_



# Home Connections

GRADE 1 – UNIT 3 – MODULE 2

Preview





NAME \_\_\_\_\_

DATE \_\_\_\_\_



# Sixes, Crayons & Coins page 1 of 2

**1** Write an equation to match each cube train.

**ex**

$$3 + 3 = 6$$

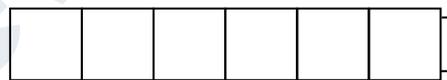
**a****b****c**

**2** Color in the train to match each equation.

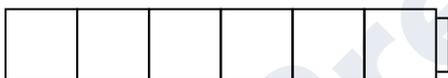
**ex**  $4 + 2 = 6$



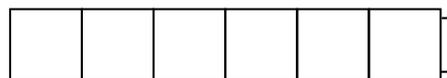
**a**  $3 + 2 + 1 = 6$



**b**  $1 + 5 = 6$



**c**  $1 + 4 + 1 = 6$



**3** Subtract.

$6 - 0 = \underline{\quad}$

$5 - 2 = \underline{\quad}$

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

$6 - 2 = \underline{\quad}$

$6 - 4 = \underline{\quad}$

$6 - 1 = \underline{\quad}$

$6 - 3 = \underline{\quad}$

$5 - 4 = \underline{\quad}$

$6 - 5 = \underline{\quad}$

$5 - 3 = \underline{\quad}$

$6 - 6 = \underline{\quad}$

$5 - 1 = \underline{\quad}$

**4** Fill in the missing number.

$2 + \underline{\quad} = 6$

$\underline{\quad} + 5 = 6$

$6 = 3 + \underline{\quad}$

$6 = 4 + \underline{\quad}$

$3 + \underline{\quad} = 6$

$\underline{\quad} + 0 = 6$

$6 = 2 + \underline{\quad}$

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

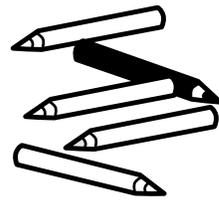
*(continued on next page)*

NAME \_\_\_\_\_

DATE \_\_\_\_\_

**Sixes, Crayons & Coins** page 2 of 2

- 5** John had some crayons. He gave 5 to Jen. Now he has 7 crayons left. How many crayons did John have to start with? Show your work.



John started out with \_\_\_\_\_ crayons.

- 6 CHALLENGE** Here are three clues:

- Kendra has 5 coins.
- She has 35¢.
- She has only nickels and dimes.

How many nickels does Kendra have? How many dimes does Kendra have?  
Show your work.



Kendra has \_\_\_\_\_ nickels. Kendra has \_\_\_\_\_ dimes.

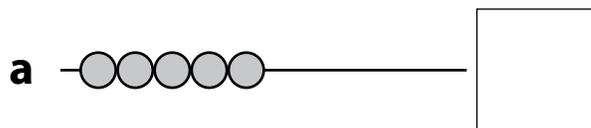
NAME \_\_\_\_\_

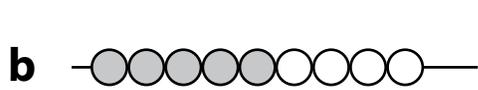
DATE \_\_\_\_\_

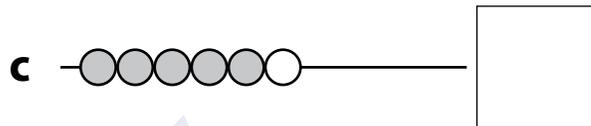
**Ten & Twenty** page 1 of 2**How many more to make 10?**

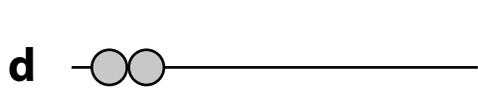
- 1** How many more beads do you need to make 10 in all? Write the number in the box at the right of each bead string.

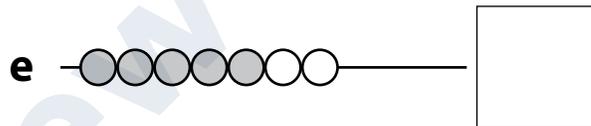













- 2** Fill in the box to complete each equation.

$6 + \square = 10$

$4 + \square = 10$

$7 + \square = 10$

$3 + \square = 10$

$10 = 8 + \square$

$10 = 2 + \square$

$10 = 5 + \square$

$10 = 9 + \square$

- 3** Are these equations correct? Circle *yes* or *no* to show.

$5 + 4 = 10$	Yes	No	$5 + 5 = 10$	Yes	No
$10 = 1 + 9$	Yes	No	$10 = 7 + 2$	Yes	No
$2 + 3 + 5 = 10$	Yes	No	$1 + 2 + 3 + 4 = 10$	Yes	No

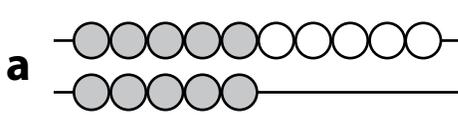
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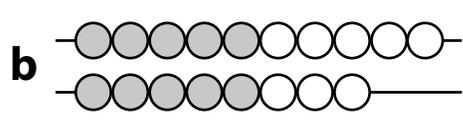
NAME \_\_\_\_\_

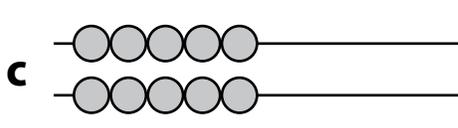
DATE \_\_\_\_\_

**Ten & Twenty** page 2 of 2**How Many More to Make 20?**

- 4** How many more beads do you need to make 20 in all? Write the number in the box at the right of each pair of bead strings.










- 5** Dan had 10 mini racer cars. He got 6 more mini racer cars for his birthday. Then his brother gave him 4 more mini racer cars.

- a** How many mini racer cars does Dan have in all? Show your work.

- b** Dan has \_\_\_\_\_ mini racer cars in all.

