

Candy Corn Flowers (IT)

Overview

Students will use candy corn pieces to create flowers after rolling a die to determine the number of petals to place on each flower. Students will also record the number of flowers they create that have 0, 1, 2, 3, 4, or 5 petals. Students will create addition and subtraction sentences to record their thinking about the number of petals on each flower.

Standards

Know number names and the count sequence.

K.CC.A.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).

Count to tell the number of objects.

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

- a. When counting objects, say the number names in the standard order, pairing each object with only one number name and each number name with one and only one object.

K.CC.B.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1 to 20, count out that many objects.

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

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

Prior to the Task

Standards Preparation: The material in the chart below illustrates the standards and sample tasks that are prerequisites for student success with this task’s standards.

Grade Level Standards	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
K.CC.A.3		<ol style="list-style-type: none">1. https://www.illustrativemathematics.org/illustrations/3982. https://www.illustrativemathematics.org/illustrations/3993. https://www.illustrativemathematics.org/illustrations/4004. https://www.illustrativemathematics.org/illustrations/1397	

¹ Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the standards.)

Grade Level Standards	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
K.CC.B.4a	<ul style="list-style-type: none"> K.CC.A.1 	<ol style="list-style-type: none"> Have students practice counting up to 5 objects to prepare for this task. Students should touch or point to each object as they say each number name in the correct order. 	<ul style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/360 https://www.illustrativemathematics.org/illustrations/359
K.CC.B.5	<ul style="list-style-type: none"> K.CC.B.4b 	<ol style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/1420 	
K.OA.A.1		<ol style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/1405 https://www.illustrativemathematics.org/illustrations/1406 	

Task Materials

- Document camera (or other means of projection)
- Six-sided dot number cubes or spinners with the numbers 0-5 (one dot number cube or one spinner for each pair of students)
- Candy corn
- Flower Activity Board (one for each pair of students)
- Student Recording Sheet Part B (one copy for each student)
- Student Recording Sheet Part C (one copy for each student)
- Pencils, crayons, or markers
- Instructional Task Checklist

Task Procedure

By the end of this task, students will practice counting objects by counting out pieces of candy corn and placing them on the Flower Activity Board to create candy corn flowers. After creating the flowers, students will count and record the number of each type of flower they made with their partners. In the last part of the task, students will create more flowers and record their work with addition and subtraction sentences.

Part A: Creating Flowers

Prior to the start of the task, cover the side of the dot number cube that has six dots with white tape to represent zero. Have students sit in pairs. Give each pair of students a Flower Activity Board and one dot number cube (or one spinner). Give each student pair a cup of candy corn pieces.

Pre-task Instructions: Explain to students that they will create flowers using the candy corn pieces as the petals for each flower. If necessary, review the parts of a flower, using the Flower Activity Board as a guide. Have the students look at their dot number cube and talk with their partner about how many petals each side of the dot number cube represents. Lead students in a discussion about the side that is covered in white tape and the number of petals that side of the cube

represents. As students are discussing, walk around, checking for accuracy and, when necessary, ask probing questions to correct misunderstandings.

Pre-task Modeling: Using a document camera (or other means of projection) and the Flower Activity Board, model the activity for the students as a whole group. Roll the dot number cube and have the students count the number of dots on the cube with you. Then add candy corn (petals) to the activity board to make a flower. Have students count with you as you place each candy corn piece on the board. Ask students, “How many petals are on the flower? How do you know?” After leading a discussion about the number of petals, create a new flower. Tell the students that each time they roll the die, they will make a new flower. Ask a volunteer to come up and roll the die again but do not clear the activity board. Ask the students, “How can we change this flower to make a flower with ____ petals?” Students may suggest taking all of the candy corn pieces off and starting again, or students may suggest adding to or taking away some candy corn pieces. Lead a discussion with students about each method of creating a new flower. Have students explain their thinking. Explain to the students that there are different ways that could be used to get to the same answer. Then have two additional volunteers come up to practice making two more flowers as examples.

Student Activity: After modeling the activity, have the students work with their partners to begin creating flowers at their desks. Tell students they will take turns rolling the dot number cube to create flowers with a number of petals (candy corn) that matches the number rolled. As the students work, walk around and check for understanding. Use the Instructional Task Checklist to take notes about the skills and strategies students employ while they work. While walking around, stop to ask the pairs questions about the work they are doing. Some questions might be:

- How many petals do you have on your flower? How do you know?
- Tell me how you create each new flower.
- How do you know how many petals to add to (subtract from) your flower? (Use this question for pairs who are not clearing the board each time they roll the number cube.)

