

Lesson Objectives

Content Objectives

- Count groups of up to 10 objects.
- Distinguish groups of 10 from smaller groups.
- Develop familiarity with different arrangements of numbers to 10.
- Recognize and write numerals to 10.

Language Objectives

- Determine which group of objects shows a certain number and color that group.
- Say the number that names a group of up to 10 objects and write the numeral.
- Count to 10 aloud.
- Listen to ideas of others for keeping track of counting and compare strategies.

Prerequisite Skills

- Know the count sequence to 5.
- Count up to 5 objects.
- Recognize and read the numbers 0 to 5.

Standards for Mathematical Practice (SMP)

SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the *Try-Discuss-Connect* routine.*

In addition, this lesson particularly emphasizes the following SMPs:

- 5** Use appropriate tools strategically.
- 6** Attend to precision.
- 7** Look for and make use of structure.

*See page 1i to see how every lesson includes these SMPs.

Lesson Vocabulary

- **six** the counting number after 5.
 - **seven** the counting number after 6.
 - **eight** the counting number after 7.
 - **nine** the counting number after 8.
 - **ten** the counting number after 9.
- Review the following key term.
- **five** the counting number after 4.

Learning Progression

In Kindergarten children learn to count groups of up to 20 objects. They develop familiarity with the benchmark numbers 5 and 10 as a way to manage larger groups, both perceptually and conceptually.

In this lesson children are formally introduced to the quantities and the written numbers 6, 7, 8, 9, and 10. This builds on the previous lessons on counting 0 through 5. The quantities 6 through 10 are presented visually in relation to 5 and are represented by a filled 10-frame.



In later lessons children will find number pairs for 10 and compare numbers to 10. They will use their understanding of 10 to describe teen numbers as a group of 10 and some more ones and to count to 100 by tens.

In Grade 1 children will continue to build on this solid understanding of 10 and use it as the foundation for their initial understanding of place value in numbers to 100.

Lesson Pacing Guide

Teacher Toolbox 

Whole Class Instruction

SESSION 1 Explore 45–60 min	Counting and Writing to 10 <ul style="list-style-type: none">Start 5 minTry It 20 minConnect It 15 minClose: Exit Ticket 5 min	Additional Practice Lesson pages 109–110 Building Fluency Use throughout lesson
SESSION 2 Develop 45–60 min	Counting and Writing to 10 <ul style="list-style-type: none">Start 5 minTry It 5 minDiscuss It 15 minConnect It 15 minClose: Exit Ticket 5 min	Additional Practice Lesson pages 113–114 Fluency Practice Chant a Counting Rhyme Write the Numbers 6 and 7
SESSION 3 Develop 45–60 min	Counting and Writing to 10 <ul style="list-style-type: none">Start 5 minTry It 10 minDiscuss It 10 minConnect It 15 minClose: Exit Ticket 5 min	Additional Practice Lesson pages 117–118 Fluency  Counting and Writing to 8
SESSION 4 Refine 45–60 min	Counting and Writing to 10 <ul style="list-style-type: none">Start 5 minApply It 10 minDiscuss It 25 minClose: Exit Ticket 5 min	Additional Practice Lesson pages 121–122
SESSION 5 Refine 45–60 min	Counting and Writing to 10 <ul style="list-style-type: none">Start 5 minApply It 10 minDiscuss It 5 minSmall Group Differentiation 20 minClose: Exit Ticket 5 min	Lesson Quiz  or Digital Comprehension Check

Small Group Differentiation

RETEACH

Tools for Instruction

Grade K

- Lesson 6 Identify Numerals to 10

REINFORCE

Math Center Activities

Grade K

- Lesson 6 Count and Circle
- Lesson 6 Count to Match
- Lesson 6 Count and Write
- Lesson 6 Count to 10 Match
- Lesson 6 Show Numbers

EXTEND

Enrichment Activity

Grade K

- Lesson 6 Make It 10

 i-Ready

Independent Learning

PERSONALIZE

i-Ready Lessons*




Grade K

- Count up to 10 Objects in Rows or Arrays
- Practice: Count up to 10 Objects in Rows or Arrays
- Count up to 10 Objects in Different Arrangements
- Practice: Count up to 10 Objects, Part 1
- Practice: Count up to 10 Objects, Part 2
- Make a Set of Up to 10 Objects
- Practice: Count and Make Groups to 10, Part 1
- Practice: Count and Make Groups to 10, Part 2
- Sequence Numbers up to 10

Learning Games

- Hungry Guppy
- Match

Lesson Materials

Lesson (Required)	<i>Per child:</i> 15 counters, copy of Start slide (Session 1), copy of Close slide (Sessions 1–3, Session 5) <i>Per pair:</i> 10 connecting cubes, 20 counters <i>For display:</i> 9 paper plates, masking tape <i>Activity Sheets:</i>  Dot Cards 2: Small, Dot Cards 2: Large
Activities	<i>Per child:</i> 10 counters <i>Activity Sheets:</i>  Write 6, 7; 10-Frames; Number Cards 0 to 10: Small; Dot Cards 1: Small; Number Cards 0 to 10: Large
Math Toolkit	counters, dot cards (6–8)
Digital Math Tool 	Counters and Connecting Cubes

*We continually update the Interactive Tutorials. Check the Teacher Toolbox for the most up-to-date offerings for this lesson.

Connect to Family, Community, and Language Development

The following activities and instructional supports provide opportunities to foster school, family, and community involvement and partnerships.

Connect to Family

Use the **Family Letter**—which provides background information, math vocabulary, and an activity—to keep families apprised of what their child is learning and to encourage family involvement.

Goal

The goal for the Family Letter is to build counting skills and to provide strategies to keep track of what is being counted.

- Children will think about numbers as sums of other numbers.

Activity

Building counting skills is important. Look at the *Counting to 10* activity and adjust it if necessary to connect with children.

Math Talk at Home

Encourage children to work with a family member to find groups of items at home that they can count to 10. Remind children that the amount they will be counting is more than what they have been working with in the past. As a class, brainstorm items that children can count with a family member. Create a list and share with the family.

Conversation Starters Below are conversation starters children can write in their Family Letter or math journal, with your guidance, to engage family members:

- What objects in the kitchen can we count to 10?
- If we have 5 objects, how many more do we need to have 10?
- How can we count to 10 with our fingers?

Available in Spanish

Teacher Toolbox

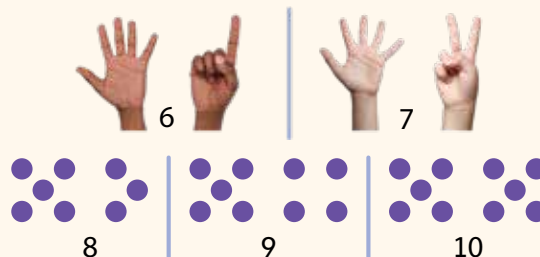
Count and Write to 10

Dear Family,

This week your child is building counting skills with numbers up to 10.

The lesson includes practice with counting up to 10 objects. Strategies for keeping track of what has been counted remain important, especially when counting these larger groups. For example, touching or pointing to each object or marking each object in a picture as it is counted are ways to ensure that no items have been missed.

Building on earlier lessons, your child will explore how numbers 6, 7, 8, 9, and 10 relate to other numbers. For example, the pictures below show how the numbers 6 through 10 visually relate to 5 using fingers or counters. Understanding these numbers as 5 and some more prepares your child for addition concepts and for thinking about these numbers as sums of other numbers.



Invite your child to share what he or she knows about counting to 10 by doing the following activity together.

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Lesson 6 Count and Write to 10

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Activity Counting to 10

Do this activity with your child to explore counting to 10.

Materials 10 small objects (such as buttons, dried beans, or cereal), dot cube (or homemade number cards 1–6), paper, pencil

Trace your child's two hands on a sheet of paper. Then have your child use the hand picture to do the following activity.

- Roll a dot cube (or turn over a number card) and count out that number of buttons. Place 1 button on each finger.
- Keep rolling and placing buttons until you get to 10—when all fingers are covered. Make sure to stop when you get to 10, no matter what number you rolled. Repeat the activity several times.
- You may want to have your child count the covered fingers to emphasize the relationship between two hands and the number 10.



In addition to doing the above activity, practice counting 1 to 10 objects with your child whenever you can. For example, encourage your child to count spoons, apples, crackers, buttons, books, stairs, etc.

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Lesson 6 Count and Write to 10

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Connect to Community and Cultural Responsiveness

Use these activities to connect with and leverage the diverse backgrounds and experiences of all children.

Session 2 Use with *Try It*.

- Have children look at the underwater scene. Explain that it shows life in the ocean. Ask children if they have seen the ocean. Invite volunteers to name the sea animals they know. Some children may have been to aquariums or may have a fish at home. Encourage them to share. Next, have children identify the animals in the picture. Ask: *What sea animals do you see?*

Session 4 Use with *Additional Practice*.

- Ask children if they have seen the types of balls shown on the page. Have children talk about other types of balls they know. Have them discuss how the balls are used in each sport. If needed, provide support with the descriptions. For example, soccer balls are used for kicking, basketballs are used for dribbling, footballs are used for throwing, and baseballs are used for hitting and catching. Model the actions as you explain.

Connect to Language Development

For ELLs, use the Differentiated Instruction chart to plan and prepare for specific activities in every session.



English Language Learners:
Differentiated Instruction

Prepare for Session 1
Use with *Try It*.

Levels 1–3

Listening/Speaking Provide children with counters to work on the *Try It* activity. Using the picture of the dot card for 6, have children place a counter on each dot as you count them aloud together. Ask: *How many dots are there?* Then pick up the 6 counters and model making a different arrangement. Count the counters in the new arrangement with children to confirm that there are 6. Continue with the arrangements for 7, 8, and 9.

Levels 2–4

Listening/Speaking Point to each dot card in *Try It* and count the dots aloud with children.
Partner children. Provide each pair with counters. Ask children to take turns counting each dot card aloud and showing the number with their counters. Model how to come up with a different arrangement for 6 counters and encourage them to do the same for 6 and then for the other numbers. If children need additional support, prompt them by asking: *How many dots are there? How many counters do you need? Does the number change when you make a different shape?*

Levels 3–5

Speaking/Writing Partner children for the *Try It* activity. Ask them to take turns telling how many dots there are in each card and counting out a matching number of counters. Have them write the number on a whiteboard.
Ask partners to make different arrangements of each number and to share their favorite arrangement with the class.

Purpose In this session children explore different arrangements to show numbers 6 to 9. They then use counters and frames to explore visual images of 10.

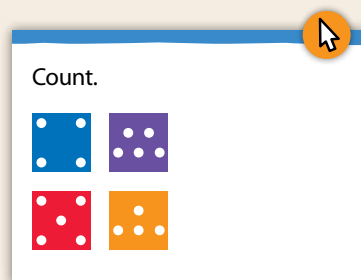
Start

Connect to Prior Knowledge

Materials For each child: copy of Start slide

Why A group can have the same number even when arranged differently. A familiar arrangement can help with counting and prepare children for counting larger groups to 10.

How Have children look at different colored cards with arrangements of dots. Have children describe how they are the same and how they are different.



Listen for The blue and orange cards both show 4 dots. The red and purple cards both show 5 dots. The blue and red cards both have dots in all the corners, but the red one has an extra dot in the middle. The purple and orange cards both have 3 dots along the bottom, but the purple card has an extra dot on top.

Try It

Materials For each child: 10 counters; For display: 9 paper plates, masking tape, Activity Sheet Dot Cards 2: Large

Review Numbers 1 to 5

Display dot cards for the numbers 1 to 5, out of order. Have children identify the number shown on each, and then have a volunteer direct you in reordering the cards to show them in order.

Ask How does the group of dots change as you go from 1 to 2 to 3 and so on?

Listen for There are more dots on the next card. The cards have 1 more dot each time.

Try It

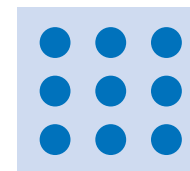
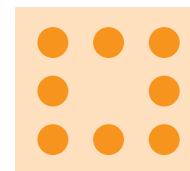
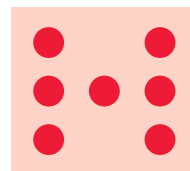
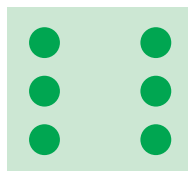
Check children's arrangement of counters.

Learning Target

Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

SMP 1, 2, 3, 4, 5, 6, 7

Math Toolkit
• counters



Have children form groups of 6, 7, 8, and 9. Review numbers 1 to 5 using dot cards, and then display the dot card for 6. Give 6 children paper plates and have them use the plates to make an arrangement of 6 on the floor. Repeat,

having other groups of 6 children make different arrangements. Then have children use counters to make arrangements of 6 on the workmat, counting to check that each arrangement shows 6. Repeat with 7, 8, and 9 counters.

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Lesson 6 Count and Write to 10

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Introduce 6

Place the dot card for 6 next to the dot card for 5. Elicit that 6 is the number that follows 5. Point to the number 6 dot card. Using masking tape, make a rectangle on the floor large enough to place 9 paper plates within it.

Ask How many plates are needed to show the number? How do you know?

Listen for You need 6 plates to show 6. 6 comes after 5. There are 6 dots, so you need 6 plates. You need 5 and another one because 6 comes after 5.

Have 6 children place a plate in the rectangle and stand on it.

Ask How many plates? How many children?

Listen for There are 6 plates and 6 children. The number of plates is the same as the number of children.

Ask If you arrange the plates in a different way, how many will there be? Why?

Listen for There will still be 6 plates because changing the way they are laid out does not change the number. The plates are only being moved around; no more have come and none have left, so there will still be 6.

Have children show another arrangement that shows 6.

Model 6 Using Counters

Give children 6 counters and have them make arrangements of 6 on the workmat, counting to check that each arrangement shows 6.

Ask Does your neighbor's arrangement look like yours?

Listen for Our arrangements are different, but we both count 6 counters. They do not look the same, but we have the same number of counters.

Ask When you make a different arrangement, how do you know you still have 6 counters?

Listen for I counted 6. Then I moved them and counted them again, and there are still 6. I have moved the counters, but I did not take any off the page and I did not put any more on, so there must still be 6.

Repeat with 7, 8, and 9 counters.

Common Misconception If children are counting a different number for the same group, **then** have them check that they are not missing any counters, skipping any numbers when they count, or counting an object more than once.

