K

Topic 7: Understanding Addition

Lessons 1-7

Math Intervention Resources

Reteach

MDIS:

B1: 7-1, 7-2, 7-3, 7-4, 7-5, 7-6

Guided Practice

It is important to help children make connections between the information they have and the new concepts and symbols being introduced. For example, connect "2 and 3 is 5" to "2 + 3 = 5."

Provide children performing below level with numerous opportunities to practice working with the + and = symbols so that they can easily differentiate between them.

Reinforce

Envision Math Games:

Topic Games:

2 More at the Music Store

envision Online Games

Understanding addition

Computation Games: addition 1, 2, 3

Basic Facts

Math Facts Practice

Symbaloo

Building Blocks:

Circle the Number

Drill Command

Numbers to Know

Addition Strategies

Make Tens

Addition Combinations 10 Concentration

Cover the Quantity

Rolling Your Addition Facts

Assessments

K

Topic 7: Understanding Addition

Lesson 7-1

MDIS: B1

Stories About Joining

Quick and Easy Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will act out number stories that involve joining two groups.	Joining parts to make a whole is one interpretation of addition.	**number story** **join** **in all**	Counters (or Teaching Tool 32)

PROFESSIONAL DEVELOPMENT

Math Background

In joining stories, it is important for children to realize that the parts disappear once they are combined to make a larger group. The activities in this lesson provide this type of experience for children. Once they have completed an activity, children should verbalize what they have done.

2 Guided Practice

Remind children that they can use counters to show joining.

Error Intervention

If children's numbers in the number sentence do not match the pictures,

then have children use counters to show the groups.

Do you understand? ***How can you act out a number story that is about joining two groups?*** [I can use objects to show each group. Then I can join the groups and count the objects. The number I get tells how many in all.]

Reteaching Show a train of 3 red cubes and a train of 2 blue cubes. ***When we join groups, we put them together.*** Have children tell how many cubes there are in all.

Common Core

Domain

Operations and Algebraic Thinking

Cluster

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Standards

K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. Also **K.OA.2, K.OA.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 7: Understanding Addition

Lesson 7-2

MDIS: B1

More Joining

Quick and Easy **Lesson Overview**

Objective	Essential Understanding	Vocabulary	Materials
Children will interpret illustrations that show joining groups and write the corresponding numbers.	Joining parts to make a whole is one interpretation of addition.		Counters (or Teaching Tool 32)

PROFESSIONAL DEVELOPMENT

Math Background

When young children use concrete materials to join groups, they push the objects together. Circling the groups of illustrations in this lesson provides a bridge from the concrete approach to the pictorial. This reinforces the idea that they are joining two parts to make a whole.

2 Guided Practice

Remind children that they can join two groups by drawing a circle around pictures of the groups. Guide children to fill in the sentences that tell how many are in each group and how many there are in all.

Error Intervention

If children make errors when writing the sums,

then have them touch the pictures as they count the first group and count on to add the second group.

Do you understand? ***How can you use pictures of two groups of objects to find out how many objects there are in all?*** [Write the number in each picture, draw a circle around the groups, and write the number in all.]

Reteaching On the board, write ____ *and* ____ *is* ____. Give partners 8 paper clips. Have them make a chain of 2 paper clips and a chain of 6 paper clips. Fill in the blanks as you ask: ***How many paper clips are in each chain?*** Then have children join the chains. Ask: ***How many paper clips are there in all?*** Have children read the sentence aloud. Repeat the activity with other numbers.

Common Core

Domain

Operations and Algebraic Thinking

Cluster

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Standards

K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. Also **K.OA.2, K.OA.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.
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K

Topic 7: Understanding Addition

Lesson 7-3

MDIS: B1

Joining Groups

Quick and Easy **Lesson Overview**

Objective	Essential Understanding	Vocabulary	Materials
Children will determine how many there are altogether when two groups are joined.	Joining parts to make a whole is one interpretation of addition.	**altogether**	Connecting cubes of 2 colors

PROFESSIONAL DEVELOPMENT

Math Background

Helping children work with joining problems like those found in this lesson helps them further develop an understanding of the concept of addition.

2 Guided Practice

Guide children to use cubes to show each group of boats and place them on the appropriate pictures. Then have them connect the cubes to find out how many boats there are altogether.

Error Intervention

If children make errors when writing the sums,

then have them recount the connected cubes by ones.

Do you understand? *How can you use cubes to solve a joining problem?* [Use cubes to show each group, connect the cubes, and count them to find out how many there are altogether.]

Reteaching Place 5 counters on your palm, red side up. Put 2 counters on a child's palm, yellow side up. *I have 5 counters. How many counters do you have?* [2] Put the two hands together. *We have 7 counters altogether.* Repeat the activity with different numbers of counters.

Common Core

Domain

Operations and Algebraic Thinking

Cluster

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Standards

K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. Also **K.OA.2, K.OA.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.
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K

Topic 7: Understanding Addition

Lesson 7-4

MDIS: B1

Using the Plus Sign

Quick and Easy **Lesson Overview**

Objective	Essential Understanding	Vocabulary	Materials
Children will use the plus sign (+) to represent joining groups when recording addition.	Joining groups can be shown in an addition expression that uses the plus sign (+).	**add** **plus sign**	Counters (or Teaching Tool 32)

PROFESSIONAL DEVELOPMENT

Math Background

As children begin to use the plus sign, it is important that they understand that they are moving from a verbal expression of "2 and 3" to stating the same thing with symbols: 2 + 3. Help children connect the two expressions so that they realize that they have done what 2 + 3 means; they just haven't used the plus sign. This connection will enable children to build on their prior knowledge as they begin to move from verbal expressions to symbolic expressions.

