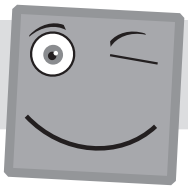
Math Skills Student Kits – Kindergarten Activities

These activities were selected for use with the Didax® Math Skills Student Kit for Kindergarten (item #211993). You can use the Bookmarks in this PDF file to navigate to the activities.

Add Within 10	Addition	Beaded Number Line, Dice	46
Make a Ten	Addition to 10	Beaded Number Line	49
Subtract Within 10	Subtraction	Beaded Number Line, Dice	51
Die Plus One	Addition (+1)	Dice	54
Die Plus Two	Addition (+2)	Dice	55
Die Minus One	Subtraction (-1)	Dice	56



Geometry: **Ladybug Lane**

Focal Point

Geometry – Describing shapes and space.

Identify angles as corners of a polygon. Identify sides of a polygon. Sort shapes according to the number of angles and sides.

Materials

- Pattern blocks

Instructions

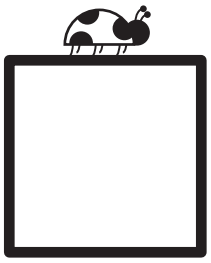
Show students the sides and the corners, using a square pattern block as an example. Show students the path the ladybug would take around the square. When she gets to the end of a SIDE, she has to make a turn. She turns at a CORNER. Ask the children to take each block and use a finger to trace the ladybug's path along the edge of the shape. For each pattern block have them count the number of sides and put the number in the correct space. Then tell them to count the number of turns the ladybug makes (corners) and put the number in the correct space.

Explore More with PB!

Students take one of each pattern block (all 6) and sort pattern blocks according to the number of sides. Next they should take an identical set of 6 pattern blocks and sort them according to the number of corners. Are the two sets of pattern blocks the same? Why? Ask if shapes made with straight sides always have the same number of sides as they have corners.

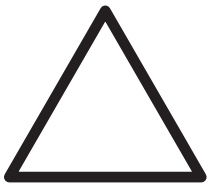
Ladybug Lane

Name: _____



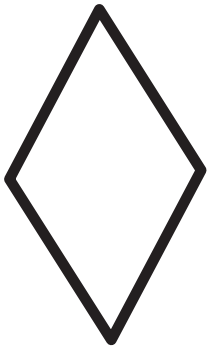
SQUARE

Sides? _____
Corners? _____



TRIANGLE

Sides? _____
Corners? _____

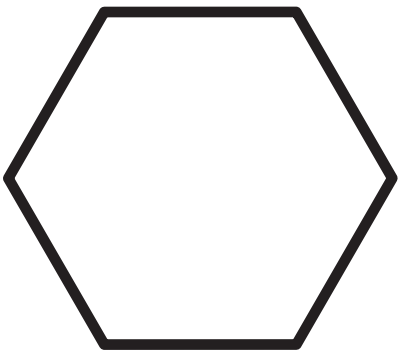


RHOMBUS

Sides? _____
Corners? _____

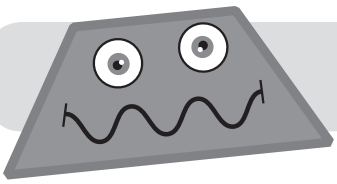
TRAPEZOID

Sides? _____
Corners? _____



HEXAGON

Sides? _____
Corners? _____



Number & Operations: **Picture This**

Focal Point

Number and Operations – Representing, comparing and ordering whole numbers and joining and separating sets.

Count a set of objects greater than one and less than 10 and know that the last counting word indicates how many items are in the set.

Materials

- Pattern blocks

Instructions

Ask the students to cover the design. Once they have done this, have them remove the blocks by color and shape one at a time and count the number of each block. Then they will record the number of each block in the given space.

Guided Learning

1. Name each piece by color and shape.

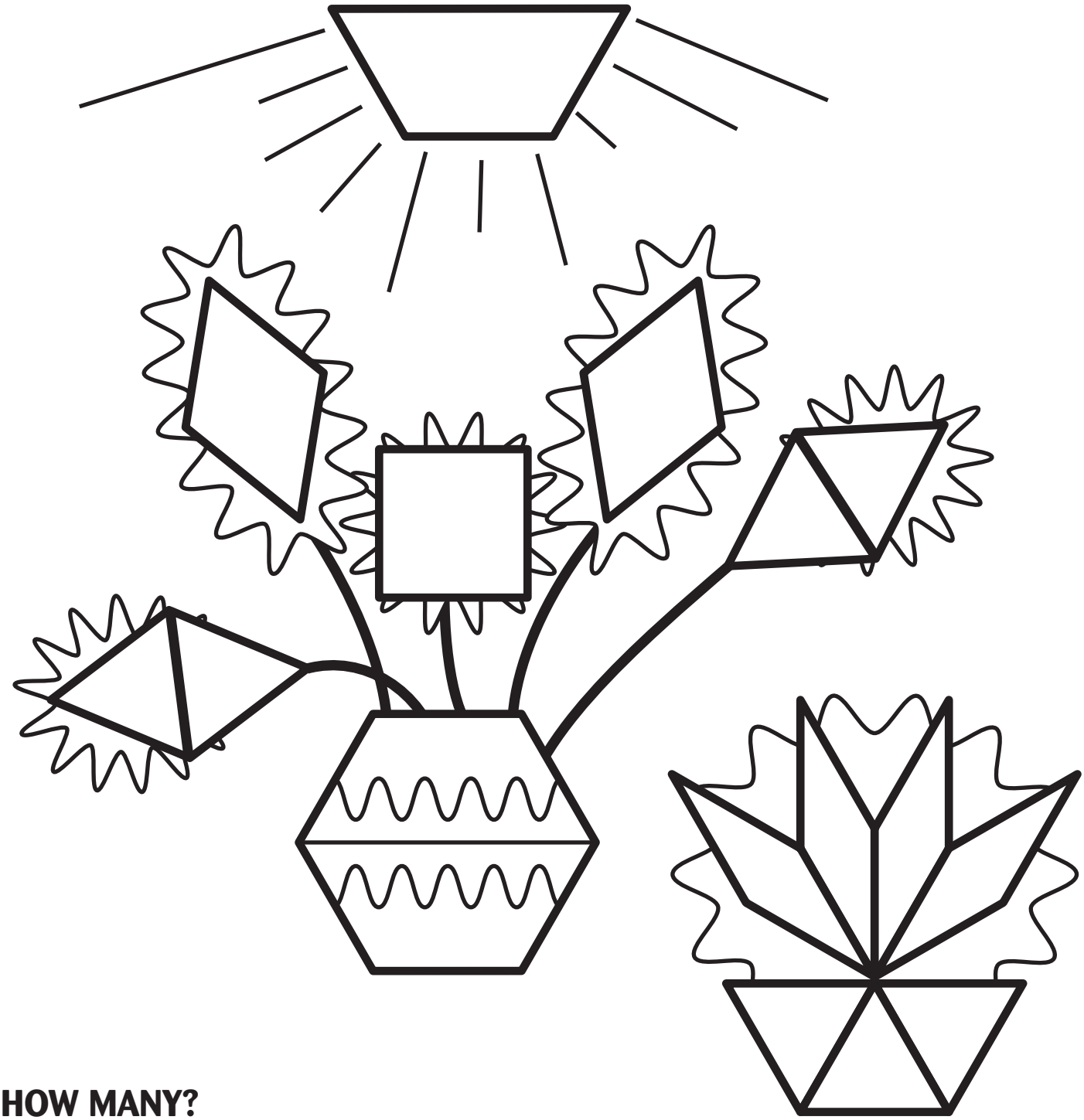
Yellow hexagon, red trapezoid, blue rhombus, green triangle, orange square, tan rhombus

Explore More with PB!

Ask students to cover the picture with different blocks and repeat the activity. Which blocks did they use more of than before? Which blocks did they use fewer of than before?

Picture This

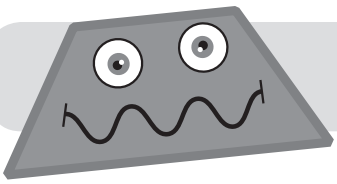
Name: _____



HOW MANY?

A. ⬡ ___ ⏢ ___ ▱ ___ △ ___ □ ___ ▰ ___

B. ⬡ ___ ⏢ ___ ▱ ___ △ ___ □ ___ ▰ ___



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.

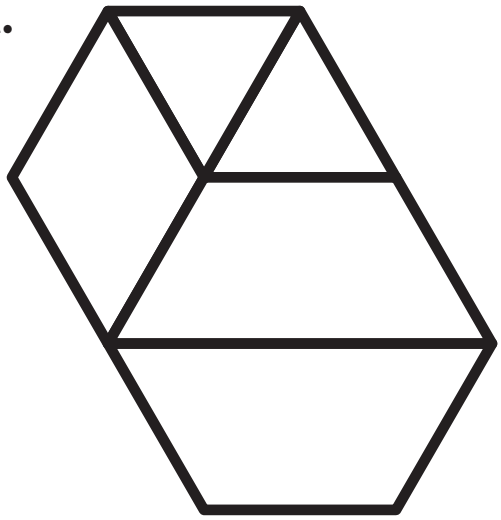
Explore More with PB!