Connect It



Materials For each child: 10 counters

Introduce 10

Have children look at the 10-frame on the page. Explain that a 10-frame is like a 5-frame but it is used for showing numbers from 1 to 10. Have children place 5 counters in the left-hand column. Have them count the counters to check that there are 5.

Together, add 1 counter at a time to the frame, counting as you go, until you reach 9.

Ask *How do you know how many counters are in the frame and how many you need to fill it?*

Listen for I can count the counters and then the spaces. I know there are 9 counters because that is the last number I counted. I see 1 space, so I need 1 more counter to fill it.

Ask *When the frame is full, how do you know how many counters there are in all?*

Listen for I can count all the counters. I counted 9 and then there is only one more number to count and 10 comes after 9.

Have children place the tenth counter in the 10-frame. Together, count all the counters.

Support Whole Class Discussion

Have children move the counters from the 10-frame and place them on the edge (or the line) of the circle.

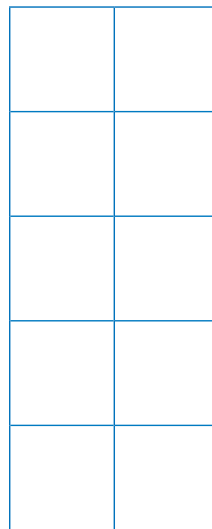
Ask *When you have moved all the counters from the frame to the circle, how many counters will be around the circle? Is it a different number? Why or why not?*

Listen for I counted 10 in the frame and I used all the counters, so there are 10 on the circle. When I move the counters, there are still 10.

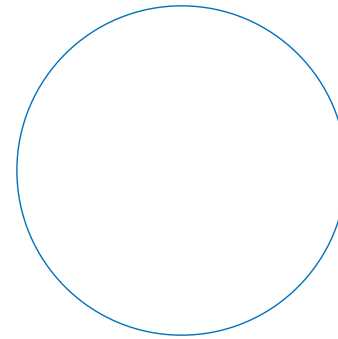
Ask *How can you count objects in a circle?*

Listen for I can keep my finger on the first counter I count and then count the counters around the circle and stop counting at my finger. I can mark the first counter I count. I can move the counters into the circle as I count them. I start at the top of the circle and then count all the way around.

Connect It



Children should place 10 counters first on the 10-frame and then around the circle.



Children explore visual images of 10. Children place 5 counters in a column of the 10-frame. Then they add counters one at a time to fill the frame,

counting to verify each time. Next, they move the counters to be around the edge of the circle. Ask: *How do you count objects in a circle?*

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Lesson 6 Count and Write to 10

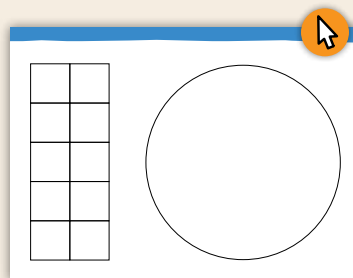
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Close: Exit Ticket



Materials For each child: 9 counters, copy of Close slide

Have children place their counters in the 10-frame and count how many they have. Then ask them to move their counters to the edge of the circle and say how many there are now.



Listen for I counted 9 in the frame and I used all the counters, so there are 9 on the circle. I have moved the counters across but did not lose any or put any more on, so there are still 9.

Common Misconception If children count a different number when the counters are in a circle, **then** remind them that they have not removed any counters or put more in the group. Have them check by moving each counter as they count it.



Real-World Connection

Encourage children to think about the real-world situations where people need to count up to 10 objects. Give them examples, such as counting coins, counting out cards in a game, cooking, or grouping children for teams.

Solutions

Support Vocabulary Development

This activity can be used to informally assess children's understanding of the skill of counting. Children can show what they know now. You can have them revise their thinking and revisit their responses once they have completed the lesson or unit.

If children need additional support, the following steps provide explicit instructions to guide them.

Point to the numeral 8 in the center of the organizer and have children underline it in their graphic organizer. Ask: *What do you know about this number?*

Write the word *eight* in one of the boxes and say: *The word eight is the same as the number 8.* Ask children to draw and write in their graphic organizer to show the meaning of the number 8. You may model an example by drawing eight shapes in one of the boxes. Encourage volunteers to share their drawings with the class.

Supplemental Math Vocabulary

- six
- ten


Name: _____

LESSON 6SESSION 1

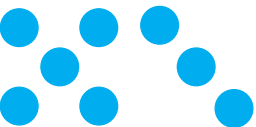
Prepare for Counting and Writing to 10

Possible answer:

Examples



Examples

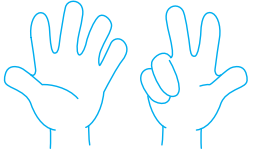


8

Examples

eight

Examples



Have children show the meaning of 8. Have children fill in each of the boxes to show the meaning of 8. Tell children that they can use words, numbers, and pictures. Encourage them to show as many ideas as they can.

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Lesson 6Count and Write to 10

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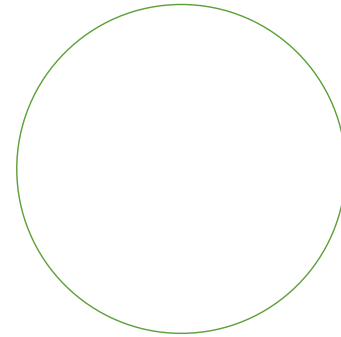
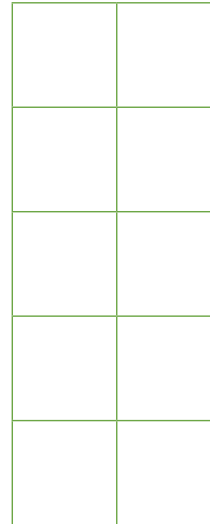
Building Fluency

Recognize numbers to 9.

Materials For display: Activity Sheet *Number Cards 0 to 10: Large*

Play Thumbs Up. Say a number 0–10 and hold up a number card, either correct or incorrect. Children put their thumbs up if it is correct and thumbs down if not. Continue showing numbers until the correct one is displayed. Repeat with other numbers to 10.

Children should place 8 small objects first on the 10-frame and then around the circle.



Children explore visual images of 8. Have children place 8 small objects on the 10-frame, one at a time, counting to verify each time.

Next, they move the objects to be around the edge of the circle. Ask: *How do you count objects in a circle?*

Solutions

Assign this problem to provide another look at counting to 8 and seeing that changing the arrangement of objects does not change how many there are.

This problem is very similar to the problem about placing 10 counters in a 10-frame and then placing the same 10 counters around a circle. In both problems, children are given counters. They are asked to place the counters in a 10-frame one at a time, counting to verify each time. They are then asked to place the counters around a circle.

Children may want to use counters or other small objects such as pennies.

- Make sure that children place 8 small objects first on the 10-frame and then around the circle.

Medium

ELL English Language Learners: Differentiated Instruction **Prepare for Session 2** Use with *Connect It*.

Levels 1–3

Listening/Speaking Using the top left square of *Connect It*, count the fish with children, modeling marking each fish as you count it in order to keep track. Ask: *How many fish?* Write the number next to the square. Encourage children to do the same with the rest of the squares on the page.

Then point to two squares that have the same number, for example, top right and bottom middle. Say: *8 and 8. These numbers match.* Model drawing a line between those two squares. Encourage children to continue the activity with the other squares.

Levels 2–4

Listening/Writing Start the *Connect It* activity by reminding children that you can say *one fish, two fishes* and also *one fish, two fish*. Ask children to count the number of objects in each square (fish or bubbles) and to write the total next to the square. Model counting one group of objects, marking each as you count in order to keep track.

Have partners compare the squares to see if they have the same number of objects. Provide the sentence frames to help children talk about their answers.

- *There are _____ fishes.*
- *There are _____ bubbles.*
- *These numbers match.*

Levels 3–5

Listening/Writing Pair children for the *Connect It* activity. Ask partners to count the number of objects in each square, marking each as they count in order to keep track and writing the number next to the square. Have partners take turns drawing lines to match the boxes that have the same number of objects. Provide a sentence frame to help them:

- *Both of these squares have _____ objects.*

Purpose In this session children describe groups of 6 to 10. They then match groups of objects with the same number in each.

Start

Develop Fluency

Why Reinforce subitizing numbers to 5 to help children become more fluent when counting groups.

How Cover 2 of the fish and encourage children to say how many are in the group without counting each one. Repeat, covering 4, 3, 1, and 0 fish.

How many?



Look for Children are able to accurately say how many are in each group without counting one at a time.

Develop Language

Why Help children understand *size* as the total number of objects in a group rather than how large an object is.

How Display a group of 8 objects and a group of 4 objects. Say: *Today we will compare the size of groups. To find out which group is bigger, we need to count to find out which group has more objects. Which group is bigger? Which is smaller? Why?*

Try It

Present the scene and engage children by having them describe the groups of objects they see.

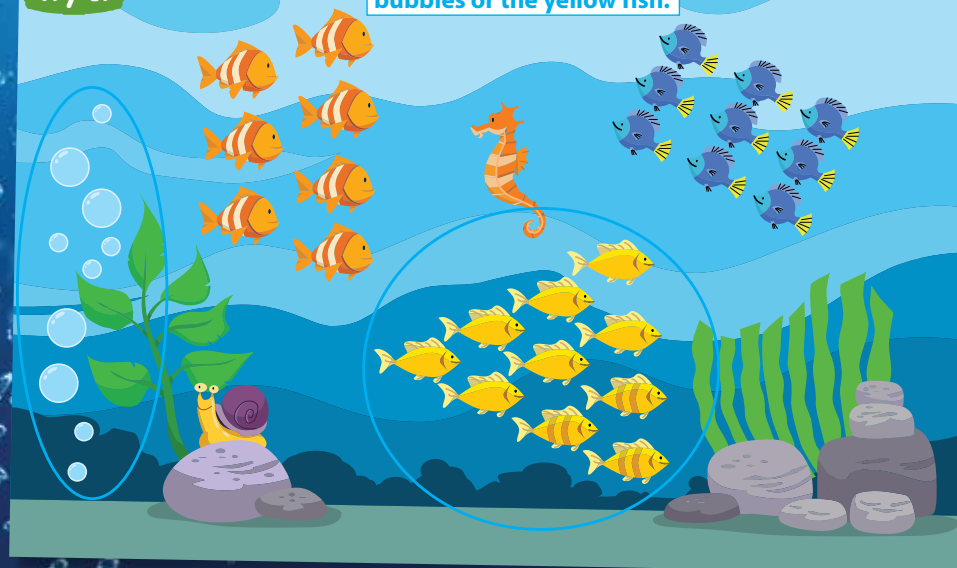
Ask When Kara looks at the bubbles, she counts a group of 6 objects. When Max looks at the bubbles, he counts a group of 10 objects. Who is correct?

Explain that Kara has counted the group of small bubbles and Max has counted the whole group of bubbles, big and small. This shows that even though their answers are different, they are both still correct.

Have children circle a group of 10 objects.

Try It

Children could circle the bubbles or the yellow fish.



Encourage children to describe groups of 6, 7, 8, 9, and 10 they find in the picture. Discuss other size groups as well and note number pairs for 10, such as 4 large bubbles and 6 small bubbles. Have children circle a group of 10.

Discuss It

Work with a partner. Can you find groups that have the same number? How can you tell?

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Lesson 6 Count and Write to 10

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Discuss It

Support Partner Discussion

Have children talk in pairs about the groups of objects they notice in the scene and how they are similar to and different from their partner's.

Support as needed with questions such as:

- Has your partner noticed anything different from you? Anything the same?
- Do you agree with what your partner has said? Why or why not?
- What is an interesting group of objects that either you or your partner noticed?

Common Misconception If children cannot identify a group to count, **then** have them think about the different objects they see and say which ones look the same. Have them look at the color of an object and then find other objects the same color.

Select and Sequence Solutions

Select children to present many different solutions. Choose children who identified groups such as:

- 9 blue fish, 7 orange fish
- 10 yellow fish, 10 bubbles
- 10 bubbles, 4 big bubbles, 6 small bubbles
- 10 striped fish, 7 orange and 3 yellow

Draw attention to the last two more creative types of groups.

Support Whole Class Discussion

Compare and connect children's solutions by having them share the groups they found.

Record and discuss the number of objects found in each group.

Ask How are some groups similar?

Listen for Some groups have the same number of objects. Some groups have the same type of objects, like yellow fish and blue fish. Some groups have other groups in them, like the big and small rocks or the striped and not striped yellow fish.

Ask How do you know how to describe a group of objects?

Listen for I say what they look like. I count how many there are. I say if they are big or small.

Connect It



Materials For each child: 10 counters

Support Whole Class Discussion

Explain to children that they will count the number of objects in each group and then match them to a group that shows the same number of objects.

Have children draw lines from each group to another group that has the same number of objects.

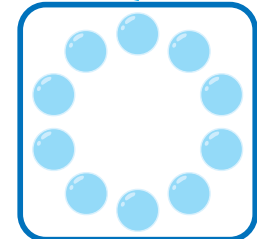
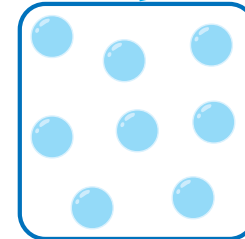
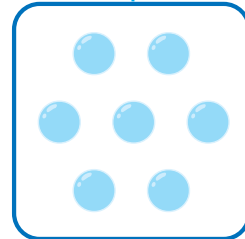
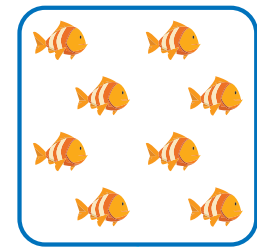
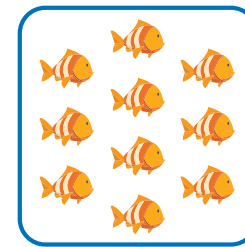
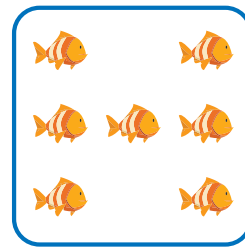
Ask How do you keep track of which objects you have counted?

Listen for I mark each object as I count it so I do not skip any or count any more than once. I touch each object as I count it. I cover each object with a counter after I count it.

Ask How do you know which groups to draw a line to?

Listen for When I count the objects in the group, I know how many are in the group, and I draw a line between two groups that have the same number of objects. When I count the same number in two groups, I draw a line to connect them.

Connect It



Have children count the number of objects in each group. Then have children draw lines to match groups that show the same number of objects.

Discuss It How did you keep track of which objects you counted?

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Lesson 6 Count and Write to 10

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Deepen Understanding Counting Precisely

SMP 6 Attend to precision.