If there are pairs who place more than 5 petals on the flower, remind the pair that each time one of the students rolls the number cube, they are creating a new flower. Allow students to continue until everyone has had the opportunity to create at least 5 flowers.

Part B: Creating Flowers and Counting Total Number of Each Type

After students have had time to practice creating flowers with a partner, say, “Now we are going to keep track of the number of petals on each flower we create. What are the possible types of flowers?” *0 petals, 1 petal, 2 petals, 3 petals, 4 petals, 5 petals*. Using the document camera (or other means of projection), model for students in a whole-group setting how to keep track of the flowers they create on the Student Recording Sheet Part B. Have volunteers come up to create flowers and record the type of flower created. After four volunteers have come up, explain the directions for the activity to the students.

- Students will take turns rolling the number cube to create flowers. Each time a new number is rolled, a new flower is created.
- After the student places the petals on the flower, **both** students will record the type of flower that was created on the Student Recording Sheet Part B by coloring in one circle under the flower that shows the number of petals they placed on the flower created.
- Students should create at least 10 flowers total (groups that work faster than others will create more flowers).

Walk around to check for accuracy and make sure students are recording their work correctly. Continue to ask probing questions as needed to determine student understanding and clarify misconceptions. After all pairs have created 10 flowers, have students count the number of circles they colored for each type of flower and write the number of circles in the space provided on the recording sheet. Then have students check their work by comparing it with what their partner wrote to determine the correct number for each type of flower based on the number of circles that are colored. Collect the recording sheets as artifacts to determine student progress with writing numerals.

Part C: Using Addition and Subtraction to Create Flowers

The activity below may be included immediately following parts A and B or as a standalone task. This part of the task should only be used after students have had experience recording addition and subtraction sentences using numerals.

Give each student a copy of the Student Recording Sheet Part C. Students will still need the Flower Activity Board as well. Using a document camera (or other means of projection), model the activity for the whole class with two student volunteers. Explain that the first number in the number sentence will be the number of petals the flower will start with. Using the first example on the recording sheet, have the first volunteer put two petals on the flower stem. Then have the student roll the number cube and write the number in the first blank. Ask students, “What should we do to fill in the last blank?” Guide students to understand that the number rolled on the number cube is the number of petals that needs to be added to the flower. Then they can count the total number of petals to fill in the blank. Have the student volunteer model adding the petals, counting the total number of petals, and then writing the total in the last blank. Have the class read the complete number sentence aloud chorally.

Repeat the modeling using the second example on the recording sheet. Have students identify what is different in the second problem (the words “take away” and the first number). Then have the second volunteer model creating the flower. Have the students discuss how to find the number for the last blank. Guide students to understand that they will need to take off the same number of petals as the number rolled on the number cube. Have the volunteer complete the problem and have the class read the complete number sentence aloud chorally.

Then have students work together in pairs to complete the remaining problems on the recording sheet. Walk around and monitor students to be sure they are adding or taking away the correct number of petals and recording the numbers correctly. Listen to discussions between students about how they found the number to write in the last blank. Ask guiding questions as needed to facilitate understanding and accuracy of student work.

