

## Lesson Objectives

### Content Objectives

- Identify groups of 0, 1, 2, 3, 4, or 5.
- Recognize, read, and write the numerals 0, 1, 2, 3, 4, and 5.
- Understand the importance of keeping track of number count and objects counted.
- Understand 0 as representing no objects.
- Recognize that a group of objects will show 1 more object for each successive number.

### Language Objectives

- Recognize 1, 2, 3, 4, and 5 objects in different arrangements (and no objects for 0).
- Use drawings to show groups of 0, 1, 2, 3, 4, or 5 objects.
- Say the number that names a group of 0, 1, 2, 3, 4, or 5 objects.

## Prerequisite Skills

- Know the count sequence to 5.
- Understand that a numeral represents a specific quantity.

## 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.
- 8** Look for and express regularity in repeated reasoning.

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

## Lesson Vocabulary

- **more, more than** the greater number, quantity, or amount.
- **zero** a number for a group with no objects. None, not any.

Review the following key terms.

- **count** to find out how many things are in a group.
- **number** a name for how many or how much.
- **one** the first counting number.
- **two** the counting number after 1.
- **three** the counting number after 2.
- **four** the counting number after 3.
- **five** the counting number after 4.

## Learning Progression

**In Kindergarten** children develop their understanding of the counting sequence and learn to count groups of up to 20 objects.

**In this lesson** children further develop counting with the numbers 1 to 5, and also begin to think about the number 0 and what this represents. They count to 5, starting with 0, and also use 0 to represent a group of no objects. As well as recognizing groups of 1 to 5 objects, children consider how to show a group of 0 objects. Within this framework, children will begin to see that each successive number represents a quantity that is 1 larger than the previous number. This helps lay the foundation for later work involving the concept of *1 more*.

**In the next lesson** children will continue to consider the size of the numbers 0 to 5 as they compare to identify which is greater and which is less.

**In Grade 1** children will work with the numbers 0 to 5 as groups of objects when they add and subtract within 20. They will also read, write, and count to 120. Children will connect thinking about 0 as they work more with two-digit numbers and consider 0 representing 0 ones.

# Lesson Pacing Guide

Teacher Toolbox

## Whole Class Instruction

<b>SESSION 1</b> <b>Explore</b> 45–60 min	<b>Numbers 0 to 5</b> <ul style="list-style-type: none"> <li>Start 5 min</li> <li>Try It 20 min</li> <li>Connect It 15 min</li> <li>Close: Exit Ticket 5 min</li> </ul>	<b>Additional Practice</b> Lesson pages 43–44  <b>Building Fluency</b> Use throughout lesson
<b>SESSION 2</b> <b>Develop</b> 45–60 min	<b>Numbers 0 to 5</b> <ul style="list-style-type: none"> <li>Start 5 min</li> <li>Try It 5 min</li> <li>Discuss It 15 min</li> <li>Connect It 15 min</li> <li>Close: Exit Ticket 5 min</li> </ul>	<b>Additional Practice</b> Lesson pages 47–48  <b>Fluency Practice</b> Write Numbers to 3 Find Groups of 0
<b>SESSION 3</b> <b>Develop</b> 45–60 min	<b>Numbers 0 to 5</b> <ul style="list-style-type: none"> <li>Start 5 min</li> <li>Try It 10 min</li> <li>Discuss It 10 min</li> <li>Connect It 15 min</li> <li>Close: Exit Ticket 5 min</li> </ul>	<b>Additional Practice</b> Lesson pages 51–52  <b>Fluency</b> Numbers 0 to 5
<b>SESSION 4</b> <b>Refine</b> 45–60 min	<b>Numbers 0 to 5</b> <ul style="list-style-type: none"> <li>Start 5 min</li> <li>Apply It 5 min</li> <li>Discuss It 30 min</li> <li>Close: Exit Ticket 5 min</li> </ul>	<b>Additional Practice</b> Lesson pages 55–56
<b>SESSION 5</b> <b>Refine</b> 45–60 min	<b>Numbers 0 to 5</b> <ul style="list-style-type: none"> <li>Start 5 min</li> <li>Apply It 10 min</li> <li>Discuss It 5 min</li> <li>Small Group Differentiation 20 min</li> <li>Close: Exit Ticket 5 min</li> </ul>	<b>Lesson Quiz</b> or <b>Digital</b> <b>Comprehension Check</b>

## Small Group Differentiation

### RETEACH

#### Tools for Instruction

##### Grade K

- Lesson 3 Count Groups of 0–5 Objects

### REINFORCE

#### Math Center Activities

##### Grade K

- Lesson 3 0–5 Match
- Lesson 3 1 More

### EXTEND

#### Enrichment Activity

##### Grade K

- Lesson 3 Number Squares



## Independent Learning

### PERSONALIZE

#### i-Ready Lesson\*

##### Grade K

- Count up to 5 Objects

#### Learning Games

- Hungry Guppy
- Match

## Lesson Materials

**Lesson (Required)** *Per child:* 6 counters, 5 connecting cubes, 1 paper clip, 1 pencil, copy of Start slide (Session 2), copy of Close slide (Sessions 2–5)

*Per pair:* 10 connecting cubes

*For display:* hoop or circle of rope

*Activity Sheet:* Number Cards 0 to 10: Large

**Activities** *Per child:* 5 small objects

*Per pair:* 15 connecting cubes, 15 counters, 6 cups, 6 sticky notes, paper

*For display:* 4 objects to count

*Activity Sheets:* Number Cards 0 to 10: Small; Number Cards 0 to 10: Large; Write 0, 1, 2, 3

**Math Toolkit** counters, connecting cubes

**Digital Math** Counters and Connecting Cubes

**Tool**

\*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 reinforce the concept of the counting numbers from 0 to 5.

- When counting, each number in the counting sequence increases by one, which represents one more than the previous number.

### Activity

Children will learn that a number describes a group of objects and that counting another object represents one more than the previous group of objects. Look at the *Counting 0 to 5* activity and adjust it if necessary to connect with children.

### Math Talk at Home

Encourage children to discuss with their family any items that they can organize to show the numbers 0–5, such as forks, crayons, pens, or buttons.

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

- *What number do you get when you count one more than 3?*
- *What do you buy more than 1 of at the supermarket?*
- *Do you prepare your favorite dish with more than 4 ingredients?*
- *What number do you get when you take away all of a group of objects?*

Available in Spanish  
Teacher Toolbox

## Numbers 0 to 5

LESSON  
**3**

### Dear Family,

This week your child is building counting skills with the number 0.

This skill involves learning to recognize and write the numeral 0 and understand that **zero** represents a group of no objects. For example, when shown a flowerpot with 2 flowers and a flowerpot with no flowers, your child will identify the flowerpot with no flowers as showing 0 flowers.

Your child will also explore how counting numbers represent one **more than** the previous number. He or she will count groups, draw one **more**, and count the group again to find how many are in the group. Your child will see how each number in the counting sequence increases by one.

●

1

●

2

●

3

2
0

This lesson also includes practice at recognizing groups of 1 through 5. Invite your child to share what he or she knows about counting and 0 by doing the following activity together.

