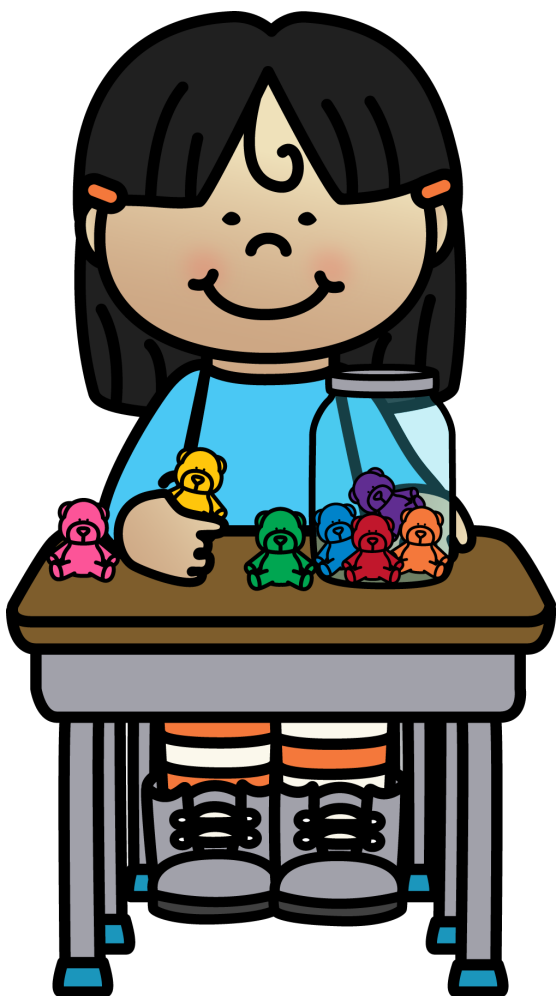


Kindergarten

Illustrative Math



Math Centers
Stage by Stage

Connecting Cubes

Stage 1: Explore

Task statement

Students have free exploration time with connecting cubes.

Required materials

- Connecting cubes

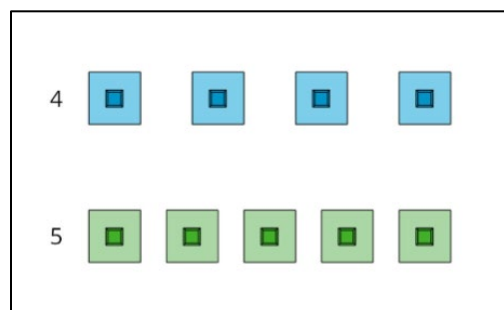
Stage 3: Get and Build

Task statement

Students use a specified number of each color of connecting cube to build a figure of their choice.

Required materials

- Connecting cubes
- Connecting Cubes, stage 3 directions



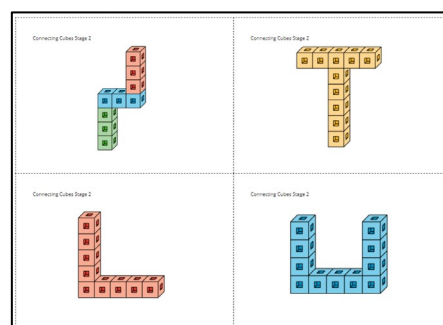
Stage 2: Build to Match

Task statement

Students look at images of figures made of connecting cubes and make a figure to match.

Required materials

- Connecting cubes
- Connecting Cards, stage 2 task cards



Pattern Blocks

Stage 1: Explore

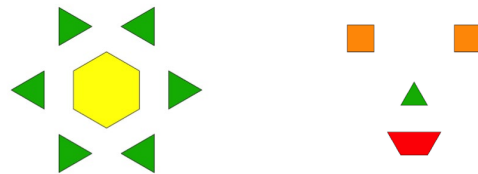
Task statement
Students have free exploration time with pattern blocks.

Required materials
•Pattern blocks

Stage 2: Puzzles

Task statement
Students use pattern blocks to fill in puzzles where the edges of each shape do not touch.

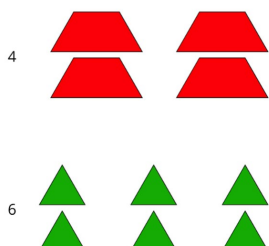
Required materials
•Pattern blocks
•Pattern Block stage 2 mat



Stage 3: Get and Build

Task statement
Students use a specified number of each pattern block to build a creation of their choice.

Required materials
•Pattern Blocks
•Pattern Blocks stage 3 directions



Stage 4: Count Out and Build

Task statement
Students count out a given number of each pattern block and put them together to make larger shapes. They compare the amount or number of different pattern blocks they use to make their shape.

Required materials
•Pattern blocks
•Pattern Block stage 4 recording sheet

3		green triangles
6		yellow hexagons
8		blue rhombuses
4		orange squares
I used more _____ than _____.		

Pattern Blocks

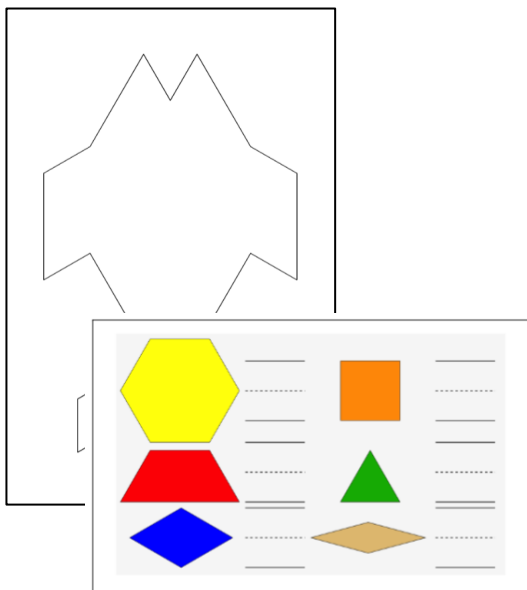
Stage 5: Puzzle Challenge

Task statement

Students use pattern blocks to fill in more challenging puzzles that do not show the individual pattern blocks. These puzzles can be filled in in different ways, using different amounts of each pattern block. Students record a number to show how many of each block they used.