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.

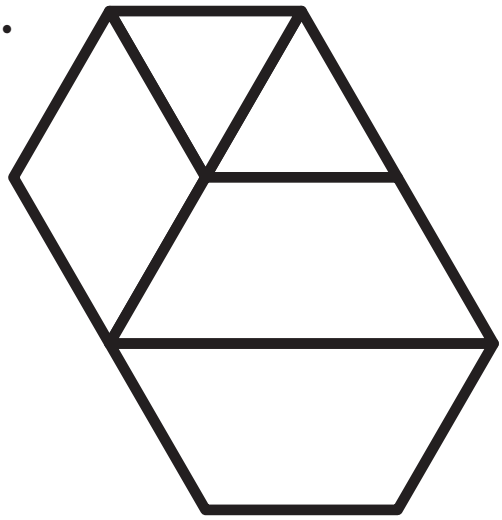
Trading Triangles

Name: _____

A.



B. cover with △



▱ = ____ △ ▭ = ____ △ ⬡ = ____ △

C.

your own design

D.

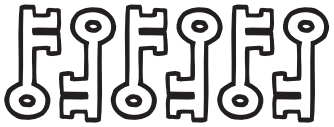
your own design

ADDITION FACTS

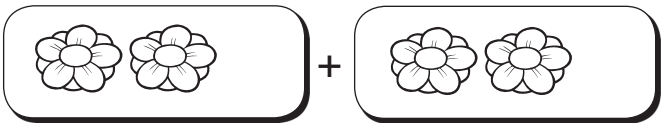
NUMBER AND OPERATIONS

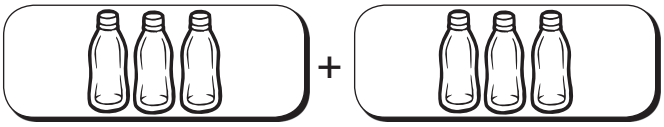
STUDENT NAME .....

1. Count the pictures. How many altogether?

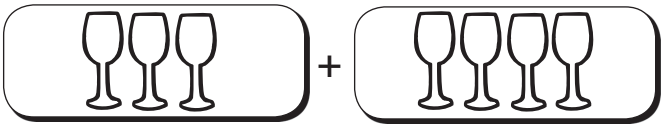
(a) 			total
(b) 			total
(c) 			total
(d) 			total

2. Write the number sentence. Find the sum.

(a)  ☐ + ☐ = ☐

(b)  ☐ + ☐ = ☐

(c)  ☐ + ☐ = ☐

(d)  ☐ + ☐ = ☐

3. Complete the addition sentences.

(a) 7 + 3 = ☐ (b) 8 + 2 = ☐

(c) 5 + 5 = ☐ (d) 9 + 1 = ☐

ADDITION WORD PROBLEMS

NUMBER AND OPERATIONS

STUDENT NAME .....

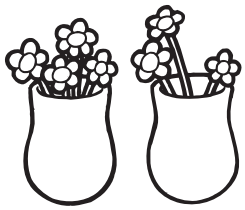
1. There are two apples and three oranges in the bowl.

How many are there altogether? ☐ apples and oranges

☐ + ☐ = ☐

2. There are four flowers in one vase and three in another.

How many are there altogether? ☐ flowers

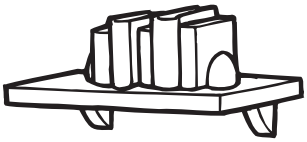


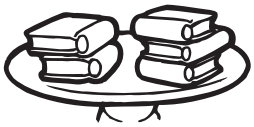
☐ + ☐ = ☐

3. There are five books on the shelf and five on the table.

How many are there altogether? ☐ books

☐ + ☐ = ☐

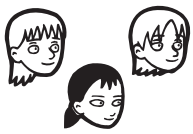


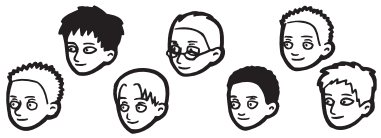


4. There are three girls and seven boys.

How many children are there altogether? ☐ children

☐ + ☐ = ☐

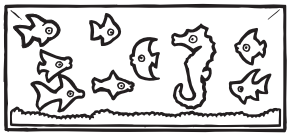




5. There is one seahorse and eight fish in the tank.

How many are there altogether? ☐ sea creatures

☐ + ☐ = ☐



FIRST TO TWENTY

Concept or Skills

Numbers, number words, counting on

NCTM Curriculum Focal Point

Number and Operations: Representing, comparing, and ordering whole numbers; joining and separating sets

Number of Students

2 or entire class

Materials

For each student:

- 20 Unifix Cubes of one color
- First-to-Twenty Mat

For each group:

- First-to-Twenty Number Cards

Getting Ready

Make a copy of the First-to-Twenty Mat for each student.

Make a copy of the First-to-Twenty Number Cards and cut them apart. If an overhead projector is used for an entire class, make transparencies of the number cards and cut them apart.

Distribute 20 Unifix Cubes of one color to each student.

Digging In

Show a number card to the students. Have them place the corresponding number of Unifix Cubes on the First-to-Twenty Mat. Say:

> **Here is a number. Cover the same number of squares on your mat with Unifix Cubes.**

Allow time for students to complete the task.

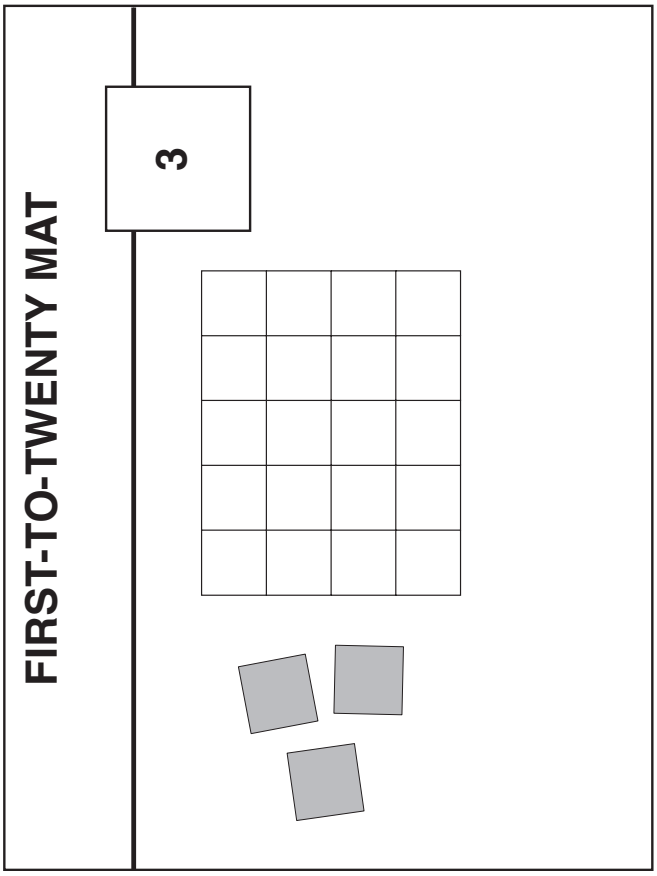
Repeat the task at least four more times, changing the number. If appropriate for students, include numbers 11 through 20.

Going Further

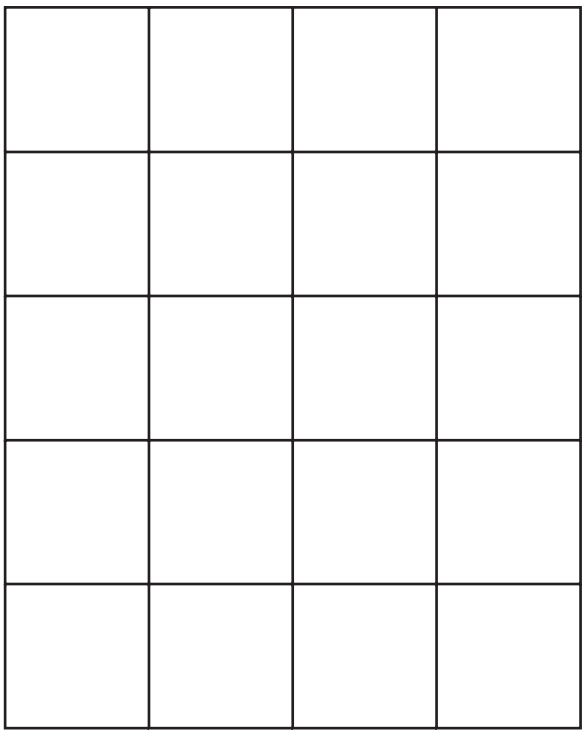
If the activity is done with the entire class, use the transparent number cards on the overhead projector.