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### Activity Counting 0 to 5

**Do this activity with your child to recognize 0 and count.**

**Materials** 6 plastic cups, small sticky notes or labels, and at least 16 objects, such as pencils, crayons, markers, or craft sticks

Tell your child that you are going to work together to organize the objects to show the numbers 0 to 5.

- Have your child write the numbers 0 to 5 on the sticky notes or labels and then place one on each cup.
- Have your child say the numbers to check that they are in the correct order.
- Lay the objects in front of your child. Starting with 0 and then 1, have him or her place the matching number of objects in each cup.
- For numbers 3 to 5, stop your child when he or she has the same amount as the previous number, and ask how many more are needed.
- Starting with 0, have your child count each group of objects to check that each cup holds the correct number.

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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.

### Sessions 1, 3, and 5 Use anytime during the sessions.

- Remind children that you count and use numbers even when you play. Play Simon Says with children. Pause after the first child sits out and say: *One person is out.* Pause after the second child sits out. Count the two children aloud. Say: *More than one child is out.* Hold up one finger and then another one to model “more than one,” and count each finger aloud. Take children outside and have them take turns jumping rope. Count aloud with children as each child jumps 5 times. Encourage children to share other games that they play inside or outside that include counting.

### Session 2 Use with *Discuss It*.

- Tell children to look at the park scene. Encourage children to discuss the differences and similarities between a park they go to and the park in the scene. For additional support, prompt them by asking questions: *Are there swings at the park? Is there a slide at the park? What else do you see at the park?*

### Session 4 Use with *Apply It*.

- Remind children that birthday celebrations differ in many cultures. Have children work with a partner. Ask them to share their birthday experiences or what they know about birthdays. Guide the conversations with the following questions:
  - *Do you sing a special song on your birthday?*
  - *Do you eat a favorite food on your birthday?*
  - *Have you read books about birthdays?*

## 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** To prepare children for *Try It*, invite two children to the front. Count aloud as you point to each. Ask: *How many children are there?* Pause for children to answer. Say: *There are 2 children.* Have children point to the last dot card on the page and count aloud the two dots. Have one child go back to his or her seat. Repeat the activity. Ask the remaining child to go back to his or her seat. Ask: *Are there any children now?* [no] Say: *There are zero children standing up.* Have children point to the box with no dots. Ask: *How many dots are there?* Write 0 on the board. Have children say *zero*. Then model drawing two objects in the third blank box at the bottom to match the number of dots on the card above. Have children complete the other boxes.

### Levels 2–4

**Speaking/Writing** To prepare children for *Try It*, invite two children to the front. Count aloud with children as you point to each child. Ask: *How many children are there?* Pause for children to say: *There are 2 children.* Have children point to the two dots and write the number on a sheet of paper. Ask one child to go back to his or her seat. Repeat the activity. Ask the remaining child to sit down. Ask: *Are there any children now?* [no] Say: *There are zero children standing up.* Have children point to the box that shows zero dots. Then have them write 0 on their paper. Ask children to draw the same number of objects in each blank box as there are dots on the card above.

### Levels 3–5

**Speaking/Writing** Partner children for the *Try It* activity. Have them model 2, 1, or sitting down individually and using the sentence frame: *There is/are \_\_\_ person(s) standing; there is/are \_\_\_ person(s) sitting.* Have children look at the dot cards. One partner asks how many dots are on the card. The second answers. Provide sentence frames: *How many dots are there? There are \_\_\_ dots.* Have them write the number above each card. Finally, have them draw objects in each blank box to correspond to the number of dots on the card above it.

**Purpose** In this session children “act out” making groups of 0 to 5. Next they draw pictures to model numbers. Children then use counters, drawings, and fingers to model 0, 1, and 2, and draw dots to match numerals.

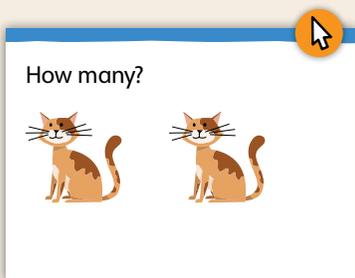
**Start**

**Connect to Prior Knowledge**

**Materials** none, children use their fingers

**Why** A group of objects can be counted. Reinforce one-to-one correspondence.

**How** Ask children to count how many cats they see. Have them hold up that many fingers.



**Solution 2**

**Look for** Children hold up two fingers.

**Try It**

**Materials** For display: hoop or circle of rope

**Make and Count Groups of 1 to 5**

Lay a hoop or circle of rope on the floor. Ask 3 children to stand in the circle. Have children count how many children are in the circle. Repeat with groups of 1, 4, 2, and 5 children in the circle.

**Ask** How can you find how many children are in the circle?

**Listen for** I can count them. I can see there are 3. I can touch the shoulder of each child I count. The last number I count is how many children there are.

**Ask** Will there be a different number of children if you count a different way?

**Listen for** No, the number of children will be the same if you count each child each time. The number can change if you count a child two times or skip a child, but that count would be incorrect.

LESSON 3 **Explore Numbers 0 to 5** SESSION 1 ● ● ● ● ●

**Learning Target**  
 • Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20.  
 SMP 1, 2, 3, 4, 5, 6, 8

**Math Toolkit**  
 • counters

**Try It**

0 objects drawn	1 object drawn	2 objects drawn

**Children make and count groups of 0, 1, 2, 3, 4, and 5.** Lay a hoop or circle of rope on the floor. Ask 3 children to stand in the circle, and have children count how many children are in the circle. Repeat with groups of 1, 4, 2, and 5 children in the circle. Last, leave the circle empty and ask how many children are in the circle. Then have children look at the dot cards on the page, count the dots, and draw that number of objects in the box underneath.

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**Show a Group of 0**

Leave the circle empty.

**Ask** How many children are in the circle? Explain how you know.

**Listen for** There are no children because the circle is empty. There are zero children.

**Ask** How could you label how many children are in the circle?

**Listen for** Write no children. Write the number 0. Write the word zero.

**Draw Pictures to Match Dot Cards**

Direct children’s attention to the Student Worktext. Have children look at the dot cards on the page, count the dots, and then draw that number of pictures in the box underneath.

**Ask** What pictures could you draw to match the number of dots on the dot cards?

**Listen for** Children name different groups of objects, such as shapes, flowers, faces, or animals.

**Ask** How many dots are on the first card? How many pictures will you draw to match that dot card? Why?

**Listen for** There are no dots, so I will not draw any pictures. There are 0 dots. To draw 0, you leave it empty.

**Ask** How can you check that you have drawn the correct number of pictures?

**Listen for** I can look at the dots and my drawing and see if they match. I can count the dots and count the pictures I drew to check that the numbers are the same.

**Common Misconception** If children start from 0 when they count the first dot, then remind them that 0 means a group of no objects. Show them an empty set and then draw dots in it, counting the dots from 1 as they are drawn.

## Connect It

 **Materials** For each child: 5 counters; For display: Activity Sheet *Number Cards 0 to 10: Large*

### Model Numbers 0 to 5

Hold up the number card showing 1. Have children say the number on the number card and hold up that many fingers. Repeat with the number cards showing 2, 3, 4, and 5 and then 0.

Have children look at the numerals on the page and place counters to match.

### Support Whole Class Discussion

**Ask** *How do you know how many fingers to hold up or how many counters to place?*

**Listen for** The number tells me. I see the number and count to it.

### Draw Dots to Show Numbers 0 to 2

Have children remove the counters and draw dots in the space to show 0, 1, and 2.