Required materials

- Pattern blocks
- Pattern Block stage 5 mat
- Pattern Blocks stage 5 recording sheet



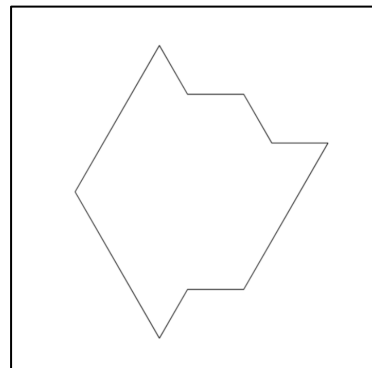
Stage 6: Place the Last Pattern Block

Task statement

Partners take turns placing one pattern block at a time in the puzzle until it is complete. The student who places the last pattern block wins.

Required materials

- Pattern blocks
- Pattern Block stage 6 mat



Pattern Blocks

Stage 7: Puzzle Challenge

Task statement

Students count out a given number of pattern blocks (up to 20) and put them together to make a new shape. Then they draw the shape.

Required materials

- Colored pencils, crayons, or markers
- Pattern blocks
- Pattern Blocks Stage 7 Recording Sheet

Put together 15 pattern blocks to make a shape.

Geoblocks

Stage 1: Exploring

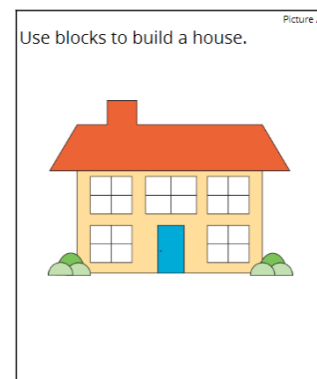
Task statement
Students have free exploration time with geoblocks.

Required materials
•Geoblocks

Stage 2: Build It

Task statement
Students use solid shapes to build objects pictured on cards.

Required materials
•Geoblocks
•Geoblocks Build It Stage 2



Stage 3: Describe and Find

Task statement
Students describe solid shapes so their partner can identify the shape out of a set of 4-6 solid shapes.

Required materials
•Geoblocks
•Solid Shapes

Stage 4: Feel and Guess

Task statement
Students feel the shape without looking at it and guess the shape.

Required materials
•Geoblocks
•Bags
•Solid Shapes

Picture Books

Stage 1: Exploring

Task statement

Students look at picture books and identify groups of objects. They may recognize small quantities or count to figure out how many.

Required materials

- Picture books

Stage 2: Create

Task statement

Students create their own picture book representing different numbers.

Required materials

- Colored pencils or crayons
- Picture Books, stage 2 recording sheet

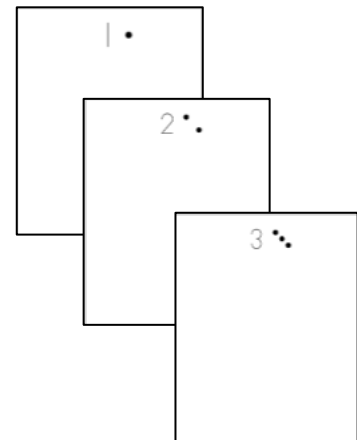
Stage 3: Find Shapes

Task statement

Students look through picture books and notice and describe shapes they see in the pictures.

Required materials

- Each group of 2-4 needs at least one picture book that shows a variety of shapes throughout the book.
- Picture Books, stage 3 recording sheet



Look for shapes in your book.		
Sketch what you see.	Describe what you see.	What shape is it?

Math Fingers

Stage 1: Show and Say

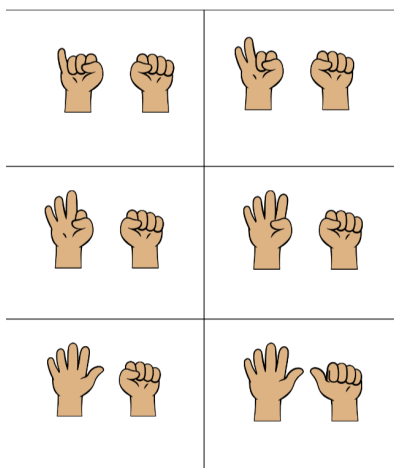
Task statement

Students use their fingers to represent quantities and explore the relationships between numbers.

Students choose a card. One partner shows the same fingers as the number on the card with their hands and the other partner says the number of fingers shown.

Required materials

- Math Finger Cards



Stage 2: Fewer or More

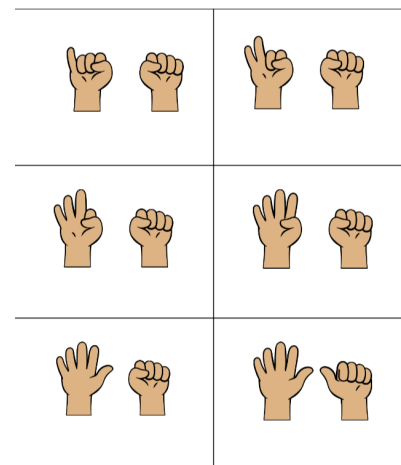
Task statement

Students look at images of figures made of connecting cubes and make a figure to match.

Students choose a card. One partner uses their fingers to show a quantity that is fewer than the fingers on the card. The other partner uses their fingers to show a quantity that is more.

