Set A1 ★ Activity 2

ACTIVITY

Number Line Showdown

Overview

In this whole-group game, students and teacher take turns drawing subtraction cards and entering the answers on a number line that goes from 0 to 20. At the end of the game, both teams add up all the numbers along the line they've entered; high score wins.

Skills & Concepts

★ develop fluency with sums to 20 and related subtraction facts

You'll need

★ Number Line Showdown Gameboard (page A1.11, 1 copy on a transparency)

★ Number Line Showdown Cards (pages A1.8–A1.10, see Advance Preparation)

★ Number Line Showdown Record Sheet (page A1.12, class set)

★ overhead pens in black, blue, and red

★ colored pencils (each student will need a red and a blue)

★ half-class set of calculators

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Advance Preparation Run 1 copy of the Number Line Showdown Cards on transparencies. Cut the cards apart and store them in an envelope or resealable plastic bag.

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Instructions for Number Line Showdown

1. Ask children to sit where they can see the screen. Place the Number Line Showdown gameboard on display at the overhead as helpers distribute copies of the Number Line Showdown Record Sheet. Let students know that they'll also need a regular pencil and 2 colored pencils, one red and one blue, to play the game.

2. Give students a minute or two to share their observations about the overhead and record sheet. Explain that they'll work together as a team to play against you. Choose or assign team colors, red and blue. Have them color in the boxes beside "Teacher" and "Class" on their record sheets as you do so at the overhead.

3. Call children's attention to the heavy mark in the middle of the number line, and ask them to pair-share ideas about the number that should be used to label that mark. Then invite a few of them to share their ideas with the class.

> **Students** *It should be a 10 because 10 is right in the middle of 0 and 20.*
> *That mark is halfway, and if you cut 20 in half, it's 10.*
> *Last time, we used a 5 for the middle mark, but that line only went to 10.*

4. When there's general agreement, use a black pen to label the middle mark with the number 10 at the overhead, as students do so on their record sheets. *Don't label any of the other marks on the line yet.*

Activity 2 Number Line Showdown (cont.)

5. Hold up your envelope or bag of Number Line Showdown Cards. Invite a volunteer to come up, draw a card for the class, and place it on display at the overhead. Ask students to give the thumbs-up sign when they have the answer. When most thumbs are up, call on a volunteer to share and explain the answer.

    Rachel *16 – 8 is 8 because 8 + 8 is 16.*

6. Have students write the answer where it belongs along the number line as you do so at the overhead. Remind them to use the pencil that matches their team color. Ask them to share their work with the people sitting next to them, and explain how they found the correct mark to label.

    Paulina *I just counted back 2 from 10.*

    Sam *I started from the beginning of the line and just counted 'til I got to 8.*

7. Take turns with the class until all the cards have been drawn and all the marks on the line have been labeled with numbers. Then distribute calculators and ask students to work in pairs to add all the numbers their team has entered, while you add yours. Record the scores on the Score Card; high score wins.

Activity 2 Number Line Showdown (cont.)

Extensions

- There is room at the bottom of students' sheets to play a second game. Collect their sheets and save them for use another day.
- Return to the game later in the year and challenge students to compute the scores without the help of a calculator.
- Leave the materials out and encourage student pairs to play the game at the overhead during Work Places.