**Ask** *How can you check whether you have the correct number of dots?*

**Listen for** I can count them. I can place counters on them as I count to make sure I count each one.

**Ask** *How many dots did you draw for 0? Why?*

**Listen for** I did not draw any dots. None. 0 means there are no dots. 0 means there are no objects to count.

### Use Fingers to Show Numbers 0 to 2

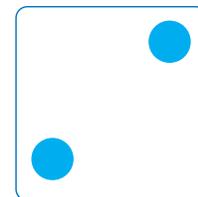
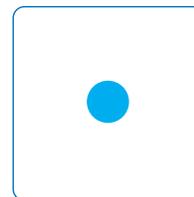
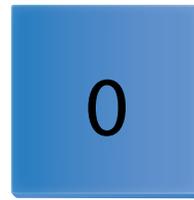
Point randomly to different cards and ask children to name the number and hold up fingers to show that number.

**Ask** *When you show a number using fingers, counters, and drawings, how is it different? How is it the same?*

**Listen for** It looks different when you show a number in different ways. The number of objects you show is always the same for that number.

## Connect It

Children's arrangements may vary.



Children use counters, drawings, and fingers to model 0, 1, and 2. Have children place counters in the space below each number to model 0, 1, and 2. Then have children remove the counters and draw dots in the space to show

0, 1, and 2. Point randomly to different cards and ask children to name the number and hold up fingers to show that number. Check that children do not draw dots or hold up fingers for 0.

42

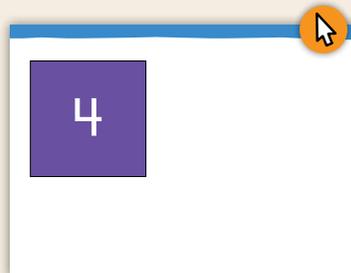
Lesson 3 Numbers 0 to 5

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## Close: Exit Ticket

 **Materials** none, children use their fingers

Ask children to use their fingers to show the number in the box.



**Solution** Children hold up 4 fingers.

**Common Misconception** If children are holding up an incorrect number of fingers, **then** have them say the number and then count from 1 until they stop at the number. Then have children count again but this time hold up 1 finger for each number they count.



## Real-World Connection

Have children think about when they might need to count groups, for example, on a dot cube when playing a board game, or counting how many juice boxes are left. Have children then think about when they might see written numerals to tell how many are needed in a group, for example, a shopping list, a contents list for a game, or a recipe.

**Solutions**

**Support Vocabulary Development**

This activity can be used to informally assess children's understanding 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.

Copy the graphic organizer on the board. Point to the numeral 4 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 four in one of the boxes and say: *The word four is the same as the number 4.* Ask children to draw and write in their graphic organizer to show the meaning of the number 4. You may model an example by drawing four shapes in one of the boxes. Encourage volunteers to share their drawings with the class.

**Supplemental Math Vocabulary**

- three
- four
- five

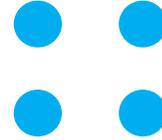
Name: \_\_\_\_\_

**Prepare for Numbers 0 to 5**

Examples



Examples



Possible answer:

4

Examples



Examples



**Have children show the meaning of 4.** Have children fill in each of the boxes to show the meaning of 4. Tell children that they can use words, numbers, and pictures. Encourage them to show as many ideas as they can.

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**Building Fluency**

**Practice one-to-one correspondence when counting.**



**Materials** For each child: 5 small objects

Have children hand out materials or objects (for example, 5 crayons for each child) to practice counting out 1, 2, 3, 4, or 5. Have the class count aloud together as each item is counted out.

## Solutions

Assign the problems to provide another look at modeling the numbers 0 to 5.

This problem is very similar to the problems about modeling the numbers 0, 1, and 2. In both sets of problems, children are given 3 numbers from 0 to 5 and are asked to model the numbers with counters, dots, and fingers. On this page children are asked to model the numbers 3, 4, and 5.

Children may want to use counters, pennies, or paper clips.

- The arrangement of counters or dots is not important. Make sure children use the correct number of counters, dots, and fingers.

**Medium**

Children's arrangements may vary.

Have children use drawings and fingers to model 3, 4, and 5. Have children draw dots in the space below each number to show 3, 4, and 5. Then point

randomly to different cards and ask children to name the number and hold up fingers to show that number.

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

### Levels 1–3

**Listening/Speaking** Using the park scene in *Try It*, point to the children on the blue bench as you count them aloud. Repeat with children. Ask: *How many children are there on the blue bench?* [3] Then tell children to point to the green bench. Ask: *Are there children on the green bench?* [no] Say: *There are zero children on the green bench.* Circle the green bench.

Write 0 on the board. Ask again: *How many children are there on the green bench?* [zero] Point out the two nests. Ask: *Which nest has zero birds?* Have children circle the empty nest. Point out the four planters. Ask: *Which planter has zero flowers?* Have children circle the empty planter.

### Levels 2–4

**Listening/Speaking** Point to the children on the blue bench in the park scene in *Try It*. Count them aloud with children. Ask: *How many children are there on the blue bench?* Point to the green bench. Ask: *How many children are on the green bench?* Have children respond in complete sentences. [There are no children on the green bench. There are zero children on the green bench.]

Follow a similar question-and-answer process for the nests and the planters. Ask children to circle the bench, nest, and planter with zero people, animals, or flowers.

### Levels 3–5

**Listening/Speaking** Partner children for the *Try It* activity. Have them count groups of items in the picture aloud. Ask them to tell each other how many of each item there are using the sentence frames:

- *There are \_\_\_\_ in the \_\_\_\_.*
- *There are \_\_\_\_ on the \_\_\_\_.*
- *There is \_\_\_\_ in the \_\_\_\_.*

Encourage partners to look at the picture and make up sentences with the word zero. Then have them circle the empty bench, nest, and planter.

**Purpose** In this session children identify groups and tell how many objects are in each group. They are introduced to the concept of zero.

**Start**

**Connect to Prior Knowledge**

**Materials** For each child: copy of Start slide

**Why** Reinforce the concept of counting groups of objects to find how many.

**How** Say: *Tim says there are 4 balls, but Lee says there are 5. Who is correct?* Have children explain to a partner who is correct, Tim or Lee.

How many?

Tim: 4    Lee: 5

**Look for** Lee is correct. There are 5 balls.

**Develop Language**

**Why** Facilitate speaking in complete sentences to help children formulate their thoughts and support language development.

**How** Write sentence frames on the board:

*I see \_\_\_\_\_.*

*I counted \_\_\_\_\_.*

*There is \_\_\_\_\_.*

*There are \_\_\_\_\_.*

Encourage children to use the sentence frames to express their thoughts as they look at the park scene and count the groups of items.

**Try It**

Present the scene and engage children by having them tell what groups of objects they can see.

**Ask** *How many children are sitting on each bench? How do you know?*

Provide an example, such as, *I see 2 children sitting on the yellow bench. I counted 1, 2.* After children have described 3 children on the blue bench, have them describe how many are on the green bench. Then have them describe how

LESSON 3      SESSION 2 ● ● ● ● ●

**Develop** Numbers 0 to 5

**Try It**

**Children should circle the empty nest, the empty bench, and the empty planter.**

**Discuss It** How can you describe how many objects are on an empty bench or in an empty pot?

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many birds are in each nest and how many flowers are in each planter.