Required materials

- Math Finger Cards



Math Fingers

Stage 3: Add 2 Hands

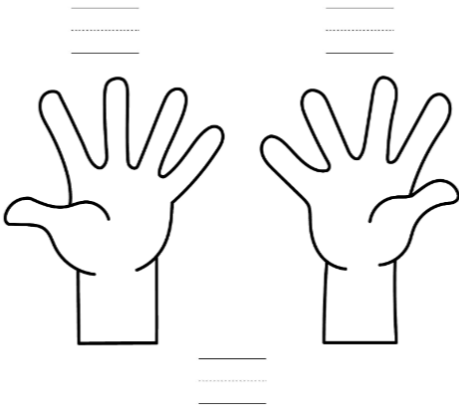
Task statement

Students use their fingers to represent quantities and explore the relationships between numbers.

Each partner holds up some fingers on one hand. Partners work together to figure out how many fingers are up altogether.

Required materials

- Math Fingers, stage 3 recording sheet



Stage 4: Make 10

Task statement

Students look at images of figures made of connecting cubes and make a figure to match.

One partner rolls the number cube and shows that number of fingers. The other partner determines how many more fingers are needed to make 10. Both partners fill in an equation to show the 2 parts that make 10.

Required materials

- Connecting Cubes
- Number Mat 1-9
- Math Fingers, stage 4 Recording Sheet

4	1	9
6	7	3
8	5	

10 = ___ + ___
10 = ___ + ___
10 = ___ + ___
10 = ___ + ___
10 = ___ + ___
10 = ___ + ___

Shake and Spill

Stage 1: Count

Task statement

Students decide together how many counters to use (up to 10). They take turns shaking and spilling the counters. Both partners count the counters. Then, they choose a different number of counters and repeat.

Students may choose to use the 5-frame to organize the counters.

Required materials

- Each group of 2 needs a cup and 10 two-color counters.
- 5-frames
- Cups

Stage 2: Which is More?

Task statement

Students decide together how many counters to use (up to 10). They take turns shaking and spilling the counters. They compare the number of red and yellow counters and describe their comparisons using the language "more than," "fewer than," and "the same as."

Students may choose to use the 5-frame to organize the counters.

Required materials

- Each group of 2 needs a cup and 10 two-color counters
- 5-frames
- Cups

Shake and Spill

Stage 3: Represent

Task statement

Students decide together how many counters to use (up to 10). One partner spills the counters. Both partners represent the red and yellow counters on the recording sheet.

This stage has two different recording sheets, one for kindergarten and another for grade 1. Be sure to use the appropriate recording sheet with students.

Required materials

- Each group of 2 needs a cup and 10 two-color counters.
- 5-frames
- Cups
- Shake and Spill Recording Sheet



Directions:

- Choose how many counters to put in the cup.
- Partner A: Shake and spill.
- Both partners: Determine how many red counters and how many yellow counters there are and write an equation to show the total.
- Switch roles and start the next round.



round	Write an equation to represent the red and yellow counters.
1	
2	
3	
4	
5	
6	
7	
8	

Draw a picture.

Fill in the expression.

$\underline{\quad\quad} + \underline{\quad\quad}$

Draw a picture.

Fill in the expression.

$\underline{\quad\quad} + \underline{\quad\quad}$

Draw a picture.

Fill in the expression.

$\underline{\quad\quad} + \underline{\quad\quad}$

Kindergarten

Grade 1

Stage 4: Cover (up to 10)

Task statement

Students decide together how many counters to use (up to 10). Partner A closes their eyes while Partner B shakes, spills, and covers up the yellow counters with a cup. Partner A determines how many counters are under the cup and explains how they know. Both partners record the round. Switch roles and repeat.

This stage has two different recording sheets, one for kindergarten and another for grade 1. Be sure to use the appropriate recording sheet with students.

Required materials

- Each group of 2 needs a cup and 10 two-color counters
- 5-frames
- Cups



Directions:

- Choose how many counters to put in the cup.
- Partner A: Close your eyes.
- Partner B: Shake and spill. Cover up the yellow counters with the cup.
- Partner A: Open your eyes and figure out how many counters are under the cup.
- Partner B: Show how many.
- Both partners: Record an equation.
- Switch roles and start the next round.



round	Write an equation to represent the red and yellow counters.
1	
2	
3	
4	
5	
6	
7	
8	

Kindergarten

Grade 1 & 2

Number Race

Stage 1: Numbers to 10

Task statement

- Students take turns rolling a connecting cube onto a number mat and write the number (1-10) they land on, on the recording sheet.
- Students may want to use colored pencils to write the numbers.

Required materials

- Colored pencils, crayons, or markers
- Connecting cubes
- Number Mat 1-10
- Number Race Recording Sheet

2	7	9	1	8
3	4	10	5	6

1	2	3	4	5	6	7	8	9	10

Stage 2: Numbers 11-20

Task statement

- Students take turns rolling a connecting cube onto a number mat and write the number (11-20) they land on, on the recording sheet.
- Students may want to use colored pencils to write the numbers.

Required materials

- Colored pencils, crayons, or markers
- Connecting cubes
- Number Mat 11-20
- Number Race Recording Sheet

17	18	20	15	11
14	12	19	16	13

11	12	13	14	15					

Less, Same, More

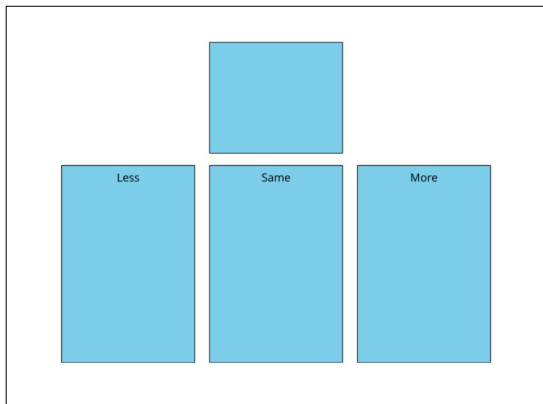
Stage 1: Groups of Objects

Task statement

Students choose a collection of objects and place the objects in the box at the top of the mat. They complete the mat to show groups that have fewer, the same, or more objects than the original amount.

