Math Skills Student Kits – Grade 1 Activities

These activities were selected for use with the Didax® Math Skills Student Kit for Grade 1 (item #211994). You can use the Bookmarks in this PDF file to navigate to the activities.

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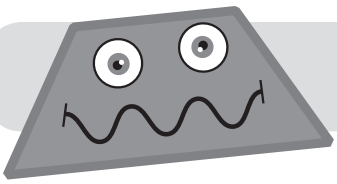


Number & Operations: **Building to 10**

Focal Point

Number and Operations – Developing an understanding of whole number relationships, including grouping in tens and ones.

Geometry – Composing and decomposing geometric shapes.

Materials

- Pattern blocks

Instructions

Explain the table showing the value (in triangles) of each of the four pattern blocks shown. You may want to review the "Trading Triangles" activity. Ask the students to use the table to estimate which of the figures can be covered with exactly 10 triangles. You can have them record their guesses. Then ask them to cover each figure with the fewest pieces possible and to trace each block. Finally, have them find each block's equivalent in triangles and determine the total number of triangles within each figure. They can check this by covering the figures with triangles only.

Guided Learning

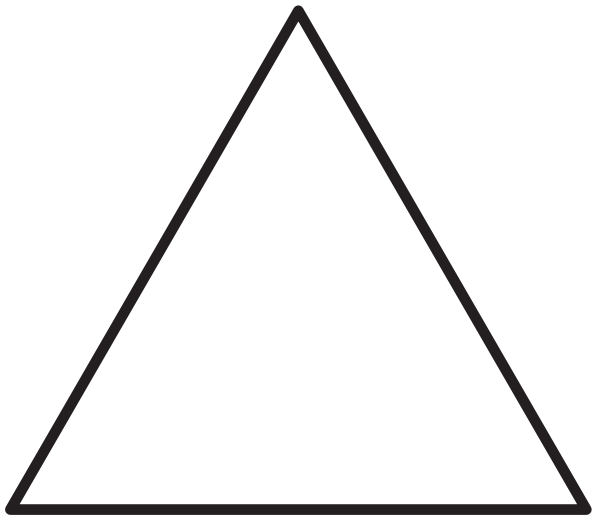
1. What strategy did you use in estimating?
2. What strategy did you use in finding the fewest number of blocks to cover a design?
3. How many triangles cover the rhombus? Hexagon? Trapezoid?

Explore More with PB!

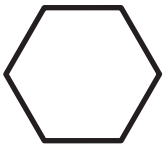
Have students work in pairs, each making his own design and asking the partner to guess if its value is greater than, less than or equal to 10 triangles.

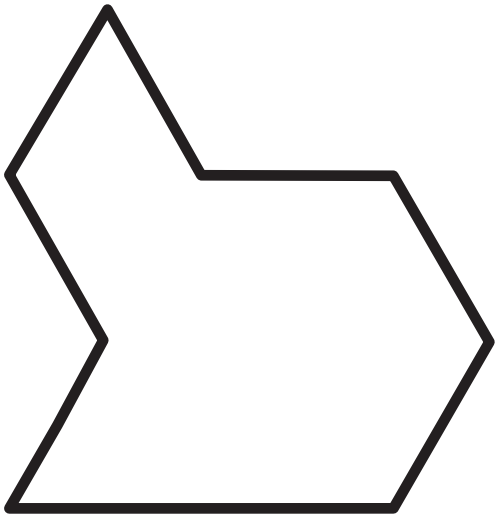
Building to 10

Name: _____

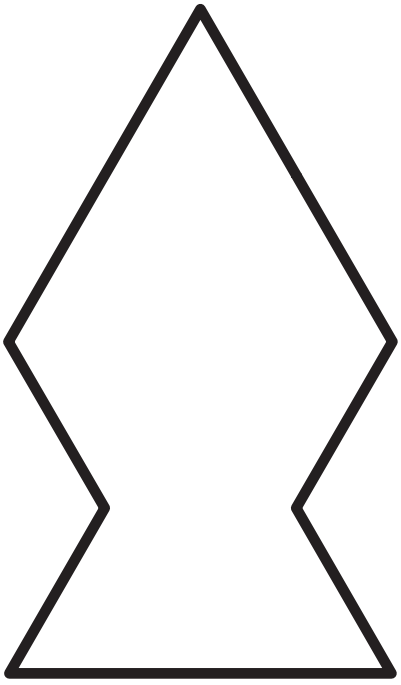


10? yes_____ no_____

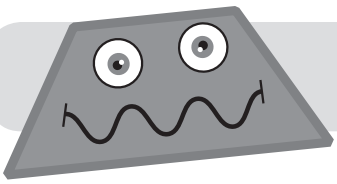
VALUE CHART	
	= 6
	= 3
	= 2
	= 1



10? yes_____ no_____



10? yes_____ no_____



Number & Operations: **Trading Triangles**

Focal Point

Number and Operations – Developing an understanding of whole number relationships, including grouping in tens and ones.

Geometry – Composing and decomposing geometric shapes.

Materials

- Pattern blocks
- Colored pencils or crayons

Instructions/Guided Learning

Ask the students to cover design A exactly with the pattern blocks shown by the solid lines and to cover design B with triangles only.

1. How many triangles did you use altogether?

Now have students remove a rhombus from design A and remove the triangles from B that were in the place of the rhombus.

2. How many triangles replaced the rhombus?

Next, have them remove a trapezoid from design A and remove the triangles from design B that were in the place of the trapezoid.

3. How many triangles replaced the trapezoid?

4. How many triangles do you need to cover the entire design?

5. How many triangles would replace a hexagon?

Tell the students to use 10 triangles and make an original design in space C and outline it. Then have them make the same design in space D, but with fewer pattern blocks of any shape.

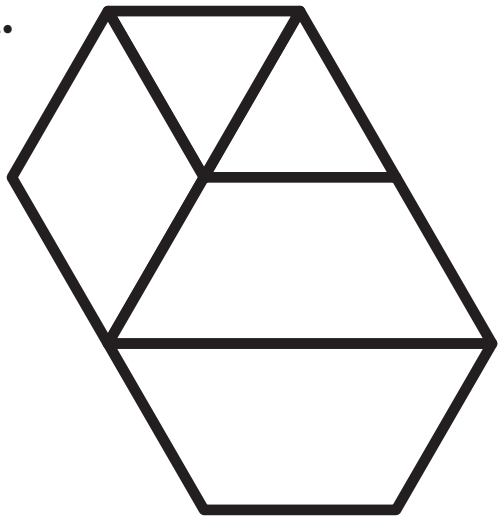
Explore More with PB!

Ask students to try to make a design using the fewest possible pieces (without using triangles) that can be covered exactly with 10 triangles. Have them verify their design by covering it with 10 triangles.

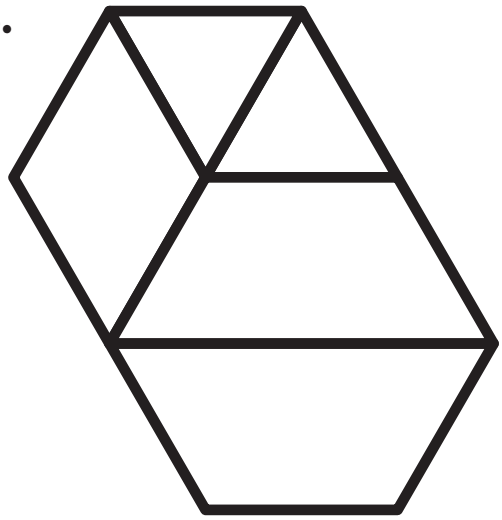
Trading Triangles

Name: _____

A.



B. cover with △



▱ = ____ △ ▭ = ____ △ ⬡ = ____ △

C.

your own design

D.

your own design

STUDENT NAME .....

ADDITION PROBLEMS

NUMBER AND OPERATIONS

1. Solve the addition problems.

(a) 11 + 10 = _____

(b) 23 + 12 = _____

(c) 34 + 25 = _____

(d) 42 + 35 = _____

2. Draw the addition story and solve the problem.

(a) There are four apples and five pears. How many pieces of fruit are there?

☐ + ☐ = ☐

(b) There were seven baseballs and four basketballs. How many balls were there altogether?

☐ + ☐ = ☐

3. Write the number sentence and solve the problem.

(a) There were five girls and six boys in one group. How many children were there altogether?

☐ + ☐ = ☐

(b) Amy has nine books and Rose has eight. How many books do they have altogether?

☐ + ☐ = ☐

(c) There are seven flowers in one vase and 12 in another. How many are there altogether?

☐ + ☐ = ☐

(d) Lewis had ten toys and Sanjiu had nine. How many toys altogether?

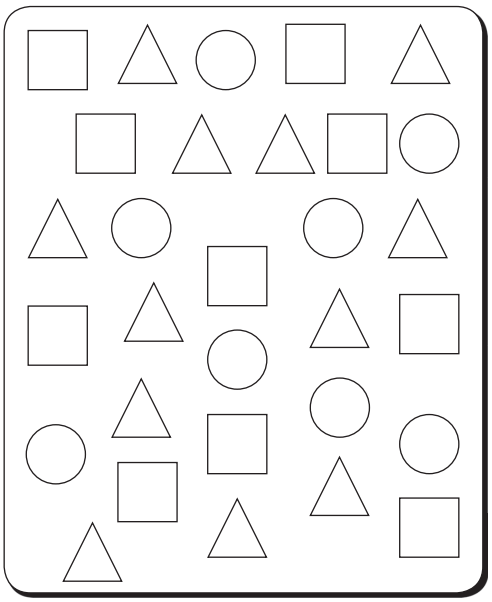
☐ + ☐ = ☐

STUDENT NAME .....

ADDITION

NUMBER AND OPERATIONS

1. How many of each shape can you find?



(a) squares _____

(b) circles _____

(c) triangles _____

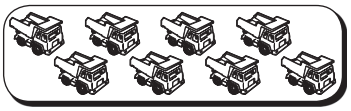
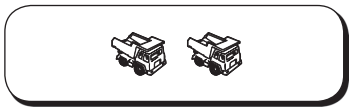
(d) squares and circles _____

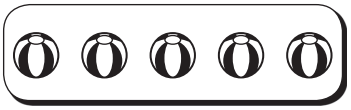
(e) squares and triangles _____

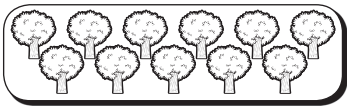
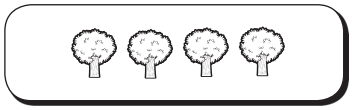
(f) shapes altogether _____

2. Complete the number sentences.

(a)  +  ☐ + ☐ = ☐

(b)  +  ☐ + ☐ = ☐

(c)  +  ☐ + ☐ = ☐

(d)  +  ☐ + ☐ = ☐

3. Solve the addition problems.

(a) 10 + 3 = _____ (b) 9 + 7 = _____ (c) 12 + 8 = _____

(d) 6 + 6 = _____ (e) 8 + 5 = _____ (f) 13 + 6 = _____

(g) 8 + 7 = _____ (h) 11 + 5 = _____ (i) 15 + 3 = _____

4. Write two addition problems with a sum of 10.

(a) _____ (b) _____

5. Write two addition problems with a sum of 20.

(a) _____ (b) _____

STUDENT NAME .....