Use the following questions to help you assess the responses to the tasks presented:

- Did the student show the correct number of Unifix Cubes for each of the number cards?
- If the number of Unifix Cubes shown by the student was incorrect, what error was made? Did the student have difficulty reading the number? Did the student have difficulty with any numbers in the teens?
- Did the student use any special procedures for counting the Unifix Cubes? For example, did the student make a pile of cubes or a row of cubes as he or she counted?



FIRST-TO-TWENTY MAT



NUMBER CARD

NUMBER CARDS

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20

NUMBER NAMES

Concept or Skills

Number words

NCTM Curriculum Focal Point

Prekindergarten Number and Operations: Whole numbers, including correspondence, counting, cardinality, and comparison

Kindergarten Number and Operations: Representing, ordering, and comparing whole numbers; joining and separating sets.

Number of Students

1, small group, or entire class

Materials

- 10–20 Unifix Cubes for each student
- Number Word Cards

Getting Ready

Make enough copies of the Number Word Cards for each student or group and cut the cards apart.

Make a transparency of the Number Word Cards (optional).

Before using the cards with students, determine the range of counting number words that will be used—for example, 1 through 10, 1 through 15, or 1 through 20.

Digging In

Show a number word card to the students. Have them show the same number of cubes as the number word. Say:

> **Here is a number word. Show me that many Unifix Cubes on your desk. Then tell me how many cubes there are.**

Allow time for students to complete the task.

Repeat the task at least four more times, changing the number word. If appropriate for students, include number words for 11 through 20.

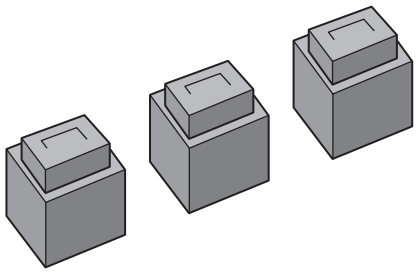
Going Further

If the activity is done with an entire class, use the transparent cards on the overhead projector.

Use the following questions to help you assess students' responses to the tasks presented:

- Did the student show the correct number of Unifix Cubes for each of the number words?
- If the number of Unifix Cubes shown by the student was incorrect, what error was made? Did the student have difficulty reading the number word? Did the student have difficulty with any number words in the teens?
- Did the student use any special procedures for counting the Unifix Cubes? For example, did the student make a pile or row of cubes as he or she counted?

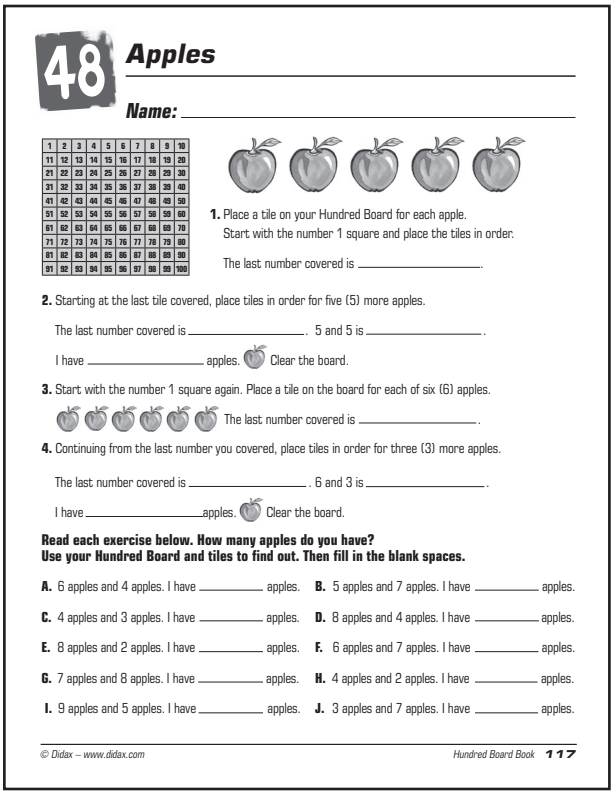
Repeat the activity several times with different number word cards. Check: Did the student show the correct number of cubes for each number word?



NUMBER WORD CARDS

one	two	three	four
five	six	seven	eight
nine	ten	eleven	twelve
thirteen	fourteen	fifteen	sixteen
seventeen	eighteen	nineteen	twenty

48 Teacher's Corner


48 Apples

Name: _____

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1. Place a tile on your Hundred Board for each apple. Start with the number 1 square and place the tiles in order.
The last number covered is _____.

2. Starting at the last tile covered, place tiles in order for five (5) more apples.
The last number covered is _____. 5 and 5 is _____.
I have _____ apples. Clear the board.

3. Start with the number 1 square again. Place a tile on the board for each of six (6) apples.
The last number covered is _____.

4. Continuing from the last number you covered, place tiles in order for three (3) more apples.
The last number covered is _____. 6 and 3 is _____.
I have _____ apples. Clear the board.

Read each exercise below. How many apples do you have?
Use your Hundred Board and tiles to find out. Then fill in the blank spaces.

A. 6 apples and 4 apples. I have _____ apples.
B. 5 apples and 7 apples. I have _____ apples.
C. 4 apples and 3 apples. I have _____ apples.
D. 8 apples and 4 apples. I have _____ apples.
E. 8 apples and 2 apples. I have _____ apples.
F. 6 apples and 7 apples. I have _____ apples.
G. 7 apples and 8 apples. I have _____ apples.
H. 4 apples and 2 apples. I have _____ apples.
I. 9 apples and 5 apples. I have _____ apples.
J. 3 apples and 7 apples. I have _____ apples.

© Didax – www.didax.com Hundred Board Book 117

Apples

Operations: Addition

Activity Focus:

Addition (basic facts)

Individual Activity

Materials:

- Hundred Board
- Markers or 20 blank tiles
- "Apples" activity sheet

Completing the Activity:

1. Have students count the number of apples pictured on the activity sheet.

2. Starting with the number 1 square, students place a blank tile on their Hundred Boards for each apple.

3. Work together to complete steps 1–6 on the activity sheet.

4. Have students complete exercises A–J at the bottom of the activity sheet, using their Hundred Boards and markers.

48 Apples

Name: _____

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1. Place a tile on your Hundred Board for each apple.
Start with the number 1 square and place the tiles in order.

The last number covered is _____.

2. Starting at the last tile covered, place tiles in order for five (5) more apples.

The last number covered is _____. 5 and 5 is _____.

I have _____ apples. Clear the board.

3. Start with the number 1 square again. Place a tile on the board for each of six (6) apples.

The last number covered is _____.

4. Continuing from the last number you covered, place tiles in order for three (3) more apples.

The last number covered is _____. 6 and 3 is _____.

I have _____apples. Clear the board.

Read each exercise below. How many apples do you have?
Use your Hundred Board and tiles to find out. Then fill in the blank spaces.

A. 6 apples and 4 apples. I have _____ apples.

B. 5 apples and 7 apples. I have _____ apples.

C. 4 apples and 3 apples. I have _____ apples.

D. 8 apples and 4 apples. I have _____ apples.

E. 8 apples and 2 apples. I have _____ apples.

F. 6 apples and 7 apples. I have _____ apples.

G. 7 apples and 8 apples. I have _____ apples.

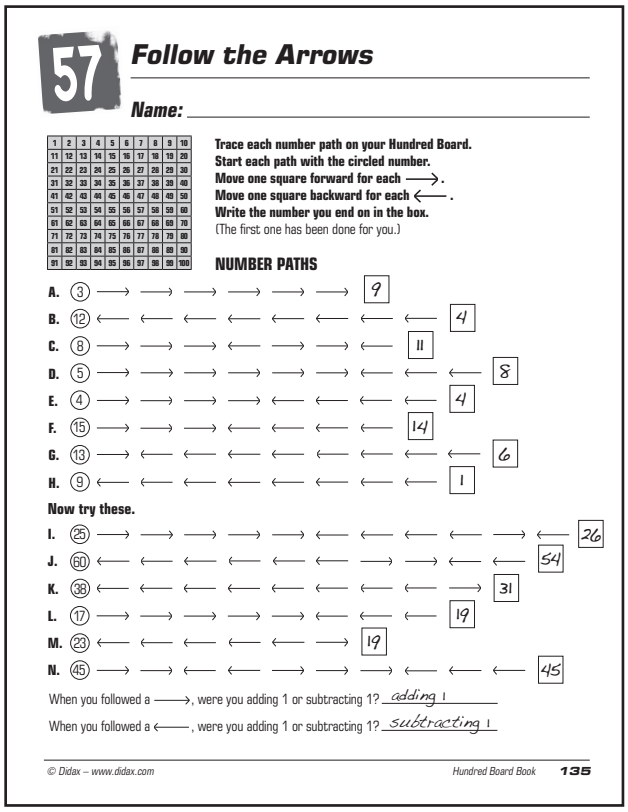
H. 4 apples and 2 apples. I have _____ apples.