Required materials

- Collection of objects
- Connecting cubes
- Less, Same, More Mat



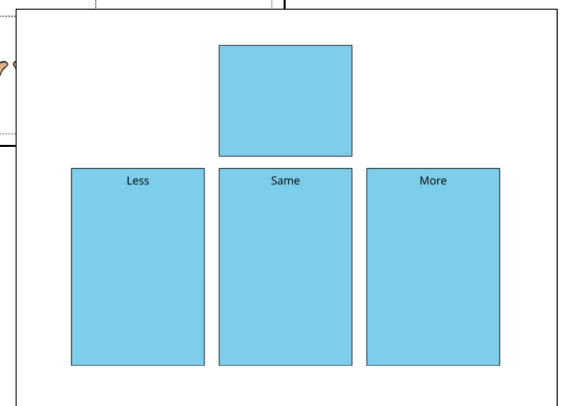
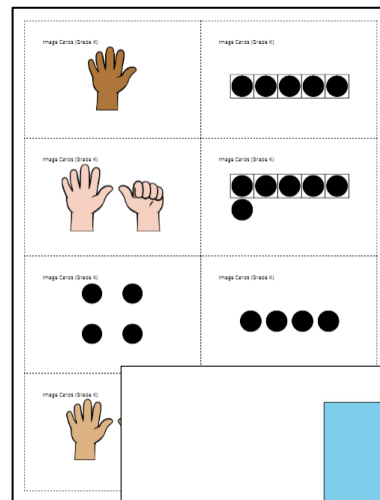
Stage 2: Images

Task statement

Students look at images of figures made of connecting cubes and make a figure to match.

Required materials

- Connecting cubes
- Image Cards



Less, Same, More

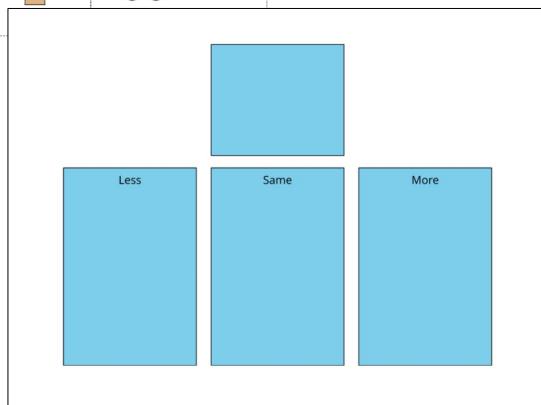
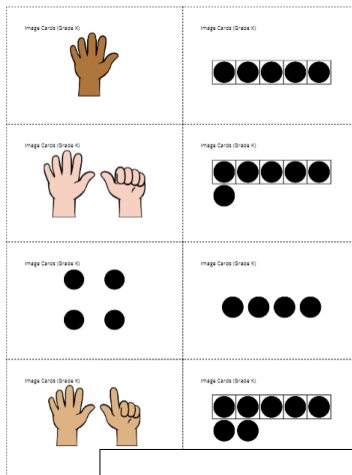
Stage 3: Drawings

Task statement

Students choose a card with an image and place it in the box at the top of the mat. They complete the mat by drawing to show groups that have fewer, the same, or more images than the original amount.

Required materials

- Less, Same More Mat
- Image Cards



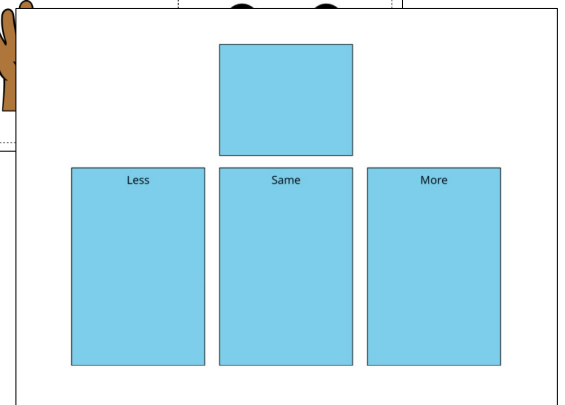
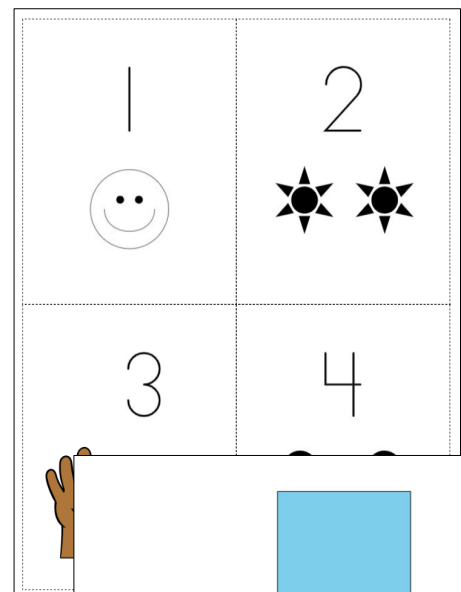
Stage 4: Numbers & Images

Task statement

Students use cards that have a number and an image. Students choose a card and place it at the top of the mat. They continue choosing cards and determining if each shows less, the same, or more than the card at the top.

Required materials

- Less, Same More Mat
- Number and Image Cards



Math Stories

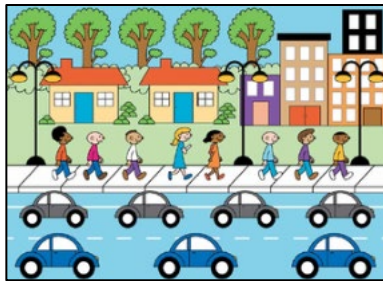
Stage 1: How Many?

Task statement

Students ask and answer "how many" questions about images and represent the quantity with a number.