MIXED PROBLEMS

NUMBER AND OPERATIONS

1. Read the story and draw the picture. Write the number sentence to solve the problem.

(a) Holly had two dogs and Charu had seven goldfish. How many pets altogether?

☐ + ☐ = ☐ pets

(b) Ruby baked 12 muffins and ate three. How many were left?

☐ – ☐ = ☐ muffins

(c) Blake's cat gave birth to seven kittens. He gave away four. How many kittens were left?

☐ – ☐ = ☐ kittens

(d) There were six books on the shelf and eight books on the desk. How many books altogether?

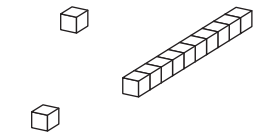
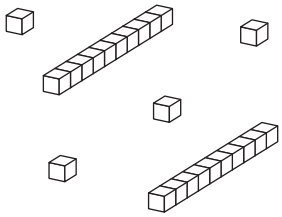
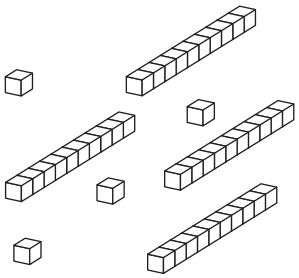
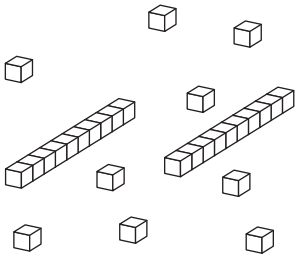
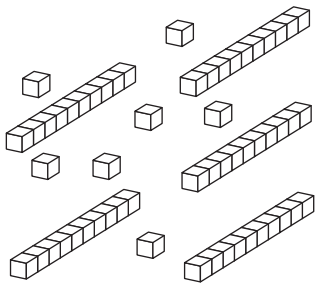
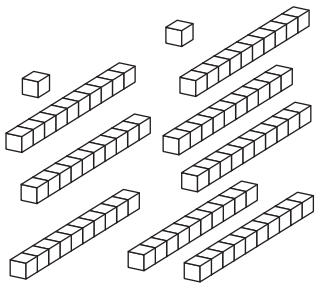
☐ + ☐ = ☐ books

STUDENT NAME .....

PLACE VALUE

NUMBER AND OPERATIONS

1. Write each number by counting the blocks.

(a)  _____ tens _____ ones = _____	(b)  _____ tens _____ ones = _____	(c)  _____ tens _____ ones = _____
(d)  _____ tens _____ ones = _____	(e)  _____ tens _____ ones = _____	(f)  _____ tens _____ ones = _____

2. Write the number.

(a) 2 tens and 3 ones		(b) 6 tens and 5 ones	
(c) 4 tens and 9 ones		(d) 7 tens and 2 ones	

3. Write how many tens and ones there are in each amount.

(a) 15 =	tens	ones	(b) 37 =	tens	ones
(c) 50 =	tens	ones	(d) 96 =	tens	ones

4. Circle the digit in each number that shows how many ones.

(a) 58 (b) 32 (c) 46 (d) 94 (e) 125

SUBTRACTION PROBLEMS

NUMBER AND OPERATIONS

STUDENT NAME .....

1. Solve the subtraction problems.

(a) 13 − 2 = ____

(b) 17 − 12 = ____

(c) 25 − 14 = ____

(d) 36 − 24 = ____

2. Write the number sentence and solve the problem.

(a) There were nine muffins. James ate two.

How many were left? ☐ – ☐ = ☐

(b) Tess is twelve years old and Lela is seven.

How much older is Tess? ☐ – ☐ = ☐

(c) There were fifteen children. Nine were girls.

How many were boys? ☐ – ☐ = ☐

(d) Alice read ten pages. If there are twenty pages in the book, how many more pages are left to read?

☐ – ☐ = ☐

(e) Ben had sixteen toys and gave seven to Noah.

How many did he have left? ☐ – ☐ = ☐

(f) Amber made twenty cards. She gave away fifteen.

How many did she have left? ☐ – ☐ = ☐

STUDENT NAME .....

SUBTRACTION

NUMBER AND OPERATIONS

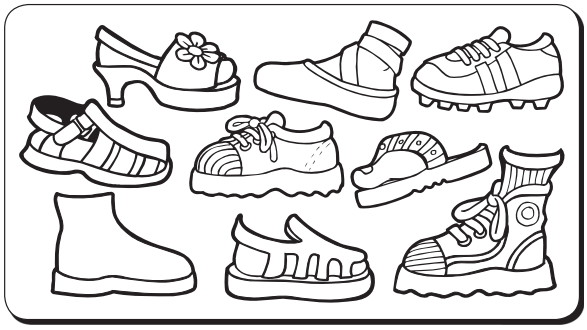
1. (a) How many altogether? ☐

(b) Color four.

(c) How many left? ☐

(d) Write the number sentence

☐ – ☐ = ☐



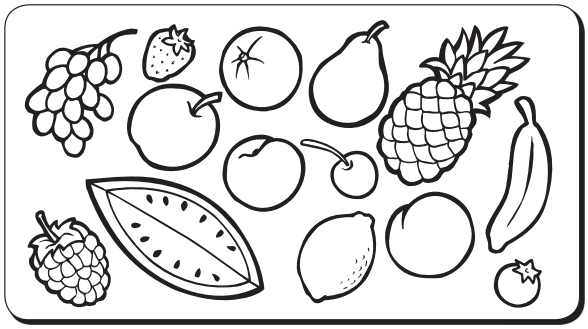
2. (a) How many altogether? ☐

(b) Color six.

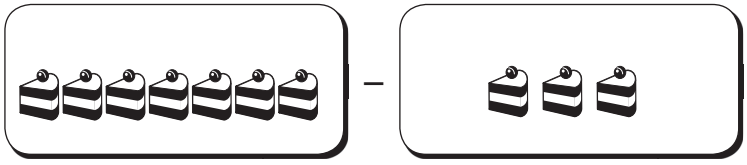
(c) How many left? ☐

(d) Write the number sentence.

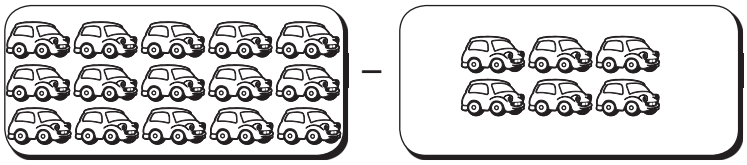
☐ – ☐ = ☐



3. Write the number sentence and solve the subtraction problem.

(a)  ☐ – ☐ = ☐

(b)  ☐ – ☐ = ☐

(c)  ☐ – ☐ = ☐

4. Solve the subtraction problem.

(a) 8 – 3 = _____ (b) 10 – 2 = _____ (c) 9 – 7 = _____

(d) 11 – 2 = _____ (e) 9 – 3 = _____ (f) 10 – 6 = _____

CUBE COUNT

Concept or Skills

Counting, greater than/less than (more/less), perimeter, area

NCTM Curriculum Focal Points

Number and Operations: Whole number relationships, including grouping of tens and ones

Measurement and Data Analysis Connection: Solve problems involving measurements and data

Number of Students

1, small group, or entire class

Materials

For each student:

- 20 Unifix Cubes
- Set of Cube Count Cards
- 1 Cube Count Record Sheet

Getting Ready

Make copies of the Cube Count Cards and cut them apart. Make a copy of the Cube Count Record Sheet for each student.

Distribute 20 Unifix Cubes and a record sheet to each student.

Digging In

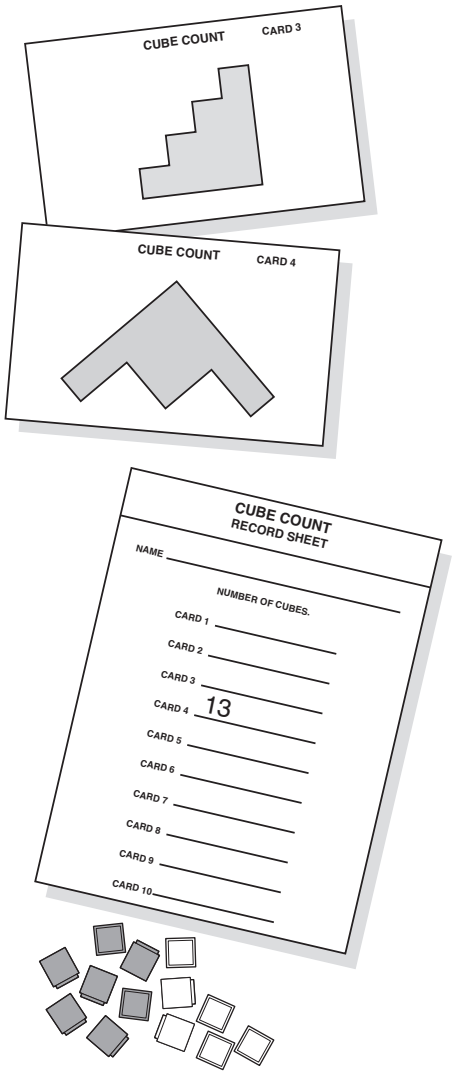
Instruct students to cover each outlined area on a card with Unifix Cubes, to count the number of cubes used, and to write the number in the blank by the appropriate card number on the record sheet.

Pose questions such as the following:

- Which figure is covered with the most Unifix Cubes?
- Which figure is covered with the fewest Unifix Cubes?
- Are any figures covered with the same number of Unifix Cubes?
- For a given figure, did anyone have a different number of cubes?

Going Further

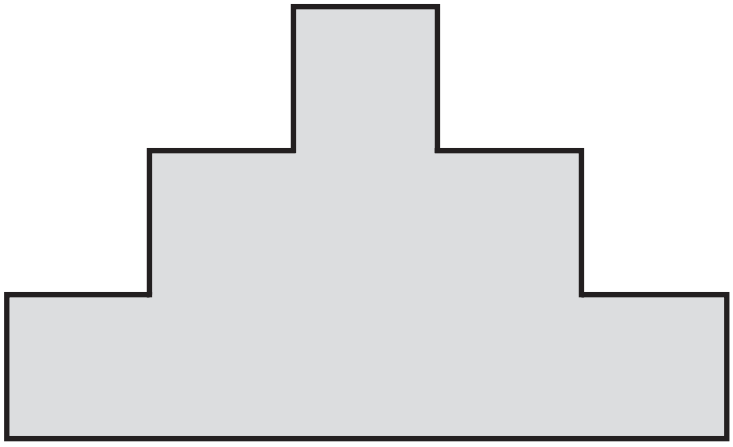
Use the blank Cube Count Cards to create new figures to cover.