I. 9 apples and 5 apples. I have _____ apples.

J. 3 apples and 7 apples. I have _____ apples.

Follow the Arrows

Operations: Addition and Subtraction


57 Follow the Arrows

Name: _____

Trace each number path on your Hundred Board.
Start each path with the circled number.
Move one square forward for each →.
Move one square backward for each ←.
Write the number you end on in the box.
(The first one has been done for you.)

NUMBER PATHS

A. (3) → → → → → → 9
B. (12) ← ← ← ← ← ← ← ← 4
C. (8) → → → ← → → ← 11
D. (5) → → → → → → ← ← ← 8
E. (4) → → → → ← ← ← ← 4
F. (15) → → → ← ← ← ← 14
G. (13) → ← ← ← ← ← ← ← ← 6
H. (9) ← ← ← ← ← ← ← ← 1

Now try these.

I. (25) → → → → → ← ← ← ← → ← 26
J. (60) ← ← ← ← ← ← → → ← ← 54
K. (38) ← ← ← ← ← ← ← ← → 31
L. (17) → → → → → ← ← ← 19
M. (23) ← ← ← ← ← → 19
N. (45) → → ← ← → → → ← ← ← 45

When you followed a →, were you adding 1 or subtracting 1? adding 1

When you followed a ←, were you adding 1 or subtracting 1? subtracting 1

© Didax – www.didax.com Hundred Board Book 135

Activity Focus:

Following number patterns
(addition and subtraction: ±1)

Individual Activity

Materials:

- Hundred Board
- Markers or blank tiles (optional)
- "Follow the Arrows" activity sheet

Completing the Activity:

Using a finger or marker, have students count forward and backward on their Hundred Boards to reach the final number.

Extension:

Give students a beginning number and an ending number and let them design an arrow path from one to the other.

57 Follow the Arrows

Name: _____

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Trace each number path on your Hundred Board.
Start each path with the circled number.
Move one square forward for each →.
Move one square backward for each ←.
Write the number you end on in the box.
(The first one has been done for you.)

NUMBER PATHS

A. (3) → → → → → → [9]

B. (12) ← ← ← ← ← ← ← ← [ ]

C. (8) → → → ← → → ← [ ]

D. (5) → → → → → → ← ← ← [ ]

E. (4) → → → → ← ← ← ← [ ]

F. (15) → → → ← ← ← ← [ ]

G. (13) → ← ← ← ← ← ← ← ← [ ]

H. (9) ← ← ← ← ← ← ← ← [ ]

Now try these.

I. (25) → → → → → ← ← ← ← → ← [ ]

J. (60) ← ← ← ← ← ← → → ← ← [ ]

K. (38) ← ← ← ← ← ← ← ← → [ ]

L. (17) → → → → → ← ← ← [ ]

M. (23) ← ← ← ← ← → [ ]

N. (45) → → ← ← → → → ← ← ← [ ]

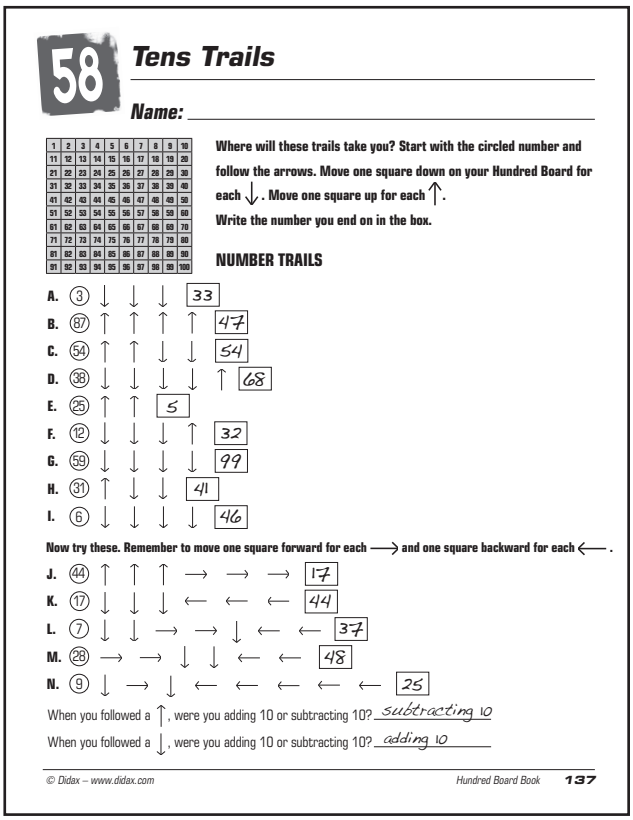
When you followed a →, were you adding 1 or subtracting 1? _____

When you followed a ←, were you adding 1 or subtracting 1? _____

58 Teacher's Corner

Tens Trails

Operations: Addition and Subtraction


58 Tens Trails

Name: _____

Where will these trails take you? Start with the circled number and follow the arrows. Move one square down on your Hundred Board for each ↓. Move one square up for each ↑. Write the number you end on in the box.

NUMBER TRAILS

A. (3) ↓ ↓ ↓ [33]
B. (87) ↑ ↑ ↑ ↑ [47]
C. (54) ↑ ↑ ↓ ↓ [54]
D. (38) ↓ ↓ ↓ ↓ ↑ [68]
E. (25) ↑ ↑ [5]
F. (12) ↓ ↓ ↓ ↑ [32]
G. (59) ↓ ↓ ↓ ↓ [99]
H. (31) ↑ ↓ ↓ [41]
I. (6) ↓ ↓ ↓ ↓ [46]

Now try these. Remember to move one square forward for each → and one square backward for each ←.

J. (44) ↑ ↑ ↑ → → → [17]
K. (17) ↓ ↓ ↓ ← ← ← [44]
L. (7) ↓ ↓ → → ↓ ← ← [37]
M. (28) → → ↓ ↓ ← ← [48]
N. (9) ↓ → ↓ ← ← ← ← ← [25]

When you followed a ↑, were you adding 10 or subtracting 10? subtracting 10

When you followed a ↓, were you adding 10 or subtracting 10? adding 10

© Didax – www.didax.com Hundred Board Book 137

Activity Focus:

Following number patterns
(addition and subtraction: + or – 10)

Individual Activity

Materials:

- Hundred Board
- Markers or blank tiles (optional)
- "Tens Trails" activity sheet

Completing the Activity:

1. Direct students' attention to the activity sheet. Tell them to start with the circled number and move one square down on their Hundred Boards for each **down** arrow and one square up for each **up** arrow.

2. Have students complete exercises A–I, recording the number of the square they end on for each set of arrows.

3. Next, have students complete exercises J–N, moving up and down and forward and backward according to the direction of the arrows.

4. Finally, students answer the questions at the bottom of the activity sheet.

Extension:

Give students a beginning number and an ending number and let them make their own arrow trails.

58 Tens Trails

Name: _____

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Where will these trails take you? Start with the circled number and follow the arrows. Move one square down on your Hundred Board for each ↓. Move one square up for each ↑.
Write the number you end on in the box.

NUMBER TRAILS

A. ③ ↓ ↓ ↓ ☐

B. ⑧⑦ ↑ ↑ ↑ ↑ ☐

C. ⑤④ ↑ ↑ ↓ ↓ ☐

D. ③⑧ ↓ ↓ ↓ ↓ ↑ ☐

E. ②⑤ ↑ ↑ ☐

F. ①② ↓ ↓ ↓ ↑ ☐

G. ⑤⑨ ↓ ↓ ↓ ↓ ☐

H. ③① ↑ ↓ ↓ ☐

I. ⑥ ↓ ↓ ↓ ↓ ☐

Now try these. Remember to move one square forward for each → and one square backward for each ← .

J. ④④ ↑ ↑ ↑ → → → ☐

K. ①⑦ ↓ ↓ ↓ ← ← ← ☐

L. ⑦ ↓ ↓ → → ↓ ← ← ☐

M. ②⑧ → → ↓ ↓ ← ← ☐

N. ⑨ ↓ → ↓ ← ← ← ← ← ☐

When you followed a ↑, were you adding 10 or subtracting 10? _____

When you followed a ↓, were you adding 10 or subtracting 10? _____

14: 1 Scoop, 2 Scoops, 3 Scoops

Number of Students

Partner pairs

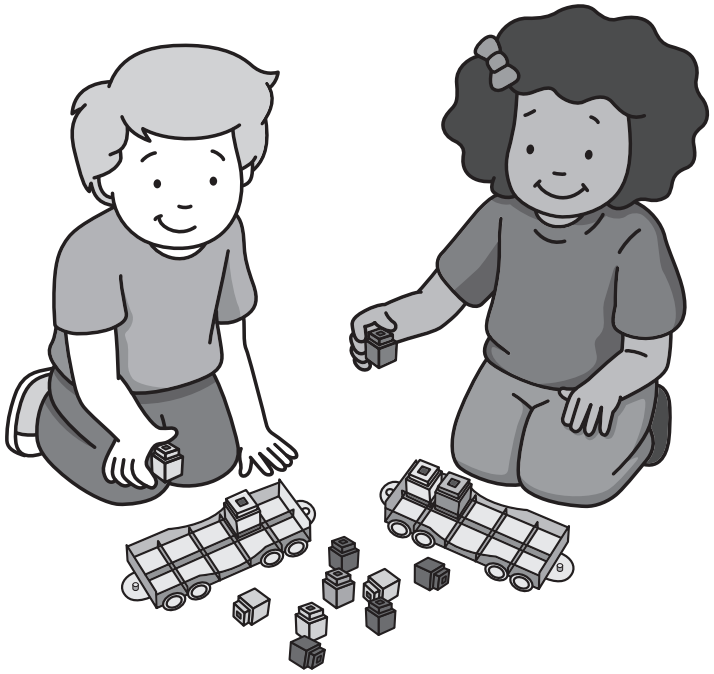
Materials

For each student:

- Unifix Ten-Frame Trains (commercially available)
- 20 Unifix Cubes

Overview

In this activity, partner pairs of students will "scoop" handfuls of Unifix Cubes with the purpose of joining (adding) the handfuls of cubes together to create a Unifix train.