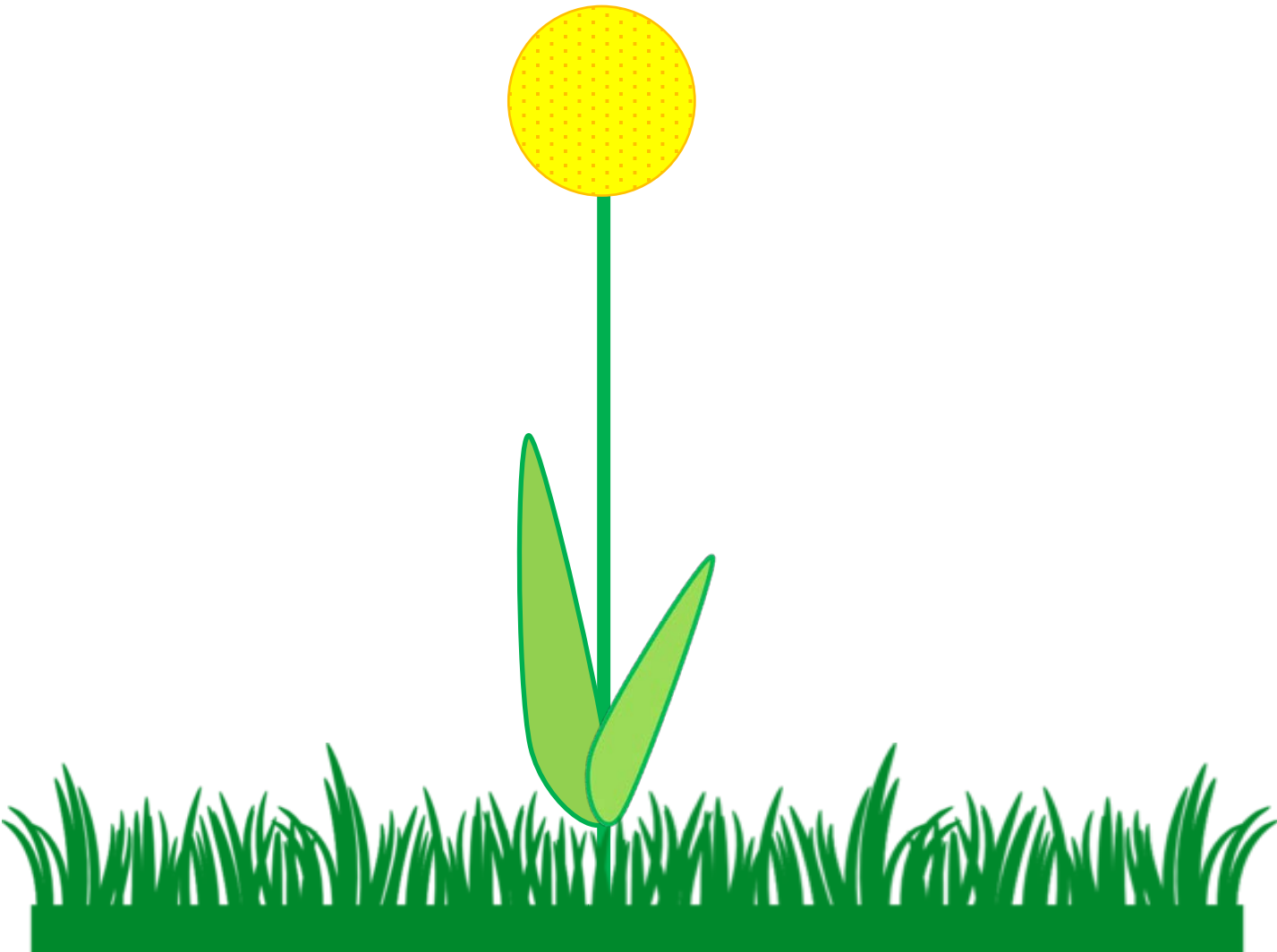
Task Notes

This task may take multiple days to complete. It may be a good idea to complete one part each day.




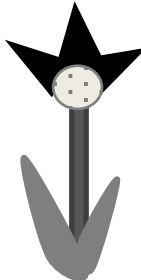
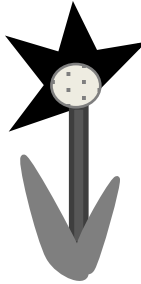
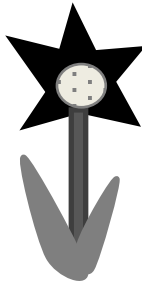
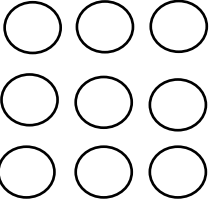
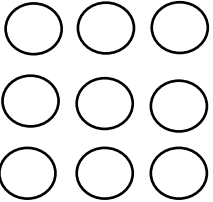
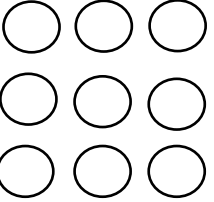
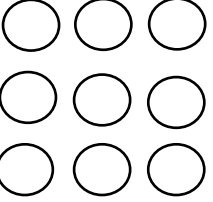
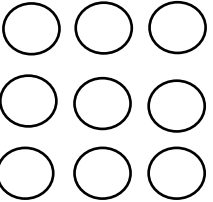
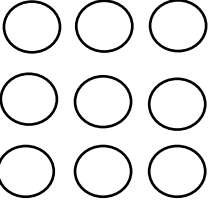
Parts A and B of this task can be modified to focus on numbers less than or equal to 10 by allowing students to roll two dot number cubes (both cubes should have the side with six dots covered). Part C of this task can be used independently of Parts A and B to help build student understanding of addition and subtraction. Also, Part C could be modified to focus on only one operation at a time. These modifications would allow the task to be used multiple times throughout the school year.