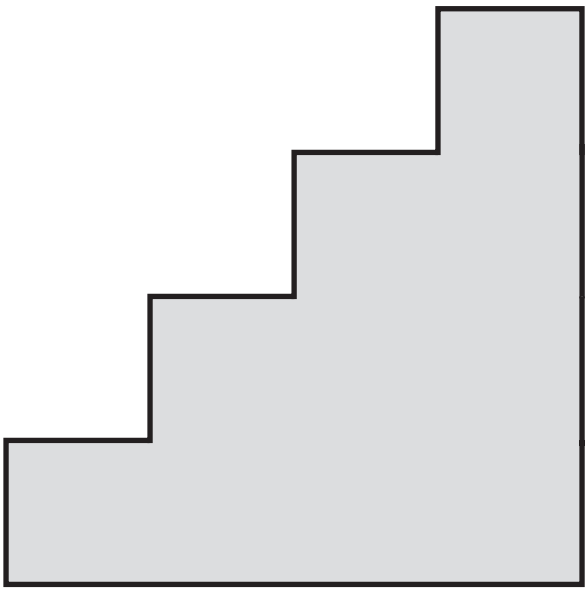
CUBE COUNT

CUBE COUNT CARD 1

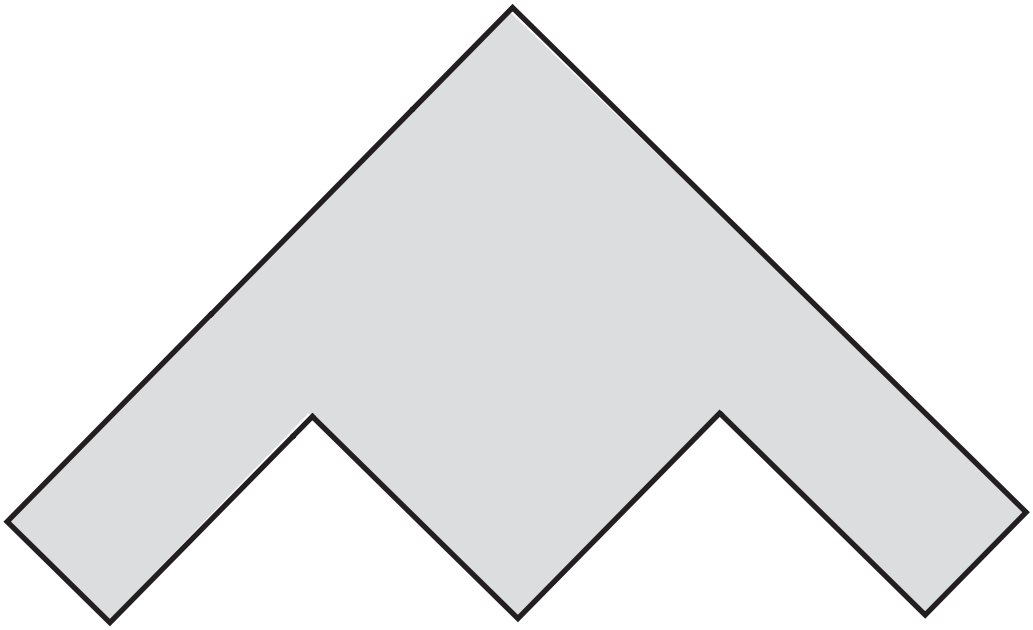
CUBE COUNT CARD 2



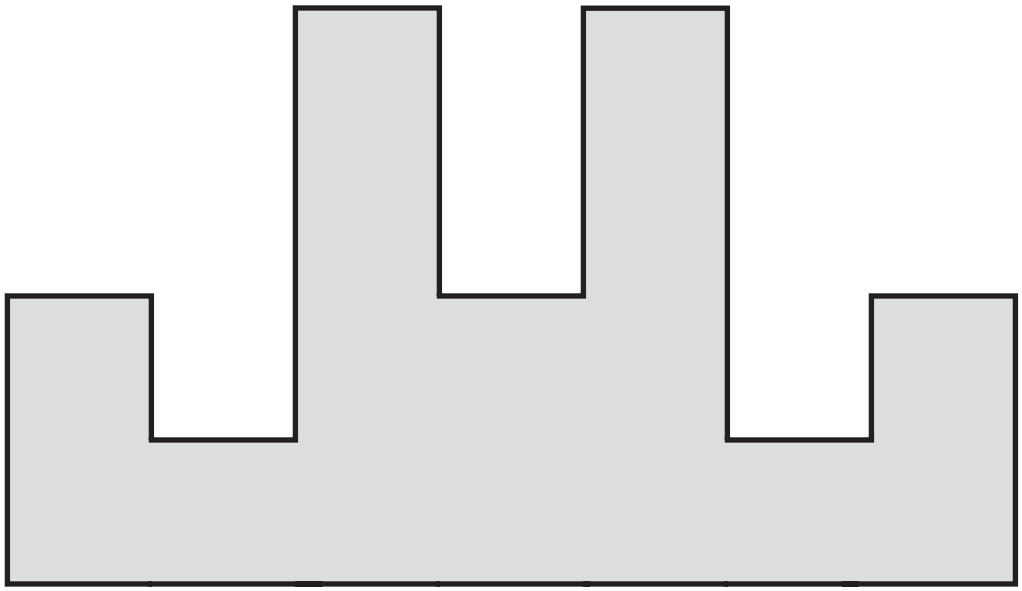
CUBE COUNT CARD 3



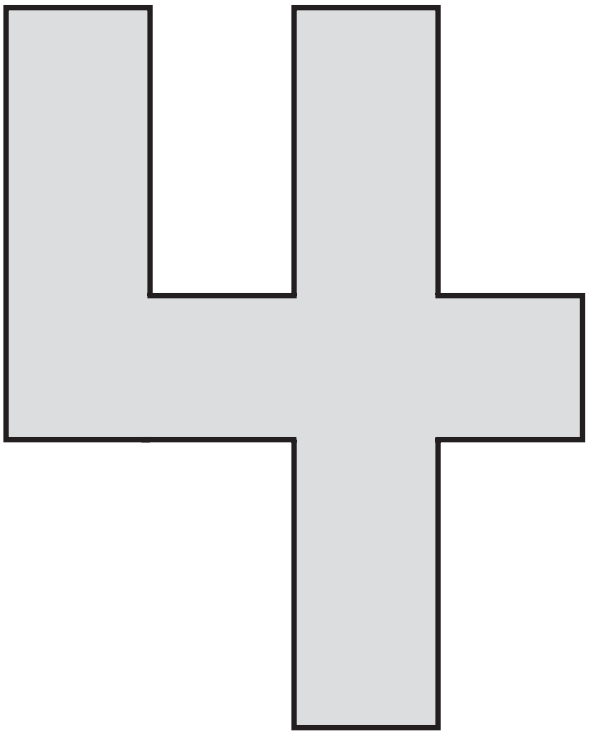
CUBE COUNT CARD 4



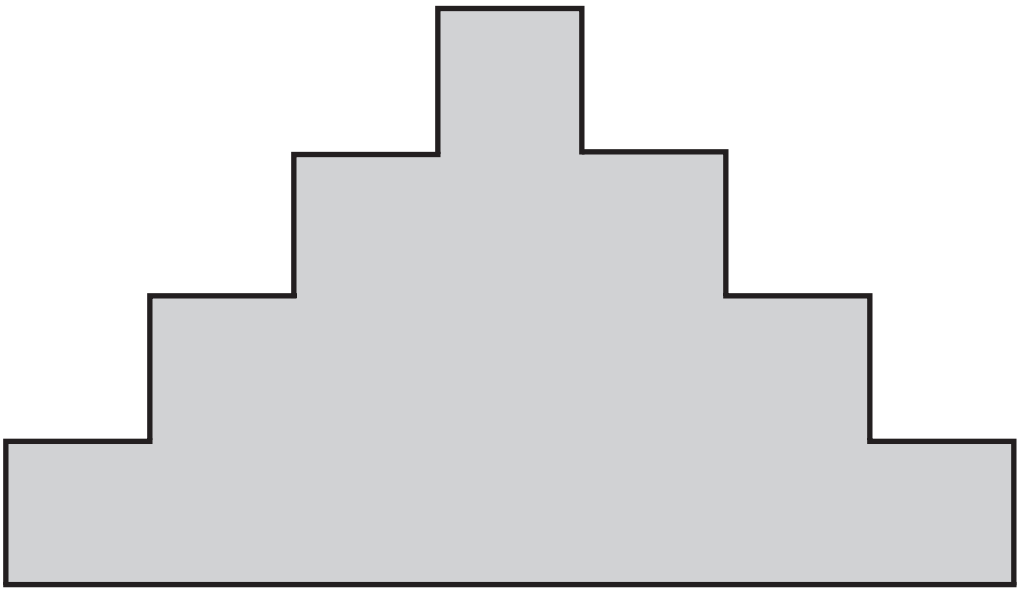
CUBE COUNT CARD 5



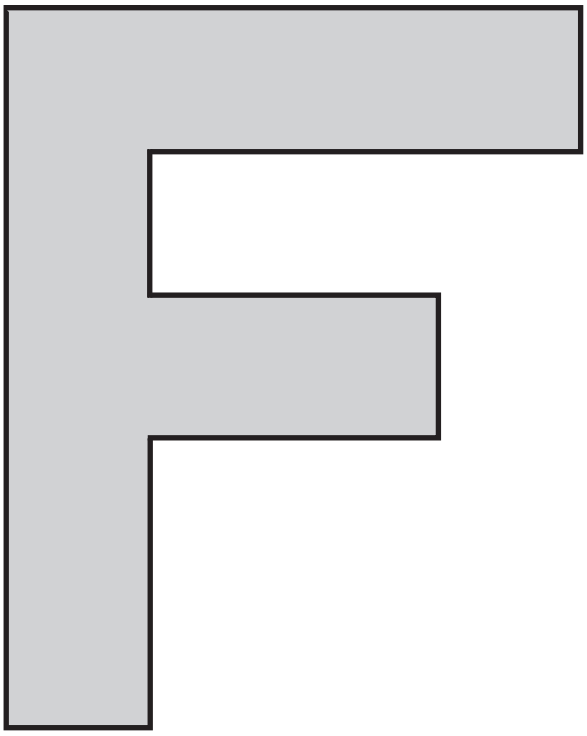
CUBE COUNT CARD 6



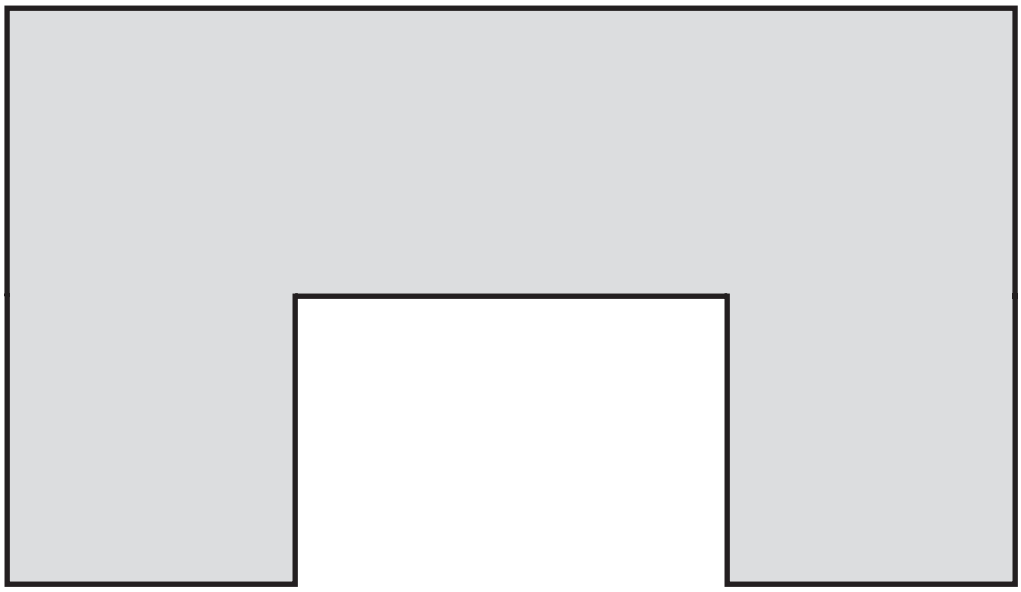
CUBE COUNT CARD 7



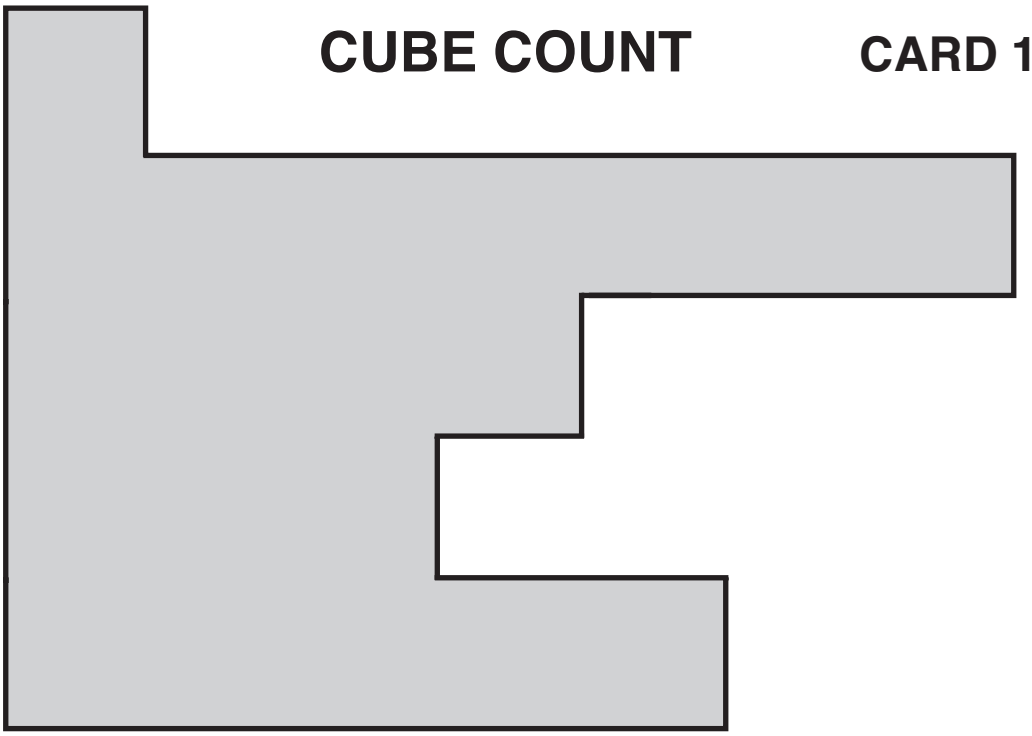
CUBE COUNT CARD 8



CUBE COUNT CARD 9



CUBE COUNT CARD 10



CUBE COUNT CARD _____

CUBE COUNT CARD _____

CUBE COUNT
RECORD SHEET

NAME _____

NUMBER OF CUBES

CARD 1 _____

CARD 2 _____

CARD 3 _____

CARD 4 _____

CARD 5 _____

CARD 6 _____

CARD 7 _____

CARD 8 _____

CARD 9 _____

CARD _____

JUST THE FACTS

Concept or Skills

Beginning addition and subtraction using basic fact families

NCTM Curriculum Focal Point

Number and Operations and Algebra: Addition and subtraction strategies

Number of Students

1–2

Materials

For each student:

- 18 Unifix Cubes of one color

For each group:

- Fact Family Number Cards

Getting Ready

Make copies of the Fact Family Number Cards and cut them apart. Note that the cards do not include 0 as an addend or sum.

Distribute 18 Unifix Cubes of one color to each student or pair of students.

Digging In

As an individual assessment activity, present a Fact Family Number Card to the student. Say:

> **I will show a Fact Family Number Card. With the Unifix Cubes, I want you to show me and tell me each member of the fact family**.

Allow time for the student to show each member of the fact family. For example, if the card shows 4, 6, 10, the members of the fact family are 4 + 6 = 10, 6 + 4 = 10, 10 – 4 = 6, and 10 – 6 = 4.

For some fact families there are only two family members, since the remaining two are identical. For example, consider 2, 2, and 4. The only members of the family are 2 + 2 = 4 and 4 – 2 = 2.

Repeat the task so that a student completes fact families for at least five number cards.

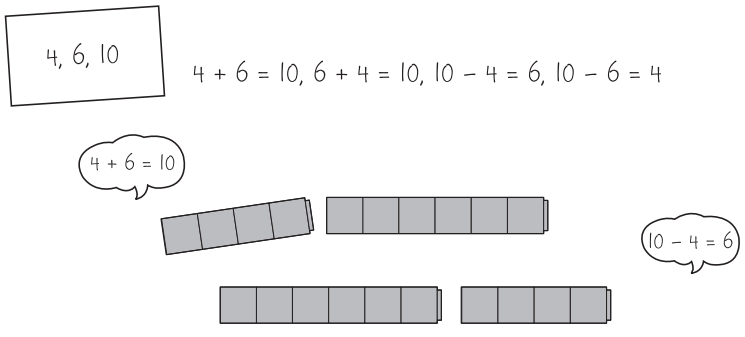
Going Further

Show students how to complete the activity in pairs. Model one of the Fact Family Number Cards with the entire class. Give each pair of students 18 Unifix Cubes and four or six number cards.

One student selects a card and the other student models the members of the fact family with the Unifix Cubes. Students reverse roles and repeat the task until all cards have been used.