Common Core State Standards

Content Standards:

Grade Level: K

Domain: Operations and Algebraic Thinking (K.OA)

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

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

Practice Standards:

2. **Reason abstractly and quantitatively.**

   Students must make sense of the quantities involved in the activity.

4. **Model with mathematics.**

   Students will use Unifix Cubes to model addition.

Presenting the Activity

1. Distribute 20 cubes to each student.
2. Group the students into partner pairs.
3. Say to the students:

   Student 1, scoop one handful of Unifix Cubes, and count the cubes as you place them on your ten-frame train.

   Student 1, now state the number of cubes you placed (for example, "6").

   Student 2, scoop one handful of Unifix Cubes, and count the cubes as you place them on your ten-frame train.

   Student 2, state the number of cubes you placed (for example, "5").

   Student pairs, join your two trains together and state the number of cubes each of you placed, such as "6 and 5."

   Student pairs, add (6) cubes and (5) cubes.

   Now explain your strategy for finding the total.

4. Round 2 begins with the partner pairs each scooping **two** handfuls of cubes.
5. Say to the students:

   Student 1, count both handfuls of your cubes (for example, "9") and place them on your ten-frame train.

   Student 2, do the same (for example, "8").

   Student pairs, join both trains together to find the total number of cubes.

   Explain your strategy for finding the total.

6. Finally, the partner pairs each scoop **three** handfuls of cubes and repeat the process described above.
7. Say to the students:

   Student 1, count all three handfuls of your cubes (for example, "3 + 2 + 5 = 10") and place them on your ten-frame train.

   Student 2, count all three handfuls of your cubes (for example, "2 + 3 + 4 = 9") and place them on your ten-frame train.

   Student pairs, join both trains together to find the total number of cubes (for example, 10 + 9 = 19).

   Now explain the strategy you used for finding the total.

Assessing Student Responses

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

- Did the student(s) use the appropriate terminology, such as *added to*, *joined*, *equals*, and so on?
- Did the student(s) understand the concept of addition?
- Did the student(s) use strategies for combining the sets?

4: Count and Write My Number

Number of Students

Partner pairs or entire class

Materials

For each pair of students:

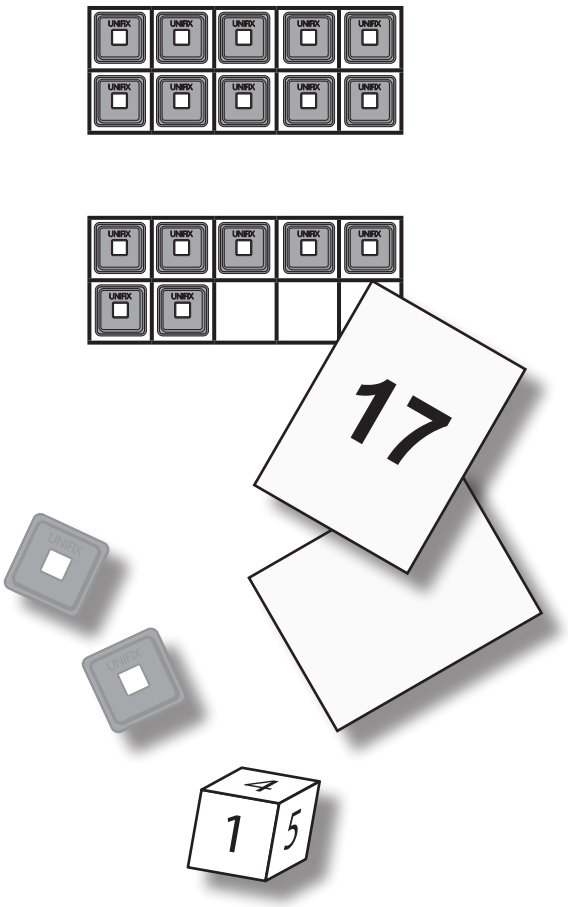
- 2 Ten-Frames Templates (page 110)
- 20 Unifix Cubes
- Six-sided number cube (1–6)

For each student:

- Individual whiteboard and marker (or create a recording sheet)

For the teacher:

- Number Cards 0–20 (pages 117–119)
- Document camera, if available



Overview

In this activity, students will use Unifix Cubes and ten-frames to count and demonstrate the numbers called. Students will write the numbers on individual student whiteboards.

Common Core State Standards

Content Standards:

Grade Level: K

Domain: Counting and Cardinality (K.CC)

Know number names and the count sequence.

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

Practice Standards:

2. **Reason abstractly and quantitatively.**

   Students must make sense of the quantity involved in each number called.

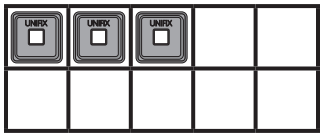
7. **Look for and make use of structure.**

   Students must learn to subitize, recognizing the number 14 is one ten and four ones.

Presenting the Activity

1. Reproduce the Number Cards 0–20 and cut the cards apart. Have each partner pair shuffle the cards and place them facedown.
2. Reproduce and distribute 2 Ten-Frames Templates to the partner pairs.
3. Distribute 20 Unifix Cubes to each partner pair.
4. Distribute individual student whiteboards and markers to each student.
5. Have students roll the number cube. The player who rolls the greater number will be Player 1.
6. Say to the students:

   > I will call a number. Player 1 will use the Unifix Cubes and ten-frames to show the number called. For example, if I call the number 3, Player 1 will count out three Unifix Cubes and place them on the frame like this:

7. Say to the students:

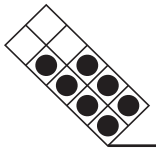
   > Player 2 will check Player 1's work. If correct, Player 2 will write the number on the whiteboard.
   >
   > Player 1 will check to see whether the written number is correct.
   >
   > I will show you the number called using the card and our document camera.

8. Call another number and repeat the activity. This time have Player 2 count out the cubes to be placed on the ten-frames. Have Player 1 check for correctness and then write the number on the recording sheet or whiteboard.
9. Continue with several more numbers as time allows.

Assessing Student Responses

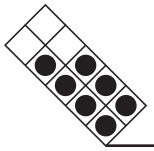
The following questions will help you assess your students' responses to the activity.

- Did the student(s) correctly count and demonstrate the numbers called?
- Did the student(s) correctly write the numbers?
- Could the student(s) count the numbers, but not write the numbers?
- Did the student(s) reverse the digits of the two-digit numbers? (For example, did a student write "31" for the called number "13"? Number reversals are a developmental issue for kindergarten students and should be pointed out by modeling the correct number.
- Did the student(s) use one-to-one correspondence when placing and counting the Unifix Cubes on the ten-frames?
- Did the student(s) think of the teen numbers as a group of one ten and more ones?



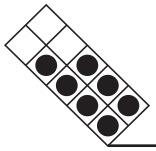
Number Cards 1–9

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

20: Make Ten

Number of Students

Individual, small group, or entire class

Materials

For each student:

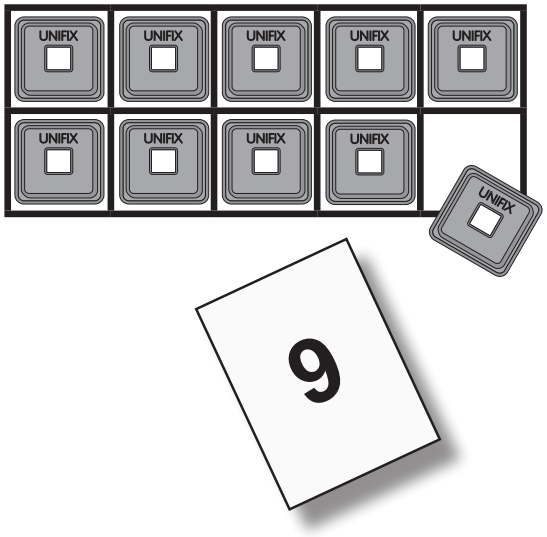
- "Make Ten" Activity Sheet (page 132)
- 18 Unifix Cubes (or other markers), 9 each of two different colors

For each group:

- Number Cards 1–9 (page 117)

Overview

In this activity, students place Unifix Cubes or other markers in a ten-frame to make 10.