Required materials

- Math Stories Stage 1 & 4 Pictures
- Math Stories Recording Sheet



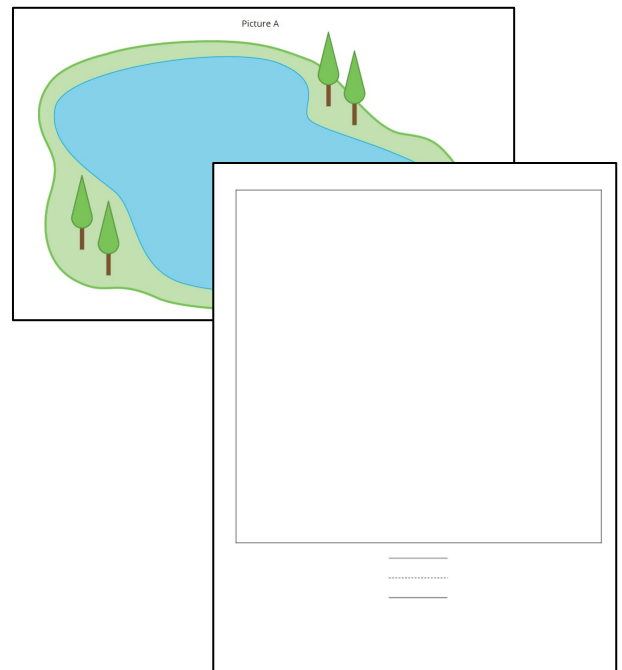
Stage 2: Act It Out

Task statement

One student uses the background mat to tell a story that includes a question. The other student uses counters or connecting cubes to act out the story and answer the question. Both students draw a picture and write the answer to the story problem on their recording sheet.

Required materials

- Connecting cubes or two-color counters
- Math Stories Stage 2 backgrounds
- Math Stories Recording Sheet



Math Stories

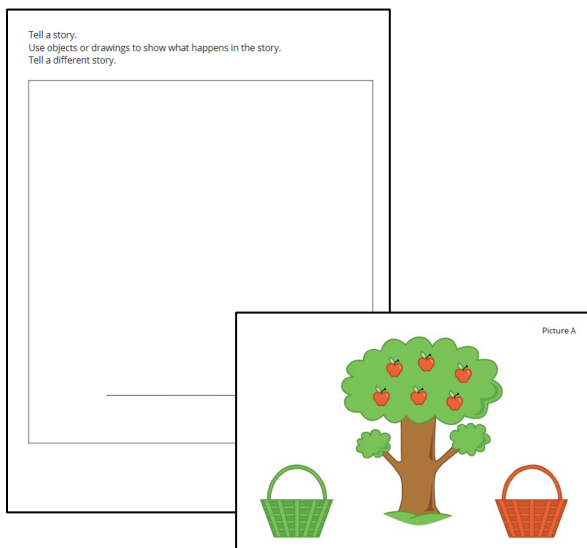
Stage 3: How Many of Each?

Task statement

One student tells a story based on a picture. The other student uses objects or drawings to represent the story. Then students switch roles and use the same picture to tell a different story. After telling two stories about the same picture, students choose another picture and repeat.

Required materials

- Connecting cubes or two-color counters
- Math Stories stage 3 recording sheet
- Math Stories pictures, stage 3



Bingo

Stage 1: Images

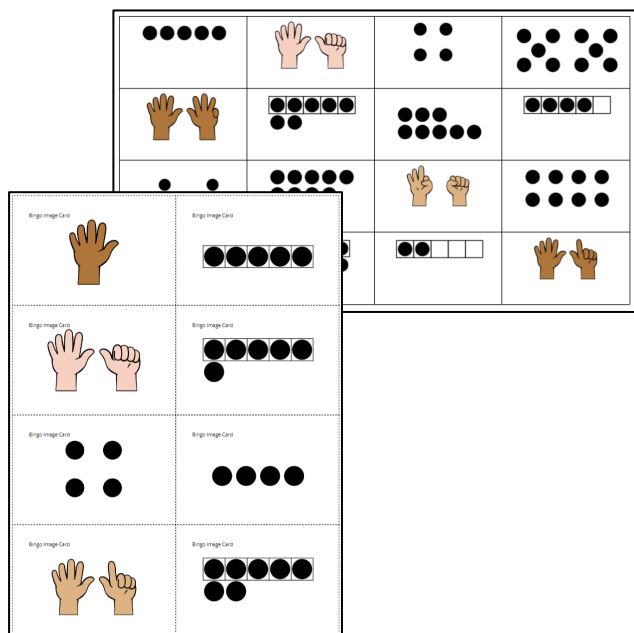
Task statement

Students generate a number and cover the appropriate space on the board with a counter.

One student chooses a card with an image and all students in the group can place a counter on their gameboard over a group that has the same number of images.

Required materials

- Counters
- Bingo Gameboard
- Bingo Image Cards



Stage 2: Images & Numbers

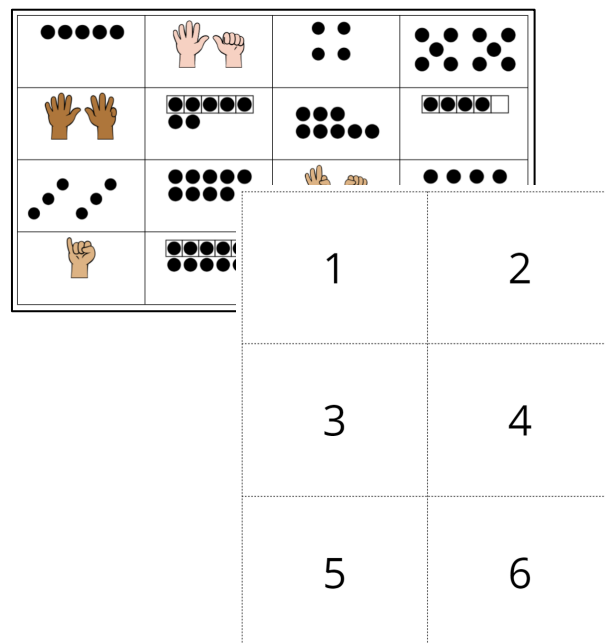
Task statement

Students generate a number and cover the appropriate space on the board with a counter.