In counting the groups on this page to identify those that match, children must attend to precision, being sure to count each object only once.

Ask How do you know you have counted accurately?

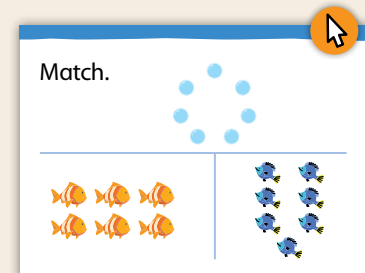
Listen for I touch each object as I count. I mark each object after I have counted it. I cover each object with a counter so I know I have counted it. I check by counting the group twice.

Generalize Prompt children to realize that there are different ways to ensure they have counted objects with precision and that the same strategy does not have to be used each time.

Close: Exit Ticket

Materials For each child: copy of Close slide

Have children count how many bubbles are in the group. Then have them draw a line to match the group of bubbles to a group of fish with the same number.



Solution A line is drawn from the bubbles to the blue fish because both groups have 7 objects.

Common Misconception If children count a number of bubbles other than 7, then have them check by placing counters on each bubble and then moving them as they count.

Solutions

Children's coloring should show the following:

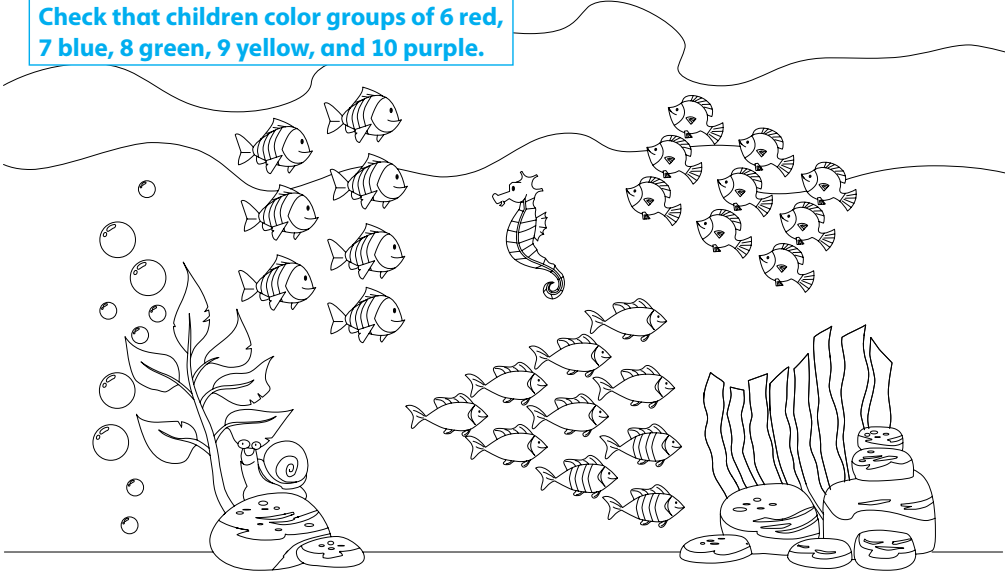
- groups of 6 red
- groups of 7 blue
- groups of 8 green
- groups of 9 yellow
- groups of 10 purple

Name: _____

LESSON 6 SESSION 2

Practice Counting and Writing to 10

Check that children color groups of 6 red, 7 blue, 8 green, 9 yellow, and 10 purple.



Have children count groups of 6, 7, 8, 9, and 10. Have children color groups of 6 red, groups of 7 blue, groups of 8 green, groups of 9 yellow, and groups of 10 purple.

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Lesson 6 Count and Write to 10

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Fluency Practice

Chant a counting rhyme.



Materials none, children use motions

- Use a familiar rhyme, a variation of a known one, or one you have made up with the children's help. For example: *One, two, buckle my shoe. Three, four, shut the door. Five, six, pick up sticks. Seven, eight, lay them straight. Nine, ten, pick 'em up again.*
- Invite children to do the actions as you chant.
- Repeat with alternative verses.

Write the numbers 6 and 7.

Materials For each child: Activity Sheet *Write 6, 7*

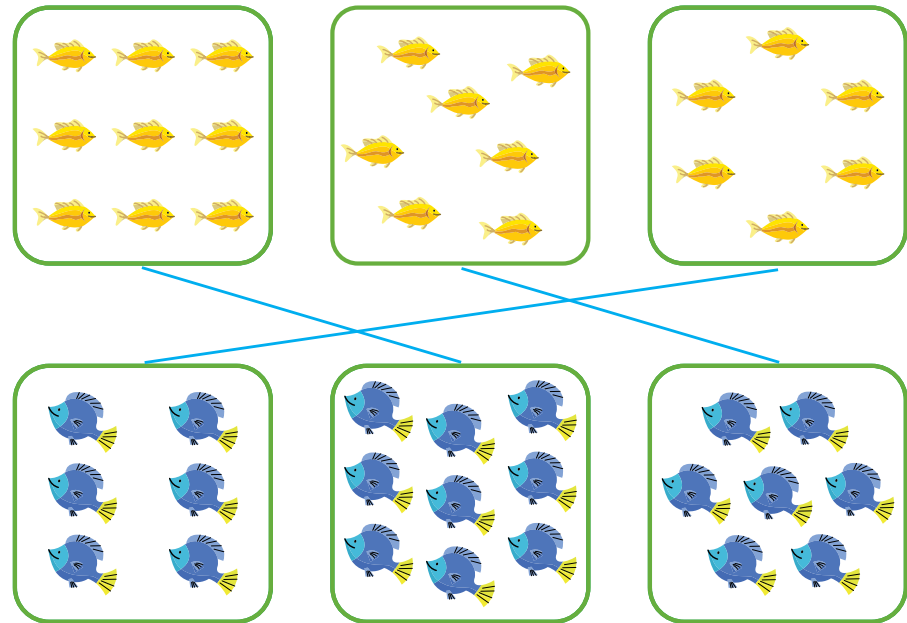
- Have children trace and then write the number 6 in the spaces provided.
- Repeat with the number 7. Use extra sheets for additional practice, as needed.

Solutions

Children match groups with the same number of fish by drawing lines.

- Groups of 9, 7, and 6 matched

Medium



Have children count the number of fish in each group. Then have children draw lines to match groups that show the same number of fish.



English Language Learners:
Differentiated Instruction

Prepare for Session 3
Use with *Try It*.

Levels 1–3

Listening/Speaking Provide children with counters for the *Try It* activity. Model flipping over a dot card, counting aloud the dots on the card, and then counting out a matching number of counters to place on the workmat. Take the counters off the mat and have children flip over another dot card and repeat the activity on their own. Help children count aloud if necessary.

Levels 2–4

Listening/Speaking Partner children for the *Try It* activity. Have partners take turns flipping over dot cards. One partner says or counts the number of dots on the card, and the other counts out a matching number of counters on the workmat. Provide a sentence frame to help them talk about the groups:

- The card has _____ dots.
- I put _____ counters on the mat.
- The numbers are the same.

Levels 3–5

Listening/Speaking Partner children for the *Try It* activity. Have one partner flip over a card and the other count out a matching number of counters on the workmat. The partner who flipped over the card checks the other partner's work. Provide sentence frames to facilitate discussion:

- The number of counters is/is not the same as the number of dots.
- We need to count again.

Purpose In this session children use objects to make groups of 6, 7, or 8. They then find the group that shows 6, 7, or 8.

Start

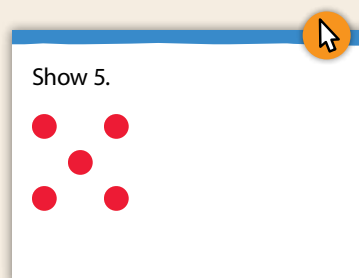


Connect to Prior Knowledge

Materials For each pair: 6 connecting cubes

Why Reinforce that a group of objects can have the same number even when arranged differently.

How Show the slide with the number 5, and have children arrange the cubes to show 5. Then ask them to show the number with the cubes arranged in a different way. Compare arrangements with other pairs.



Possible Solutions Children make a tower or a train of 5 connecting cubes. Children arrange the cubes in two rows, one line, or a circle.

Develop Language

Why Help children understand the use of the word *check* when reviewing the answers to math problems.

How Say: To “check” something is to make sure that it is right. Provide children with 10 objects. Say: Please check the objects to make sure that you have 10.

When they finish, ask: Do you have 10? What did you do to check? [count]

Try It



Materials For each child: 10 counters, Activity Sheet *Dot Cards 2: Small*, cards for 6, 7, and 8 only

Explain to children that they will use their counters to make groups of 6, 7, or 8 objects. Have them place the dot cards facedown, then turn one over and show that many counters on the workmat. Repeat with the other dot cards.

Try It



Math Toolkit

- counters
- dot cards (6–8)

Check children's work.



Have children use counters to make groups of 6, 7, or 8. Give children 10 counters and a set of dot cards for 6, 7, and 8. Children place the dot cards facedown and then turn one over and show that many counters on the workmat. Repeat.

Discuss It

How do you know you have the correct number of counters?

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Lesson 6 Count and Write to 10

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Support Partner Discussion

Have children talk in pairs about how they know when they have a group of 6, 7, or 8. Support as needed with questions such as:

- Can you explain why you did it that way?
- Can you think of another way to tell how many are in the group?

Common Misconception If children are unsure how to arrange the counters so that they can count accurately, **then** have them start with an arrangement in a line and count from one end to the other.

Select and Sequence Solutions

Select children to present their arrangements of the different groups of counters. Choose children who chose to:

- place counters in a line and count from one end to the other
- place counters in a circle, start at the top, and count around the circle
- place counters in rows and count along each row
- place counters in a scattered group but move each into another group as it is counted

Discuss It

Support Whole Class Discussion

Compare children's arrangements and methods for accurately counting the groups.

Ask How do you know what number the dot card shows?

Listen for I count the dots. I know the pattern.

Ask How do you know you have the correct number of counters?

Listen for I place the counters on the workmat one at a time and count as I do it. I move the counters as I count them. I place the counters in a line so I can count them from one end to the other.



Visual Model

Use 10-frames to count to 10.

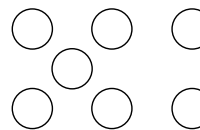
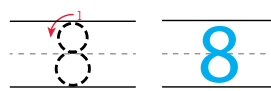
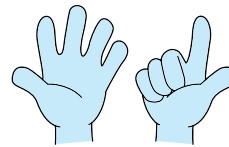
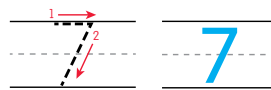
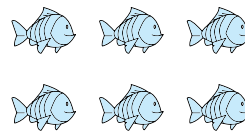
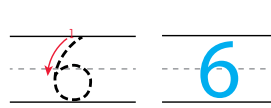
If . . . children are unsure about which number is next when counting groups of objects up to 10

Then . . . use the activity below to reinforce the sequential order when counting.

Materials For each child: 10 counters, Activity Sheet 10-Frames

- Have children place a counter on each square of the 10-frame, counting as they place them. Encourage children to begin in the top left corner and fill the top row first before starting at the bottom left corner and filling the bottom row.
- Then have children remove one counter at a time and replace it with a drawing, counting as they remove each one.

Connect It



Ask children to find the group that shows 6, 7, or 8. Have children read the number at the beginning of each problem. Then have them trace and write the numeral. Have children color the group with the correct number of objects.

Discuss It How did you decide which group of circles to color? What are different ways you could count the group of 8 circles?

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Lesson 6 Count and Write to 10

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Connect It

Support Whole Class Discussion

For each problem, have children trace and write the numeral and then color the group that has that many objects. When all three problems have been completed, have several children share their answers and thinking.

Ask How did you decide which group of circles to color?

Listen for I counted a group of 7 circles and a group of 8 circles, so I colored the group of 8 circles to match the number.

Ask What are different ways you could count the group of 8 circles?

Listen for Children may recognize the first part of the group of circles as 5 from dot cubes and dot cards. They can then count on two more and three more to find groups of 7 and 8.

Deepen Understanding Counting Groups of Objects

SMP 7 Use structure.

When all problems have been discussed, challenge children to think about how the structure of the groups can help with counting.

Ask Did you have to count both groups in each problem to know how many there were?

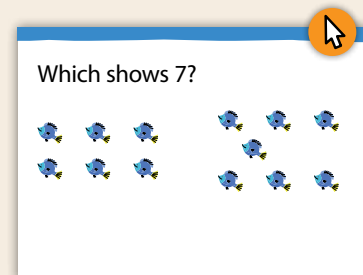
Listen for The fish looked like the dots on the dot cards, so I knew they were 6 and 5. The first group of fingers was holding up one more than the other group, so I knew that there were not as many in the second group. In the first group of circles I saw 5, and I counted on the two other circles and found 7 circles. The second group of circles had one more circle, and I know that the number that comes after 7 is 8, so there must be 8 circles.

Generalize Prompt children to identify that there are different ways to use the structure of counting to find how many are in a group.

Close: Exit Ticket

Materials For each child: copy of Close slide

Have children choose which group of fish shows 7 fish.



Look for Children may recognize the group of 6 without counting and see that the other group has 1 more and so is a group of 7.

Common Misconception If children do not accurately count how many fish are on the slide, **then** have them mark the fish as they count them. Marking the fish helps children avoid skipping any or counting any more than once.

Solutions

For each problem, children:

- trace and then write the numeral
- color the group that has that number of objects

Example

Numeral 8 traced and written, and group of 8 circles colored

Basic

Problems

- Numeral 6 traced and written, and group of 6 fingers colored

Medium

- Numeral 7 traced and written, and group of 7 snails colored

Medium

Name: _____

LESSON 6SESSION 3

Practice Counting and Writing to 10

Example

8

6

7

Have children practice writing 6, 7, and 8 and counting 6, 7, and 8 objects. Ask children to trace and then write the numeral at the beginning of each problem. Then have children color the group with that number of objects.

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Lesson 6 Count and Write to 10

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Fluency & Skills Practice

Teacher Toolbox

Assign Counting and Writing to 8

In this activity children write numbers to 8 and identify groups with each number of objects. There are many real-world situations in which children can count and write numbers to 8. For example, children may want to help put a certain number of candles on a birthday cake, draw a picture with a certain number of trees, or describe how many fish are in an aquarium.

