

K

Topic 2: Comparing & Ordering 0-5 Lessons 1-9

Math Intervention Resources

Reteach

MDIS:

A1: 2-4, 2-5

A2: 2-1, 2-2, 2-3, 2-6, 2-9

A11: 2-7

A22: 2-8

Guided Practice

Help children understand that they can build on the concepts of equal groups and more introduced in Topic 2.

Show a group of objects such as 4 cubes. Model for children how to make a group that has 1 more object than another group, or 1 fewer object.

Provide numerous opportunities for children to practice making groups that have 1 more, 2 more, 1 fewer, and 2 fewer.

Reinforce

Envision Math Games:

Topic Games:

- School Fun

envision Online Games

- Numbers 1-5

Symbaloo

Building Blocks (Golden CD)

10 Block Materials:

- Number chat cards
- Concentration
- Digit Detectives 0-5
- Numbers I Hear
- Numbers I Know

Assessments

K

Topic 2: Comparing and Ordering 0 to 5

Lesson 2-1

More, Fewer, and Same As

Quick and Easy Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will use one-to-one correspondence to compare objects and decide whether one group has <i>more</i> , <i>fewer</i> , or the <i>same number</i> as the other group.	If you compare two groups of objects and the number of objects match, the groups have the same number of objects. If one group has items left over, that group has more. The other group has fewer objects.	more (than) fewer (than) same as same number of column row	Connecting cubes



Math Background

In this lesson, children use what they know about equal groups to compare groups that have more and fewer objects. Children need to utilize the concept of one-to-one

correspondence (matching objects in one group to objects in another group) to see that there will be objects left over.

2

Guided Practice



MATHEMATICAL PRACTICES

Remind students to place a comma between the thousands digit and the hundreds digit.

Exercise 7

Error Intervention

If students are having difficulty understanding the problem,

then draw a place-value chart labeled *thousands*, *hundreds*, *tens*, *ones*. *What number belongs in the tens place?* [5] *What number belongs in the hundreds place?* [2] *What number belongs in the thousands place?* [6] *What number belongs in the ones place?* [6] *What is the 4-digit number?* [6,256]

Reteaching Ask students how they would use place-value models and a place-value chart to show the number 455. For another example and more practice, assign **Reteaching** Set A on p. 24.



Common Core

Domain

Counting and Cardinality

Cluster

Comparing numbers.

Standard

K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

Mathematical Practices

- ✓ Make sense of problems and persevere in solving them.
- ✓ Reason abstractly and quantitatively.
- ✓ Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- ✓ Use appropriate tools strategically.
- ✓ Attend to precision.
- Look for and make use of structure.
- ✓ Look for and express regularity in repeated reasoning.

K

Topic 2: Comparing and Ordering 0 to 5

Lesson 2-2

1 and 2 More

Quick and Easy Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will recognize and identify a group of objects that has 1 more or 2 more than another group.	1 more than or 2 more than expresses the relationship between two groups of objects.	1 more (than) 2 more (than)	Connecting cubes, crayons, Writing Practice 4, 5, 0 (Teaching Tool 13)



Math Background

Research says ... children will build on the concepts of equal groups and more introduced in Lesson 2-1. Knowing numbers that are 1 more than or 2 more than another number without counting is useful in many situations (Van de Walle & Watkins, 1993).

2

Guided Practice

Remind children that they can match up objects to decide which group has 1 more or 2 more objects.

Error Intervention

If children have difficulty comparing groups of objects, **then** have them draw lines to match objects one-to-one and then trace the objects.

Do you understand? *Do you have to count to know which group has one more or two more?* [No, you can match up each object and then tell.]

Reteaching Make two stacks of 2 connecting cubes each and explain that each stack has the same number of cubes. Add a cube to one stack and discuss what happens when one stack has 1 more than the other. Add another cube to the same stack and discuss what happens when one stack has 2 more than the other.



Common Core

Domain

Counting and Cardinality

Cluster

Comparing numbers

Standard

K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

Mathematical Practices

- ✓ Make sense of problems and persevere in solving them.
- ✓ Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- ✓ Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- ✓ Look for and express regularity in repeated reasoning.

K

Topic 2: Comparing and Ordering 0 to 5

Lesson 2-3

1 and 2 Fewer

Quick and Easy

Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will recognize and identify a group of objects that has 1 fewer or 2 fewer than another group.	1 fewer than or 2 fewer than expresses the relationship between two groups of objects.	1 fewer (than) 2 fewer (than)	Connecting cubes, crayons



PROFESSIONAL DEVELOPMENT

Math Background

This lesson builds on the concepts of equal groups and fewer presented in previous lessons. Relative value is an important concept of number sense. By learning concepts such

as more and fewer, children use the language of mathematics to compare quantities. This builds a foundation for beginning addition and subtraction.

Common Core

Domain

Counting and Cardinality

Cluster

Comparing numbers

Standard

K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

2 Guided Practice

Remind children that they can match up objects to decide which group has 1 fewer or 2 fewer objects.