One student chooses a number card and all students in the group can place a counter on their gameboard over a group that has that number of images.

Required materials

- Counters
- Number cards 1-10
- Bingo Gameboard



Bingo

Stage 3: Add and Cover

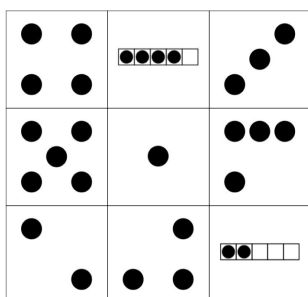
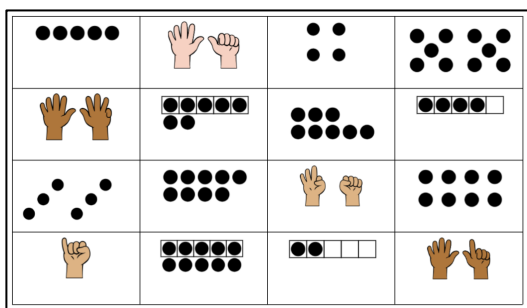
Task statement

Students generate a number and cover the appropriate space on the board with a counter.

Students roll 2 cubes onto the dot mat. They find the total number of dots and cover any spaces on the gameboard with that number of dots.

Required materials

- Connecting cubes
- Two-color counters
- Dot Mat
- Bingo Gameboard



Stage 4: Numbers 11-19

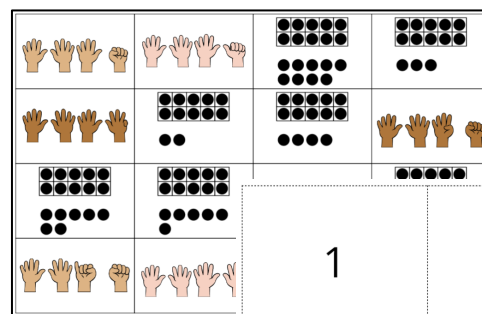
Task statement

Students generate a number and cover the appropriate space on the board with a counter.

One student chooses a card with a number from 11-19 and all students in the group can place a counter on their gameboard over a group that has that number of images.

Required materials

- Two-color counters
- Number Cards 11-19
- Bingo Gameboard, stage 4



1	2
3	4
5	6

Math Libs

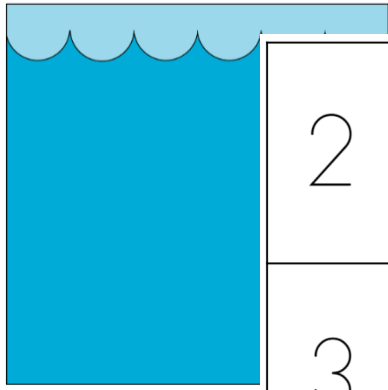
Stage I: Draw I-10

Task statement

- Students roll a cube onto a number mat and write the number in the space provided next to one of the images. They draw a scene with the appropriate number of that image.
- Students repeat until each image has a number next to it and all of the images have been drawn in the scene.

Required materials

- 1 connecting cube per group of 2
- Math Libs Scenes
- Number Mat I-10

	_____		_____
	_____		_____
			

2	7	9	1	8
3	4	10	5	6

Which One?

Stage I

Task statement

One partner chooses a shape on the gameboard.

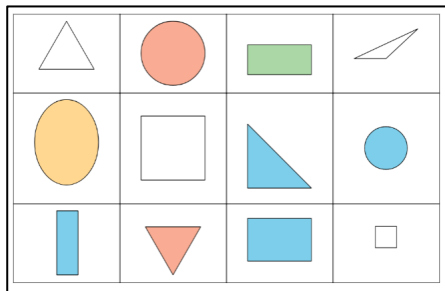
The other partner asks questions to figure out what shape they chose.

Students may use counters to cover up shapes that have been eliminated.

Students work with simple shapes such as circles, rectangles, and triangles.

Required materials

- Counters
- Which One stage I gameboard



Build Shapes

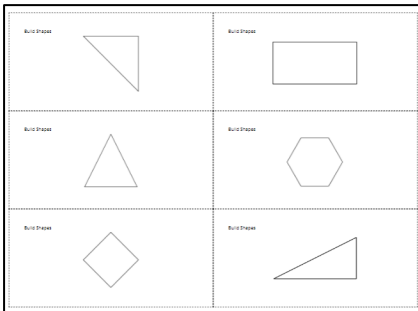
Stage 1: Match the Flat Shape

Task statement

Students choose a shape card to build. Students check their work with their partner to be sure they both agree they made the shape correctly.

Required materials

- Play dough or modeling clay
- Straws
- Build Shapes Stage 1 & 2 cards



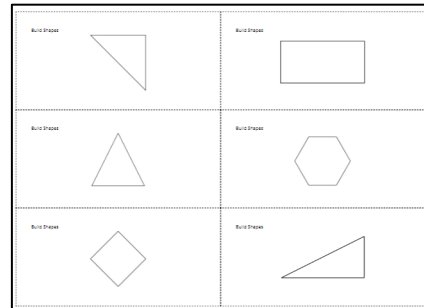
Stage 2: Describe the Flat Shape

Task statement

Students choose a shape card and describe the shape to their partner, who builds the shape based on the description.

Required materials

- Play dough or modeling clay
- Straws
- Build Shapes Stage 1 & 2 cards



Stage 3: Match the Solid Shape

Task statement

Students build solid shapes.

Required materials

- Clay
- Geoblocks
- Solid shapes
- Sticks

Match Mine

Stage 1: Pattern Blocks

Task statement

Students put shapes together to make larger shapes.

Students then describe their shape to a partner who tries to make a matching shape.

Students may use folders to hide their shape.