The following questions will help assess a student's responses to the tasks presented:

- Did the student correctly show each of the four (or two) members of a particular fact family?
- Did the student correctly state the members of a fact family?
- If the student experienced difficulty in showing the members of a fact family, was there an observable pattern in the errors?
- Were particular sets of numbers more difficult than others?



FACT FAMILY NUMBER CARDS

1, 1, 2	1, 6, 7	2, 3, 5
1, 2, 3	1, 7, 8	2, 4, 6
1, 3, 4	1, 8, 9	2, 5, 7
1, 4, 5	1, 9, 10	2, 6, 8
1, 5, 6	2, 2, 4	2, 7, 9

FACT FAMILY NUMBER CARDS

2, 8, 10	3, 6, 9	4, 5, 9
2, 9, 11	3, 7, 10	4, 6, 10
3, 3, 6	3, 8, 11	4, 7, 11
3, 4, 7	3, 9, 12	4, 8, 12
3, 5, 8	4, 4, 8	4, 9, 13

FACT FAMILY NUMBER CARDS

5, 5, 10	6, 6, 12	7, 8, 15
5, 6, 11	6, 7, 13	7, 9, 16
5, 7, 12	6, 8, 14	8, 8, 16
5, 8, 13	6, 9, 15	8, 9, 17
5, 9, 14	7, 7, 14	9, 9, 18

Two-Dice-Difference Chart

How to Play

- *Each team tosses a die. Highest number goes first.*
- *Teams choose a color token (tiles, chips, cubes).*

- *Toss two dice. Find the difference.*
- *Find the number on the chart and place a token on it.*
- *If no play is possible, lose a turn.*
- *When each box on the chart is filled, count the tokens.*
- *Team with the most tokens wins.*

0	3	2	1	4
1	2	5	2	0
2	1	0	3	1
0	2	3	1	2
4	3	2	0	1

10 Minus One Die Chart

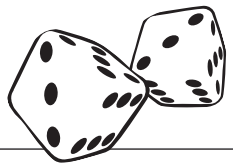
How to Play

- *Each team tosses a die. Highest number goes first.*
- *Teams choose a color token (tiles, chips, cubes).*

- *Toss a die. Subtract the number on the die from **10.** Find the difference on the chart and place a token on it.*
- *If no play is possible, lose a turn.*
- *When each box of the chart is filled, count the tokens.*
- *Team with the most tokens wins.*

4	6	8	5	7
8	5	7	9	6
7	4	6	9	8
6	9	5	7	4
4	8	9	5	6

12 Minus Two-Dice-Sum Chart



How to Play

- *Each team tosses a die. Highest number goes first.*
- *Teams choose a color token (tiles, chips, cubes).*

- *Toss two dice. Find the sum. Subtract the sum from* ***12.***
- *Find the difference on the chart and place a token on the number.*
- *If no play is possible, lose a turn.*
- *When each box on the chart is filled, count the tokens.*
- *Team with the most tokens wins.*

5	2	7	3	8
4	6	0	5	6
8	1	9	3	4
3	5	10	2	6
7	6	4	5	7

18 Minus Two-Dice-Sum Chart

How to Play

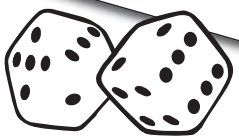
- *Each team tosses a die. Highest number goes first.*
- *Teams choose a color token (tiles, chips, cubes).*