Number Line Showdown Cards page 1 of 3

$$14 - 10$$

Number Line Showdown Card

$$16 - 8$$

Number Line Showdown Card

$$6 - 3$$

Number Line Showdown Card

$$14 - 7$$

Number Line Showdown Card

$$12 - 10$$

Number Line Showdown Card

$$10 - 4$$

Number Line Showdown Card

$$13 - 12$$

Number Line Showdown Card

$$10 - 5$$

Number Line Showdown Card

Number Line Showdown Cards page 2 of 3

$$15 - 2 =$$

Number Line Showdown Card

$$20 - 3 =$$

Number Line Showdown Card

$$14 - 2 =$$

Number Line Showdown Card

$$19 - 3 =$$

Number Line Showdown Card

$$13 - 2 =$$

Number Line Showdown Card

$$20 - 5 =$$

Number Line Showdown Card

$$18 - 9 =$$

Number Line Showdown Card

$$18 - 4 =$$

Number Line Showdown Card

Number Line Showdown Cards page 3 of 3

$$20 - 1 \quad |$$

Number Line Showdown Card

$$19 - 1 \quad |$$

Number Line Showdown Card

Number Line Showdown Gameboard

0

20

Score Card

☐ Teacher		
☐ Class		

NAME

DATE

Number Line Showdown Record Sheet

Game 1

20

Score Card		
☐ Teacher	
☐ Class	

0

Game 2

20

Score Card		
☐ Teacher	
☐ Class	

0
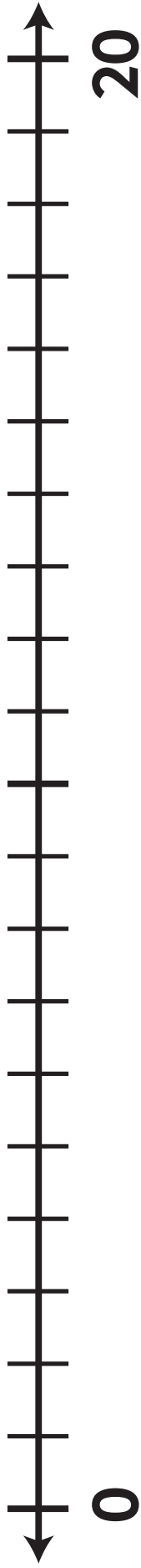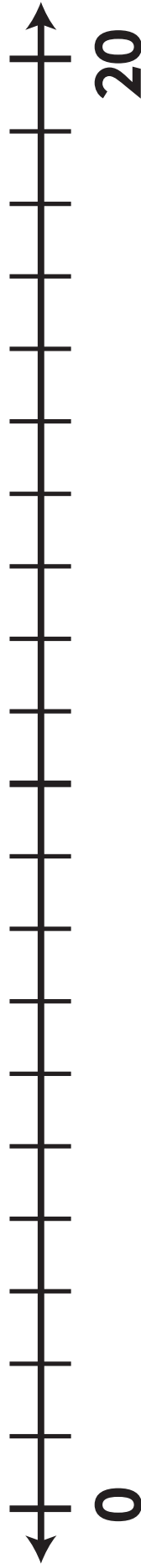
Set A1 ★ Activity 3

ACTIVITY

Unifix Train Fact Families

Overview
Unifix trains are used to introduce the concept of a fact family as 4 related addition and subtraction sentences.

Skills & Concepts
★ find and use patterns to add and subtract (fact families)

★ develop fluency with sums to 20 and related subtraction facts

You'll need
★ Unifix Train Fact Families, sheets 1 and 2 (pages A1.15 and A1.16, class set)

★ Unifix cubes (class set)

★ crayons

Instructions for Unifix Train Fact Families

1. As students watch and help you count, build a Unifix train with 7 blue and 5 red cubes.

2. Work with input from the class to generate 2 addition sentences to match the train. Record them on the whiteboard.

$$7 + 5 = 12$$
$$5 + 7 = 12$$

3. Now ask students how many cubes would be left if you subtracted 5 of them from the train. How do they know?

> **Students** *It would be 7 because 7 and 5 are 12.*
> *Yep! If you take the 5 red ones off, those 7 blue ones will still be left.*

4. Remove the 5 red cubes from the train and confirm with students that 7 remain. Record a matching subtraction sentence on the board. Repeat the process a second time with 7 instead of 5.

$$7 + 5 = 12$$
$$5 + 7 = 12$$
$$12 - 5 = 7$$
$$12 - 7 = 5$$

5. Explain to students that the 4 facts you've just recorded on the board are called a *fact family*. Can they explain why?

> **Students** *They're all about 12.*
> *It's kind of like 12 is the mom and 5 and 7 are the kids.*
> *They all fit together, so they're kind of like a family.*

Activity 3 Unifix Train Fact Families (cont.)

6. Now build a train of 9 green cubes and 6 brown cubes as the students watch and help you count. Repeat steps 2–4 to generate a fact family for this train.

$$9 + 6 = 15$$
$$6 + 9 = 15$$
$$15 - 6 = 9$$
$$15 - 9 = 6$$

7. Give each student a copy of the Unifix Train Fact Families sheets. Review the instructions together. When students understand what to do, let them go to work. Circulate to provide assistance as needed. Encourage them to share and compare their answers as they work.