Error Intervention

If children have difficulty comparing groups of objects, **then** have them draw lines to match objects one-to-one and then trace the objects.

Do you understand? *Do you have to count to know which group has 1 fewer or 2 fewer?* [No, you can match up each object and then tell.]

Reteaching Line up 2 rows of 4 beans each and match each one-to-one. Then take 1 bean away and ask children to describe the groups. Repeat with different numbers of beans. Then take 2 beans away from the rows and repeat.

K

Topic 2: Comparing and Ordering 0 to 5

Lesson 2-4

The Number 0

Quick and Easy Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will understand that zero means none.	Zero is a number that tells how many objects there are when there are none.	zero none	Counters (or Teaching Tool 32), crayons



Math Background

The idea of zero can be difficult for young children. The key is to name the correct set, as in “1 nest, but 0 birds.” The 0 is the foundational concept that makes the place-value numeration system possible by acting

as a placeholder when no value is named. The comprehension of zero is foundational to future use of the Hindu-Arabic numeration system.

2

Guided Practice

Remind children that zero can be used to tell that a group is empty.

Error Intervention

If children are not able to grasp that zero means none,

then help them understand this by showing a small clear plastic bag with 2 red cubes and a small plastic bag with no cubes. Hold up the bags, and help children compare them using the words *two* and *zero*.



Do you understand? *When there are no apples on the plate, how many cubes should you use to show none or nothing?* [Zero]

Reteaching Tell children to listen for the number in a sentence, such as, *Today I ate 2 sandwiches.* Ask children to show the number of sandwiches with color tiles. Repeat with other sentences using 0 to 5. When 0 comes up, ask children how they will show it and why.



Common Core

Domain

Counting and Cardinality

Cluster

Know number names and the count sequence

Standard

K.CC.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).

Mathematical Practices

- ✓ Make sense of problems and persevere in solving them.
- ✓ Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- ✓ Use appropriate tools strategically.
- ✓ Attend to precision.
- Look for and make use of structure.
- ✓ Look for and express regularity in repeated reasoning.

K

Topic 2: Comparing and Ordering 0 to 5

Lesson 2-5

Reading and Writing 0

Quick and Easy Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will recognize and write the numeral that describes the quantity of 0.	Zero is a number that tells how many objects there are when there are none.		Number Cards 0–5 (Teaching Tool 5), counters (or Teaching Tool 32), Writing Practice 4, 5, 0 (Teaching Tool 13)



Math Background

Representing numbers in a variety of ways helps children gain number sense. Often children will understand one representation of a number, such as a numeral, but not a

physical representation, such as with place-value blocks. Understanding that there are multiple representations of a number will help children later on with their algebraic thinking.

2 Guided Practice

Remind children that there is a special symbol for the number 0.

Error Intervention

If children have difficulty writing the numbers,

then have children practice by using a finger to trace over the numbers on number cards (Teaching Tool 5), or they can practice writing 0 on Teaching Tool 13.

Do you understand? *When the pencil holder is empty, what number would you write to show how many?* [0]

Reteaching Have children practice making zeros by providing them with beans, paint, or bits of paper. They can glue or paint their zeros onto a sheet of construction paper.



Common Core

Domain

Counting and Cardinality

Cluster

Know number names and the count sequence

Standards

K.CC.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). Also **K.CC.4**, **K.CC.5**

Mathematical Practices

- ✓ Make sense of problems and persevere in solving them.
- ✓ Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- ✓ Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- ✓ Look for and express regularity in repeated reasoning.

K

Topic 2: Comparing and Ordering 0 to 5

Lesson 2-6

As Many, More, and Fewer

Quick and Easy

Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will use one-to-one correspondence to compare two groups and determine whether one group has more, fewer, or as many as the other group.	If you compare two groups of objects and the number of objects match, the groups have the same number of objects. If you compare two groups and one group has items left over, that group has more. The other group has fewer objects.	as many	Connecting cubes, crayon



Math Background

Research says ... graph comprehension is based on knowledge of the components of a graph, ability to make comparisons and do computations from the information on the graph, and facility in relating information back to its context (Friel, Curcio & Bright, 2001).

This lesson begins a section in which children build their graphing skills by comparing sets of data to read and create different types of graphs related to familiar situations.

2

Guided Practice

Remind children that they can match objects one-to-one to figure out whether one group has more, fewer, or as many objects as another group. The suggestions below apply to Exercises 1–6.

Error Intervention

If children have difficulties matching objects one-to-one, **then** have them draw lines from one object to the other.

Do you understand? *How can you find out whether one group of objects has more, fewer, or as many as the other group?* [I can use objects to show each group. Then I can match the objects one-to-one. The group with an object or objects left over has more. The other group has fewer. If each object has a match, there are as many in one group as the other.]

Reteaching Show children a row of 4 marking pens without tops and a row of 3 marking-pen tops below the pens. *When we compare groups, we match them one-to-one.* Have children match the pens and tops. Then have them point to the row that has more and the row that has fewer. Continue with other comparisons.