Fluency and Skills Practice

Counting and Writing to 8

Name _____

Example

7

8

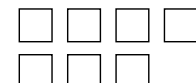
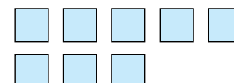
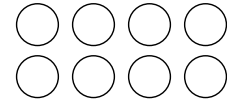
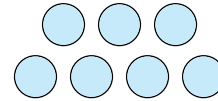
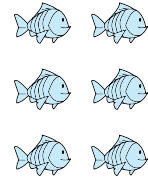
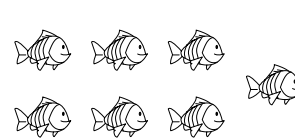
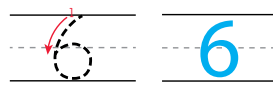
6

Have children practice writing 6, 7, and 8 and counting 6, 7, and 8 objects. Ask children to trace and then write the numeral at the beginning of each problem. Then have children color the group with that number of objects.

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Solutions

- Numeral 6 traced and written, and group of 6 fish colored
Medium
- Numeral 7 traced and written, and group of 7 circles colored
Medium
- Numeral 8 traced and written, and group of 8 squares colored
Medium



Have children practice writing 6, 7, and 8 and counting 6, 7, and 8 objects.
Ask children to trace and then write the numeral at the beginning of each problem. Then have children color the group with that number of objects.



English Language Learners: Differentiated Instruction

Prepare for Session 4 Use with *Apply It*.

Levels 1–3

Listening/Speaking Have children point to the number 9 on the second page of *Apply It*. Ask children to trace the number as you say it aloud with them. Ask children to count 9 squares in the figure at the right. Count aloud with them if necessary. Say: *Color 9 squares*. Follow a similar process with the second problem. For the last problem, say: *Now you draw 10 things*.

Levels 2–4

Listening/Speaking Have children point to the number 9 on the second page of *Apply It*. Ask children to trace the number as you say it aloud with them. Say: *Color any 9 squares in this figure*. Follow a similar process with the second problem. For the last problem, say: *Draw 10 things, any 10 things you like*.

Levels 3–5

Listening/Speaking Have children write each numeral on the second page of *Apply It*. For the first two problems, say: *Color that number of squares [or circles]*. For the last problem, say: *Now draw 10 things, to represent the number 10*. Have children work with a partner to check each other's work. Encourage discussion between partners.

LESSON 6

SESSION 4 **Refine**

Purpose In this session children work with the numbers 9 and 10 in different ways. They count 9 or 10 counters, color 9 or 10 objects, and write the numerals 9 and 10.

Start


Connect to Prior Knowledge

Materials For each pair: 10 connecting cubes

Why Practice counting and recognizing 8 objects so children can later build upon this experience to count 9 and 10.

How Have children arrange a group of 8 connecting cubes. Then ask them to show a group of 8 with the cubes arranged in a different way. Compare arrangements with other pairs of children.

Count 8.



Look for Children could make a tower of 8, two rows of 4, 4 rows of 2, a circle of 8 cubes, or a line of 8 cubes.

Apply It

Materials For each pair: 20 counters

For the first page, explain to children that they will count 9 and 10 counters and then a partner will check their work.

Have children work in pairs. One child counts out 9 counters. The second child checks by placing the counters on the 10-frame. When children have agreed that 9 counters are shown, ask them to switch roles and repeat.

Repeat with counting out 10 counters.


LESSON 6

SESSION 4 ● ● ● ● ●

Refine Counting and Writing to 10

Apply It Check that children count out groups of 9 or 10 accurately.

Math Toolkit
• counters



Have children count 9 or 10 counters. Give pairs of children a cup of 20 counters. Have one child count out 9 counters and the second child check by placing the counters on the 10-frame. Children then switch roles. Repeat with counting out 10 counters.

Discuss It How does the 10-frame help you check that you have counted the correct number?

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Lesson 6 Count and Write to 10

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Discuss It

Support Whole Class Discussion

Ask children to share their work. Discuss how they approached the task, how they checked their work, and how they came to agree that the correct number of counters was showing.

Ask How did you keep track of the counters as you counted them?

Listen for I moved each counter to a new place so I did not count it twice. I touched each counter so I did not miss any. I put them in a line so they were easier to count.

Encourage children to think about whether they would like to try any of the other ways of counting that they heard the next time they count objects.

Ask If you put the 9 counters in different places on the 10-frame, would there still be 9 counters? How do you know?

Listen for Yes. I am still using the same counters, so the number will not change. I have not used any more counters or moved any counters away.

Ask How does the 10-frame help you check that you have counted the correct number?

Listen for The 10-frame makes it easier to count the counters because I can count the ones at the top and then the ones at the bottom. The 10-frame fits 10 counters, so if it is full I know I have 10.

For the problems on the second page, tell children they will continue to think about 9 and 10.

For each problem, have children trace and write the numeral and then color or draw that number of objects.

Note that, in the first two problems, children may color any 9 or 10 objects.

Support Whole Class Discussion

Discuss how the numbers can be represented.

Ask *Work with a partner. How did your partner draw 10? How can you check that you both drew 10 objects correctly?*


Listen for Responses may include descriptions of arrangements, such as in a long line or in pairs. To check, children may suggest counting against a standard, such as the fingers on their hands, making sure there is 1 object drawn for each finger.

Close: Exit Ticket

Check for Understanding

Materials For each child: 15 counters; For remediation: 15 crayons, Activity Sheet 10-Frames

Ask children to count out 10 counters and explain how they know there are 10.



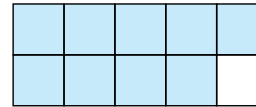
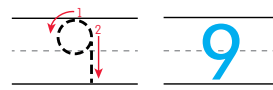
Show 10.

●	●	●	●	●
●	●	●	●	●

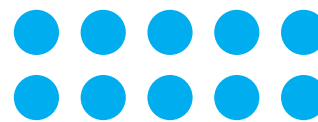
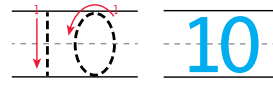
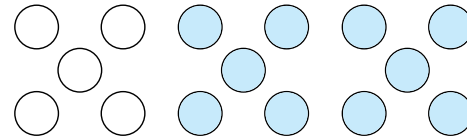
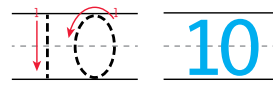
Solution Children display 10 counters.

Error Alert For children who are still struggling, use the chart to the right to guide remediation.

After providing remediation, check children's understanding by asking them to count out 10 crayons.



Pictures will vary. Check that children have colored 9 squares and 10 dots.



Pictures will vary. Check that children have drawn 10 objects. Possible answer shown.

Ask children to trace and write the numerals 9 and 10 and then color 9 or 10 objects. Note that they may choose to color any 9 or 10 of the objects in the groups. In the last problem, have children trace and write 10 and then draw 10 shapes or objects.

Discuss It Work with a partner. How did your partner draw 10? How can you check that you both drew 10 objects correctly?

Error Alert

If the error is ...	Children may ...	To support understanding ...
displaying 8 counters or more than 11 counters	not understand 10 as naming a specific quantity.	Ask children to place 1 counter on any square of a 10-frame. Ask: <i>Are there 10 counters? How many counters are there?</i> Have them place another counter on the frame. Then repeat the questions. Continue, having children place 1 counter at a time until the frame is filled. Then ask them to display 10 counters.
	have miscounted.	Provide additional practice counting sets of up to 10 objects.
displaying 9 or 11 counters	have miscounted.	Ask children to count the counters they displayed. If they struggle with counting, see the first row of the chart. If they correct themselves, provide additional practice counting sets of 1 to 10 objects.

Solutions

On the first page, children:

- trace the numeral
- write the numeral
- color objects to match the number

On the second page, children:

- trace and write the numeral 9 and then color 9 objects
- trace and write the numeral 10 and then draw 10 objects

Example

Numeral 10 traced and written, and any
10 fish colored

Basic

Problems

- Numeral 9 traced and written, and any 9 sea stars colored

Medium

- Numeral 10 traced and written, and any 10 dolphins colored

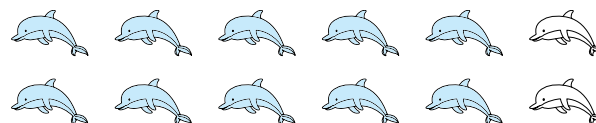
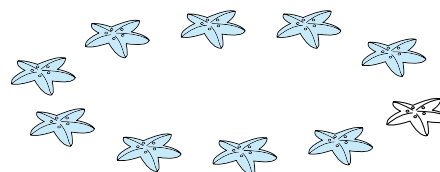
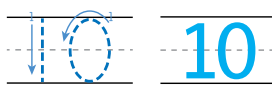
Medium

Name: _____

Practice Counting and Writing to 10

Example

Coloring will vary. Children can color any 9 or 10 objects.



Have children practice writing 9 and 10 and counting out 9 or 10 objects.
Ask children to trace and write the numeral 9 or 10. Then have children color that number of objects.

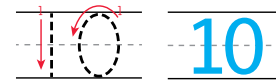
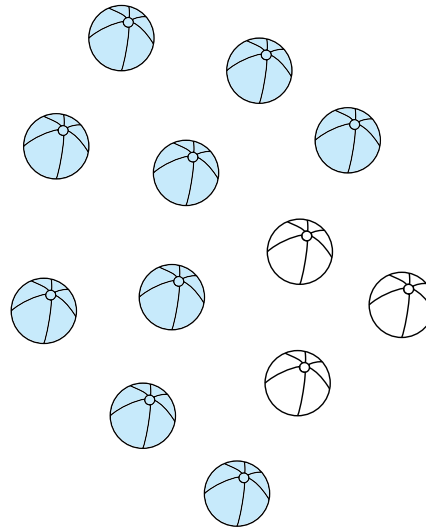
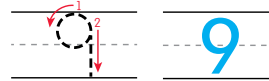
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Lesson 6 Count and Write to 10

Pictures will vary. On the left, children can color any 9 objects. On the right, make sure the drawing shows 10 objects.

Solutions

- Numeral 9 traced and written, and any 9 balls colored
Medium
- Numeral 10 traced and written, and any 10 objects drawn
Challenge



Have children trace and write the numerals 9 and 10, count and color 9 objects, and then draw 10 objects. On the left, have children trace and

write the numeral 9 and then color 9 objects. On the right, ask children to trace and write the numeral 10 and then draw a picture to show 10 objects.

LESSON 6

SESSION 5 **Refine**

Purpose In this session children practice counting to 10 by finding a missing number in the sequence and coloring objects.

Start

Connect to Prior Knowledge

Why Reinforce the order of number names when counting to 10.

How Starting with 1, count together as a class to 10, pointing to each number as it is counted.



Listen for Children say every number name in order from 1 to 10. Listen for any skipped or muddled numbers.

Apply It



Materials For each pair: 10 counters

Tell children they will look at the numbers 1 to 10 and figure out which of the numbers is missing.

For the first page, have children work in pairs. One child covers one of the numbers. The other child figures out which number is covered and shows it with counters on the 10-frame.

When looking at the counters, pairs should discuss and agree that the number of counters matches the missing number the first child covered.

Repeat so each child gets at least one turn in each role.

For the second page, have children count the fishbowls and circle the number that tells how many and then color 1 fish for each bowl.

Discuss It

Support Whole Class Discussion

When children have finished the first page, discuss how they figured out the numbers and how they modeled them.

LESSON 6

Refine Counting and Writing to 10

SESSION 5 • • • • •

Apply It

Check that children identify the missing number and model it accurately with counters.

Math Toolkit
• counters

1 2 3 4 5 6 7 8 9 10



Have children find a missing number from the 1 to 10 sequence. Have children work in pairs. One child covers one of the numbers. The other child figures out which number is covered and shows it with counters on the 10-frame.

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Discuss It How did you find the missing number?

Lesson 6 Count and Write to 10

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Ask How did you find the missing number?

Listen for I counted from 1 so I knew which number to say for the missing number. I looked at the number before the missing number so I knew which number came next. I know where that number comes when I count to 10, so I knew it was the missing one.

When children have finished the second page, invite them to share the number of bowls and which fish they colored.

Ask How is the set of fishbowls like a 10-frame? How is it different?

Listen for Children connect the 10 squares in a 10-frame to the total of 10 fishbowls. They should see similarities in the organization of the objects in two rows of 5.

They may mention there are objects rather than blank spaces.

Ask Work with a partner. Did you color the same fish as your partner?

Listen for Children should conclude that they can color any 10 fish and that different ways of coloring can still be correct.

Ask How many fish do not have a bowl? How do you know?

Listen for There are 2 fish that do not have a bowl. I colored 1 fish for each bowl, and there are 2 left that I did not color. There are only 10 bowls, so only 10 fish can get a bowl.

Differentiated Instruction

PERSONALIZE



Provide children with opportunities to work on their personalized instruction path with *i-Ready* Online Instruction to:

- fill prerequisite gaps
- build up grade-level skills

Close: Exit Ticket

Math Journal

Materials For each child: 12 counters, copy of Close slide

Have children count out 10 counters and then place them into the 10-frame. Then tell children to remove the counters one by one and replace them with a dot. Finally, have children write the numeral 10 next to the frame.

Count and draw 10.

Solution Children count 10 counters to fill the 10-frame, draw 10 dots, and write the numeral 10.

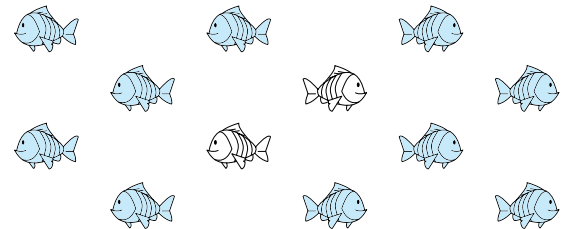
Error Alert If children write 01 instead of 10, then remind them to start from the left, just like when they write words. Tell them that it is important to write the numerals in the correct order; otherwise, the numerals will tell a different number.



Coloring will vary. Children can color any 10 fish.

How many  ? 8 9 **10**

Color 1  for each .



Have children count the fishbowls and circle the number that tells how many and then color 1 fish for each bowl. Allow children to find their own strategies to figure out how many fish and which ones to color.

Discuss It Work with a partner. Did you color the same fish as your partner? How many fish do not have a bowl?

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Lesson 6 Count and Write to 10

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RETEACH

Hands-On Activity

Match representations of 6, 7, 8, 9, and 10.