Unifix Train Fact Families sheet 1

1 Write a fact family to match each Unifix train below. Include 2 addition and 2 subtraction sentences.
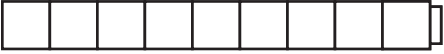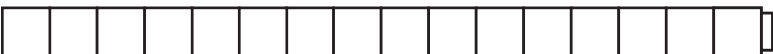
Unifix Train	Fact Family
example	$7 + 4 = 11$ $4 + 7 = 11$ $11 - 7 = 4$ $11 - 4 = 7$
a	
b	
c	
d	

Unifix Train Fact Families sheet 2

2 Color in each train below. Use 2 colors and color in every cube. Write a fact family for each train.

Unifix Train	Fact Family
a	
b	
c	
d	

Set A1 ★ Activity 4

ACTIVITY

Triangle Fact Families

Overview
This activity provides additional practice with fact families.

Skills & Concepts
★ find and use patterns to add and subtract (fact families)

★ develop fluency with sums to 20 and related subtraction facts

Recommended Timing
Anytime after Set A1 Activity 3

You'll need
★ Triangle Fact Families, sheets 1 and 2 (pages A1.19 and A1.20, run a class set)

Instructions for Triangle Fact Families

1. Draw a large triangle at the whiteboard as the students watch. Label it with the numbers 10, 7, and 3, as shown below.
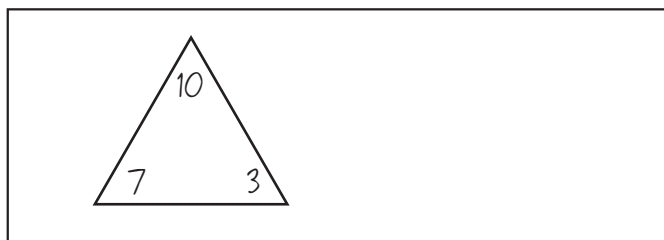
2. Explain that a fact family lives in this triangle. Can students explain why? Have them pair-share ideas for a few moments. Then call on volunteers to share their thinking with the class.

> **Students** *It's because 7 + 3 = 10, so they all go in one family.*
> *Also, 3 + 7 go together to make 10.*
> *And if you go 10 – 3, you get 7.*

3. Work with input from the class to write 2 addition and 2 subtraction sentences for the triangle.

$$7 + 3 = 10$$
$$3 + 7 = 10$$
$$10 - 3 = 7$$
$$10 - 7 = 3$$
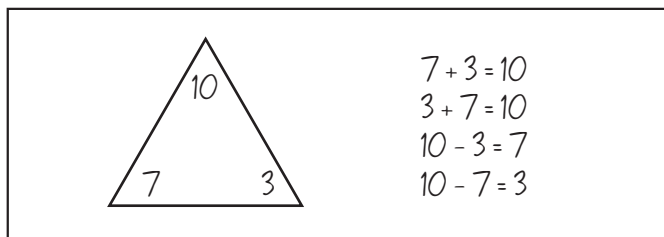
Activity 4 Triangle Fact Families (cont.)

4. Draw a second triangle at the board. Label it with the numbers 11, 4, and 7. Work with input from the class to write 2 addition and 2 subtraction sentences for this triangle.

$$4 + 7 = 11$$
$$7 + 4 = 11$$
$$11 - 4 = 7$$
$$11 - 7 = 4$$
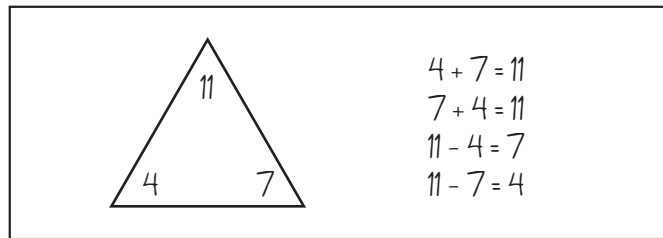
5. Now draw a third triangle. Label it with the numbers 5 and 6, as shown below. Explain that one of the members of this family is lost. Ask students to help you figure out the missing number. Record it where it belongs on the triangle and then have students help you write the fact family to match.