Teachers may also choose to use paper triangles or pattern blocks instead of candy corn for the petals. Using other manipulatives would allow this activity to be used in centers for students to practice their counting.

Flower Activity Board



Student Recording Sheet Part B

0 petals	1 petal	2 petals	3 petals	4 petals	5 petals
					
					
<p>How many flowers with 0 petals?</p> <p>_____</p> <p>-----</p> <p>_____</p>	<p>How many flowers with 1 petal?</p> <p>_____</p> <p>-----</p> <p>_____</p>	<p>How many flowers with 2 petals?</p> <p>_____</p> <p>-----</p> <p>_____</p>	<p>How many flowers with 3 petals?</p> <p>_____</p> <p>-----</p> <p>_____</p>	<p>How many flowers with 4 petals?</p> <p>_____</p> <p>-----</p> <p>_____</p>	<p>How many flowers with 5 petals?</p> <p>_____</p> <p>-----</p> <p>_____</p>

Student Recording Sheet Part C

Examples:

2 and _____ is _____.

7 take away _____ is _____.

And

Take Away

3 and _____ is _____.

5 take away _____ is _____.

4 and _____ is _____.

9 take away _____ is _____.

5 and _____ is _____.

6 take away _____ is _____.

1 and _____ is _____.

8 take away _____ is _____.

Instructional Task Checklist

Part A: Creating Flowers

PAIR #	NAME	SKILL CHECK		
		Identifies the correct number rolled on the number cube	Places the correct number of petals on the flower	*Adds to or subtracts from their partner's number of petals to make their flower
Pair 1				
Pair 2				
Pair 3				
Pair 4				
Pair 5				
Pair 6				
Pair 7				
Pair 8				
Pair 9				
Pair 10				
Pair 11				
Pair 12				

* Not all students will use this strategy, but it serves as a good discussion point for after the task. Using this checklist, the teacher is able to call on students who used this strategy.

Counting Book (IT)

Overview

Students will practice counting and answering “how many?” questions while reading *Ten Apples Up on Top* by Dr. Seuss as a class. Then students will count cubes and create a class book that allows them to count and compare groups of objects in a similar way to the book read in class.

Standards

Count to tell the number of objects.

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

- When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
- Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
- Understand that each successive number name refers to a quantity that is one larger.

K.CC.B.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1 to 20, count out that many objects.

Compare numbers.

K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

Prior to the Task

Standards Preparation: The material in the chart below illustrates the standards and sample tasks that are prerequisites for student success with this task’s standards.

Grade Level Standards	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
K.CC.B.4	<ul style="list-style-type: none"> K.CC.A.1 K.CC.A.2 	<ol style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/1113 https://www.illustrativemathematics.org/illustrations/1209 https://www.illustrativemathematics.org/illustrations/1149 	<ul style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/360 https://www.illustrativemathematics.org/illustrations/359 https://www.illustrativemathematics.org/illustrations/401 https://www.illustrativemathematics.org/illustrations/361
K.CC.B.5		<ol style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/1420 	
K.CC.C.6		<ol style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/1210 	

Task Materials

1. *Ten Apples Up on Top!* by Dr. Seuss
2. Document camera or other means of projection
3. Numeral cards 1-10 (one set per pair of students)
4. Unit cubes (up to 10 per student)
5. Blank Book Pages (two pages per pair of students)
6. Pencils
7. Crayons

Task Procedure

By the end of this task, students will count up to 10 objects using one-to-one correspondence. Students will also count groups of up to 10 objects to compare numbers using the words “more” or “less.” Students will use counting and comparing to create a class book similar to *Ten Apples Up on Top*, which can be kept in the class library to be read at any time.

Whole-Class Instruction

1. Read the book *Ten Apples Up on Top*. This is a classic story by Dr. Seuss about three animals that compete to see who can carry the most apples on their heads. In order to be sure all students can see the book, use a document camera or other means of projection to show the pages as the book is read.
2. As the story is read, have the students count the apples aloud each time an apple is added and say the new number. Also, ask students to predict how many apples will be on the animals’ heads on the next page. Have students explain their thinking.
3. Ask comparison questions about the number of apples on each animal’s head as the story is read.
4. Ask students “how many?” questions about the number of apples on top of each animal’s head. Have students explain that the number on which they stop counting is the number of apples the animal has on its head.