Children struggling to understand how the numbers represent quantities

Will benefit from additional work representing numbers

Materials For each child: Activity Sheet *Number Cards 0 to 10: Small*, cards for 6–10 only, Activity Sheet *Dot Cards 1: Small*, cards for 6–10 only

- Have each pair mix up the number cards and the dot cards for numbers 6–10 and spread them out on the table, facedown.
- Partners take turns turning over 2 cards. If the cards show a digit and dot match, the player wins the pair and the other player takes a turn. If the cards do not match, they are turned facedown and the other player takes a turn.
- Play continues until all 5 pairs have been found. If time permits, shuffle the cards and play again.

EXTEND

Challenge Activity

Make a path of 10.

Children who have achieved proficiency in counting to 10

Will benefit from deepening understanding of counting objects in any order

- On the board, draw 10 dots arranged in a pyramid. Say that the dots show stepping stones across a pond. Together, count to confirm the drawing shows 10 stones. Ask: *Suppose you want to cross the pond from one side to the other, stepping on each stone once. Could you do it? How?*
- Allow children time to plan. Then invite a volunteer to show an answer on the board, counting each stone to verify.
- Challenge children to find different paths. Ask volunteers to show and describe their paths.

Lesson Objectives

Content Objectives

- Identify whether the number of objects (to 10) in one group is greater than, less than, or equal to the number in another group.
- Read and compare two written numbers from 1 to 10 without objects.

Language Objectives

- Draw lines to determine if one group has more, fewer, or the same number of objects as another group.
- Circle the number that represents more (or less) than another number (up to 10).
- Use 10-frames and counters to compare numbers to 10.
- Use the key mathematical terms *more*, *greater*, *fewer*, *less*, *the same*, and *equal to* to make oral comparison statements.

Prerequisite Skills

- Count up to 10 objects.
- Read and recognize the numbers 0 through 10.
- Identify whether the number of objects (to 5) in one group is greater than, less than, or equal to the number in another group.
- Compare two written numbers from 1 to 5 without objects.

Standards for Mathematical Practice (SMP)

SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the *Try-Discuss-Connect* routine.*

In addition, this lesson particularly emphasizes the following SMPs:

- 2** Reason abstractly and quantitatively.
- 5** Use appropriate tools strategically.
- 8** Look for and express regularity in repeated reasoning.

*See page 1i to see how every lesson includes these SMPs.

Lesson Vocabulary

There is no new vocabulary. Review the following key terms.

- **compare numbers** to decide if one number is greater than, less than, or equal to another number.
- **equal** the same value, same size, or same amount.
- **less, less than, fewer, fewer than** the group or number with fewer, not as much, not as many.
- **more, more than, greater, greater than** the greater number, quantity, or amount.

Learning Progression

In Kindergarten children learn to compare sets of objects and numerals. They understand that quantities grow as they count.



In this lesson children compare quantities up to 10 represented concretely, pictorially, and numerically. Comparing quantities and numbers reinforces the idea that greater numbers represent increasingly larger sets. Initially, children compare the sizes of two sets by matching each object in one set with one object from the other set. Then, when the sets are not in the same place, children can count how many are in each set and then compare the numbers.

In Grade 1 children will build on this understanding of comparison to compare two-digit numbers. For example, knowing that 6 is greater than 4 helps them understand that 26 is greater than 24, and that 60 is greater than 40.

Lesson Pacing Guide

Teacher Toolbox 

Whole Class Instruction

SESSION 1 Explore 45–60 min	Comparing Within 10 <ul style="list-style-type: none">Start 5 minTry It 20 minConnect It 15 minClose: Exit Ticket 5 min	Additional Practice Lesson pages 145–146 Building Fluency Use throughout lesson
SESSION 2 Develop 45–60 min	Comparing Within 10 <ul style="list-style-type: none">Start 5 minTry It 5 minDiscuss It 15 minConnect It 15 minClose: Exit Ticket 5 min	Additional Practice Lesson pages 149–150 Fluency Practice Write the Numbers 8, 9, and 10 Compare Numbers to 5
SESSION 3 Develop 45–60 min	Comparing Within 10 <ul style="list-style-type: none">Start 5 minTry It 10 minDiscuss It 10 minConnect It 15 minClose: Exit Ticket 5 min	Additional Practice Lesson pages 153–154 Fluency  Comparing Within 10
SESSION 4 Refine 45–60 min	Comparing Within 10 <ul style="list-style-type: none">Start 5 minApply It 10 minDiscuss It 25 minClose: Exit Ticket 5 min	Additional Practice Lesson pages 157–158
SESSION 5 Refine 45–60 min	Comparing Within 10 <ul style="list-style-type: none">Start 5 minApply It 10 minDiscuss It 5 minSmall Group Differentiation 20 minClose: Exit Ticket 5 min	Lesson Quiz  or Digital Comprehension Check

Small Group Differentiation

RETEACH

Tools for Instruction

Grade K

- Lesson 8 Compare Within 10

REINFORCE

Math Center Activities

Grade K

- Lesson 8 Which Group Is More?
- Lesson 8 Count and Compare
- Lesson 8 Which Is More?
- Lesson 8 Compare and Color

EXTEND

Enrichment Activity

Grade K

- Lesson 8 Comparing Grapes

 i-Ready

Independent Learning

PERSONALIZE

i-Ready Lesson*

Grade K

- Compare Numbers Within 10

Learning Games


- Hungry Guppy
- Zoom
- Bounce

Lesson Materials


Lesson (Required) Per child: 20 counters, copy of Start slide (Session 2), copy of Close slide (Sessions 1–2, Session 5)

Per pair: 20 counters, 2 number cubes labeled 5–10, 7 crayons

For display: 13 crayons

Activity Sheet:  10-Frames**

Activities Per pair: 6 counters, 7 connecting cubes, 6 similar small objects (such as bear counters)

Activity Sheets:  Write 8, 9, 10; Number Cards 0 to 10: Large**, Number Cards 0 to 10: Small, Dot Cards 1: Large

Math Toolkit counters, number cubes (labeled 5–10), crayons, 10-frames

Digital Math Counters and Connecting Cubes

Tool 

**Used for more than one activity.

*We continually update the Interactive Tutorials. Check the Teacher Toolbox for the most up-to-date offerings for this lesson.

Connect to Family, Community, and Language Development

The following activities and instructional supports provide opportunities to foster school, family, and community involvement and partnerships.

Connect to Family

Use the **Family Letter**—which provides background information, math vocabulary, and an activity—to keep families apprised of what their child is learning and to encourage family involvement.

Goal

The goal of the Family Letter is to explain the different strategies that can be used to compare numbers.

- Comparing groups of objects helps children determine whether one group has more or less.

Activity

Understanding how to compare numbers will help prepare children for subtraction. Look at the *Comparing Within 10* activity and adjust it if necessary to connect with children.

Math Talk at Home

Encourage children to work with a family member to collect 10 small objects from around the house, such as buttons, and put them on a plate. Then have them collect 10 more objects, such as beans, and put them on another plate.

Conversation Starters Below are additional conversation starters children can write in their Family Letter or math journal, with your guidance, to engage family members:

- *If we take 4 beans away, how many beans do we have? Which group has more?*
- *What happens if we take 5 buttons off the plate? Do we have more buttons or beans?*

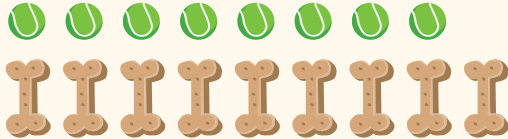
Available in Spanish
Teacher Toolbox

Compare Within 10

Dear Family,

This week your child is learning to compare within 10.


The lesson includes comparing groups of up to 10 objects to find which group has more and which group has fewer. There are many strategies that can be used in comparing. When comparing objects in a picture, you can draw lines between the objects in the two groups or cross out pairs of objects (one from each group) until one group has no more objects to cross out. If comparing actual objects, you may line them up in two rows to see which group has more and which has fewer.



As your child begins to think more abstractly, he or she will start to recognize that 7 is more than 4, no matter what objects are being counted or how they are arranged.

Comparing groups of objects will help prepare your child for solving subtraction problems that involve finding how many more or how many fewer objects are in one group than another.

Invite your child to share what he or she knows about comparing within 10 by doing the following activity together.



LESSON 8

Lesson 8 Compare Within 10

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Activity Comparing Within 10

Do this activity with your child to explore comparing within 10.

Materials 20 small objects of 2 different kinds (such as 10 crackers and 10 pretzels, or 10 buttons and 10 paper clips), 2 bowls

- Place 10 objects of one kind in a bowl for your child. Place 10 objects of another kind in a bowl for yourself.
- You and your child each take a handful of objects and place them on the table. Your child compares the groups of objects using any strategy he or she prefers and says which group has more. For example, if there are 8 crackers and 3 pretzels, your child should say: *8 is more than 3*. (Sometimes the groups will have the same number of objects. If that is the case, add objects to or remove objects from your group.)
- Return the objects to the bowls and repeat the activity several times.
- Now tell your child you are going to compare the groups to see which has fewer. For example, if there are 8 crackers and 3 pretzels, your child should say: *3 is less than 8*.



In addition to doing the above activity, encourage your child to compare numbers of objects in his or her daily life. For example, ask your child to compare numbers of buttons and pockets, cups and plates, or swings and slides.

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Lesson 8 Compare Within 10

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Connect to Community and Cultural Responsiveness

Use these activities to connect with and leverage the diverse backgrounds and experiences of all children.

Session 2 Use with *Try It*.

- Ask children if they have ever been to a pet store. For children who are not familiar with pet stores, explain that these stores sell animals that people can buy to bring home. Other places give pets away for adoption. In these stores people don't have to pay to get the pets. Have children talk about the pets they have or have seen. Encourage them to say the names of pets they own or names they would use to name a pet. Expand the conversation to talk about objects that pets may need and that stores may sell, such as collars, leashes, treats, bones, balls, bowls, and food. Partner children to talk about how to take care of a pet. Encourage children to use numbers in their conversations. Prompt their discussions by asking: *What does your pet eat? Where do you put the food? Where do you put the water? How many bowls does a pet need? Do you walk your pet outside? What do you need to walk your pet? How many treats does your pet get?*

Sessions 3 and 4 Use anytime during the sessions.

- In these sessions, children will be comparing groups of items. Some of these items are shapes. Encourage a conversation about shapes by asking children to brainstorm names of shapes they know. Write the words on the board and encourage children to talk about places where they see these shapes at school, at home, or in their neighborhood. Ask: *Where do you see (circle, triangle, square, etc.)? What is an object that is shaped like a (circle, triangle, square, etc.)?* If time allows, have children play in small groups. Each group gets the name of a shape. The group needs to find objects that have that shape. The groups count the objects and say the number.

Connect to Language Development

For ELLs, use the Differentiated Instruction chart to plan and prepare for specific activities in every session.



English Language Learners:
Differentiated Instruction

Prepare for Session 1
Use with *Connect It*.

Levels 1–3

Listening/Speaking Use with *Connect It*. Hold up 6 crayons in one hand and count them aloud with children. Ask: *Are there 6 crayons?* [Yes] Hold up 7 crayons in the other hand and count them aloud with children. Ask: *Are there 7 crayons?* [Yes] *Is 7 more than 6?* [Yes] Provide children with 6 counters. Have them point to each counter as you count them aloud together. Ask: *How many counters are there?* [6] Show them 7 counters and count them aloud together. Ask: *How many counters are there?* [7] Have children compare the groups. Say: *Point to the group that has more counters.*

Levels 2–4

Speaking/Writing Group children in triads to complete *Connect It*. Give each group counters and number cards 5–7. Have children take turns selecting a number card, stating the number, and counting out the correct number of counters. When each child has counted a group of counters, choose two groups to compare. Ask: *How can you tell which group has more?* Allow wait time and then have children work with their group members to name the steps used for comparing two groups. Encourage them to use the sequencing words *first* and *next* to express the steps in order.

Levels 3–5

Speaking/Writing Pair children up to compare groups of 5, 6, and 7 counters in *Connect It*. Ask: *How can you tell which group has more?* Allow wait time and then have children work with their group members to name the steps used for comparing two groups. Give each pair a list of terms they should use in their explanations: *first*, *next*, *more*. Have children put a check mark next to each word as they use it.

Purpose In this session children compare groups of 6 and 7 and discuss how to identify the group that has more. Then children compare groups of counters to see which has more.


Start

Connect to Prior Knowledge

Why Reinforce comparing two quantities and using comparative language.

How Have children look at the two groups of dots and say how many are in each group. Then ask children which group has more dots.

Which has more?



Possible Solutions 4 dots and 2 dots. The group of red dots has more. 4 dots is more than 2 dots. 4 is greater than 2, so the group of red dots has more.

Try It

Materials For each child: 13 counters; For each pair: 7 crayons; For display: 13 crayons

Review Numbers 1 to 5

Pair children. Give one child of the pair 3 crayons and the other 4 crayons.

Ask How can you compare the two groups of crayons to find out who has more?

Listen for Match the crayons one-to-one and see who has crayons left over; that person has more. Count them at the same time, and the person who counts more numbers has more crayons.

Try It

Check children's comparisons.

Learning Target

• Compare two numbers between 1 and 10 presented as written numerals.
SMP 1, 2, 3, 4, 5, 6, 8



Math Toolkit

- counters
- crayons

Children compare groups of 6 and 7 crayons and discuss how to identify the group that has more. Invite two children to the front of the class and give one child 6 crayons and the other 7 crayons. Ask: Which child

has more crayons? How do you know? Then have children use counters to model the problem and discuss how they can compare the number of counters without counting.

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Lesson 8 Compare Within 10

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Introduce Comparing Within 10

Invite two children to the front of the class. Give one child 6 crayons and the other child 7 crayons.

Ask Who has more crayons? How do you know?

Listen for You can match the crayons; the group that has crayons that do not have a partner has more than the other group. You can count the crayons; the group that takes more numbers to count has more. The group that has a number that comes after the other number when you count has more.

Ask What is the same about comparing these groups and how you have compared groups before? What is different? Why?

Listen for I can match the groups or count them like I can with the groups to 5. I do the same thing but just with more crayons.

Ask How do you know if you have the same number of crayons?

Listen for You get the same number when you count. Each crayon has a partner.

Model the Problem

Have children use counters and the workmat on the page to model and solve the problem. Have them use each side to represent the two groups they are comparing.

Ask How can you compare the number of objects without counting?

Listen for I can match the counters from the two groups. I can line up the counters to see which has more. I can compare the counters like I compared the crayons.

Common Misconception If children are struggling with comparative language, then model statements for them with visuals. For example, *There are more counters than cubes. The number of books is less than the number of pencils. There are fewer paintbrushes than paints. There is the same number of children as chairs. The number of girls is the same as (or equal to) the number of boys.*

Connect It



Materials For each child: 5, 6, or 7 counters; For display: 12 crayons

Compare Other Groups of Counters

Pair children and give each child 5, 6, or 7 counters. Do not count out the counters; instead give them as a group.