- *Toss two dice. Find the sum. Subtract the sum from **18.***
- *Find the difference on the chart and place a token on the number.*
- *If no play is possible, lose a turn.*
- *When each box on the chart is filled, count the tokens.*
- *Team with the most tokens wins.*

10	11	8	13	16
12	14	15	7	10
6	8	13	12	6
16	10	9	11	9
15	11	7	14	12

100 Minus Two-Dice-Sum Chart

- *Each team tosses a die. Highest number goes first.*
- *Teams choose a color token (tiles, chips, cubes).*



How to Play

- *Toss two dice. Find the sum. Subtract the sum from* ***100.***
- *Find the difference on the chart and place a token on the number.*
- *If no play is possible, lose a turn.*
- *When each box on the chart is filled, count the tokens.*
- *Team with the most tokens wins.*

92	93	90	95	98
94	96	97	89	92
88	90	95	94	88
98	92	91	93	91
97	93	89	96	94

100 Minus a Tens Die Chart

How to Play

- *Each team tosses a die. Highest number goes first.*
- *Teams choose a color token (tiles, chips, cubes).*

- *Toss a die. Each dot equals 10. Count by tens to find the value of the die.*
- *Subtract the die value from* ***100.***
- *Find the difference on the chart and place a token on it.*
- *If no play is possible, lose a turn.*
- *When each box of the chart is filled, count the tokens.*
- *Team with the most tokens wins.*

90	60	80	50	70
80	50	70	40	60
70	40	60	90	80
60	90	50	70	40
40	80	90	50	60

29: I Know That Problem

Number of Students

Entire class in partner pairs

Materials

For each student:

- 2 ten-frames or Ten-Frames Template (page 110)

For each pair of students:

- 20 Unifix Cubes
- Individual student whiteboard and marker

For the teacher:

- Word Problem Cards (page 148)

Overview

In this activity, students solve word problems involving addition and subtraction of whole numbers. The word problems are read by the teacher or may be read by students, if able.

Common Core State Standards

Content Standards:

Grade Level: 1

Domain: Operations and Algebraic Thinking (1.OA)

Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Practice Standards:

1. **Make sense of problems and persevere in solving them.**
   Students must explain to themselves and to their classmates what the information means for each problem. In certain situations, problems can have more than one solution.
2. **Reason abstractly and quantitatively.**
   Students must make sense of mathematical vocabulary for the quantities involved on each problem card.
3. **Construct viable arguments and critique the reasoning of others.**
   Students justify their conclusions and communicate them to others.
4. **Model with mathematics.**
   Students use Unifix Cubes and ten-frames to model and solve word problems.

Presenting the Activity

1. Make one copy of the Word Problem Cards and cut the cards apart.
2. Group the students into partner pairs.
3. Distribute Unifix Cubes and ten-frames to each pair of students.
4. Say to the students:

   "I will select and read one of the Word Problem Cards out loud to the class.

   For example, Mike checked out 8 books from the library. He read 3 books today. How many more books does he need to read before returning the books to the library?

   Partner 1 will solve the problem using Unifix Cubes and ten-frames.

   Partner 1 will set up the problem by placing 8 Unifix Cubes on the ten-frame, and then remove 3 cubes to model the answer, 5.

   Partner 1, explain your thinking as you solve the problem.

   Partner 2, listen to how your partner is solving the problem. Then, using your whiteboard, write a number sentence to represent the problem, such as $8 - 3 = 5$.

   Then, the two partners trade roles.

   I will select another problem card to read to the class.

   Partner 2 will model the solution using Unifix Cubes and ten-frames, then share the answer with Partner 1, who will create the number sentence.

5. As time allows, continue reading problems for students to solve.

Assessing Student Responses

The following questions will help you assess your students' responses to the activity.

- Did the student(s) correctly model each problem with the Unifix Cubes and ten-frames?
- Did the student(s) use the appropriate terminology, such as *added to*, *joined*, *subtracted*, *equals*, and so on?
- Did the student(s) state the correct solution for each word problem?
- Did the student(s) create correct equations?
- If the student gave an incorrect answer to a word problem after modeling it correctly, was any pattern evident?

Word Problem Cards

Matt had 14 marbles. Kent gave him 4 more marbles. How many marbles does he have now?

Maggie has 7 stickers. Her sister Mandy has 3 stickers. How many more stickers does Mandy need to have the same number as Maggie?

I want to save 10 pennies. I have 6. How many more pennies do I need to save?

I have 5 teddy bears. My brother has 5 teddy bears. How many bears do we have altogether?

I have 11 shirts. Six of my shirts are blue. How many shirts are not blue?

LaToya collects hair ribbons. She has 4 ribbons now. How many ribbons does she need to collect to have 20 hair ribbons?

Emily read 5 books. To win a prize, she must read 12 books. How many books does she still need to read?

Tim has 19 race cars. He gives 11 to his friend. How many race cars does he have left?

I walked 5 blocks to school, then 6 blocks after school to my friend's house. How many blocks did I walk?

Kevin has 8 pets. Six of his pets are fish in his fish tank. How many pets are dogs?

35: Make My Target Number

Number of Students

Pairs

Materials

For each student:

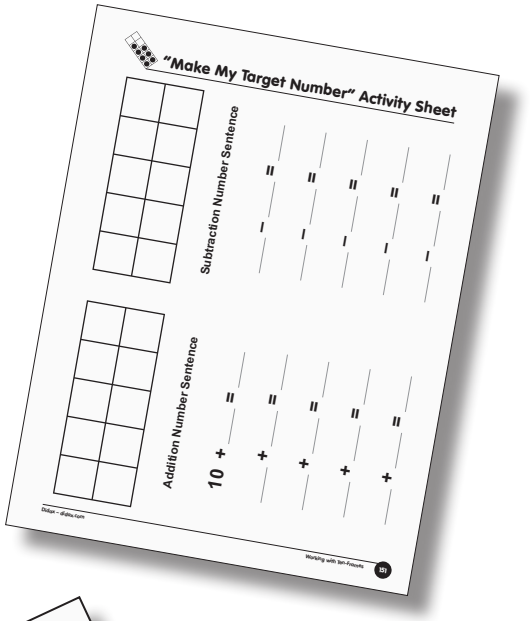
- "Make My Target Number" Activity Sheet (page 158)
- 20 Unifix Cubes

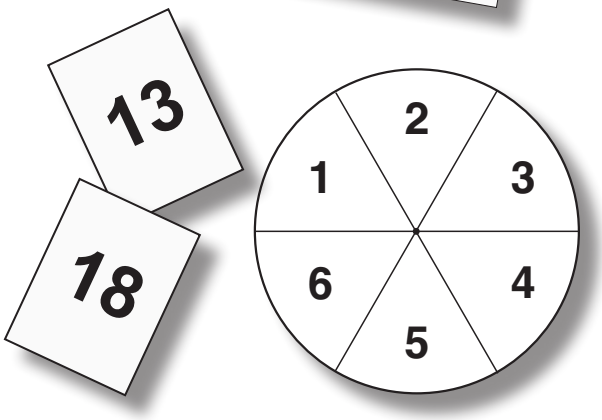
For each pair of students:

- Number Cards 11–20 (pages 118–119)
- Six-sided number cube or 1–6 Spinner (page 159)

Overview

The activity involves students tossing a number cube, placing Unifix Cubes on ten-frames, and writing the corresponding number sentence until reaching a specified number.





Common Core State Standards

Content Standards:

Grade Level: 1

Domain: Operations and Algebraic Thinking (1.OA)

Add and subtract within 20.

6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.

Practice Standards:

2. Reason abstractly and quantitatively.

Students have been making 10 using various strategies, such as counting on. Similar strategies work for finding a sum up to 20.

4. Model with mathematics.

Students model two addends with cubes and then write a corresponding number sentence representing the sum.

Presenting the Activity

1. Distribute Unifix Cubes and a "Make My Target Number" Activity Sheet to each student.
2. Distribute a 1–6 number cube or 1–6 spinner sheet to each pair.
3. Say to the student(s):

   > To start the game, each one of you draws a Number Card. Whoever has the greater number goes first. This is the target number you need to make on your ten-frames.

4. Now, fill in one of the ten-frames with 10 Unifix Cubes.
5. Allow time for students to complete the task.
6. Say to the student(s):

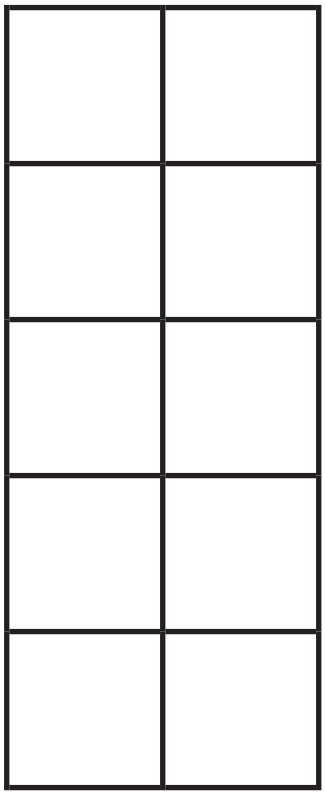
   > On your turn, toss the number cube and pick up the corresponding number of cubes. Place them on your ten-frames. The object of the games is to reach your target number before your opponent. For each turn, I want you to write two number sentences. The first is an addition number sentence to show the sum. When you start, the first number sentence will be "10 plus your number equals a new number."
   >
   > The second number sentence will be a subtraction number sentence to show the number of cubes you need to reach your target number. If your target number is 16 and you toss 2, then your first equation will be $10 + 2 = 12$ and your second equation will be $16 - 12 = 4$.
   >
   > You have to get your target number exactly to win. So, if you toss a number that will give you more than your target number, you lose your turn. For example, if you have 12 cubes in your frames and toss a 5, you would lose your turn.

Assessing Student Responses

The following questions will help you assess your students' responses to the activity:

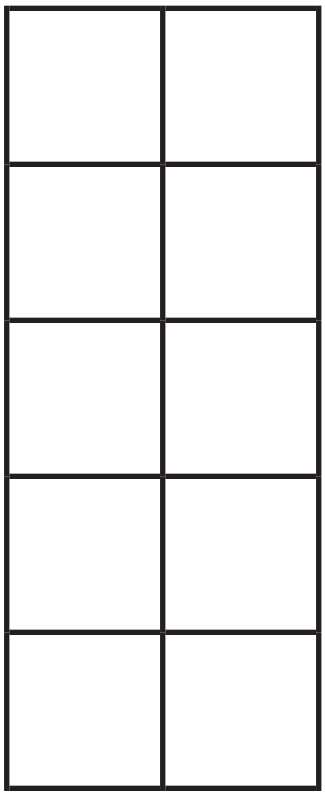
- Did the student(s) correctly model each addition problem with the cubes?
- Did the student(s) write the correct addition number sentence for each toss?
- Did the student(s) write the correct subtraction number sentence for each toss?
- Did the student(s) use any noticeable fact strategies in finding the differences?
- If the student answered incorrectly to several problems after showing the model correctly, was any pattern evident?