Required materials

- Folders
- Pattern blocks

Stage 2: Solid Shape

Task statement

Students use positional words as they build with solid shapes and describe what they have built so their partner can make a matching shape.

Required materials

- Folders
- Geoblocks
- Solid shapes

Subtraction Towers

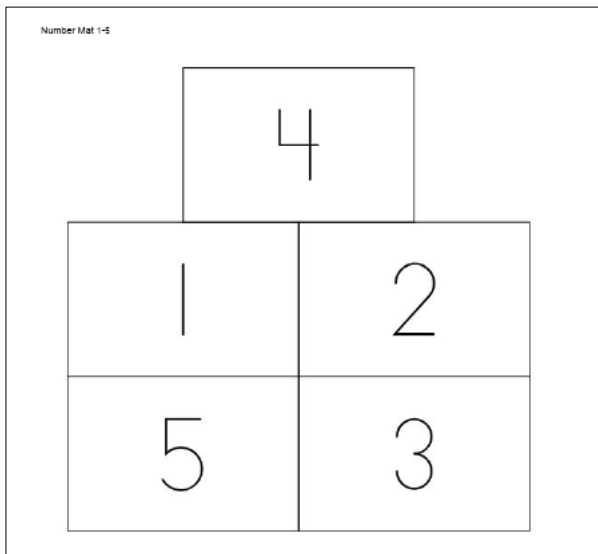
Stage I

Task statement

One partner builds a tower with 5-10 cubes. The other partner rolls a cube onto the number mat to figure out how many cubes to subtract. Students work together to figure out how many cubes are left.

Required materials

- Connecting cubes
- Number Mat 1-5



Roll and Add

Stage 1 : Dots

Task statement

Students use a mat with dot images. Students write a number to record the total.

Required materials

- Connecting cubes
- Roll and Add, Dot Image Mat
- Roll and Add recording sheet

1. _____

2. _____

3. _____

4. _____

5. _____

Stage 2: Addition Expressions

Task statement

Students roll a cube onto a mat with numbers 1-5. Students fill in an expression with the two numbers they land on and find the value of the expression.

Required materials

- Connecting cubes or Two-color counters
- Number Mat 1-5
- Roll and Add Recording Sheet

4	
1	2
5	3

_____ + _____

_____ + _____

_____ + _____

Find the Value of Expressions

Stage I: Color the Total or Difference

Task statement

- One partner chooses an expression card.
- The other partner finds the value of the expression.
- When both partners agree, they both color in that number on the recording sheet.
- All expressions have values within 10.

Required materials

- Connecting cubes or two-color counters
- Find the Value of Expression Recording Sheet

Find the Value Expression Cards

- Find the Value Expression Cards

5	4	9	8
9	2	4	3
8	6		

$3+5$	$7-5$	$1+6$	$7+2$
$5-2$	$6+0$	$4+4$	$9-4$
$4-0$	$10-2$	$8+1$	$8-4$

Make or Break Apart Numbers

Stage 1: Numbers to 9

Task statement

Students generate a number and decompose that number into two parts.

Students roll to get a number from 4-9. They find two groups of dots that can be put together to make that number. Students write an expression to represent the two parts that make the number.

Required materials

- Connecting cubes
- Two-color counters
- Make or Break Apart Numbers, Dots, Recording Sheet
- Make or Break Apart Numbers, Dots, Number Mat 4-9
- Make or Break Apart Numbers, Dots, Dot Page

Write an Expression (4 + 3)

4	6			
7	8	5		

Stage 2: Numbers 11 to 19

Task statement

Students generate a number and decompose that number into two parts.

Students roll to get a number from 11-19. They find two groups of dots that can be put together to make that number. Students write an expression to represent the two parts that make the number.

Required materials

- Connecting cubes
- Two-color counters
- Make or Break Apart Numbers Recording Sheet
- Make or Break Apart Numbers Mat 11-19

Write an Expression (4 + 3)

11	12	13		
14	15	16		
17	18	19		

5-Frames

Stage 1: Add

Task statement

Students begin with a full 5-frame and roll to see how many counters to add.

Required materials

- Connecting cubes
- Counters
- 5-Frame
- Number Mat 1-5
- 5-Frame Recording Sheet

--	--	--	--	--

4	
1	2
5	3

1. _____	4. _____
2. _____	5. _____
3. _____	6. _____

Stage 2: Subtract

Task statement

Students begin with a full 5-frame and roll to see how many counters to take away.

Required materials

- Connecting cubes
- Counters
- 5-Frame
- Number Mat 1-5
- 5-Frame Recording Sheet

--	--	--	--	--

4	
1	2
5	3

1. _____	4. _____
2. _____	5. _____
3. _____	6. _____

Find the Pair

Stage 1: Make 5

Task statement

Before playing, students remove the cards that show numbers greater than 5 and set them aside.

Partner A asks their partner for a number that would make 5 when added to the number on one of their cards. If Partner B has the card, they give it to Partner A and Partner A gets a match. If not, Partner A chooses a new card. When students make the target number 5, they put down those two cards and write an expression to represent the combination. Students continue playing until one player runs out of cards. The player with the most pairs wins.

Required materials

- 5-frames
- Counters
- Number cards 0-10
- Find the Pair Recording Sheet

Directions:

- Take 5 cards each and put the rest in a pile face down.
- Partner A:
 - Ask your partner for a number that can be added to one of your cards to make 5.
 - If they have the card, put the pair of cards down and write an expression.
 - If they don't have that card, pick a card from a pile.
- Take turns asking for cards. The partner with the most pairs at the end of the game wins.

1	2
3	4
5	6

Stage 2: Make 10

Task statement

Partner A asks their partner for a number that would make 10 when added to the number on one of their cards. If Partner B has the card, they give it to Partner A. If not, Partner A chooses a new card. When students make the target number 10, they put down those two cards and write an equation to represent the combination. Students continue playing until one player runs out of cards. The player with the most pairs wins.