Have each child in the pair place his or her counters on one of the workmats. Then have children compare the two groups to find out which child has more or if they have the same number.

Support Whole Class Discussion

Ask *How do you know who has more?*

Listen for The group that has counters left over after I match them with the other group has more. The group with a number that comes after the other group's number when I count them has more.

Ask *What does it mean if both groups are matched up with no counters left over or you count to the same number for each group?*

Listen for It means the two groups are the same because they have the same number of counters. Neither one of the groups has more because they both have the same. One group is equal to the other group.

Pose a New Problem

Display 5 crayons in one hand and 7 crayons in the other hand.

Ask *Which hand has more crayons? How can you find out?*

Listen for I can use counters to show the problem. I can match. I can count.

Have children model and solve the problem using counters on their workmats.

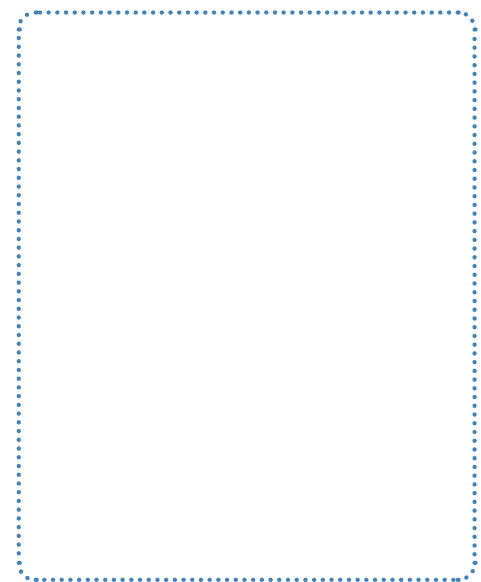
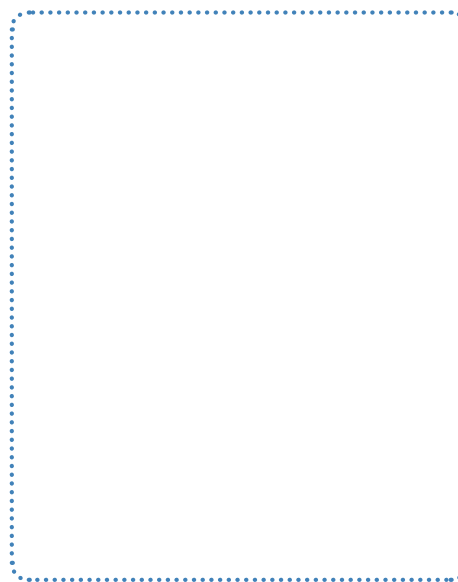
Ask *How did you use the counters to show the problem this time?*

Listen for I used 5 counters to show one hand with 5 crayons and 7 counters to show the other hand with 7 crayons.

Children will spend time learning more about the concept of less in Additional Practice.

Connect It

Check children's comparisons.



Children compare groups of counters to see which has more. Pair children and give each child a group of 5, 6, or 7 counters. Then ask children to compare the counters to find out which child has more or if they have the

same number of counters. Ask pairs to explain how they determined who has more. Then display 5 crayons in one hand and 7 crayons in the other. Ask: Which hand has more crayons? How do you know?

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Lesson 8 Compare Within 10

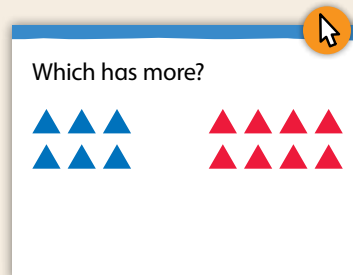
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Close: Exit Ticket



Materials For each child: 15 counters, copy of Close slide

Have children use the counters to help find which of the two groups has more.



Solution The group of red shapes has more. There are more red shapes than blue shapes.

Common Misconception If children think there is the same number in each group, then have them count the top row of each group. Children can then build on what they know from comparing smaller groups.



Real-World Connection

Encourage children to think about everyday places or situations where people might need to compare groups. Have volunteers share their ideas. Examples: treat bags for children, packing kits, sharing toys

Solutions

Support Vocabulary Development

This activity can be used to informally assess children’s understanding of comparing quantities within 10. Children can show what they know now. You can have them revise their thinking and revisit their responses once they have completed the lesson or unit.

If children need additional support, the following steps provide explicit instructions to guide them.

Have children point to the term *less* and repeat the word after you. Say: *We use the word less to compare.* Hold up 5 crayons in one hand and count them aloud with children. Then hold up 7 crayons in the other hand and count them aloud with children. Say: *5 crayons is less than 7 crayons.* Ask: *Which group has less?* Partner children. Provide them with counters, pictures, and other objects they can count.


Ask children to draw and write in their graphic organizer to show the meaning of the word *less*. You may model an example by drawing a group of 3 objects and a group of 2 objects and circling the group with 2. Encourage volunteers to share their drawings with the class.

Supplemental Math Vocabulary

- same as
- fewer
- more

Building Fluency

Practice making combinations for 5.

 **Materials** none, children use their fingers

Solidify children’s understanding of 5. Hold up 4 fingers on one hand, and ask children to hold up the number of fingers needed to make 5. Repeat, holding up other numbers of fingers less than 5.

Name: _____


LESSON 8SESSION 1

Prepare for Comparing Within 10

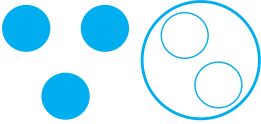
Possible answer:

less

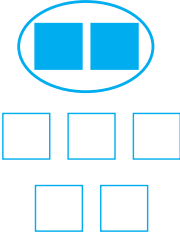
Examples



Examples



Examples



Have children show the meaning of the word *less*. Have children fill in each of the boxes to show the meaning of the word *less*. Tell children that they can use words, numbers, and pictures. Encourage them to show as many ideas as they can.

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Lesson 8 Compare Within 10145

Solutions

Assign this problem to provide another look at comparing numbers within 10.

This problem is very similar to the problem about comparing groups of 5, 6, or 7 counters. In both problems, children are given groups of objects and are asked to compare the groups to see which has more, or if they have the same number of objects. The question asks children to compare groups of 2, 3, or 4 objects.

Children may want to use counters, connecting cubes, paper clips, or cereal pieces.

- Check to make sure children compare groups of objects correctly.

Medium

Children compare groups of objects to see which has fewer. Give children some small objects. Have them put 3 objects on one workmat and 2 objects on the other workmat. Then ask children to compare the objects to find out which

workmat has fewer. Ask them to explain how they determined which has fewer. Then have them place 3 objects on one workmat and 4 objects on the other workmat. Ask: Which workmat has fewer objects? How do you know?

ELL English Language Learners: Differentiated Instruction Prepare for Session 2 Use with *Connect It*.

Levels 1–3

Listening/Speaking Have children point to the spotted dogs in the first problem of *Connect It* as you choral count. Ask: *How many spotted dogs are there?* Repeat for the gray dogs.

Say: *You counted two groups of dogs. Let's compare. Which group has more dogs?* [spotted dogs] *Why? Complete this sentence: ___ is more than ___.* Ask: *Which group has fewer? Complete this sentence: ___ is more than ___.*

Have children draw a line to match each spotted dog with a gray dog to check their answers.

Levels 2–4

Listening/Speaking Have children point to the spotted dogs in the first problem of *Connect It* as you choral count. Ask: *How many spotted dogs are there?* Repeat for the gray dogs.

Say: *Let's compare the groups of dogs. Which group has more dogs?* [spotted dogs] *Why?* Guide children to use the phrase *more than* to answer. Ask: *Which group has fewer?* Guide children to use the phrase *fewer than* to answer.

Have children draw a line to match each spotted dog with a gray dog. Ask: *Does this help you check your answers? How do you know which group has more? Tell your partner.*

Levels 3–5

Listening/Speaking Partner children for the first problem of *Connect It*. Have them talk about the spotted dogs and gray dogs and what numbers they represent.

Ask: *What can you do to know which group has more? Do you do the same to know which group has fewer?* Encourage volunteers to model an example for the class. Provide support with vocabulary as needed.

Purpose In this session children compare quantities and make comparison statements.

Start

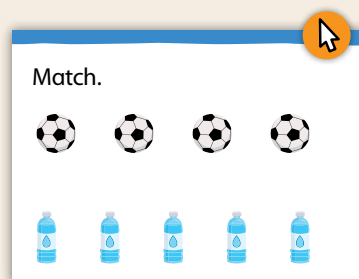


Connect to Prior Knowledge

Materials For each child: 10 counters, copy of Start slide

Why Reinforce one-to-one matching for comparison.

How Have children draw lines to match the soccer balls to the water bottles, one ball to one bottle. Have children say which group has more. Then have them check their work by placing a counter on each picture and then counting the two groups of counters.



Solution Lines are drawn between soccer balls and water bottles, matching one-to-one. The group of water bottles has an object that has not been matched.

Develop Language

Why Clarify the meaning of the term *match*.

How During the *Try It* activity, model matching the collars with the dogs. Have children follow along. Ask: *Did you match each dog with a collar?* Say: *You match objects that go together or are alike.* Have children brainstorm other objects they can match.

Try It

Present the scene and engage children by having them describe the items in the picture, telling how many of each they see, such as 10 dog treats and 8 water bowls.

Ask *Can each puppy get a collar? How do you know?*

LESSON 8
SESSION 2 ● ● ● ● ●

Develop Comparing Within 10

Try It

Pictures will vary. Children should draw a line from one collar to one puppy without duplication. Possible answer shown.

Encourage children to discuss the quantities of items and then compare quantities. Ask children to make comparison statements using *more*, *less*, *fewer*, or *the same as*. Have children draw lines matching each puppy to a collar.

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PET STORE

Discuss It

Do you think the pet store sells more dog treats than balls? Why or why not?

Lesson 8 Compare Within 10

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Have children draw lines matching each puppy to a collar. After they determine that each puppy can get a collar, say: *There are more collars than puppies. The number of collars is greater than the number of puppies.*

Discuss It

Support Partner Discussion

Have children talk in pairs about other groups of objects they see. For example, have them compare the number of water bowls with the number of puppies.

Support as needed with questions such as:

- *What do you think about your partner's solution?*
- *How did you compare two groups? Did you both compare the same way?*
- *Did your partner see a group to compare that you did not?*

Common Misconception If children struggle to compare groups by counting, **then** have them draw lines as before to match objects. Remind them that the group with objects without a partner has more.

Select and Sequence Solutions

Select children to present many different solutions. Choose children who identified different groups to compare and made comparison statements, such as:

- *I see more puppies than balls.*
- *There is the same number of orange water bowls as blue water bowls.*
- *There is a greater number of dog treats than puppies. 10 is greater than 8.*

Support Whole Class Discussion

Compare and connect children's solutions by having them share the groups they compared and the comparison statements they made.

Record and discuss each comparison.

Ask Do you think the pet store sells more dog treats than balls? Why or why not?

Listen for There are more dog treats than balls. More people could want balls so more have been sold. More dog treats need to be on the shelf because the store sells more.

There is no one correct solution to this question, but it does encourage children to use comparative statements in context.

Ask How many cats are in the picture?

Listen for There are zero cats. None. No cats.

Connect It

Support Whole Class Discussion

Explain to children that for each problem they will draw lines to match objects and then circle the group that has more.

Have children tell which group has more and then explain how they know.

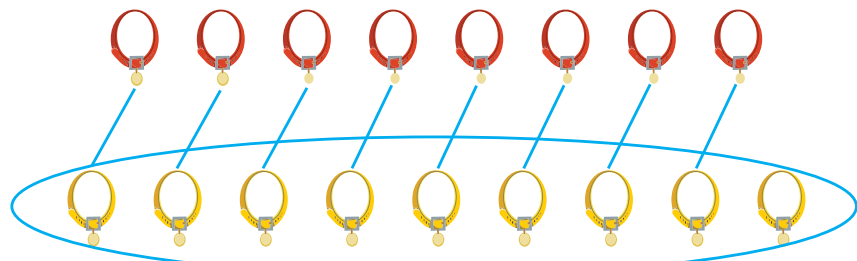
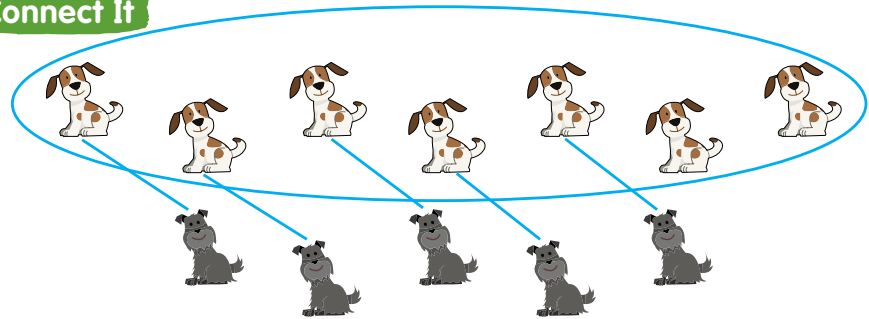
Ask How does drawing lines to match objects help you know which group has more?

Listen for I can match up and see which objects do not have a partner. The group that has objects without a partner has a greater number of objects.

Ask How else could you know which group has more?

Listen for I can count each group. The group with a greater number will have more objects. A number that is greater comes after the other number when you count.

Connect It



Have children draw lines to match objects and circle the group with more. For each problem, ask children to tell which group has more and explain how they know.

Discuss It How does drawing lines to match objects help you know which group has more?

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Lesson 8 Compare Within 10

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Deepen Understanding Comparing Numbers

SMP 2 Reason abstractly.

When both problems have been discussed, challenge children to think more abstractly about comparing numbers.

Children begin the transition to abstract reasoning when they can generalize that, for example, 10 is always more than 8 no matter the objects being counted or how they are arranged.

Ask If there are 6 bowls and 6 collars, how can you compare the groups without looking?

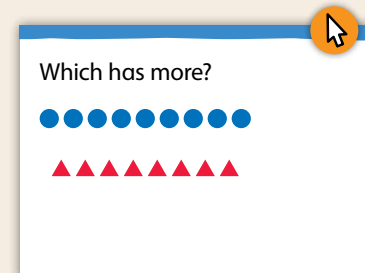
Listen for If the numbers are the same, the groups are equal.