"Make My Target Number" Activity Sheet



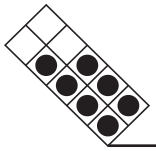
Subtraction Number Sentence

=	=	=	=	=
−	−	−	−	−



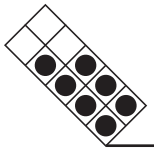
Addition Number Sentence

=	=	=	=	=
10 +	+	+	+	+



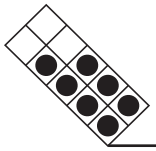
Number Cards 1–9

1	2	3
4	5	6
7	8	9



Number Cards 10–18

10	11	12
13	14	15
16	17	18



Number Cards 19–20

19	20

28: Who Am I?

Number of Students

Partner pairs

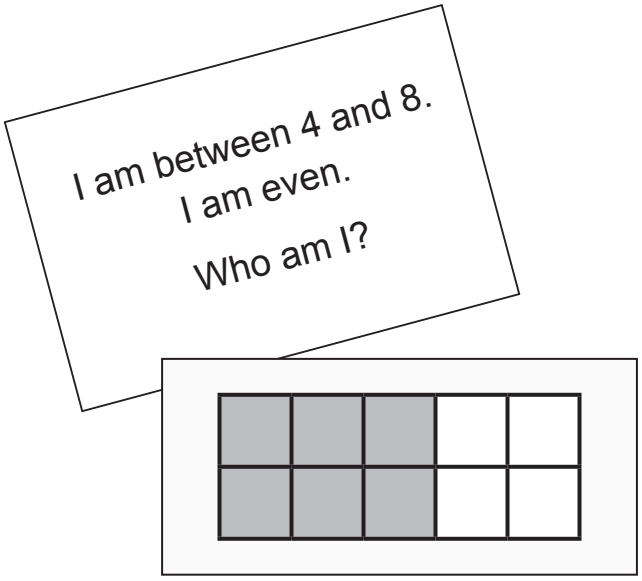
Materials

For each pair of students:

- Ten-Frame Cards 1–20 (pages 114–115)
- "Who Am I?" Cards (pages 145–147)

Overview

In this activity, students respond to oral or written problems involving numbers from 1 to 20, some of which have more than one solution.



Common Core State Standards

Content Standards:

Grade Level: 1

Domain: Operations and Algebraic Thinking (1.OA)

Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Domain: Number and Operations in Base Ten (1.NBT)

Understand place value.

2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
   a. 10 can be thought of as a bundle of ten ones—called a "ten."
   b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

Practice Standards:

1. **Make sense of problems and persevere in solving them.**

   Students must explain to themselves and to their classmates what the information means for each problem. In certain situations, problems can have more than one solution.

2. **Reason abstractly and quantitatively.**

   Students must make sense of mathematical vocabulary for the quantities involved on each problem card.

Presenting the Activity

1. Make copies of the Ten-Frame Cards and the "Who Am I?" Cards on card stock and cut them apart.
2. Distribute the Ten-Frame Cards and the "Who Am I?" Cards to each pair of students.
3. Depending upon the students' ability to read, you may need to read the cards to students.
4. Say to the students:

   Place the Ten-Frame Cards from 1 to 20 in front of both of you.

   One of you starts by selecting a "Who Am I?" Card and reading the problem.

   Your partner finds the Ten-Frame Card or cards that answers the question "Who am I?"

   Remember, some cards will have more than one number for an answer. Be sure to find all of the numbers.

5. You may need to demonstrate the activity with one card.
6. Allow time for students to complete the task.
7. Repeat the activity until all "Who Am I?" Cards have been used.
8. For each card selected, say to student(s):

   Is there one answer or more than one answer to this problem?

   If there is more than one number, how did you know?

Assessing Student Responses

The following questions will help you assess your students' responses to the activity:

- Did the student(s) correctly find the cards for each problem situation?
- If the problem had more than one correct answer, how did the student(s) determine the multiple answers?
- If the student(s) did not find all solutions to a problem, did you observe or hear any strategies they might have used?
- Did the student(s) have difficulty reading the "Who Am I?" Cards?
- Did the student(s) have difficulty with any particular problem format?

"Who Am I?" Cards

I am between 4 and 8.
I am even.

Who am I?

I am less than 16.
I am greater than 12.
I am odd.

Who am I?

I am between 14 and 20.
I am odd.

Who am I?

I am between 2 and 9.
I am even.

Who am I?

I am greater than 10.
I am less than 13.
I am odd.

Who am I?

I am less than 10.
I am the number of days in a week.

Who am I?

I am less than 5.
I am greater than 2.
I am even.

Who am I?

I am greater than 9.
I am less than 15.
I am even.
I am not 10.

Who am I?

"Who Am I?" Cards

I am greater than 7 and less than 13. I am odd. Who am I?	I am less than 9. I am greater than 3. I am odd. Who am I?
I am less than 8 and greater than 1. If I am doubled, I am less than 5. Who am I?	I am even and less than 12. When I am doubled, I have 0 in the ones place. Who am I?
I am greater than 12. I am less than 20. I am even. Who am I?	I am between 13 and 16. Who am I?
I am between 7 and 10. I am even. Who am I?	I am a 2-digit number. Both of my digits are the same. Who am I?

"Who Am I?" Cards

I am a 2-digit number.
My ones digit is 6 more than my tens digit.

Who am I?

I am even.
My double is greater than 13 and less than 18.

Who am I?

I am a 2-digit number.
My ones digit is 3 more than my tens digit.

Who am I?

I am odd and less than 12.
When I am doubled, I have an 8 in the ones place.

Who am I?

I am a 2-digit number.
My ones digit is double my tens digit.

Who am I?

I am between 10 and 15.
I am even.

Who am I?

I am odd.
My double is greater than 13 and less than 16.

Who am I?

I am a 2-digit number.
My ones digit is 8 more than my tens digit.

Who am I?

Fill in the Pieces C

Date _____ **Name** _____

Each of these is a piece cut from a 100 Chart. Fill in the missing numbers.

1.

12		
	33	

2.

	34	
53		

3.

47		
		59

4.

66		

5.

	62	

6.

	56	

7.

51		

8.

	46	

9.

	78	

Finding Differences

Topic: Subtraction facts from 7 to 12

Object: Cover four numbers in a row with your counters.

Groups: 2 pair players or 2 players

Materials for each group

- *Finding Differences* Gameboard, p. 100
- 2 set of Digit Cards 3–9 (0–2 removed), p. 182
- Counters (different kind or color for each pair)

Directions

1. The first pair mixes the Digit Cards, stacks them facedown, and draws one card. The pair finds and covers two adjacent numbers whose difference equals the number drawn. The drawn card is stacked in a discard pile.

   Example: If 5 is drawn, the pair might cover 9 and 4, 8 and 3, 7 and 2, or 6 and 1.

2. The next pair draws a card, finds two adjacent numbers with a difference equaling the drawn number and covers the two adjacent numbers with different counters. The pair discards the drawn card.

3. Pairs continue alternating turns and trying to arrange four of their counters in a row.

4. After all Digit Cards are drawn, one player remixes the Digit Cards and stacks them facedown for continued use.

5. If a pair draws a card and cannot find two addends, the pair passes that turn.

KEY STANDARD

Understand subtraction as an unknown addend problem. (**1.OA.B.4**)

Tip *Some students will benefit from the use of Dot Cards.*

Use Gameboard B (p. 101) to practice subtraction facts with differences to 12.

3	7	2	9	1	5
9	1	6	0	8	3
5	0	3	7	4	9
0	4	9	2	8	5
8	1	2	6	2	1
3	7	8	1	3	9

6. The game ends when one pair lines up four of that pair's counters in a row, or when all adjacent addends are covered without a four-in-a-row arrangement.

Making Connections

Promote reflection and make mathematical connections by asking:

- What strategy helped you line up your counters in a row?
- How would you play this game differently next time?

Finding Differences A

Gameboard A

3	7	2	9	1	5
9	1	6	0	8	3
5	0	3	7	4	9
0	4	9	2	8	5
8	1	2	6	2	1
3	7	8	1	3	9

Finding Differences B

Gameboard B

9	5	12	3	10	1
2	11	4	8	2	7
6	3	7	12	5	11
10	5	11	9	1	9
7	12	6	2	6	3
3	9	0	5	12	8

Subtract or Add

Topic: Addition and subtraction facts

Object: Cover three numbers in a row with your counters.

Groups: 2 pair of players

Materials for each group

- *Subtract or Add* Gameboard A, p. 92
- 2 number cubes (1–6)
- Counters (different kind for each pair)

Directions

1. The first pair rolls two number cubes. The pair decides whether to add or subtract the displayed amounts.
2. Next the pair states the equation and places a counter on the resulting sum or difference.

   Example: If 2 and 5 are rolled, the pair might cover 3 (5 – 2) or 7 (2 + 5).
3. If a pair rolls two sixes, the pair is allowed to roll again.
4. Pairs alternate turns rolling number cubes, stating equations, and placing counters on the gameboard.
5. The first pair to have three counters in a row horizontally, vertically, or diagonally wins.

Making Connections

Promote reflection and make mathematical connections by asking:

- What strategies helped you line up your counters in a row?