$$5 + 6 = 11$$
$$6 + 5 = 11$$
$$11 - 5 = 6$$
$$11 - 6 = 5$$
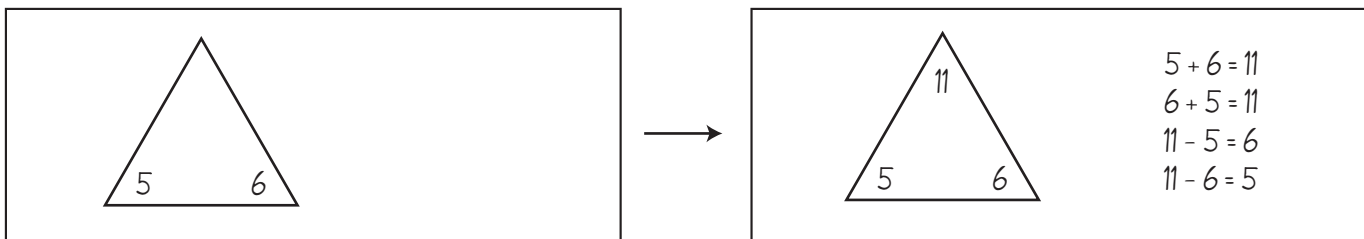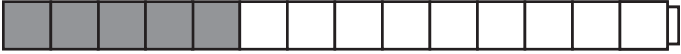
6. Give each student a copy of the Triangle Fact Families sheets. Review the instructions together. When students understand what to do, let them go to work. Circulate to provide assistance as needed. Encourage them to share and compare their answers as they work.
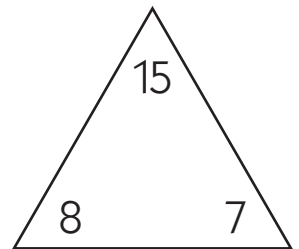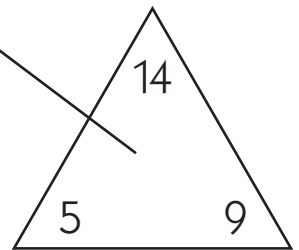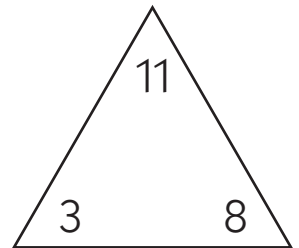
NAME _____   DATE _____

Triangle Fact Families sheet 1

1 Match each Unifix train to its fact family triangle. Then write 2 addition and 2 subtraction sentences to match. Write them under the train.

example

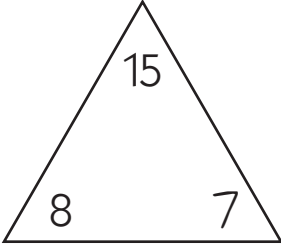$5 + 9 = 14$ $14 - 5 = 9$
$9 + 5 = 14$ $14 - 9 = 5$

a

b

c

d

Triangles:
- 11 / 3 8
- 14 / 5 9
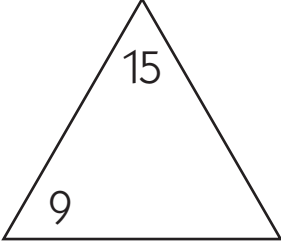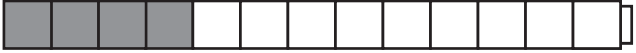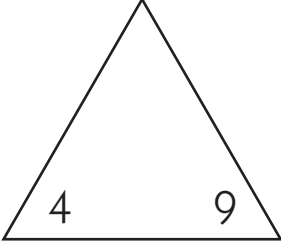- 15 / 8 7
- 12 / 9 3
- 13 / 8 5
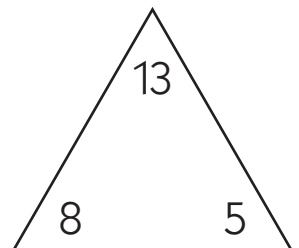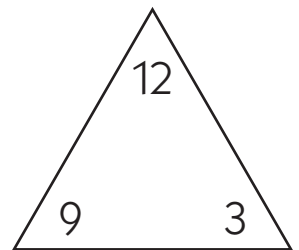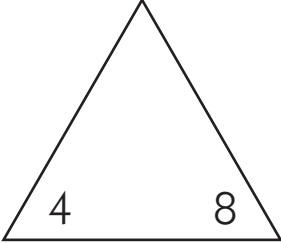
NAME _____   DATE _____

Triangle Fact Families sheet 2

2 One number from each family is lost! Write the missing number in the triangle.
Use the pictures to help. Then write 2 addition and 2 subtraction sentences to match.

Unifix Train	Triangle Fact Family	Fact Family
example	15 / 8 / 7	7 + 8 = 15 8 + 7 = 15 15 – 7 = 8 15 – 8 = 7
a	4 / 8	
b	15 / 9	
c	4 / 9	
d	14 / 6	