Have children circle the empty planter, bench, and nest.

**Discuss It**

**Support Partner Discussion**

Have children talk in pairs about groups they see.

Support as needed with questions such as:

- *What did you notice?*
- *Did your partner notice something you did not see?*
- *Is there another way of looking at that?*

**Common Misconception** If children are unable to describe some groups accurately, **then** remind them to count each object in the group. Have them mark each object as they count it to help make sure all objects are counted and no object is counted more than once.

**Select and Sequence Solutions**

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

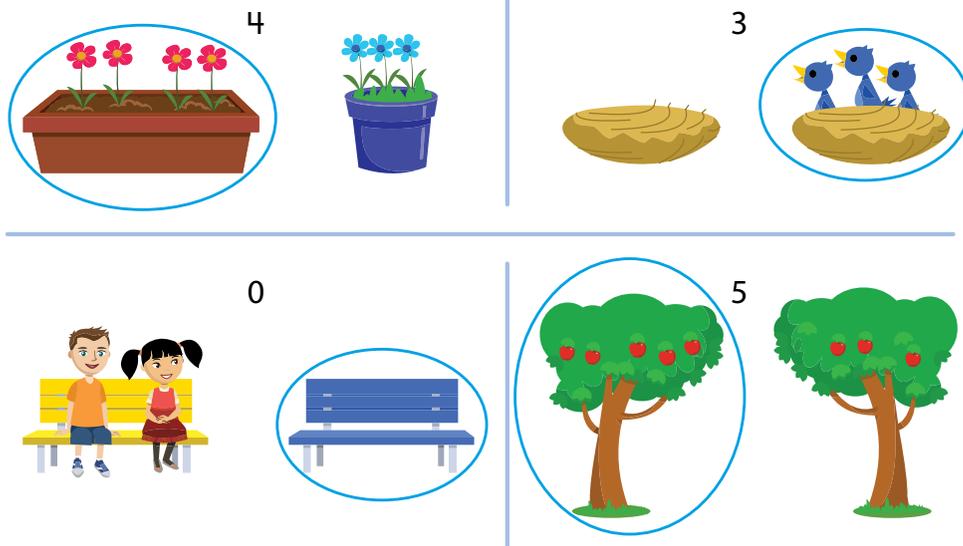
- 1 sun, 2 birds flying
- 2 yellow apples and 4 red apples
- 3 birds in one nest and 0 birds in the other nest
- 4 flowers in the blue planter, 0 flowers in the red planter, 2 flowers in the purple planter, 5 flowers in the brown planter
- 5 birds, 5 children

**Support Whole Class Discussion**

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

Record and discuss each group. Look for opportunities to connect groups that have the same number but different objects, and connect groups that are the same objects but in groups of different numbers.

**Connect It**



Have children describe the pictures. Have children circle the planter with 4 flowers, the nest with 3 birds, the bench with 0 children, and the tree with 5 apples.

**Discuss It** How do you know which picture has 0 objects on it or in it?

**Ask** How can you describe how many objects are on an empty bench or in an empty pot?

**Listen for** There are no objects on the bench. There are not any flowers in the pot. There are zero children on the bench. The pot has zero flowers.

**Ask** How is the group of yellow apples like the group of flying birds?

**Listen for** They are both yellow. There are two objects in each of the groups.

**Ask** How is the group of blue flowers different from the group of light pink flowers?

**Listen for** The blue flowers are in a group of 4. The light pink flowers are in a group of 2.

**Ask** When you see a group of objects, can you find another group that has the same objects but a different number?

**Listen for** Yes, I see 2 yellow apples and 4 red apples. I see 2 birds flying and 3 birds in a nest.

**Ask** I see 2 children on one bench and 3 children on another bench. How can there be a group of 5 children?

**Listen for** If I count all the children I see in the picture, there are 5. 2 and 3 together is 5.

**Connect It**

**Support Whole Class Discussion**

Explain to children that they will look at the two groups in each picture and circle the group that is described.

Have children circle the planter with 4 flowers, the nest with 3 birds, the bench with 0 children, and the tree with 5 apples.

**Ask** How do you know how many are in each picture?

**Listen for** I can count the objects in each group. I can mark objects as I count them so I know I count each one once.

**Ask** How do you know which picture has 0 objects on it or in it?

**Listen for** The nest and bench with 0 objects are both empty. There are no objects to count.

**Deepen Understanding Counting Groups**

**SMP 6** Attend to precision.

**Materials** For display: 4 objects to count

When discussing the groups in *Connect It*, prompt children to recognize the importance of precision in counting. Demonstrate by counting the 4 flowers three times and getting a different number each time: counting a flower more than once, skipping a flower, and counting accurately.

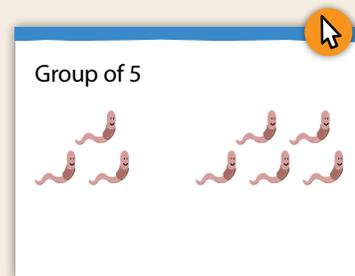
**Ask** How can you make sure you have counted the correct number of objects in a group?

**Listen for** I can count each object only once. I can be careful not to miss any objects. I can move each object as I count it. I can mark each object as I count it.

**Generalize** To find how many are in a group, why do you think you must count every object and count each object only once? Listen for understanding that this is how to find the correct number in a group.

**Close: Exit Ticket**

**Materials** For each child: copy of Close slide  
Have children find the group of 5 worms.



**Solution** The group on the right

**Listen for** Children count precisely so no object is skipped or counted twice.

**Common Misconception** If children choose the group of 3 worms on the left, then practice counting with one-to-one correspondence again, marking each worm as it is counted.

**Solutions**

Have children find groups of 1, 2, 3, 4, 5, and 0 objects. Then have them color to show different groups.

Children's coloring should show the following:

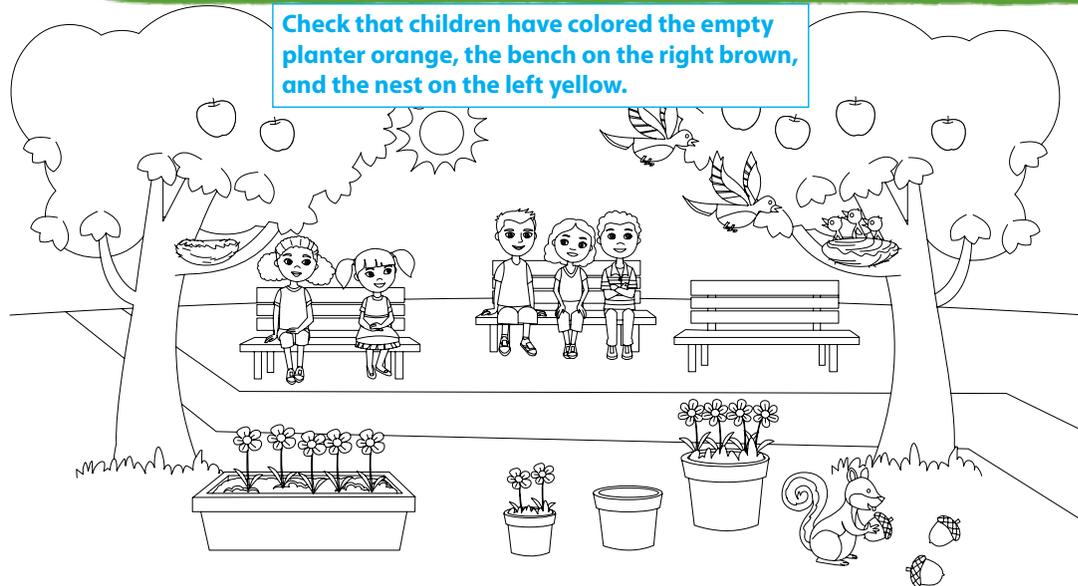
- the planter with 0 flowers colored orange
- the bench with 0 children colored brown
- the nest with 0 birds colored yellow

Name: \_\_\_\_\_

LESSON 3 SESSION 2

**Practice Numbers 0 to 5**

Check that children have colored the empty planter orange, the bench on the right brown, and the nest on the left yellow.