KEY STANDARD

Apply properties of operations as strategies to add and subtract. (**1.OA.B.3**)

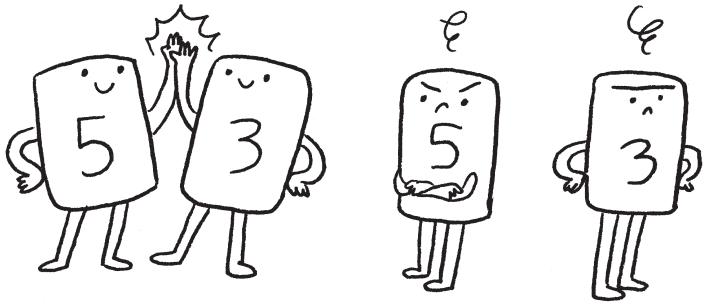
Tips *If the game is sent home for additional practice, require adult players to get four in a row.*

Using the Subtract or Add *Gameboard B (p. 93) with only one regular number cube (1–6) and the Digit Cards (4–9), p. 182, challenges students to use higher numbers.*

7	5	3	10
2	0	6	1
6	4	2	7
1	3	8	0
4	1	5	2

Subtract or Add

Gameboard A



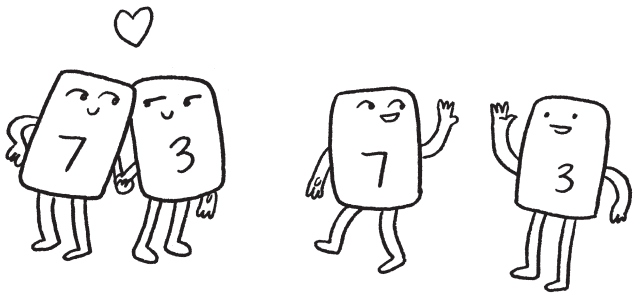
5+3=8

5-3=2

7	5	3	10
2	9	6	1
6	4	2	7
1	3	8	0
4	1	5	2

Subtract or Add

Gameboard B



7 + 3 = 10

7 − 3 = 4

5	2	3	9
12	7	8	11
5	1	3	6
0	6	2	8
4	10	7	1

38: Drawing Back

Number of Students

Pairs or small groups

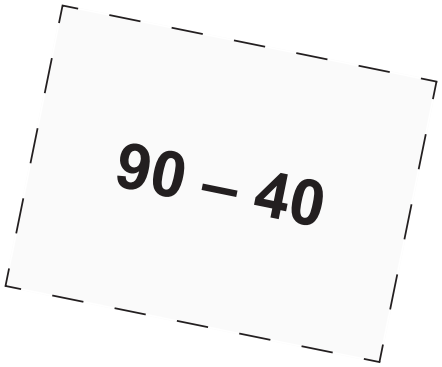
Materials

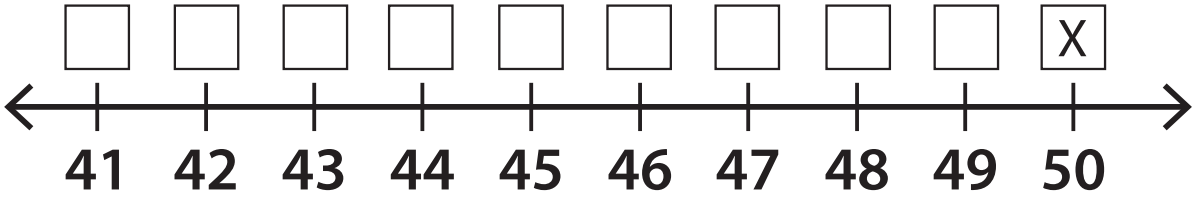
For students:

- 0–100 Number Line (pages 91–94)
- "Drawing Back" Subtraction Cards (pages 166–170)

Overview

In this activity, students subtract multiples of 10 and mark the difference on a number line, attempting to get three or four consecutive marks.





Common Core State Standards

Content Standards:

Grade Level: 1

Domain: Number and Operations in Base Ten (NBT)

Use place value understanding and properties of operations to add and subtract.

6. Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Practice Standards:

8. Look for and express regularity in repeated reasoning.

First-grade students have focused on basic subtraction facts. Now, they are extending the regularity in reasoning to subtracting multiples of 10.

Presenting the Activity

1. Make a copy of the 0–100 Number Line for each student. Cut them apart and tape or glue the sections together.
2. Make copies of the Subtraction Cards and cut them apart.
3. Distribute a Number Line to each student.
4. Distribute a deck of Subtraction Cards to each pair or group.
5. Say to students:

> To begin, each player draws a card and finds the difference. The player with the smallest or least difference will go first.
>
> Next, the first player draws a card, finds the difference, locates the difference on the number line, and places an "X" in the square.
>
> Continue taking turns drawing cards and marking your number line.
>
> The first player to get four (three or five) X's in a row is the winner.
>
> If your "Drawing Back" difference is already marked, you lose your turn.
>
> When someone wins, get new number lines and play another game.

Assessing Student Responses

The following questions will help you assess your students' responses to the activity:

- Did the students verbalize the connections between the subtraction problems and the basic fact problems?
- Were any of the problems more difficult than others?

"Drawing Back" Subtraction Cards

90 – 30	90 – 60	90 – 90
90 – 20	90 – 50	90 – 80
90 – 10	90 – 40	90 – 70

"Drawing Back" Subtraction Cards

80 − 60	80 − 30	70 − 70
80 − 70	80 − 40	80 − 10
80 − 80	80 − 50	80 − 20

"Drawing Back" Subtraction Cards

70 − 60	70 − 30	60 − 60
70 − 50	70 − 20	60 − 50
70 − 40	70 − 10	60 − 40

"Drawing Back" Subtraction Cards

60 – 10	50 – 30	40 – 40
60 – 20	50 – 40	50 – 10
60 – 30	50 – 50	50 – 20

"Drawing Back" Subtraction Cards

20 – 20	30 – 30	40 – 30
20 – 10	30 – 20	40 – 20
10 – 10	30 – 10	40 – 10

36: Forward or Back

Number of Students

Pairs

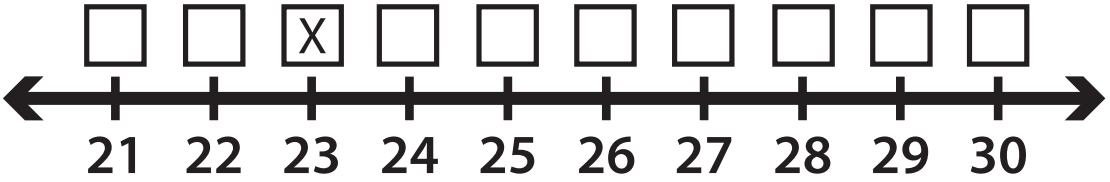
Materials

For each student:

- 0–30 Number Line (page 91)
- "Forward or Back" Cards (pages 160–162)
- Pencil

Overview

In this game, two students count forward or backward to determine the answer to a problem stated on a problem card.



Common Core State Standards

Content Standards:

Grade Level: 1

Domain: Number and Operations in Base Ten (NBT)

Extend the counting sequence.

1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Practice Standards:

2. Reason abstractly and quantitatively.

First-grade students are beginning to make sense of quantities. They now start at any number to count forward or backward, rather than starting at 1. They are beginning to focus on quantitative reasoning

Presenting the Activity

1. Make a copy of the "Forward or Back" Cards on card stock for each student and cut the cards apart.

2. Make a copy of the 0–30 Number Line for each student, cut the sections apart, and glue or tape them together to form a continuous number line.

3. Distribute a 0–30 Number Line and a deck of "Forward or Back" Cards to each student.

4. Say to students:

   "In this game, you each have a number line and a deck of "Forward or Back" cards. Turn your cards face down in a pile.

   To begin, each of you turns over a card at the same time. Read the card and determine the number being described.

   For example, suppose you turn over a card that says "5 more than 15." What number is 5 more than 15? (20)

   Next, go to your number line and make an "X" in the box above 20.

   When you have finished the round, both of you place your card on the bottom of your pile.

   Now you play again. Turn over a card at the same time, find the answer, and mark it on your number line.

   Continue playing until one of you crosses out five numbers in a row on your number line—for example, 10, 11, 12, 13, 14.

5. Play a variation of the game by having students play on the same number line. The winner is the player who covers three consecutive numbers.

Assessing Student Responses

The following questions will help you assess your students' responses to the activity:

- Did the students correctly identify the greater (lesser) number?
- Did the students correctly locate the number and cross it out on the number line?

"Forward or Back" Cards

3 less than 13	2 more than 25
9 less than 30	8 more than 8
4 more than 2	2 less than 11
10 more than 13	8 less than 21

"Forward or Back" Cards

4 less than 12	3 more than 27
10 less than 13	9 more than 13
9 less than 16	8 more than 6
6 less than 11	5 more than 24

"Forward or Back" Cards

8 less than 10	10 more than 17
5 less than 11	7 more than 14
10 less than 11	9 more than 9
7 less than 11	6 more than 18

18 Add One-Digit to Two-Digit Numbers

Math Standard Add within 100, including adding a two-digit number and a one-digit number.

Grouping(s)

Math workstation

Materials

For the student:

- 100-bead number line (BNL)
- "Add 1-Digit to 2-Digit Numbers" Cards (page 97)
- Recording Sheet (page 98)

Overview

Students add one-digit numbers to two-digit numbers in a game format.

Presenting the Activity

1. Students each select two cards.
2. Students use the BNL to find the sum.
3. Students record the equations on the recording sheet.

   Language Frame:

   _____ **plus** _____ **=** _____**.**

   The sum of _____ **and** _____ **is** _____**.**

4. The student with the greater value earns 1 point.
5. The person with the most points after 10 rounds wins.

Guided Learning

Ask:

- What was your strategy to find the sum?
- What did you notice about adding on a one-digit number to a two-digit number?

Assessing Student Responses

- Were students able to add successfully?

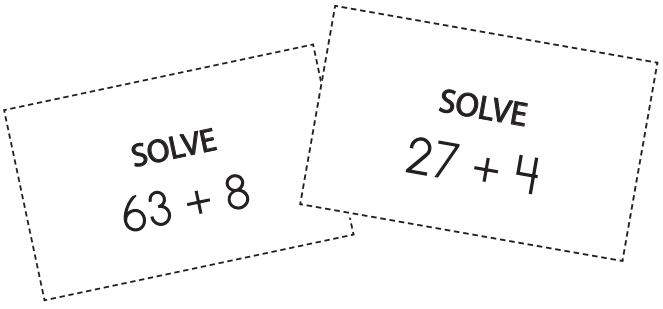
  Y / N / Emerging

- Were students able to explain their reasoning?

  Y / N / Emerging

- Do students understand the concept of getting to the nearest 10 and then counting on?

  Y / N / Emerging



Activity 18: "Add 1-Digit Numbers to 2-Digit Numbers" Cards

SOLVE 19 + 1	SOLVE 15 + 2	SOLVE 27 + 4
SOLVE 33 + 8	SOLVE 15 + 7	SOLVE 34 + 4
SOLVE 45 + 9	SOLVE 41 + 3	SOLVE 56 + 7
SOLVE 63 + 8	SOLVE 69 + 4	SOLVE 75 + 5
SOLVE 78 + 3	SOLVE 81 + 7	SOLVE 88 + 4
SOLVE 91 + 9	SOLVE 27 + 7	SOLVE 46 + 6

Name _____

Activity 18: "Add 1-Digit Numbers to 2-Digit Numbers" Recording Sheet

Player 1 Equation	Player 2 Equation	Points	
		Player 1	Player 2

19 Add Multiples of 10

Math Standard Add within 100, including . . . adding a two-digit number and a multiple of 10.

Grouping(s)

Small guided math group or workstation

Overview

Students explore adding multiples of 10 to two-digit numbers.