9 + 1 = 10

Common Core State Standards

Content Standards:

Grade Level: K

Domain: Operations and Algebraic Thinking (K.OA)

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

4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

Practice Standards:

4. Model with mathematics.

Students are using manipulatives to model basic addition facts to 10. From the visual representation they create on the ten-frame activity sheet, they are writing the corresponding addition equation.

7. Look for and make use of structure.

As students continue making 10 in this activity, they begin to notice patterns, such as 2 + 8 is the same as 8 + 2. The addends are just in a different order.

Presenting the Activity

1. Make copies of the Number Cards 1–9 on card stock and cut them apart.
2. Distribute the Unifix Cubes or markers to each student.
3. Say to the student(s):

   “Draw a Number Card. Put that number of Unifix Cubes on your ten-frame using one color.”

4. You may need to demonstrate the activity with one card.
5. Allow time for students to complete the task.
6. Say to the student(s):

   “Now, how many more cubes do you need to make 10? Use the other color of cubes to fill the ten-frame.”

7. Repeat the activity for all 9 Number Cards.
8. For each Number Card you show, say to the student(s):

   “Write the number I showed you in the first space, and then write the number that will make 10 in the second space—for example, 6 + 4 = 10.”

9. For each number sentence the students record, say:

   “Tell me the number sentence you wrote.”

Assessing Student Responses

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

- Did the student(s) place the correct number of cubes for each number shown?
- Did the student(s) determine the correct number of cubes to make 10?
- What procedure did the student(s) use to determine what makes 10? Did the student count the remaining squares in the ten-frame? Did the student count on from the number shown—for example, 8, 9, 10, so 8 + 2 = 10?
- Did the student(s) have any difficulty completing the number sentences on the activity sheet?
- Did the student(s) notice any patterns, such as 4 + 6 = 6 + 4?

13: Target Number Addition Roll

Number of Students

Partner pairs

Materials

For each student:

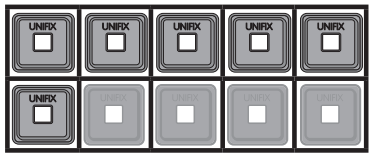
- 2 ten-frames or Ten-Frames Template (page 110)

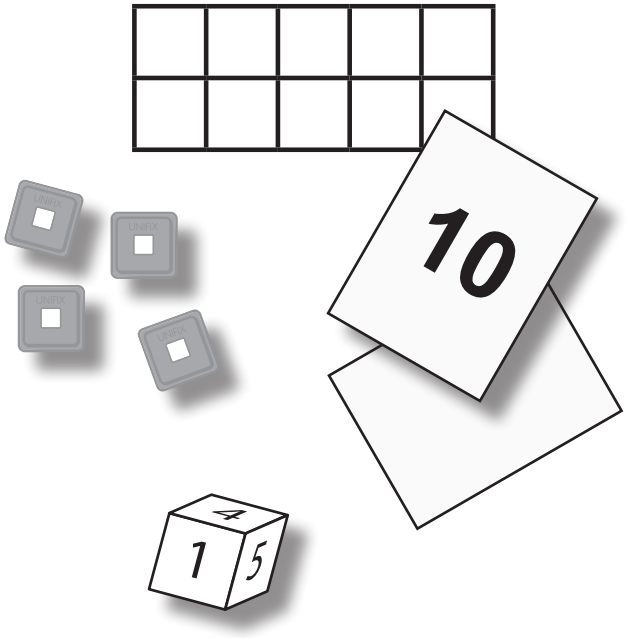
For each pair of students:

- Number Cards 2–12 (pages 117–118)
- Assortment of colored Unifix Cubes
- Six-sided number cube (1–6)

Overview

In this activity, a target number is selected. Students will represent addition by combining Unifix Cubes on one or two ten-frames to determine whether they have reached the target number.





Common Core State Standards

Content Standards:

Grade Level: K

Domain: Operations and Algebraic Thinking (K.OA)

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

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

Practice Standards:

2. **Reason abstractly and quantitatively.**

   Students must make sense of the quantities involved in the activity.

4. **Model with mathematics.**

   Students will use Unifix Cubes to model addition.

Presenting the Activity

1. Make copies of the Number Cards for partner pairs.
2. Make a copy of the Ten-Frames Template for each student.
3. Group students in partner pairs.
4. Distribute Unifix Cubes and 1–6 number cube to partner pairs.
5. Say to the students:

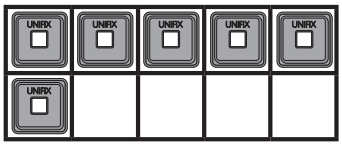
   “Shuffle the Number Cards and place them facedown between you and your partner.

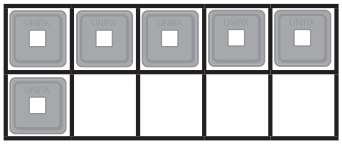
   Player 1, draw the top card and show it to your partner. This number becomes the target number for Player 2.

   For example, suppose the card drawn is the number 10. Player 2 will toss the number cube two times.

   Each time the number cube is tossed, Player 2 will count Unifix Cubes to match the number tossed and place them on his or her ten-frame(s).

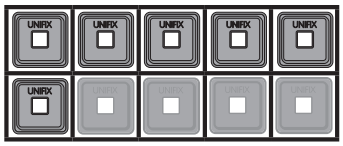
   For example, if the first roll lands on the number 6, Player 2 places six cubes of the same color on the frame. If the second roll is also a 6, Player 2 then adds 6 more cubes of a different color to the ten-frames, like this:

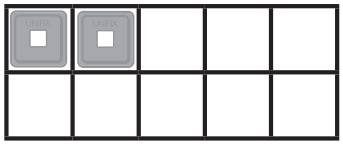




6. Say to the students:

   “Now, Player 2 will combine the cubes on the ten-frames. Player 2 should notice the total as one ten and two ones, or 12.





7. Say to the students:

   “Player 2, look at selected target number of (10). Is this number a match? If not, how close to (10) is the number you have?

   Player 2 may state, “My number is 2 more than 10.”

8. The activity continues with Player 2 selecting a target number for Player 1. The above process is repeated.

Assessing Student Responses

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

- Did the student(s) use the appropriate terminology such as *added to*, *joined*, *equals*, etc.?
- Did the student(s) understand the concept of addition?
- Did the student(s) use a strategy for combining the sets, i.e., doubles?
- Could the student(s) explain how close the target number was?

21: What a Difference

Number of Students

Pairs

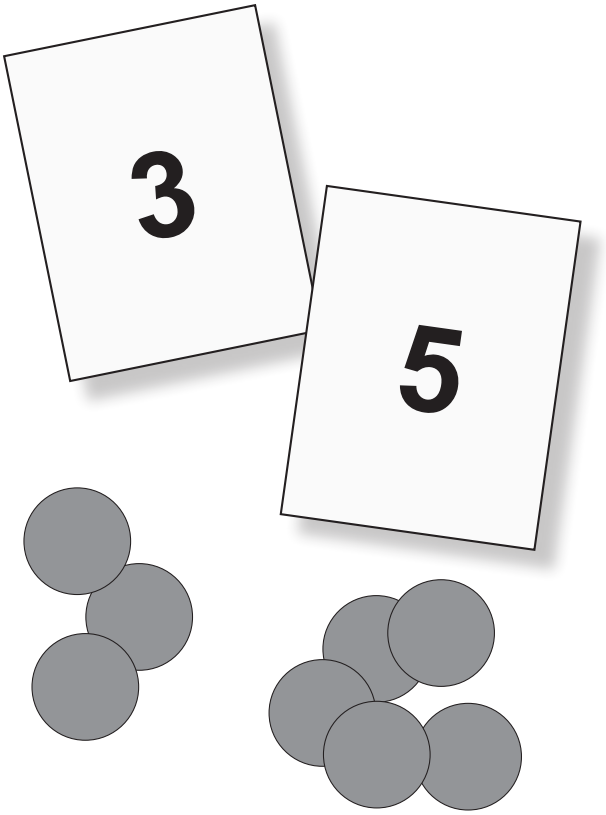
Materials

For each pair:

- Number Cards 1–9 (4 sets) (page 96)
- 0–10 Number Line (page 91)
- Approximately 50 counters

Overview

In this game, students use Number Cards, counters, and a 0–10 Number Line to show subtraction.



Common Core State Standards

Content Standards:

Grade Level: K

Domain: Operations and Algebraic Thinking (OA)

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

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

Practice Standards:

5. Use appropriate tools strategically.

Kindergarten students are learning to separate and subtract using models and representations to find the difference between two numbers.