Common Core

Domain

Counting and Cardinality

Cluster

Comparing numbers.

Standard

K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

Mathematical Practices

- ✓ Make sense of problems and persevere in solving them.
- ✓ Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- ✓ Use appropriate tools strategically.
- ✓ Attend to precision.
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K

Topic 2: Comparing and Ordering 0 to 5

Lesson 2-7

Ordering Numbers 0 to 5

Quick and Easy

Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will use objects to order numbers 0 to 5 in sequence.	There is a specific order to the set of whole numbers.	order	12 crayons, connecting cubes, Number Cards 0–5 (Teaching Tool 5), glue



PROFESSIONAL DEVELOPMENT

Math Background

In previous lessons, children have learned to count forward and backward and to identify and create equal and unequal groups. These concepts prepare children to order numbers. In most cases, children will not have problems

drawing objects, writing the corresponding number, and putting them in order. For children who do have difficulty, review the concepts of *1 more* and *1 fewer* to help them see the pattern in the order of numbers.

2

Guided Practice

Remind children that they can use objects to order numbers from 0 to 5.

Error Intervention

If children have difficulty recognizing the staircase pattern of the towers,

then provide children with dot cards (Teaching Tool 5) and help them place the cards in correct order.

Do you understand? *Which number comes after 0?* [1] *Which number comes after 1?* [2] Continue in this manner until you reach 5.

Reteaching Write the numbers 0 to 5 on paper cups and have partners take turns placing the cups in order from 0 to 5. Then have children count and place the corresponding number of counters in front of each cup.



Common Core

Domain

Counting and Cardinality

Cluster

Count to tell the number of objects

Standard

K.CC.4.c Understand that each successive number name refers to a quantity that is one larger.

Mathematical Practices

- ✓ Make sense of problems and persevere in solving them.
- ✓ Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- ✓ Use appropriate tools strategically.
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- Look for and make use of structure.
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K

Topic 2: Comparing and Ordering 0 to 5

Lesson 2-8

Ordinal Numbers Through Fifth

Quick and Easy Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will use words <i>first</i> through <i>fifth</i> to identify ordinal positions.	Numbers can be used to tell order (ordinal numbers). Positions/order in a row can be found by counting, and ordinal names are similar to number names.	first second third fourth fifth	Number Cards 1–5, (Teaching Tool 5), blunt-tipped scissors, glue



Math Background

Children need more practice with ordinal numbers to avoid name confusion between numerals and ordinal numbers.

2

Guided Practice

Remind children that they can tell about the position of an animal, person, or thing by using the word *first*, *second*, *third*, *fourth*, or *fifth*.

Error Intervention

If children have difficulty identifying ordinal positions through fifth, **then** have five children line up and call out their positions in order.

Do you understand? *How do you describe the order of five things in a row?* [I start at the beginning of the row and use order words. I use the words *first*, *second*, *third*, *fourth*, and *fifth*.]

Reteaching Have children mime different instruments in a marching parade. Identify a position, first through fifth, and an action. For example, *Linda is first and plays the drums*. Children line up in order and march, miming their instruments.



Common Core

Domain

Counting and Cardinality

Cluster

Count to tell the number of objects.

Standards

K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality. Also **K.CC.4.c**

Mathematical Practices

- ✓ Make sense of problems and persevere in solving them.
- ✓ Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- ✓ Use appropriate tools strategically.
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- ✓ Look for and express regularity in repeated reasoning.

K

Topic 2: Comparing and Ordering 0 to 5

Lesson 2-9

Problem Solving: Use Objects

Quick and Easy

Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will use objects to show the number in each group, order the number of objects in each group, and identify the group that has the most or fewest number of objects.	Some problems can be solved by using objects to act out the actions in the problem.	fewest most	Connecting cubes (red, green, blue, yellow, purple, orange), crayons



Math Background

In this lesson, children will use what they know about equal groups to order groups that have more or fewer objects. Children need to utilize

the concept of one-to-one correspondence to determine which group has the most number of objects or the fewest number of objects.

2

Guided Practice

Remind children to look at the cube trains at the top of the page to help them.

Error Intervention

If children have difficulty ordering the numbers,
then have them arrange the cube trains from shortest to longest.

Do you understand? *How many cubes are in each cube train?* [3, 2, and 5] *Which has the fewest number in the group?* [The flamingo stickers] *Which has the most?* [The fish stickers]

Reteaching Have pairs of children pretend some cubes are apples. Give one child 3 connected red cubes and tell him or her that they are red apples. Give the other child 1 green cube and tell him or her that it is a green apple. Identify who has more and who has fewer.



Common Core

Domain

Counting and Cardinality

Cluster

Comparing numbers

Standards

K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. Also **K.CC.4.b**, **K.CC.4.c**

Mathematical Practices

- ✓ Make sense of problems and persevere in solving them.
- ✓ Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- ✓ Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- ✓ Look for and express regularity in repeated reasoning.