2 Guided Practice

Remind children that they can use a plus sign to show the joining of two numbers.

Error Intervention

If children are confused by the plus sign,

then have them write the symbol + between the two groups of counters at the top of the student page. *The plus sign shows joining.*

Do you understand? *What do you know about a plus sign?*
[A plus sign means "and." The plus sign can be written between numbers to show that two groups are joined together.]

Reteaching Draw a group of 2 stars and a group of 3 stars on the board. Then draw a circle around both groups. Below the circle, write: 2 and 3. Then write 2 + 3. Point out the plus sign and explain that it means "and." *How many stars are there in all?* [5] Draw other groups of stars and have volunteers write numbers and the plus sign on the board to show how the groups can be joined.

Common Core

Domain
Operations and Algebraic Thinking

Cluster
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Standards
K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. Also **K.OA.2, K.OA.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 7: Understanding Addition

Lesson 7-5

MDIS: B1

Finding Sums

Quick and Easy **Lesson Overview**

Objective	Essential Understanding	Vocabulary	Materials
Children will identify and use the equal sign (=); add and write the sum.	Joining parts to make a whole is one interpretation of addition. Addition number sentences using + and = can be used to show parts of a whole.	**equal sign** **sum**	Counters (or Teaching Tool 32)

PROFESSIONAL DEVELOPMENT

Math Background

It is important to help children make connections between the information they have and the new concepts and symbols being introduced. For example, connect "2 and 3 is 5" to 2 + 3 = 5. Also, when introducing the word *sum*, link it to expressions *altogether* and *in all*.

2 Guided Practice

Read the sentence under each picture aloud. Point out that it tells the adding shown in the picture. Guide children to see they will use the plus and equal signs to show the adding in another way. After children trace the addition sentence, have them read it aloud with you.

Error Intervention

If children read "+" and "=" incorrectly,

then have them point to 2 + 6 = 8 on the page and follow along as you read it.

Do you understand? ***How can you use the equal sign when you add?*** [Write an equal sign between the numbers being added and the sum, or the number in all]

Reteaching Ask children to make groups of 5 and 2 counters. Have them join the groups and tell how many in all. [7] Write "5 and 2 is 7" on the board. Then erase *and* and write "+" in its place. Erase *is* and write "=" in its place. Repeat with different numbers of counters and have children write the plus and equal signs in place of *and* and *is*.

Common Core

Domain

Operations and Algebraic Thinking

Cluster

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Standards

K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. Also **K.OA.2, K.OA.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 7: Understanding Addition

Lesson 7-6

MDIS: B1

Addition Sentences

Quick and Easy Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Children will write and solve addition sentences to represent joining situations.	Joining parts to make a whole is one interpretation of addition. Addition number sentences using + and = can be used to show parts of a whole.	addition sentence	Counters (or Teaching Tool 32)

PROFESSIONAL DEVELOPMENT

Math Background

Some children want to skip writing the addition sentence and jump directly to telling the sum. If they do, they may not grasp the meanings for addition (part-part-whole and joining). Guide them through each step by discussing the process as they write the numbers.

2 Guided Practice

Point out the addition sentence and the dashed numbers and signs that children will trace. Have children count the animals in each group and then trace these numbers. After children trace the circle to join the groups, have them find how many there are in all, trace the plus sign, the equal sign, and then trace the sum.

Error Intervention

If children have difficulty finding sums,

then have them place a counter on top of each animal and then join the counters.

Do you understand? *What do you write in an addition sentence?* [The numbers I'm adding, a plus sign, an equal sign, and the sum]

Reteaching Display two groups of 5 or fewer objects. Have children write the number for each group on self-stick notes. Ask children to join the objects and write the sum on a note. Have children write a plus sign and an equal sign on notes. Then have children build an addition sentence by putting the notes in order.

Common Core

Domain

Operations and Algebraic Thinking

Cluster

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Standards

K.OA.5 Fluently add and subtract within 5. Also **K.OA.1, K.OA.2**

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 7: Understanding Addition

Lesson 7-7

MDIS:

Problem Solving: Draw a Picture

Quick and Easy **Lesson Overview**

Objective	Essential Understanding	Vocabulary	Materials
Children will solve problems by drawing pictures about joining two groups.	Information in a problem can often be shown using a picture or diagram and used to understand and solve the problem.		Crayons

PROFESSIONAL DEVELOPMENT

Math Background

Ask questions that help children think about what to draw when representing word problems. *What is the first thing you should draw? How do you know how many things to draw? Do your drawings have to look like the real objects?*

Common Core

Domain

Operations and Algebraic Thinking

Cluster

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Standards

K.OA.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. Also **K.OA.1, K.OA.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.

2 Guided Practice

Remind children that they can draw a picture to solve a joining problem and then write numbers to tell how many there are altogether. Exercise 1 allows children to revisit the Visual Learning Bridge as they draw their own pictures and write the number sentence to solve the problem.

Error Intervention

If children have trouble getting started,

then ask: *How many fish are in the first group?* Have children draw the first group. Then ask about the second group and have children draw it.

Do you understand? *Do your pictures have to look like the real objects? Explain.* [No, because the pictures just help with finding how many altogether]

Reteaching With connecting cubes, build a tower 2 cubes tall. Have children draw the tower. Using a different color, build a tower 3 cubes tall. Have children draw the second tower. Then ask children how many cubes there are altogether. [5] Have children complete the sentence "___ and ___ is ___."