All Aboard

LESSON FOCUS Finding related addition and subtraction facts in a fact family.
COMPANION ANCHORS LESSONS Related Facts; Writing
Related Facts; Writing Number Sentences; Fact Families

MATERIALS
Excursions student pages 127–130
Home Connection pages 131–132
Safety scissors
Paste
Construction paper or other heavy paper
Red and blue snap cubes (8 per child)
Dice (2 per pair of children)

LESSON OVERVIEW
In this lesson, children investigate fact families. They begin by cutting out numeral and operation symbol train cars and make fact family trains. Then they continue with snap cube modeling and the recording of number sentences. Pairs roll dice to find addends and record their fact family.

SETTING THE STAGE
Children make cut-out train number sentences forming a fact family.

◆ Distribute construction paper or other heavy-stock paper to children. Have children tear out The Number Train, page 127, in their books and cut out the engine and train cars. Tell them to paste the train cars onto construction paper to make either an addition or a subtraction sentence train. Remind children that the number sentence must be correct.

◆ When children finish cutting and pasting, have them share their sentences. Find all four fact family number sentences, and put them on the board (3 + 2 = 5, 2 + 3 = 5, 5 − 3 = 2, 5 − 2 = 3). Explain that we call four number sentences that are all made from the same numbers a fact family. Some children might suggest sentences where the operation is on the right side of the sentence (5 = 3 + 2). Encourage them to find additional sentences like these.

BUILDING CONCEPTUAL KNOWLEDGE
Children build snap cube trains to model a fact family.

◆ Distribute 8 snap cubes to each child (3 red, 5 blue). Tell children to connect the snap cubes to make a train. One part of the train will be blue, and the other will be red. Ask, “What is an addition number sentence that goes with your train (3 + 5 = 8 or 5 + 3 = 8)?” Write children’s answers on the board.

◆ Model with the snap cubes that the order of the numbers can be changed (3 + 5 or 5 + 3). Write the second number sentence on the board. Ask, “Do both addition sentences equal 8 (yes)? What is similar about these two number sentences?” (They use the same numbers and equal 8.) Ask, “What is different?” (The order of the addends is different.)

◆ Ask children whether they can use this snap cube train to think of a subtraction sentence (8 − 5 = 3 or 8 − 3 = 5). Write the subtraction sentence on the board. Ask for the other subtraction sentence. Write it on the board. Discuss what makes these two number sentences similar and what makes them different. Use cubes to model the subtraction as a part-part-whole relationship. There are 8 cubes in all, and 3 are red, so the other 5 are blue. Then model the other sentence. Again explain and discuss with children how they have just modeled all the number sentences in a fact family.

LANGUAGE DEVELOPMENT
addition sentence  number sentence
fact family  subtraction sentence
BUILDING SKILLS AND STRATEGIES

Children use snap cubes and given numbers to write train fact families.

For this activity, children work in pairs and share their responses. Have children turn to On Track, page 129, in their book. Explain that children should use their snap cubes and the numbers in the puff of smoke to make and write four number sentences on the trains. Once children are finished, have them share their sentences and discuss how they make up fact families.

PUTTING IT INTO ACTION

Pairs roll dice to find addends and make number sentences for fact families.

Group children in pairs. Have them turn to Roll It, Roll It, Roll It, page 130. Explain that each pair should roll two dice and record the two numbers in the first column. Then they should use the two numbers as addends to make two addition sentences and record them in the top two boxes. They can use their snap cubes to model the addition sentences. Once they have finished recording, they should use the same three numbers to make two subtraction sentences and then record them below the addition sentences.

Tell children to continue until they have filled in the two pages. If children roll two numbers that they have used before to make a fact family, have them roll again. Explain to children that rolling doubles, such as 5 and 5, will only make two sentences. Sentences made from doubles also make fact families, but the families are smaller.

HOME CONNECTION

Have children take home and complete Home Connection, pages 131-132.
ROLL IT, ROLL IT, ROLL IT

✓ Roll two dice. Write two addition sentences using the two numbers as the addends. Then write two related subtraction sentences. Roll again, and make a new fact family.

<table>
<thead>
<tr>
<th>Numbers Rolled</th>
<th>Fact Family</th>
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<tbody>
<tr>
<td>4, 6</td>
<td>4 + 6 = 10</td>
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<td>6 + 4 = 10</td>
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<td>10 - 6 = 4</td>
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<td>10 - 4 = 6</td>
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All Aboard

THE NUMBER TRAIN

11 + 2 = 3
ON TRACK

Use the numbers in the smoke to make two addition sentences and two subtraction sentences.

3 + 4 = 7

4 + 9 = 5

3 - 4 = 7

4 - 9 = 5
**ROLL IT, ROLL IT, ROLL IT**

Roll two dice. Write two addition sentences using the two numbers as the addends. Then write two related subtraction sentences. Roll again, and make a new fact family.

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<td>$10 - 4 = 6$</td>
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<td>$10 - 6 = 4$</td>
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HOME CONNECTION: FACT FAMILY GAME

Dear Parent or Guardian:

Your child has been learning all about Fact Families.

Play the Fact Family Game with your child. Cut out the number cards on the other side of this sheet. Place them face down on a flat surface. Player 1 draws two cards. He or she writes the two addition sentences and the two related subtraction sentences on a sheet of paper. For example, if a player chooses the numbers 2 and 4, he or she would write the following addition and subtraction sentences:

\[2 + 4 = 6 \quad 6 - 4 = 2\]
\[4 + 2 = 6 \quad 6 - 2 = 4\]

If a player can write all four sentences, he or she keeps the cards. If not, the cards are returned. Then the next player takes a turn. When all the cards have been used, the player with the most cards wins.
### HOME CONNECTION: FACT FAMILY GAME

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132  one hundred thirty-two

UNIT C  All Aboard