Presenting the Activity

1. Make four copies of the Number Cards for each partner pair.
2. Make copies of the 0–10 Number Line for each partner pair.
3. Distribute the cards, number line, and counters to each partner pair.
4. Say to students:

> The object of the game is to find the difference between the numbers on two cards. You will use counters and also show that difference on the number line.
>
> To begin, place the deck of cards face down between you and your partner.
>
> Each partner chooses a card and shows it to the other player. The partner with the greater number finds the difference between the two numbers.
>
> You may use counters to find the difference between the numbers. Then show your subtraction on the number line.
>
> For example, Partner 1 draws a "3" and Partner 2 draws a "5." Partner 2 subtracts the smaller number, 3, from the larger number, 5, using the counters. Partner 2 also models the subtraction, 5 – 3, on the number line to land on the number 2.
>
> Play three rounds.

Assessing Student Responses

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

- Did the students correctly identify the number on each card?
- Did the students correctly use the counters to model subtraction?
- Did the students correctly subtract to find the difference between the two numbers, and then correctly show the subtraction on the number line?

1: Counting Forward

Number of Students

Individual students

Materials

For each student:

- Student Rekenrek
- Number Cards 1–10 (page 106)
- Paper bag

Overview

In this activity, students use the Rekenrek to count forward from any given number.

Common Core State Standards

Content Standards:

Grade Level: K

Domain: Counting and Cardinality (K.CC)

Know number names and the count sequence.

2. Count forward from a beginning number within the known sequence (instead of having to begin at 1).

Practice Standards:

2. Reason abstractly and quantitatively.

Kindergarten students are beginning to count on from any given number without starting back at 1.

Presenting the Activity

1. Make a copy of the Number Cards and cut the cards apart. Place them in a paper bag to draw.

2. Distribute a Rekenrek to each student.

3. Say to students:

   > I am going to tell you a number. For example, I may start with the number 6. You will show that number on your Rekenrek.
   >
   > Then, I will draw a number from my bag. We will all start counting at the number 6 and count forward with the number that I draw. If I draw the number 3, we will start at 6 and together we will count forward three more numbers to say "7, 8, 9."
   >
   > If I tell you the number 12, you will show it on your Rekenrek. I will draw a card for you to count forward with, such as 7. We will start at 12 and count forward seven more numbers: "13, 14, 15, 16, 17, 18, 19." We counted on seven more numbers.

4. Continue the activity by calling out other numbers from 1 to 10. Students will show the called number on the Rekenrek and then orally count forward using the Number Card selected from the bag.

Assessing Student Responses

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

- Did the students correctly show the called number using the Rekenrek?
- Did the students correctly count forward orally from any given number?

27: Double Me

Number of Students

Partner pairs

Materials

For each student:

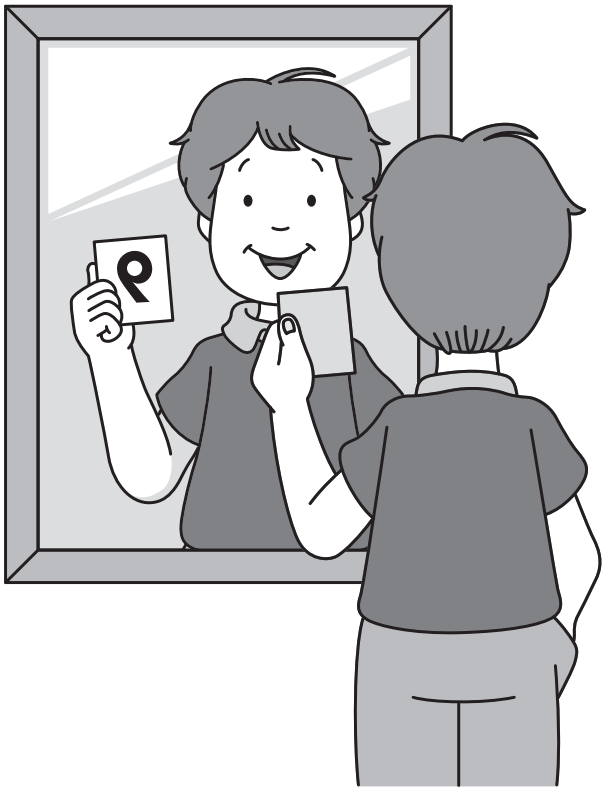
- Student Rekenrek
- "Double Me" Recording Sheet (page 134)
- Paper and pencil

For each partner pair:

- Number Cards 1–10 (pages 106–107)

Overview

In this activity, students use their Rekenreks to double various numbers from 1 to 10 and then record their findings as addition number sentences.



Common Core State Standards

Content Standards:

Grade Level: K

Domain: Operations and Algebraic Thinking (K.OA)

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

1. Represent additon and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

Grade Level: 1

Domain: Operations and Algebraic Thinking (1.OA)

Work with addition and subtraction equations.

8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = ? – 3, 6 + 6 = ?

Practice Standards:

2. **Reason abstractly and quantitatively.**

   Students are learning to make sense of quantities and understand what addition means as they focus on basic addition facts involving doubles.

6. **Attend to precision.**

   Students are accurately finding sums for two repeated addends.

Presenting the Activity

1. Make a copy of the Number Cards 1–10 for each pair of students and cut the cards apart.
2. Make a copy of the "Double Me" Recording Sheet for each student.
3. Distribute a set of Number Cards 1–10 to each pair of students.
4. Distribute a Rekenrek and recording sheet to each student.
5. Say to students:

> For this activity, you and your partner are going to double numbers on your Rekenreks.
>
> Let's do one together so you can see how to do it with your partner.
>
> I will draw a Number Card from 1 to 10.
>
> For example, let's say I draw a 4.
>
> You and your partner will work together with your Rekenreks to show 4 + 4 and determine the sum.
>
> When you agree on the sum, write the number sentence on your recording sheet.
>
> Place the beads back in the start position and draw another card.
>
> Continue until you have doubled all of the numbers from 1 to 10.

Assessing Student Responses

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

- Did students correctly find the sums for all double addends?
- Were any sums more difficult than others?

10: On Your Mark, Get Set, Go!

Number of Students

Entire class

Materials

For each student:

- Student Rekenrek

Overview

In this activity students count by ones, moving one bead on the Rekenrek for each number they count.

Common Core State Standards

Content Standards:

Grade Level: K

Domain: Counting and Cardinality (K.CC)

Know number names and the count sequence.

1. Count to 100 by ones and by tens.

Count to tell the number of objects.

4. Understand the relationship between numbers and quantities; connect counting to cardinality.

Practice Standards:

2. Reason abstractly and quantitatively.

Kindergarten students are beginning to make sense of quantities and the symbols representing those quantities. They are beginning to focus on quantitative reasoning.

Presenting the Activity

1. Distribute Rekenreks to students.
2. Say to students:

> We are going to count together to 20.
>
> When I say "On your mark," place the Rekenrek in front of you.
>
> When I say "Get set," move all of your beads to the start position on the right side of your Rekenrek.
>
> When I say "Go," we will start counting by ones and moving a bead to the left for each number we count.
>
> Remember, when we get to 11, you will need to begin counting the beads on the second row of your Rekenrek.

3. Continue counting to 20.

Assessing Student Responses

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

- Did the students correctly show the numbers on their Rekenreks?
- Did any numbers cause difficulties?
- Were any number names difficult for students to say?

28: One More Than My Double

Number of Students

Partner pairs

Materials

For each student:

- Student Rekenrek
- Paper and pencil or whiteboard and marker

For the teacher:

- Large Number Cards 1–10 (pages 108–110)

Overview

In this activity, students use a fact strategy to find one more than a specified double on their Rekenreks.

4 + 4 + 1 = 9

Common Core State Standards

Content Standards:

Grade Level: K

Domain: Operations and Algebraic Thinking (K.OA)

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

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

Grade Level: 1

Domain: Operations and Algebraic Thinking (1.OA)

Work with addition and subtraction equations.

8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = ? – 3, 6 + 6 = ?

Practice Standards:

2. Reason abstractly and quantitatively.

Students are learning to make sense of quantities and understand what subtraction means as they focus on basic subtraction facts.

6. Attend to precision.

Students are accurately finding the missing addend for a sum of 10 or a sum of 20.

Presenting the Activity

1. Make a copy of the Large Number Cards 1–10 and cut the cards apart.
2. Distribute a Rekenrek and pencil and paper, or whiteboard and marker, to each student.
3. Say to students:

   "You are going to work together to play "One More Than My Double."

   I will show you a number from 1 to 10.

   You and your partner will work together to determine one more than the double of the number I show you.

   Then one of you will write an addition number sentence to show your answer.

   Here is an example card. (Show 4.)

   So, each of you show 4 on your Rekenrek.

   Now, double 4 by moving another 4 beads.

   Then add 1 bead. What is your answer? (9)

   Now, on your paper, write $4 + 4 + 1 = 9$ or $4 + 5 = 9$.

   We will continue until all the cards have been used.

4. Note that $10 + 10 + 1 = 21$ cannot be shown on student Rekenreks.
5. Discuss with students how they determined their sums.
6. Discuss with students doubles plus 2.
7. Discuss with students doubles plus 1 for numbers greater than 20.