Generalize You know that 7 puppies is a greater number of puppies than 5 puppies. How do you know which has a greater number when you compare 7 collars and 5 balls? Listen for understanding that the objects being compared have changed but the number of objects has not. 7 objects will always have a greater number than 5 objects.

Close: Exit Ticket

Materials For each child: copy of Close slide

Have children draw lines to match the blue shapes to the red shapes and then circle which group has more.



Solution Group of blue shapes circled

Common Misconception If children match all the pictures in each group and so think they have the same amount, **then** have them check that they have not drawn a line to an object more than once or skipped any object.

Solutions

Children's coloring should show the following:

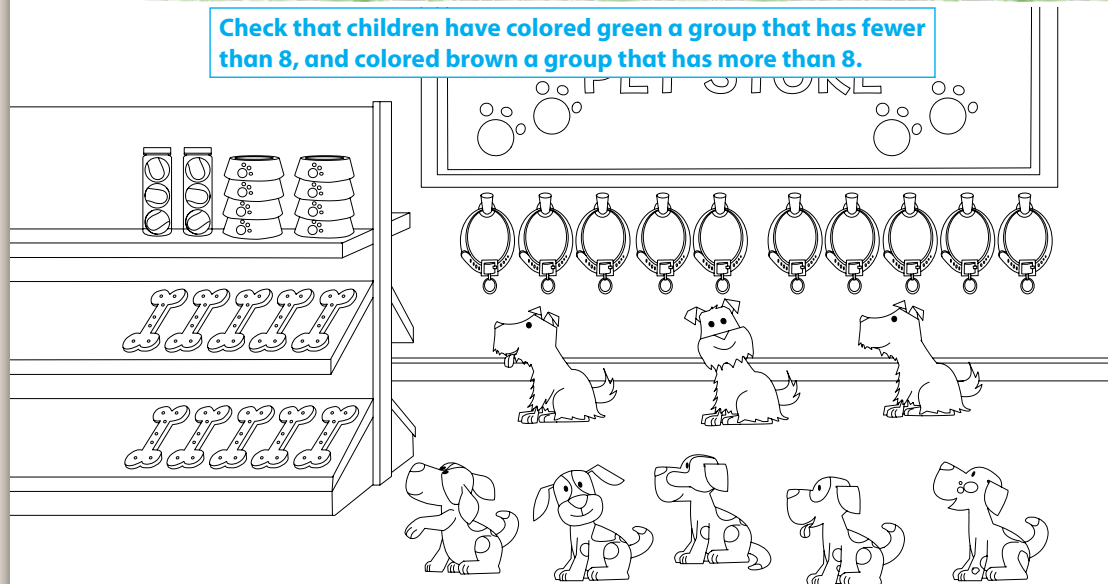
- green for a group that has fewer than 8
- brown for a group that has more than 8

Name: _____

LESSON 8 SESSION 2

Practice Comparing Within 10

Check that children have colored green a group that has fewer than 8, and colored brown a group that has more than 8.



Have children count and color the 8 dogs. Have children color green a group that has fewer than 8. Have them color brown a group that has more than 8. Then have children color the rest of the picture.

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Lesson 8 Compare Within 10

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Fluency Practice

Write the numbers 8, 9, and 10.

Materials For each child: Activity Sheet *Write 8, 9, 10*

- Have children trace and then write the number 8 in the spaces provided.
- Repeat with the numbers 9 and 10. Use extra sheets for additional practice, as needed.

Compare numbers to 5.

Materials For display: Activity Sheet *Number Cards 0 to 10: Large*

- Lay the number cards for 0–5 in random order facedown in a row.
- Turn over the first card and have children identify the number.
- Turn over the next card and have children say the number and then say whether that number is greater than or less than the number turned over before it.
- Continue along the row until all cards have been turned over and compared.

Solutions

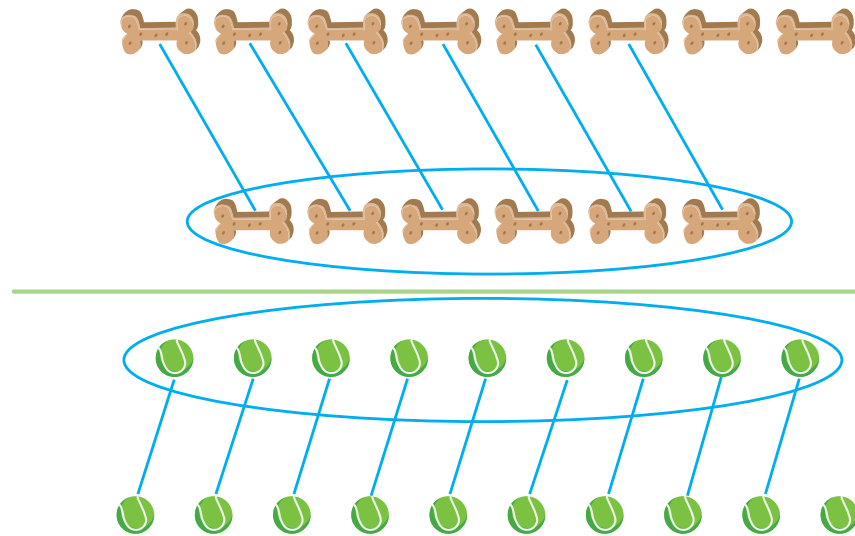
Children match objects to find the group with fewer objects and circle that group.

- Lines drawn and bottom group circled

Medium

- Lines drawn and top group circled

Medium



Have children draw lines to match objects and circle the group with fewer. For each problem, ask children to tell which group has fewer and explain how they know.

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Lesson 8 Compare Within 10

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English Language Learners:
Differentiated Instruction

Prepare for Session 3
Use with *Connect It*.

Levels 1–3

Listening/Writing Model doing the first problem in *Connect It* and have children join in. Have children count the tennis balls and say the number. Ask a volunteer to write the number on the board. Repeat for the dog treats. Ask: *Which number is more?* [9] *Which group has more objects?* [dog treats] Have children write the numbers and circle the one that shows more.

Levels 2–4

Speaking/Writing Model doing the first problem in *Connect It* and have children join in. Have children count the tennis balls and say the number. Ask a volunteer to write the number on the board. Repeat for the dog treats. Ask: *Which number is more?* [9] *Which group has more objects?* [dog treats] Have children write the numbers and circle the one that shows more. *Which number is less?* [8] *Which group has fewer?* [balls] Have children cross out the number that shows less.

Levels 3–5

Listening/Speaking Have children work with a partner on the first problem of *Connect It*. Have one partner count the tennis balls and the other partner write the number. Then have them switch roles to count the dog treats and write the number. Encourage children to compare the groups and the numbers. Encourage children to ask each other questions about the groups and the numbers.

Purpose In this session children compare groups of objects to find which group has more and which has fewer. Then they write the number of objects in the group and circle the greater number.

Start

Connect to Prior Knowledge

Why Reinforce comparative language. Fluently compare lesser numbers.

How Have children look at the two number cards and make comparative statements to compare the two groups/numbers.

Compare.

5	3
---	---

Possible Solutions

A group of 5 has more than a group of 3.

5 is greater than 3.

3 is less than 5.

A group of 3 has fewer than a group of 5.

Develop Language

Why Develop an understanding of the word *closer*.

How During the *Connect It* activity, before the *Discuss It* questions, have two children stand different distances from the door. Ask: *Who is closer to the door?* Say: *You can also use the word closer to talk about numbers.* Write the numbers 1 through 6 horizontally on the board. Ask: *Which number is closer to 2: 3 or 6?*

Try It



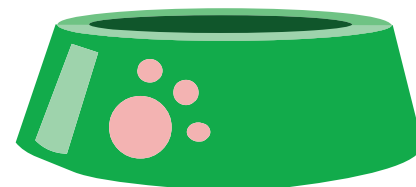
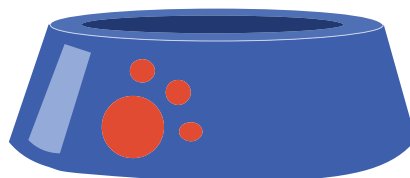
Materials For each child: 20 counters

Explain to children that they will place a group of 6 counters and a group of 8 counters on the page with one group in each bowl. Have children compare the two groups of counters to find which has more and which has fewer.

Try It

Check children's work.

Math Toolkit
• counters



Have children compare groups of counters to see which has more. Tell children how many counters to put in each bowl. Use 5 to 10 counters in each bowl. Then ask them to compare the counters to find out which bowl has more and which bowl has fewer.

Discuss It Which bowl would have more if there were 9 counters in each bowl?

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Lesson 8 Compare Within 10

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Repeat with another two groups between 5 and 10. Finish with two groups of the same number in each bowl.

Support Partner Discussion

Have children tell a partner how they found out which bowl had more and which bowl had fewer. Support as needed with questions such as:

- Can you explain how your partner did it?

Common Misconception If children struggle with comparing the numbers, **then** have them match up the pairs of counters and remind them that the group with unmatched counters has more.

Select and Sequence Solutions

Select children to present how they found which had more or fewer, or whether the groups were equal. Choose children who identified:

- 8 counters is more than 6 counters
- 6 is less than 8
- 7 is equal to 7

Discuss It

Support Whole Class Discussion

Compare and connect children's comparisons, focusing on the language used to make the comparative statements. For the first problem, ask the following question:

Ask What else can you say to compare these two groups?

Listen for Discuss any other comparisons that are appropriate, such as: 6 is less than 8, 6 counters is fewer (or less) than 8 counters, and 8 is greater than 6.

Repeat for the other problems.

Then ask these final questions to check for understanding.

Ask Which bowl would have more if there were 9 counters in each bowl?

Listen for Neither; they would have the same. 9 is equal to 9, so there will be the same number.

Ask Which bowl would have more if there were 0 counters in one bowl and some counters in the other bowl?

Listen for The bowl with counters. Any number of counters is more than no counters. All counting numbers are greater than 0.



Hands-On Activity

Identify groups that are greater, less, or equal.

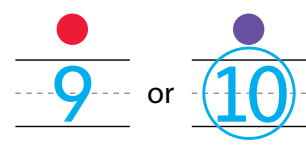
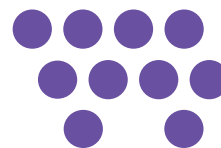
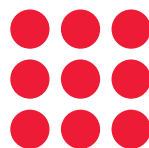
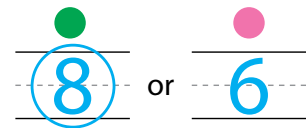
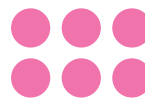
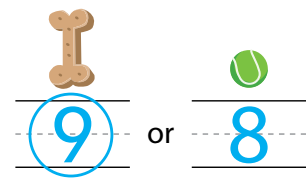
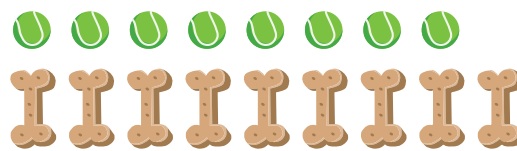
If . . . children are unsure about making the correct comparative statement when comparing two groups

Then . . . use the activity below to practice comparing two groups.

Materials For each pair: 6 similar small objects (such as bear counters), 6 round counters, 7 connecting cubes

- Give pairs of children the small objects, the counters, and the connecting cubes, but do not tell them how many there are.
- Ask children to compare the groups, two at a time, identifying which group has more, which group has fewer, and which groups have the same number.
- After children have made the comparisons, have them make the comparative statement. Model the correct statement if needed.

Connect It



Have children compare the quantities shown in the pictures. Have children write how many are in each group, read each number, and then circle the number that is greater. For each problem, discuss different ways to decide which group has more.

Discuss It Work with a partner. Look at the green and pink dots. Is there one pink dot for every green dot? How can you be sure?

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Lesson 8 Compare Within 10

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Connect It

Support Whole Class Discussion

For each problem, tell children to count the objects in each group and write the number. Have them circle the greater number.

When all three problems have been completed, have several children share their answers and thinking.

As children share, prompt them to explain how they found the number that is greater.

Discuss the meaning of the terms *greater*, *less*, and *equal*. Remind children of how they previously used these terms when comparing numbers within 5.

Ask Work with a partner. Look at the green and pink dots. Is there one pink dot for every green dot? How can you be sure?

Listen for I can mark one dot in the first group with an X and then one in the second group and keep doing that until I run out of dots in one of the groups.

Deepen Understanding Comparing Numbers

SMP 8 Use repeated reasoning.

When all problems have been discussed, challenge children to focus on the numbers that are being compared rather than the groups.

Ask Which is greater, 9 apples or 10 apples? How do you know?

Listen for I know that 10 dots is greater than 9 dots, so 10 apples is greater than 9 apples.

Ask Which is greater, 8 bears or 6 bears? How do you know?

Listen for I know that 8 is greater than 6, so 8 bears is greater than 6 bears. I know that 8 comes after 6 when I count, so it is greater.

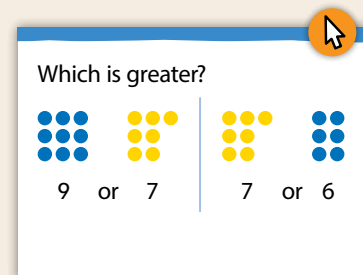
Generalize Prompt children to recognize that it does not matter what the objects in the groups are. Once it is known that one number is greater than another, for example, that 6 is greater than 5, children can apply this to other comparisons of 6 and 5 and know that 6 will always be greater than 5.

Close: Exit Ticket



Materials For each child: 16 counters

Have children use counters to compare the numbers shown. Have them find the greater number in each pair.



Solution 9 is greater than 7. 7 is greater than 6.

Common Misconception If children say that 7 is less both times, then remind them that a number can be greater than one number but less than another number. Have them count the dots or model the problem with counters.

Solutions

On the first page, children:

- write the number of shapes in each group
- circle the number that is greater

On the second page, children:

- write the number of objects in each group
- circle the number that is less

Example

Numbers 7 and 6 traced; number 7 circled

Basic

Problems

- Numbers 6 and 9 traced; number 9 circled

Basic

- Numbers 6 and 10 written; number 10 circled

Medium

Name: _____

LESSON 8 SESSION 3

Practice Comparing Within 10

Example

or

or

or

In each problem, have children compare the numbers of objects.

Have children write how many are in each group and then circle the number that is greater.