Required materials

- 10-frames
- Connecting cubes or counters
- Number cards 0-10
- Find the Pair recording sheet

Directions:

- Take 5 cards each and put the rest in a pile face down.
- Partner A:
 - Ask your partner for a number that can be added to one of your cards to make 10.
 - If they have the card, put the pair of cards down and fill in the equation.
 - If they don't have that card, pick a card from a pile.
- Take turns asking for cards. The partner with the most pairs at the end of the game wins.

$$\underline{\quad} + \underline{\quad} = 10$$
$$\underline{\quad} + \underline{\quad} = 10$$
$$\underline{\quad} + \underline{\quad} = 10$$

1	2
3	4
5	6

Check it Off

Stage I: Add within 10

Task statement

Students take turns picking two number cards (0-5) to make and find the value of an addition expression. Students check off the number that represents the value of the sum (0-10) and then write the addition expression on the recording sheet.

This stage has two different recording sheets, one for kindergarten and another for grade 1. On the kindergarten recording sheet, students fill in blanks to record the expression. On the grade 1 recording sheet, students write in the full expression. Be sure to use the appropriate recording sheet with students.

Required materials

- Number Cards 0-10
- Check it Off Recording Sheet

Directions:		
• Partner A:		
◦ Pick 2 cards and find the sum.		
◦ Check off the number you found and write the expression.		
• Take turns. The partner who has checked off the most end of the game wins.		
Found it	expression	
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

1	2
3	4
5	6

What's Behind My Back?

Stage 1: Show 2 Parts

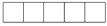
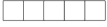
Task statement

Students begin with a tower of 5-10 connecting cubes. They break apart the tower and represent the two parts with a drawing and an expression.

Required materials

- Connecting cubes
- Crayons
- What's Behind My Back Recording Sheet

5 cubes

expression: _____

expression: _____

expression: _____

expression: _____

expression: _____

expression: _____

Stage 2: 10 Cubes

Task statement

Students work with 10 cubes. One partner snaps the tower and puts one part behind their back and shows the other part to their partner. Their partner figures out how many cubes are behind their back.

On the kindergarten recording sheet, students draw or color the connecting cube tower to show the two parts that the tower broke into and fill in an equation to show the total number of connecting cubes in the tower and the two parts that the tower was broken into.

Required materials

- 10-frames
- Connecting cubes


10 = ____ + ____

10 = ____ + ____

10 = ____ + ____

10 = ____ + ____

10 = ____ + ____

Tower Build

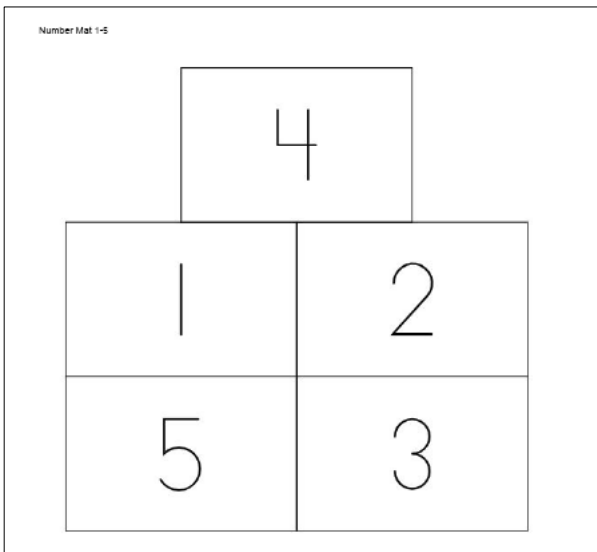
Stage 1: Count & Build to 10

Task statement

Students take turns rolling a connecting cube onto a number mat and add that number of cubes to their tower. The first student to make a tower of 10 wins. If a student makes a tower with more than 10 cubes, they use the extra cubes to begin a new tower.

Required materials

- Connecting cubes
- Number Mat 1-5



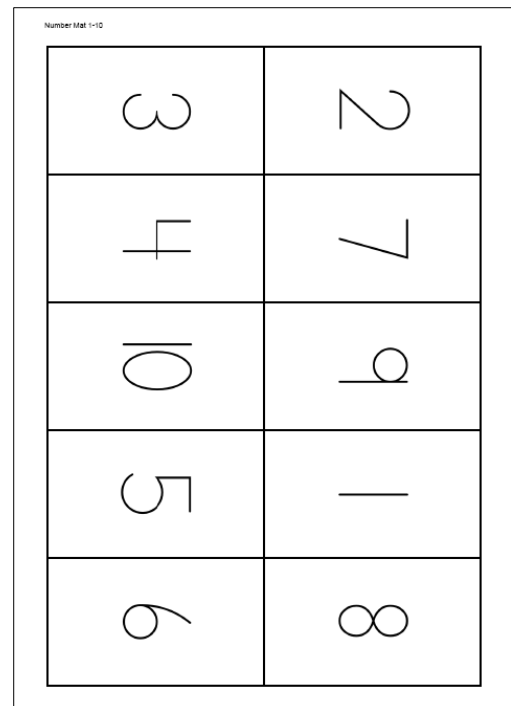
Stage 2: Count & Build to 20

Task statement

Students take turns rolling a connecting cube onto a number mat and add that number of cubes to their tower. The first student to make a tower of 20 wins. If a student makes a tower with more than 20 cubes, they use the extra cubes to begin a new tower.

Required materials

- Connecting cubes
- Number Mat 1-10



Grab and Count

Stage I: Pattern Blocks

Task statement

- Each student grabs a handful of pattern blocks and puts them together with their partner's.
- They guess how many pattern blocks there are and then count the blocks.
- Students record their guess and the actual number of blocks on the recording sheet.

Required materials

- Pattern Blocks
- Grab and Count Recording Sheet

guess _____ _____	count _____ _____
guess _____ _____	count _____ _____
guess _____ _____	count _____ _____
guess _____ _____	count _____ _____
guess _____ _____	count _____ _____