Assessing Student Responses

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

- Did the students correctly double the number of beads and add one?
- Did the students write the correct addition number sentences?
- Did any numbers cause difficulties?

26: Toss a Number

Number of Students

Pairs

Materials

For each student:

- Student Rekenrek
- "Toss a Number" Game Sheet (page 133)
- 1– 6 number cube
- Pencil

Overview

In this game, students use their Rekenreks to focus on basic addition facts for sums 7 to 10.

____ + ____ = 10	____ + ____ = 10
4 + 5 = 9	____ + ____ = 9
____ + ____ = 8	____ + ____ = 8
____ + ____ = 7	____ + ____ = 7

Common Core State Standards

Content Standards:

Grade Level: K

Domain: Operations and Algebraic Thinking (K.OA)

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

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

Grade Level: 1

Domain: Operations and Algebraic Thinking (1.OA)

Add and subtract within 20.

5. Relate counting to addition and subtraction.

Work with addition and subtraction equations.

8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = ? – 3, 6 + 6 = ?

Practice Standards:

2. Reason abstractly and quantitatively.

Students are learning to make sense of quantities and understand what addition means as they focus on basic addition facts with sums from 7 to 10.

Presenting the Activity

1. Make a copy of the "Toss a Number" Game Sheet sheet for each student
2. Distribute a Rekenrek, game sheet, and pencil to each student.
3. Distribute a number cube to each pair.
4. Say to students:

   For this game, you and your partner are going to use your Rekenreks to complete basic addition number sentences.

   Toss the number cube to see which of you goes first. Whoever has the greater number goes first.

   Look at your game sheet. There are two columns. They both show 10, 9, 8, and 7. These are *sums*, or the answers to basic addition problems.

   On your turn, toss the number cube. That number is the first addend in one of the addition sentences you are going to complete.

   Suppose I toss a 3. I decide where I will write the 3. Let's place it on the line that has a sum of 8. This is now what the line looks like: 3 + _____ = 8. (Write the open sentence on the board.)

   On your Rekenrek, move 3 beads. Then figure out how many more beads you need to move so that the sum is 8. How many do you need to move? (5)

   Now, record a 5 on your game sheet so that you have a complete number sentence: 3 + 5 = 8.

   If you toss a number (addend) and you cannot complete a number sentence on your game sheet, you lose a turn.

   The first player to complete all eight number sentences on his/her game sheet wins the game.

5. Have students play three games.

Assessing Student Responses

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

- Did students have difficulties completing sums on their Rekenreks?
- Were any sums more difficult than others?
- In observing students, how did students move the beads? One by one or in groups?

"Toss a Number" Game Sheet

_____ + _____ = 10	_____ + _____ = 10
_____ + _____ = 9	_____ + _____ = 9
_____ + _____ = 8	_____ + _____ = 8
_____ + _____ = 7	_____ + _____ = 7

8 Add Within 10

Math Standard Solve addition and subtraction word problems, and add and subtract within 10.

Grouping(s)

Whole group or small guided math group

Materials

For the student:

- 20-bead number line
- 6-sided die
- "Add Within 10" Cards (page 86)
- Recording Sheet (page 87)

Overview

Students build and solve addition problems within 10 using the 20-bead number line.

Presenting the Activity

1. Students roll the die and record the numeric value of the die on the recording sheet (for example, 4).
2. Students select an "Add Within 10" Card and record the number on the card as the second addend (for example, 4 + 3).
3. Students use the BNL to solve the equation.
4. Students record the sum on the recording sheet (4 + 3 = 7).
5. **Optional:** Have partners check each other's work for accuracy using an addition chart.

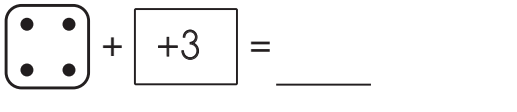
Guided Learning

Ask:

- Where did you start? Why?
- Did you count by ones? Another way?

Assessing Student Responses

- Was student able to accurately add?
  Y / N / Emerging
- Did student count on?
  Y / N / Emerging
- Is student able to complete the task without the BNL?
  Y / N / Emerging



Activity 8: "Add Within 10" Cards

+3	+2	+1
+0	+4	+3
+2	+1	+0
+4	+3	+2
+1	+0	+4

Name _____

Activity 8: "Add Within 10" Recording Sheet

The first one is done for you.

Write the equation.	Show your thinking.
 + +3 = ____ 4 + 3 = 7	
	
	
	
	
	
	

11 Make a Ten

Math Standard For any number from 1 to 9, find the number that makes 10 when added to the given number.

Grouping(s)

Whole group or small guided math group

Materials

For the student:

- 20-bead number line (BNL)
- Recording Sheet (page 91)

Overview

Students use the BNL to model sums to 10 by finding the missing addend when given a starting value.

Presenting the Activity

1. Teacher identifies a beginning quantity and prompts students to find how many more to make 10.
2. Students use the BNL to determine the missing addend and then record the equation on the recording sheet.

Starting value and equation:	
8	Equation: 8 + 2 = 10
5	Equation: 5 + 5 =10
9	Equation: 9 + 1 = 10
3	Equation: 3 + 7 = 10
6	Equation: 6 + 4 = 10
7	Equation: 7 + 3 = 10
1	Equation: 1 + 9 = 10* (*Observe whether students add 9 to 1 or have to begin counting from 1.)

Guided Learning

After each round, *ask:*

- How many more did you need?
- Did you need to count?

Teacher should check students' recording sheets for accuracy of equations.

Assessing Student Responses

- Did student have to count?

  Y / N / Emerging
- Did student accurately record the equation?

  Y / N / Emerging
- Can student complete problems without the BNL?

  Y / N / Emerging

8 + 2 = 10

Name _____

Activity 11: "Make a Ten" Recording Sheet

Use a RED crayon to show the starting number and a GREEN crayon to show how many more. Then write the equation. (The first one is done for you.)

Start at . . .	How many more?	Equation
8		8 + 2 = 10
5		
9		
3		
6		
7		
1		

9 Subtract Within 10

Math Standard Solve addition and subtraction word problems, and add and subtract within 10.

Grouping(s)

Whole group or small guided math group

Materials

For the student:

- 20-bead number line
- 6-sided die
- "Subtract Within 10" Cards (page 88)
- Recording Sheet (page 89)

Overview

Students build and solve subtraction problems within 10 using the 20-bead number line.

Presenting the Activity

1. Students roll the die and record the value on the sheet (for example, 4).
2. Students select a "Subtract Within 10" card and record the subtrahend (4 – 2).
3. Students use the BNL to solve the equation.
4. Students record the difference on the recording sheet (4 – 2 = 2).

Guided Learning

Ask:

- Where did you start? Why?
- Did you count back by ones? Another way?

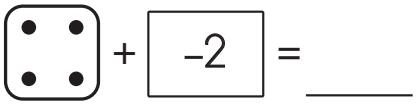
Assessing Student Responses

- Was student able to accurately subtract?

  Y / N / Emerging
- Did student count back?

  Y / N / Emerging
- Is student able to complete the task without the BNL?

  Y / N / Emerging



Activity 9: "Subtract Within 10" Cards

−3	−2	−1
−0	−4	−3
−2	−1	−0
−4	−3	−2
−1	−0	−4

Name _____

Activity 9: "Subtract Within 10" Recording Sheet

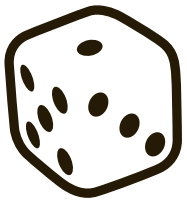
Write the equation.	Show your thinking.
 + –2 = ____ 4 – 2 = 2	
	
	
	
	
	
	

Die Plus One Chart

- Each player chooses a color token (tiles, cubes, chips).
- Players toss die. Highest number goes first.

How to Play

- *Toss die.*
- *Add one.*
- *Find the number on the chart.*
- *Place one token on the number.*
- *If number has a token on it, lose a turn.*
- *Count tokens to see who wins.*



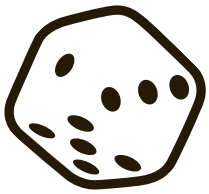
4	6	5	3	2
7	4	3	5	7
3	7	5	6	2
6	4	6	7	4
5	3	2	3	5
2	6	7	4	6

Die Plus Two Chart

- Each player chooses a color token (tiles, cubes, chips).
- Players toss die. Highest number goes first.

How to Play

- *Toss die.*
- *Add two.*
- *Find the number on the chart.*
- *Place one token on the number.*
- *If number has a token on it, lose a turn.*
- *Count tokens to see who wins.*



4	6	5	3	8
7	4	3	5	7
3	7	5	6	8
6	4	6	7	4
5	3	8	3	5
8	6	7	4	6

Die Minus One Chart

- Each player chooses a color token (tiles, cubes, chips).
- Players toss die. Highest number goes first.

How to Play

- *Toss die.*
- *Subtract one.*
- *Find the number on the chart.*
- *Place one token on the number.*
- *If number has a token on it, lose a turn.*
- *Count tokens to see who wins.*

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