Ask children to find groups of 1, 2, 3, 4, and 5 as well as groups of 0 objects. Make sure children count each object in the group only once.

Have children color the planter with 0 flowers orange, the bench with 0 children brown, and the nest with 0 birds yellow.

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Lesson 3 Numbers 0 to 5

47

**Fluency Practice****Write numbers to 3.**

**Materials** For each child: Activity Sheet *Write 0, 1, 2, 3*

- Have children trace and then write the numbers 0 and 1 in the spaces provided.
- Repeat with the numbers 2 and 3. Use extra sheets for additional practice, as needed.

**Find groups of 0.**

Find opportunities throughout each day for children to identify groups of 0, such as an empty book bin, an empty pencil pot, a table where 0 children are sitting, etc.

**Solutions**

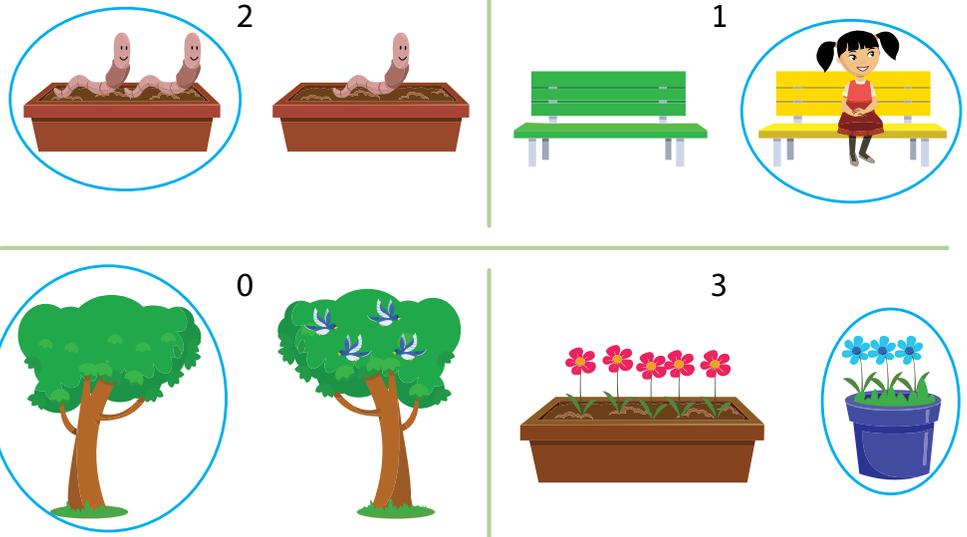
Children circle the groups that are described.

- Planter with 2 worms  
**Medium**

- Bench with 1 child  
**Medium**

- Tree with 0 birds  
**Medium**

- Planter with 3 flowers  
**Medium**



**Have children describe the pictures.** Ask children to find and point to a group of 1, 2, 3, 4, and 5. Have children circle the planter with 2 worms, the bench with 1 child, the tree with 0 birds, and the planter with 3 flowers.

**ELL English Language Learners: Differentiated Instruction** Prepare for Session 3 Use with *Try It*.

**Levels 1–3**

**Listening/Speaking** Display the spinner and star from *Try It*. Using a pencil and a paper clip, demonstrate how the game is played as you explain using simple words and gestures. Show children that when the clip lands on 0, no counters are placed on the star; when the clip lands on 1, one counter is placed; when the clip lands on 2, two counters are placed on different points of the star.

Verify understanding by letting children spin. Then let them play the game with a partner.

**Levels 2–4**

**Listening/Speaking** Display the spinner and star from *Try It*. Demonstrate how the spinner works and explain the rules of the game in simple terms.

Partner children. Give them sentence frames they can use to conduct the game:

*The spinner landed on \_\_\_\_\_.*

*You get \_\_\_\_\_ counters.*

*The star is full!*

**Levels 3–5**

**Speaking/Reading** Partner children to play the *Try It* spinner game. Demonstrate the use of the spinner and explain the rules of the game. Have one partner spin and call out the number. The other partner counts the corresponding number of counters and places them on the star. As an extra challenge, have children keep track of how many spins it took to fill the star.

**Purpose** In this session children count out 0, 1, 2, or 3 objects in a game. Then they trace, write, and read the numeral 0 and identify groups of 0.

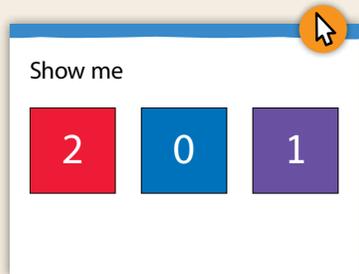
## Start

### Develop Fluency

**Materials** none, children use their fingers

**Why** Reinforce connecting a group of objects with the number label.

**How** Point to each number one at a time and have children hold up that many fingers. Have children hold up a fist with 0 fingers for 0. Keep pointing to the numbers in random order, moving to the next number more quickly each time to encourage fluency.



**Look for** Children hold up 1, 2, or 0 fingers when that number is pointed to. Children do not need to count their fingers.

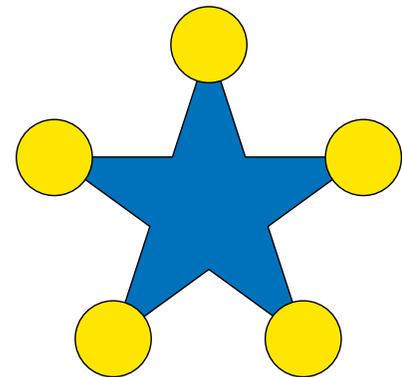
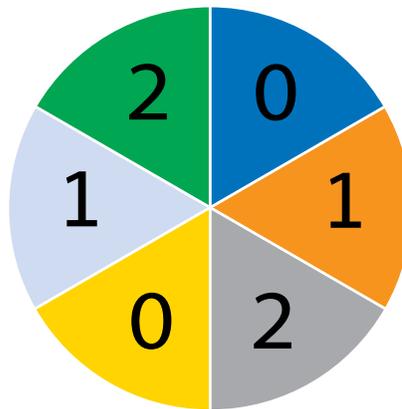
### Develop Language

**Why** Clarify the meaning of the phrase *figure out*.

**How** Write 0, 1,     , 3 on the board. Count the numbers aloud with children. Say: *Let's count to figure out, or find, the missing number.* Model counting aloud with your fingers, pausing at 2. Ask: *What number is missing?* Pause for a volunteer to share the answer. Say: *To solve the problem, we figured out the missing number.*

### Try It

Check that children only place counters on the star when they spin 1 or 2.