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Lesson 8 Compare Within 10

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Fluency & Skills Practice **Teacher Toolbox**

Assign Comparing Within 10



In this activity children practice comparing groups with up to 10 objects. Children may make similar comparisons in real-world situations to determine which group has fewer or which number is less. For example, two friends may compare how many strawberries they have in their lunches, or children may compare the number of children who are wearing red clothes with the number of children wearing green clothes.



Fluency and Skills Practice



Comparing Within 10



Name _____



Example







or



or


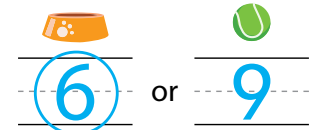
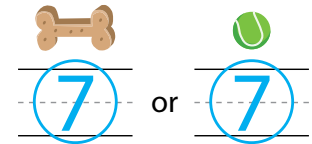
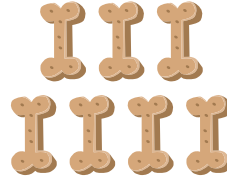
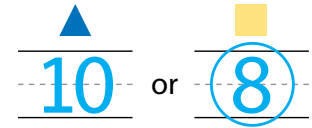
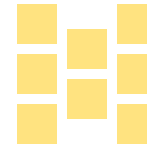

or


In each problem, have children compare the numbers of objects. Have children write how many are in each group and then circle the number that is less. If the groups have the same number, have children circle both numbers.

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Solutions

- Numbers 10 and 8 written; number 8 circled
Medium
- Numbers 7 and 7 written; both number 7s circled
Medium
- Numbers 6 and 9 written; number 6 circled
Medium



In each problem, have children compare the numbers of objects. Have children write how many are in each group and then circle the number that is less. If the groups have the same number, have children circle both numbers.

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Lesson 8 Compare Within 10

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ELL

English Language Learners:
Differentiated Instruction

Prepare for Session 4
Use with *Apply It*.

Levels 1–3

Listening/Speaking Provide children with 10 counters. Have them point to each box in the first 10-frame on the first page of *Apply It* as you count aloud together. Ask children to point to the number 7. Tell them to place 7 counters on the 10-frame as you count aloud together. Ask: *How many counters are there?* Count each box in the next 10-frame aloud with children. Ask them to place 9 counters on the other 10-frame as you count each box aloud together. Ask children to point to the number 9. Ask: *How many counters are there?* Guide children to compare the sets of counters. Ask: *Which number is greater?* [9] *Which number is less?* [7]

Levels 2–4

Listening/Speaking Ask children to point to the question at the top of the first page of *Apply It*. Guide them to notice characteristics of a question, such as a question word, a capital letter at the beginning of the sentence, and a question mark at the end. Ask children to point to each word as you read the question aloud. Have them locate the last word and circle it. Read the word aloud: *less*. Have children work with a partner to compare the numbers using counters and 10-frames. Encourage them to use the word *less* to explain their answers. Provide a model: *7 is less than 9*.

Levels 3–5

Listening/Speaking Ask children to point to the question at the top of the first page of *Apply It*. Ask: *What clues helped you find the question?* [Possible answers: question word, capital letter at the beginning of the sentence, question mark at the end.] Ask children to point to each word as you read the question aloud. Have them circle the word *less*. Pair children up to compare the numbers using counters and 10-frames. Encourage them to use the word *less* as they discuss their answers and then co-write a sentence on an index card using the frame:

- 7 is less than 9.*

LESSON 8

SESSION 4 **Refine**

Purpose In this session children practice comparing numbers to see which is greater and which is less. They represent numbers with counters as a way to check their comparisons.

Start

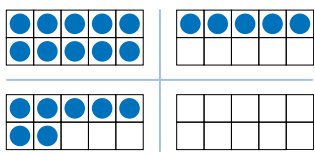
Develop Fluency

Why Develop fluency with counting up to 10 objects.

How Show children the 10-frames. Start with the top row and ask children how many each 10-frame is showing. Ask: *Can you tell how many there are without counting?*

Repeat with the bottom row.


How many in each 10-frame?



The image shows four 10-frames arranged in a 2x2 grid. The top-left 10-frame is full of blue counters (10). The top-right 10-frame has 5 blue counters in the top row (5). The bottom-left 10-frame has 7 blue counters (7). The bottom-right 10-frame is empty (0).

Solution 10, 5, 7, 0

Apply It

 **Materials** For each child: 20 counters, Activity Sheet 10-Frames

Explain to children that they will compare numbers and find which is less.

For the problems on the first page, first have children compare the pairs of numbers on the Student Worktext page and tell which is less. Next, have them use counters and 10-frames to check their work and then circle the number that is less.

Put children in pairs. Tell children to place some counters on the 10-frames. Ask pairs to compare their frames, decide which shows less, and discuss how they know.


LESSON 8

Refine Comparing Within 10

SESSION 4 ● ● ● ● ●

Apply It

Which is less?

 **Math Toolkit**
• counters
• 10-frames

7 or 9

10 or 0

Ask children to compare numbers. First have them compare numbers and tell which is less. Have children represent each number with counters to check their comparisons. For each problem, have them circle the number that is less.

Discuss It How did using counters on the 10-frames help you check your comparisons?

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Lesson 8 Compare Within 10

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Then have children remove the counters and look at the numbers 7 and 9 on the Student Worktext page. Ask them to think about what they know about these two numbers and, without using counters, tell which number is less. Children can then use counters to check their thinking and circle the number that is less.

Repeat for the second problem.

Discuss It

Support Whole Class Discussion

Ask children to share their work. Discuss how they approached the problems and how they checked their work.

Ask How did using counters in the 10-frames help you check your comparisons?

Listen for It is easier to see (or count) how many counters I am using when they are in the 10-frame. I can compare how many empty spaces are in each 10-frame.

Discuss how the 10-frames looked when children represented the numbers in the second problem.

Ask Why is this 10-frame full? Why is this 10-frame empty?

Listen for Because I compared the numbers 10 and 0. 10 counters fill the 10-frame because there are 10 spaces. The other 10-frame has no counters because 0 means none.

Encourage children again to consider what else they know if they know that one number in a pair is less.

Ask If you know which of two numbers is less, do you also know which number is greater?

Listen for Yes, if one number is less, it means the other number is greater.

For the problems on the second page, tell children they will compare more numbers to find which is less.

For each problem, have children count and write the number of counters in a 10-frame and compare that number with the given number. Then have children circle the number that is less.

Support Whole Class Discussion

Have volunteers read a number pair and say which is less using a sentence (e.g., 5 is less than 6). Discuss the numbers in relation to 10.

- Ask Which group of counters shows the number closest to 10? How do you know?
- Listen for The last group (the red ones) is closest because only 1 space is empty. The others have more than 1 space empty.


Close: Exit Ticket

Check for Understanding

Materials For remediation: 20 counters, Activity Sheet 10-Frames

Show children the group of 6 dots and the numbers 6 and 8. Ask children to think about the two numbers and then say which number is less, 6 or 8.

Which is less?



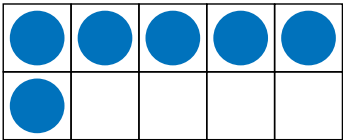
6 or 8

Solution 6 is less than 8.

Error Alert For children who are still struggling, use the chart to the right to guide remediation.

After providing remediation, check children's understanding by asking them to compare a nonaligned group of 7 and group of 9 and tell which is less.

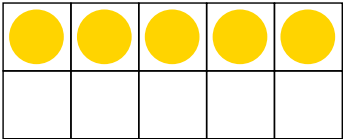
How many?



6

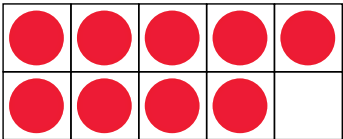
Which is less?

6 or 5



5

5 or 7



9

9 or 10

Have children compare the number of counters in a 10-frame with a given number and tell which is less. Have them count and write the number of counters in the 10-frame, compare that number with the number shown in black, and circle the number that is less.

Discuss It Look at all the counters. Which group of counters shows the number closest to 10? How do you know?

Error Alert

If the error is ... Children may ... To support understanding ...

identifying 8 as less than 6

not understand the term less.

Make comparisons of groups with widely different numbers of counters, such as 2 and 9. Point out that the group of 2 is less. Repeat with other groups that do not have a wide difference.

not recognize how many are in each group.

Provide children with 10-frames and counters. Have them count and place 6 and 8 counters in two different frames. Ask children to compare the two amounts now.

Solutions

- For each problem, children:
- count and write the number of counters in a 10-frame
 - compare that number with the number shown on the right
 - circle the number that is greater (for problems on the first page) or less (for problems on the second page)

Example

9 traced and circled

Basic

Problems

- 8 traced, written, and circled
Basic
- 5 written and 10 circled
Medium

Name: _____

LESSON 8SESSION 4

Practice Comparing Within 10

Example

How many?

●	●	●	●	●
●	●	●	●	

Which is greater?

or 7

●	●	●	●	●
●	●	●		

or 6

●	●	●	●	●

or

Have children compare the number of counters in a 10-frame with a given number and tell which is greater. Have children count and write the number of counters in the 10-frame. Ask them to compare that number with the number shown on the right. Have them circle the number that is greater.

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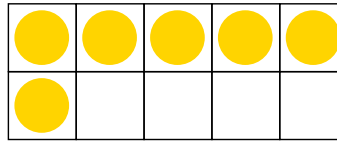
Lesson 8 Compare Within 10

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Solutions

- 6 written and circled
Medium
- 7 written and circled
Medium
- 10 written and 9 circled
Challenge

How many?

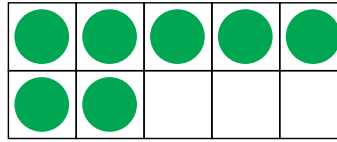


6

Which is less?

6

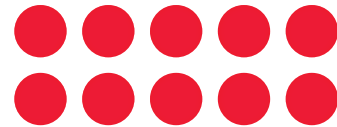
or 7



7

7

or 8



10

10

or 9

Ask children to compare a number of counters with a given number and tell which is less. Have children count and write the number of counters. Ask

them to compare that number with the number shown on the right. Have them circle the number that is less.

LESSON 8

SESSION 5 **Refine**

Purpose In this session children practice comparing numbers presented as written numerals to tell which is greater and which is less.

Start

Connect to Prior Knowledge

Why Reinforce recognizing groups with an equal number of objects.

How Ask: Which two 10-frames are showing the same number of counters? Does the other 10-frame show more or less?

Same number?

The image shows three 10-frames. The first is blue and contains 7 blue counters. The second is yellow and contains 5 yellow counters. The third is red and contains 7 red counters.

Solution The blue frame and the red frame show the same number. The yellow frame shows a number that is less.

Apply It

Materials For each pair: 20 counters, 2 number cubes labeled 5–10, 2 copies of Activity Sheet 10-Frames

Tell children they will make sets with more, less, and the same.

Then they will compare two numbers to find which is greater and which is less.

Give each pair of children a number (5, 6, 7, 8, or 9). Have them use 10-frames to show a number that is less, one that is greater, and one that is equal to the number they were given.

For the first page, have pairs roll two number cubes labeled 5–10. Have them say which number is greater and which is less. Children then build the numbers in the 10-frames to check. Tell children they should roll again if the numbers are equal.

Have children repeat the task several times to generate and compare different numbers.

LESSON 8

Refine Comparing Within 10

SESSION 5 • • • • •

Apply It

Check that children correctly determine which number is greater and which is less.

Math Toolkit

- counters
- number cubes (labeled 5–10)
- 10-frames

Have children tell which number is greater and which is less. Have partners roll two number cubes (labeled 5–10). Ask them to say which number is greater and which is less and then use counters to build the numbers on the 10-frames to check. Repeat.

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Discuss It How can you tell which number is greater before you check your answer with counters?

Lesson 8 Compare Within 10

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For the second page, have children compare each pair of numbers in the left column and write the number that is greater. Then have them compare the numbers in the right column and write the one that is less.

Discuss It

Support Whole Class Discussion

When children have finished the first page, have them share an example of numbers they compared.

Ask How can you tell which number is greater before you check your answer?

Listen for Children might discuss the counting sequence or how the numbers represent quantities.

Discuss an example in which the two numbers are the same. Show 7 on two number cubes. Emphasize the term *equal*. Have children say together the comparison 7 is equal to 7. Repeat for other numbers that are equal.

When children have finished the second page, have them share how they can tell their answers are correct.

Ask Check your work. How can you be sure which number is greater? How can you be sure which number is less?

Listen for Children may discuss 10-frames and how they think about how full each number makes the frame.

Differentiated Instruction

PERSONALIZE



Provide children with opportunities to work on their personalized instruction path with *i-Ready* Online Instruction to:

- fill prerequisite gaps
- build up grade-level skills

Close: Exit Ticket

Math Journal

Materials For each child: copy of Close slide
Have children circle the number that is greater and underline the number that is less in each number pair.

Solution Circle 7, underline 6; circle 9, underline 7; circle 8, underline 5; circle 10, underline 0

Error Alert If children say that 7 is greater than 9 (because they found that 7 is greater than 6), **then** remind them that a number can be both less than one number and greater than another number. Remind children that they can count to see which number comes after and is therefore greater.

Greater

6	8	8
9	7	9
10	6	10

Less

6	9	6
10	8	8
7	8	7

Have children determine which number is greater and which is less. For each pair of numbers in the first column, ask children to write the number that is greater. In the second column, ask them to write the number that is less.

Discuss It Check your work. How can you be sure which number is greater? How can you be sure which number is less?

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Lesson 8 Compare Within 10

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RETEACH



Hands-On Activity

Play a game comparing numbers.

Children struggling with comparing numbers and describing comparisons

Will benefit from additional work with comparing pairs of numbers

Materials For display: 3 or 4 copies of Activity Sheet *Number Cards 0 to 10: Small*

- Use only the 1–10 number cards. Deal 4 or 5 cards to each player, and have them place their cards in a pile facedown.
- Have children work with a partner. Each player turns over one card. Children compare the cards and determine which shows less.
- The player with the card that shows the lesser number takes both cards. Encourage children to state the comparison, such as *7 is less than 9*. Play until there are no cards left.
- Repeat, this time having the player with the card that shows the greater number take both cards.

EXTEND



Challenge Activity

Compare more than two quantities.

Children who have achieved proficiency with comparing two numbers

Will benefit from deepening understanding of comparing quantities

Materials For display: Activity Sheet *Dot Cards 1: Large*, Activity Sheet *Number Cards 0 to 10: Large*

- Display three 5–10 number cards and ask which is the greatest. If children struggle, show corresponding dot cards and ask which group has the most.
- Repeat for identifying the least.
- Ask children to explain how they know.