Materials

For the student:

- 100-bead number line (BNL)
- "Add Multiples of 10" Cards (page 99)
- Recording Sheet (page 100)

For the teacher:

- Demonstration 100-bead number line (BNL)

Presenting the Activity

1. Students draw a card.
2. Students model the problem on the BNL.
3. Students record the equation and complete the number sentence on the recording sheet.
4. Students continue to draw cards until the recording sheet is complete.

Guided Learning

Ask:

- How did you figure out the sum?
- What did you notice about the starting number and the sum?
- What digit changed? Why?
- Is there a pattern? Can you describe what you noticed on the beaded number line?

Assessing Student Responses

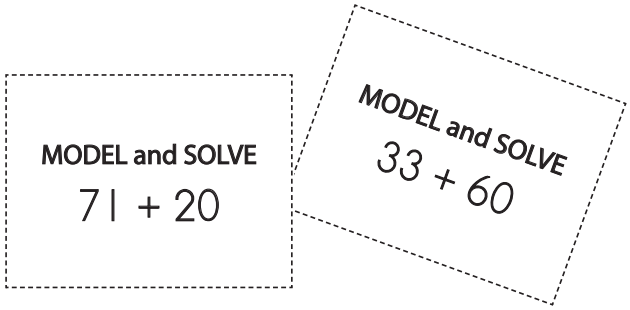
- Was student able to solve the problems with ease?

  Y / N / Emerging
- Was student able to explain his/her reasoning?

  Y / N / Emerging
- Did student demonstrate understanding of the concept of adding 10 to a number?

  Y / N / Emerging
- Could student relate the change in quantity to the change in the tens digit?

  Y / N / Emerging



Activity 19: "Add Multiples of 10" Cards

MODEL and SOLVE 71 + 20	MODEL and SOLVE 12 + 30	MODEL and SOLVE 15 + 40
MODEL and SOLVE 51 + 50	MODEL and SOLVE 33 + 60	MODEL and SOLVE 27 + 70
MODEL and SOLVE 45 + 20	MODEL and SOLVE 67 + 30	MODEL and SOLVE 72 + 20
MODEL and SOLVE 88 + 10	MODEL and SOLVE 90 + 10	MODEL and SOLVE 19 + 50
MODEL and SOLVE 39 + 60	MODEL and SOLVE 44 + 40	MODEL and SOLVE 18 + 70

Name _____

Activity 19: "Add Multiples of 10" Recording Sheet

What's the sum? 71 + 20 = 91 20 more than 71 is 91.	What's the sum? _____ + _____ = _____ _____ more than _____ is _____.
What's the sum? _____ + _____ = _____ _____ more than _____ is _____.	What's the sum? _____ + _____ = _____ _____ more than _____ is _____.
What's the sum? _____ + _____ = _____ _____ more than _____ is _____.	What's the sum? _____ + _____ = _____ _____ more than _____ is _____.
What's the sum? _____ + _____ = _____ _____ more than _____ is _____.	What's the sum? _____ + _____ = _____ _____ more than _____ is _____.

20 Find 10 More Than a Number

Math Standard Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count.

Grouping(s)

Whole group or small guided math group

Overview

Teacher calls out a number and instructs students to find 10 more. Students build the sum on the BNL.

Materials

For the student:

- 100-bead number line (BNL)
- Individual dry-erase board

For the teacher:

- Assessment Sheet (page 76)

Presenting the Activity

1. Teacher *says:* Find 10 more than: ____.

   24 17 56 73 90

2. After each round, students record the difference on the dry-erase board and hold it up for teacher to scan for accuracy. Students can also check in with a partner.
3. Teacher uses the teacher recording sheet to note student accuracy in finding 10 more or 10 less than a number, and if necessary, where student accuracy broke down.
4. Students who struggle should be pulled into a small group and use the beaded number line with more guidance to discover the pattern in the tens digit.
5. Prompt students to reset the BNL between rounds.

Guided Learning

Ask:

- What did you notice about the starting number and the sum?
- What digit changed? Why?
- Is there a pattern?

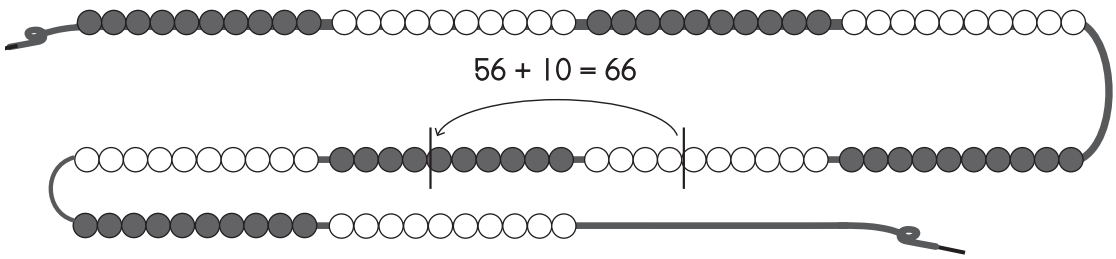
Assessing Student Responses

- Was student able to complete the task with accuracy?

  Y / N / Emerging

- Can student complete the task without the beaded number line?

  Y / N / Emerging



21 Find 10 Less Than a Number

Math Standard Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count.

Grouping(s)

Whole group or small guided math group

Materials

For the student:

- 100-bead number line (BNL)
- Individual dry-erase board

Overview

Teacher calls out a number and instructs students to find 10 less and build the sum on the BNL.

Presenting the Activity

1. Teacher *says:* Find 10 less than: ____.

   16 32 64 20 89

2. After each round, students record the difference on the dry-erase board and hold it up for teacher to scan for accuracy. Student can also check in with a partner.
3. Students who struggle should be pulled into a small group and use the beaded number line with more guidance to discover the pattern in the tens digit.
4. Prompt students to reset the BNL between rounds.

Guided Learning

Ask:

- What did you notice about the starting number and the difference?
- What digit changed? Why?
- Is there a pattern?

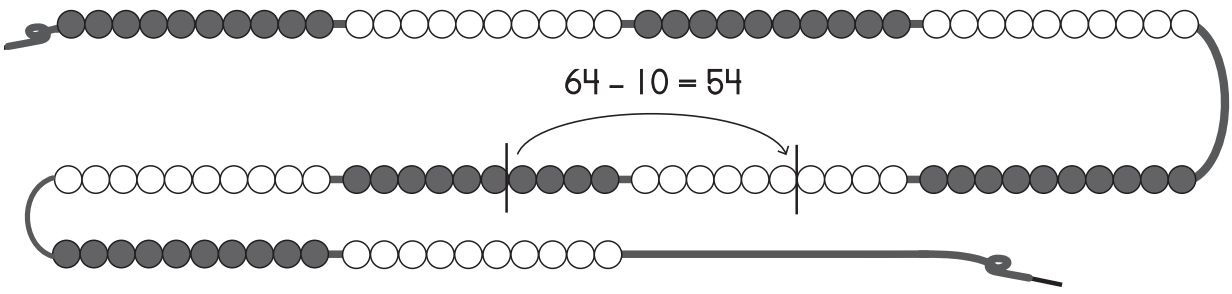
Assessing Student Responses

- Did student struggle with any part of this task? Why?

  Y / N / Emerging

- Can student complete tasks without the beaded number line?

  Y / N / Emerging



22 Subtract Multiples of 10

Math Standard Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90.

Grouping(s)

Small guided math group or workstation

Overview

Students explore subtracting multiples of 10 from two-digit numbers.

Materials

For the student:

- 100-bead number line (BNL)
- "Subtract Multiples of 10" Cards (page 101)
- Recording Sheet (page 102)

For the teacher:

- Demonstration 100-bead number line

Presenting the Activity

1. Students pick a card.
2. Students model the problem on the BNL.
3. Students record the equation and complete the number sentence on the recording sheet.
4. Students continue to select cards until the recording sheet is complete.

Guided Learning

Ask:

- How did you figure out the difference?
- What did you notice about the starting number and the difference?
- What digit changed? Why?
- Is there a pattern? Can you describe what you noticed on the beaded number line?

Assessing Student Responses

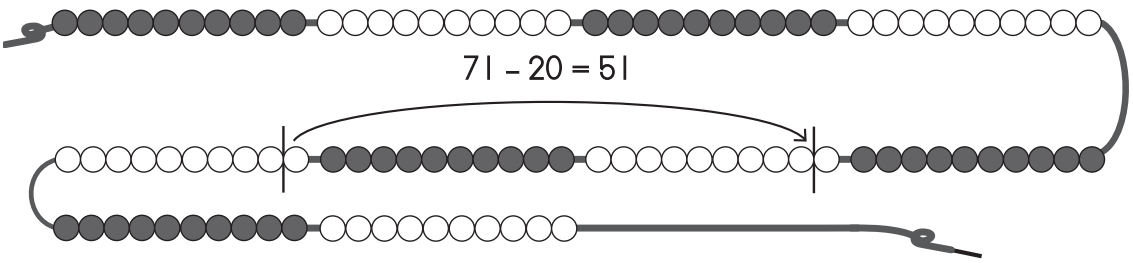
- Was student able to solve the problems with ease?

  Y / N / Emerging
- Was student able to explain his/her reasoning?

  Y / N / Emerging
- Did student demonstrate understanding of the concept of subtracting 10 from a number?

  Y / N / Emerging
- Could student relate the change in quantity to the change in the tens digit?

  Y / N / Emerging



Activity 22: "Subtract Multiples of 10" Cards

MODEL and SOLVE 71 – 20	MODEL and SOLVE 42 – 30	MODEL and SOLVE 85 – 40
MODEL and SOLVE 97 – 50	MODEL and SOLVE 33 – 10	MODEL and SOLVE 57 – 20
MODEL and SOLVE 65 – 20	MODEL and SOLVE 87 – 30	MODEL and SOLVE 72 – 60
MODEL and SOLVE 88 – 10	MODEL and SOLVE 90 – 80	MODEL and SOLVE 29 – 20
MODEL and SOLVE 99 – 60	MODEL and SOLVE 54 – 40	MODEL and SOLVE 75 – 70

Name _____

Activity 22: "Subtract Multiples of 10" Recording Sheet

What's the difference? 71 − 20 = 51 20 less than 71 is 51.	What's the difference? _____ − _____ = _____ _____ more than _____ is _____.
What's the difference? _____ − _____ = _____ _____ less than _____ is _____.	What's the difference? _____ − _____ = _____ _____ more than _____ is _____.
What's the difference? _____ − _____ = _____ _____ less than _____ is _____.	What's the difference? _____ − _____ = _____ _____ more than _____ is _____.
What's the difference? _____ − _____ = _____ _____ less than _____ is _____.	What's the difference? _____ − _____ = _____ _____ more than _____ is _____.