**Have children identify and count out 0, 1, and 2.** Give children a paper clip, a pencil, and 6 counters each. Explain that 0 means no counters. Children spin the spinner and put that many counters on the points of the star. Repeat until the star has 5 points covered.

**Discuss It** Which numbers help you to fill the points of the star? Why?

### Try It

**Materials** For each child: 6 counters, paper clip, pencil

Explain to children that they are going to play a spinner game where they will use counters to fill the points on a star.

Have children place one end of the paper clip in the center of the spinner and then put the point of the pencil in the center so that the paper clip can spin around the pencil. Children spin the spinner and put that many counters on the points of the star. Repeat until all 5 points of the star are covered.

### Support Partner Discussion

Have children explain to a partner which numbers helped them to fill the points of the star and which did not. Support as needed with questions such as:

- What did you do?
- What did you notice about the way your partner did it?
- Can you explain why sometimes you could not put any counters on the star?

**Common Misconception** If children place more counters than the number spun, then remind them to count one counter at a time as they place the counters on the star.

### Select and Sequence Solutions

Select children to present how they filled their star with counters. Choose children who identified:

- 1 puts 1 counter on the star
- 0 does not put any counters on the star
- 2 helps to fill the star faster

### Discuss It

#### Support Whole Class Discussion

**Compare and connect** the ways children filled their star.

**Ask** Which number did not help to fill the star? Why?

**Listen for** 0 does not put any counters on the star because it means no counters.

**Ask** How do you know how many counters to place on the star each time?

**Listen for** I count out the counters. 1 puts 1 counter on. 2 puts 2 counters on.



### Hands-On Activity

**Make groups.**

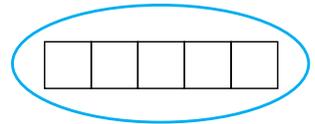
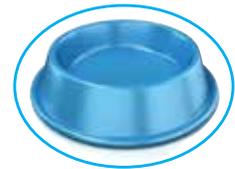
**If . . .** children are still unsure about the concept of 0

**Then . . .** use the activity below to emphasize that 0 is a label given to an empty set.

**Materials** For each pair: 15 connecting cubes, 6 cups, 6 sticky notes

- Have pairs write the numerals 0–5 on the sticky notes, one on each, and place one on each cup.
- Have children then count out the number of cubes to match the number on each cup and place them inside.
- Ask children how many cubes they should put in the cup with the 0 on it.

### Connect It



**Have children trace and write the numeral 0, read the number aloud, and then find the picture that shows 0.** Ask children to circle the picture that shows 0.

**Discuss It** Look at each picture. How can you tell when a picture shows 0? What numbers do the other pictures show?

### Connect It

#### Support Whole Class Discussion

Have children trace and write the number 0, read the number aloud, and then find the picture that shows 0. Next, have children circle the picture that shows 0. When all three problems have been completed, have several children share their answers and thinking.

- Ask** How can you tell when a picture shows 0?
- Listen for** There are no objects in the group. It is empty.
- Ask** What numbers do the other pictures show?
- Listen for** There are 2 fish, 3 dog treats, and 4 counters.

Call children’s attention to the pictures in the third problem. Point out that the problem shows two 5-frames: one with 4 counters and one with 0 counters. Explain that 5-frames are a tool used for showing numbers from 0 to 5.

### Deepen Understanding Counting

**SMP 8** Use repeated reasoning.

When all problems have been discussed, challenge children to think about the repeated pattern in counting.

- Ask** As you count out objects such as counters or cubes, what do you do?
- Listen for** I count out one at a time. I move one object as I count it.
- Ask** When you count objects into a group, what is happening to the number of objects as you count them?
- Listen for** The number of objects is more each time I count. There is one more each time.

**Generalize** Prompt children to identify that as they count, the next number is one more than the previous number.

### Close: Exit Ticket

**Materials** For each child: copy of Close slide

Have children look at each plate of apples and say how many are on each plate. Ask children to circle the plate that shows 0 apples and explain how they know.



- Solution** Bottom left plate circled
- Listen for** The plate shows 0 because it has no apples on it. The plate is empty.
- Common Misconception** If children count the empty set as one object, for example, 1 fishbowl rather than 0 fish, then remind them that they are counting how many objects are in the container. Remind them that in the activity where they counted how many children were in the hoop, they did not count the hoop.

**Solutions**

For each problem, children:

- trace and write the number
- circle the picture that shows that number

**Example**

Empty plate circled

**Basic**

**Problems**

- 0; empty pot circled

**Medium**

- 0; empty 5-frame circled

**Medium**

Name: \_\_\_\_\_

LESSON 3 SESSION 3

**Practice Numbers 0 to 5**

**Example**

---

Have children practice writing the numeral 0 and then find a picture that shows 0. Ask children to trace and write the numeral 0 and then circle the picture that shows 0.

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Lesson 3 Numbers 0 to 5 **51**

**Fluency & Skills Practice**

**Teacher Toolbox**

**Assign Numbers 0 to 5**

In this activity children write numbers to 5 and identify groups with each number of objects. There will be many real-world situations in which children count and write the numbers 0 through 5. For example, children may use these numbers to describe a trip to the playground—there is 1 slide, there are 0 dogs, or there are 5 children swinging.

Fluency and Skills Practice  
Numbers 0 to 5

Name \_\_\_\_\_

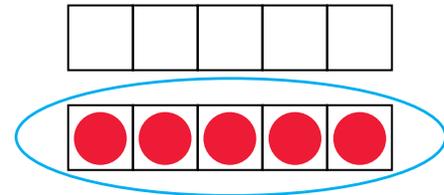
**Example**

Have children practice writing the numerals 0-5 and then find the picture that shows that number. Ask children to trace and write the numerals shown. Then have them circle the picture that shows that number.

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**Solutions**

- 0; cupcake with no candles circled  
**Medium**
- 2; bench with 2 children circled  
**Medium**
- 5; 5-frame with 5 counters circled  
**Challenge**



Have children practice writing the numerals 0, 2, and 5 and then find the picture that shows that number. Ask children to trace and write the

numerals shown. Then have them circle the picture that shows that number.

**ELL English Language Learners: Differentiated Instruction** **Prepare for Session 4**  
Use with *Apply It*.

**Levels 1–3**

**Listening/Speaking** Partner children for the activity on *Apply It*. Assign Partner A the blue box and place 5 counters inside. Show Partner A how to move the counters from the blue box into the red box one at a time. Assign Partner B the red box. Explain that as soon as Partner A moves a counter into the red box, Partner B is to count up aloud one number until he or she gets to 5. Verify comprehension, then let children play the game.

**Levels 2–4**

**Listening/Speaking** Partner children for the activity in *Apply It*. Assign Partner A the blue box and tell him or her to count out 5 counters, one by one, and place them inside the blue box. Tell Partner A to move the counters from the blue box into the red box one at a time. Assign Partner B the red box. Explain that as Partner A moves counters into the red box one by one, Partner B will count the counters that are coming into the red box. Verify comprehension, and then let children play the game.

**Levels 3–5**

**Listening/Speaking** Partner children for the activity in *Apply It*. Explain the activity to the children. Verify comprehension by having the children restate the instructions. For Partner A: *I will move the counters from the blue box to the red box one at a time.* For Partner B: *I will count up 1, 2, 3, 4, 5 as the counters come into the red box.*

**Purpose** In this session children count a set of counters by moving one counter at a time. Then they draw candles on birthday cakes to model numbers.

## Start

### Connect to Prior Knowledge

**Materials** For each child: 6 counters

**Why** Reinforce precision when counting using one-to-one correspondence.

**How** Give children 6 counters and have them count out 4 counters. Ensure they only count 4 into the group.

Count out 4.

**Look for** Children count out 4 counters accurately.

## Apply It

**Materials** For each child: 5 counters

Explain to children that they will explore what happens to numbers as they count.

**For the problem on the first page,** give each child 5 counters. Have children place all of their counters in the blue box. Then have them move the counters to the red box one at a time, counting each one to find the total number of counters.

## Discuss It

### Support Whole Class Discussion

Ask children to tell the total number of counters. Explain that you gave each child the same number of counters.

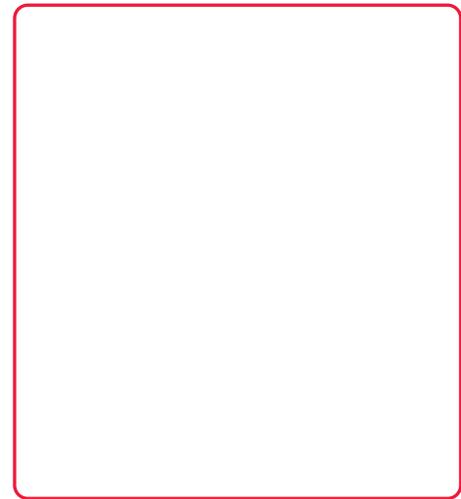
**Ask** *Should you each have counted to the same number? How do you know?*

**Listen for** Yes; if I have 5 and everyone else has 5, then we should all be counting to 5. We all had the same amount, so our numbers should also be the same.

### Apply It

Check that children place counters into the red box one at a time and count as they move them.

 Math Toolkit  
• counters 



**Have children count a set of counters by moving one more each time.** Give children 5 counters and have them place the counters in the blue box. Have children count how many are in the group by moving each counter across to the red box as it is counted.

**Discuss It** How many counters start in the red box? What is happening to the group of counters in the red box as you count them?

**Ask** *How many counters started in the red box?*

**Listen for** None. No counters. Zero.

**Ask** *How did you know you had counted all the counters?*

**Listen for** There were none left in the blue box.

**Ask** *What is happening to the group of counters in the red box as you count them?*

**Listen for** There are more counters in the red box each time. There is 1 more counter in the red box each time.

**Ask** *What do you notice about the numbers you are counting?*

**Listen for** The numbers get bigger by 1 each time I count a counter and move it to the red box. I am counting in order. I am counting one number for every counter.

Invite children to tell whether they found moving the counters helpful when counting and to explain how.

**Ask** *How did moving the counters help you to count correctly?*

**Listen for** It was easy to see how many I had counted. I knew the counters in the blue box were the ones I had left to count. It helped me not count the same counter twice.

**For problems on the second page,** tell children they will draw and count candles for different birthday cakes.

Say: *When Zoe turned 1, she had 1 birthday candle on her cake. The next year she turned 2. How many candles should she have on her cake? Have children draw and count the candles. Repeat for when Zoe turned 3 and 4.*

**Support Whole Class Discussion**

Discuss how each drawing does not have to be the same as long as it shows the correct number.

**Ask** *How did you know how many candles to draw?*

**Listen for** I matched the number under the cake. I drew 1 more candle for each cake because Zoe was 1 more year old.

**Ask** *Look at each birthday cake, starting with the first one. How can you describe how the number of candles changes each time?*

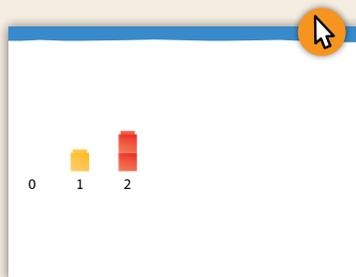
**Listen for** Each cake has 1 more candle than the cake before it. There is 1 more candle each time.

**Close: Exit Ticket**

**Check for Understanding**

**Materials** For each child: 5 connecting cubes, copy of Close slide

Explain that the number of cubes matches the number under the cubes. Ask children to draw the cubes for 3.



**Solution** 3 cubes drawn



**Have children draw and count 2, 3, and 4 candles.** Say: *When Zoe turned 1, she had 1 candle on her cake. The next year, she turned 2. How many candles should she have on her cake? Have children draw and count the candles. Repeat for when Zoe turned 3 and 4.*

**Discuss it** Look at each birthday cake, starting with the first one. How can you describe how the number of candles changes each time?

**Error Alert**

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

drawing 3 cubes but counting 2 or more than 3 as the total

have miscounted or started counting from 0.

Ask the child to count the cubes that were drawn, saying each number out loud from 1. Explain that they are counting from 1 because this is 1 cube. They can also model the cubes with their own connecting cubes and move each one as it is counted as they did earlier in the session.

drawing 5 cubes and telling 5 as the answer

have been confused by the fact they have 5 cubes and felt they needed to use them all.

Repeat the direction, pausing to go over information as children listen. Establish the number of cubes there are to start, and have children repeat the task to you (drawing 1 more cube and telling how many now). Ask children to show how many cubes they need to draw, either using their fingers or their own cubes.

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

After providing remediation, check children's understanding by posing another problem (this time for 4 cubes or for 3 cubes again but in a different arrangement) and having children repeat the steps above.

**Solutions**

For each problem, children:

- read the number
- draw that number of crackers on the plate

Then children count and say how many are on each plate. Prompt children to recognize that they have drawn 1 more each time.

**Example**

3 crackers drawn

**Basic**

**Problems**

- 4 crackers drawn

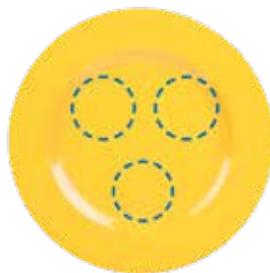
**Medium**

- 5 crackers drawn

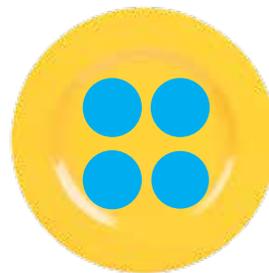
**Medium**

Name: \_\_\_\_\_

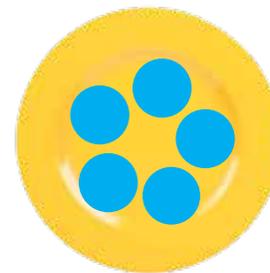
LESSON 3 SESSION 4

**Practice Numbers 0 to 5****Example**

3



4



5

**Have children draw one more each time to match the counting numbers.**  
Read the numbers 3, 4, 5 together. Have children draw that number of crackers on each plate. Then have children count and say how many are on

each plate. Prompt children to recognize that they have drawn one more each time.

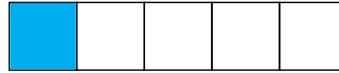
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Lesson 3 Numbers 0 to 5

55

Children may color squares in different positions. Check that children color the correct number of squares in each frame.

1



2



3



4



## Solutions

For each problem, children:

- read the number
- color that many squares in the frame

Then children count and say how many are in each frame. Prompt children to recognize that they have colored 1 more each time.

- 1 square colored

**Medium**

- 2 squares colored

**Medium**

- 3 squares colored

**Medium**

- 4 squares colored

**Medium**

Have children color one more square each time to match the counting numbers. Read the numbers 1, 2, 3, 4 together. Have children color that number of squares in each frame. Then have children count and say how

many are in each frame. Prompt children to recognize that they have colored one more each time.

**Purpose** In this session children practice showing 0 and the counting numbers to 5.

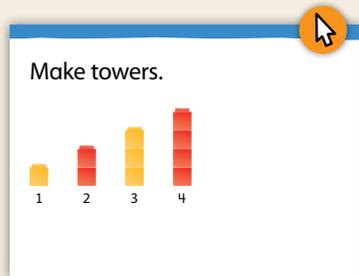
**Start**

**Develop Fluency**

**Materials** For each pair: 10 connecting cubes

**Why** Reinforce counting order of numbers and one-to-one correspondence.

**How** Have children make towers of 1, 2, 3, and 4 cubes and place the towers in that order.



**Look for** Children build towers of 1, 2, 3, and 4 cubes and place them in counting order.

**Apply It**

**Materials** For each child: 5 connecting cubes

Tell children they will show and count numbers from 0 to 5.

**For the first page,** have children look at each number and show that many cubes in the correct frame. Children should start with the frame for 1.

After they have shown 1, they should slide the cube to the next frame and use cubes to show the next number. Children then repeat to 5.

Each time children show a number, have them color the squares in the frame to match.

**For the second page,** have children draw objects to show the given numbers. Explain that they should show 2 apples in the tree, 0 fish in the fishbowl, 5 crackers on the plate, and 3 flowers in the flowerpot.

**Discuss It**

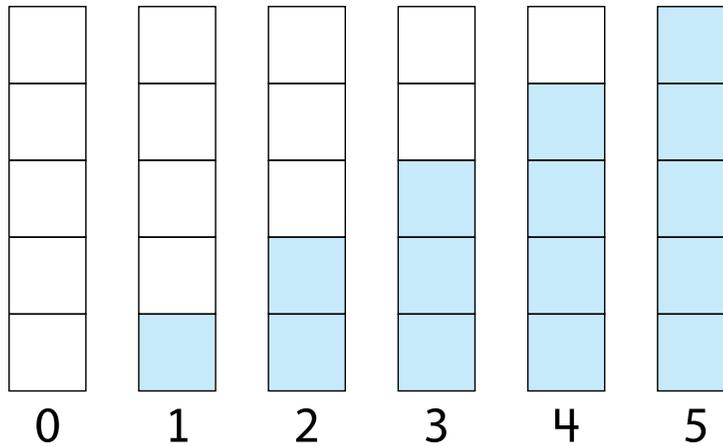
**Support Whole Class Discussion**

When children have finished the first page, have them share their answers. Invite children to share how they showed the numbers.

**Apply It**

Check that children add one more cube each time they slide the cubes to the next frame and count to check the number of cubes.

**Math Toolkit**  
• connecting cubes



**Have children show 0, 1, 2, 3, 4, 5.** Give each child 5 cubes. Have children show 1 in the frame labeled 1 by placing 1 cube. Have them slide the cube to the next frame and put on 1 more cube to show the next counting number. Repeat to 5.

**Discuss It** How could you show 0 in the frame? How did you show the next counting number each time?

**Ask** How could you show 0 in the frame?

**Listen for** Do not put any cubes in the frame. 0 means none, so I knew that no cubes should go in that frame. Leave the frame empty because it already shows 0 cubes.

**Ask** How did you show the next counting number each time?

**Listen for** I looked at the number and counted that many cubes. I knew there should be 1 more cube for each number, so I used 1 more cube for each frame.

When children have finished the second page, invite them to share how they figured out the number of objects to draw.

**Ask** How do you know you have drawn the correct number of objects in each picture?

**Listen for** I counted the objects as I drew them. I counted the objects again after I had drawn them to check. When I counted the objects I had drawn, the last number I said matched the number on the page.

**Ask** How did you show 0 fish in the fishbowl?

**Listen for** I did not draw any fish because a fishbowl with 0 fish would be empty. I left the fishbowl empty because it already shows 0 fish.

If no one mentions it, encourage children to see how drawings that are different (such as sizes or arrangements) still represent the same number.

**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 fill in the missing group of counters.

Fill in the missing group.

					●
					●
					●
					●
					●
0	1	2	3	4	5

**Solution** Children draw a group of 3 counters in the 3 column.

**Error Alert** If children did not draw the correct number of objects, **then** they may need further support in number recognition. Remind children of their work with the dot cards in Session 1. Read each card in order and connect the number to the number of dots.

Check that children draw 2 apples on the tree, 0 fish in the fishbowl, 5 crackers on the plate, and 3 flowers in the flowerpot.

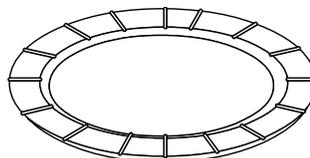
2



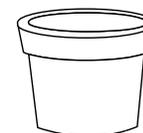
0



5



3



Have children draw objects to show numbers 0 to 5. Have children draw 2 apples in the tree, 0 fish in the fishbowl, 5 crackers on the plate, and 3 flowers in the flowerpot.

**Discuss It** How do you know you have drawn the correct number of objects in each picture? How did you show 0 fish in the fishbowl?

58

Lesson 3 Numbers 0 to 5

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## RETEACH



### Hands-On Activity

Make groups for numbers 0 to 5.

**Children** struggling to understand the meaning of the numbers 0 to 5

**Will benefit from** additional work with representing quantities

**Materials** For each pair: 15 counters, Activity Sheet *Number Cards 0 to 10: Small*; For display: Activity Sheet *Number Cards 0 to 10: Large*

- Display the number card for 0. Have each pair find their copy of this number card. Pairs then use their counters to represent this number, placing any counters they use above the number card.
- Repeat for the numbers 1, 2, 3, 4, and 5 in order. Each time, ask children to check their work so they both agree they are correct.
- Have children compare their work with another pair and discuss how their arrangements are similar or different. Have both pairs discuss how different arrangements still correctly show the number. Encourage children to change their arrangements. Discuss why there is no arrangement for 0.

## EXTEND



### Challenge Activity

Describe arrangements of counters.

**Children** who have achieved proficiency in counting and representing numbers 0 to 5

**Will benefit from** deepening spatial thinking about numbers 0 to 5

**Materials** For each pair: 5 counters, paper

- Partners sit back-to-back. One child arranges some or all of the counters (or chooses not to arrange any counters) on a sheet of paper.
- The child then describes the arrangement for the partner to re-create on their paper.
- When they have finished, pairs first check that they have the same number of counters and then see if the arrangements look similar.