Teacher-Guided Activity

1. Students should work in pairs for this part of the task.
2. Show the class a numeral card from 1 to 10. Have students name the number.
3. Have Partner A in each pair take cubes from a pile and slide them one at a time toward them as they practice counting. Clap or use a bell to signal the movement and counting of each cube.
4. After the designated number is reached, say, “Partner B, check to see if your partner has the correct number of cubes.” After students count to check each other’s work, ask, “How many cubes do you have?” Have students tell how many cubes they have. Ask students to share how they know how many cubes they have. (*An answer of “I counted the cubes and the last number I said was _____” is acceptable.*)
5. Repeat this series of actions with three to four additional numerals. Partner A and B should swap roles each time a new number is chosen.

Partner Work

It may be helpful to create a model page that is displayed for students to refer to as they work. Students will create pages similar to those in *Ten Apples Up on Top*, which can then be compiled into a class book for the class library.

1. Give each student one of the Blank Book Pages.
2. Have each student draw a face on the circle provided in the first column of the page. Have each student write his or her name under the face.
3. Have students swap papers and draw a face on the circle provided in the second column on the page. Have the students write their names under the faces. If there is time, allow students to decorate the face to represent their own head (add hair, color the eyes, etc.). Students will exchange papers again.
4. Beginning with Partner A's paper, Partner A will pull a numeral card. Partner A will draw that number of apples on top of the picture that represents his or her head on the paper. Partner A will write the numeral that represents the number of apples he or she drew in the space provided next to the circle on the book page.
5. Partner B will pull a different numeral card. He or she will draw that number of apples on the top of the picture that represents his or her head on the same paper Partner A started with. Partner B will write the numeral that represents the number of apples he or she drew in the space provided next to the circle on the book page.
6. Together, the partners will decide who has more apples, and then fill in the sentence in the third column to state what they found. The blanks should be filled in with the students' names.
7. Monitor that students are following the directions given, taking turns listening and speaking, understanding how numbers are compared, and using appropriate math vocabulary terms, such as *more* and *less*.
8. Allow students to continue until each pair of students has completed two pages.

Task Notes

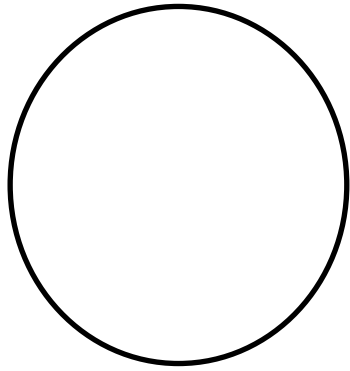
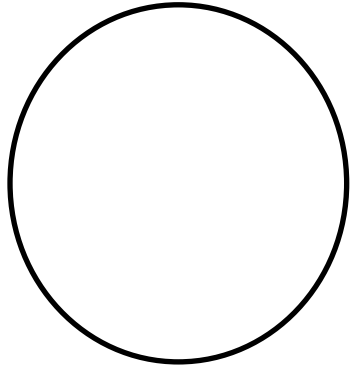
This task should be used to help develop students' abilities with counting out groups of objects, counting with one-to-one correspondence, and comparing groups of objects. Students will be developing these skills throughout the year.

Place the class book in the class library so that it is available for students to read it as they wish or as they need to.

The numeral cards and number of objects can be increased to 20 throughout the year. However, students should only compare groups with up to 10 objects. The class book can be added to throughout the year by having students compare three groups of up to 10 objects and write sentences with the words "most" or "least." As the students' vocabulary increases, the words can be changed to "greater than," "less than," "greatest," and "least." Also, students can write sentences (or complete sentences) that compare the numerals (e.g., 7 apples is greater than 4 apples).

To provide modifications to students who need more room, use a legal-size sheet of paper divided into thirds for the class book. If necessary, students can be given paper circles to decorate to represent their heads for the class book prior to the task. These circles can then be glued to the page in the correct places. Also, colored dot stickers can be used as the apples rather than having students draw the apples. This can save time or can be an accommodation for students who need assistance.

Blank Book Pages



has more apples
on top than



Toys, Toys, Toys (IT)

Overview

The student will use pictures of groups of toys to demonstrate greater than, less than, and equal to.

Standard

Compare numbers.

K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

Prior to the Task

Standards Preparation: The material in the chart below illustrates the standards and sample tasks that are prerequisites for student success with this task's standards.

Grade Level Standard	The Following Standards Will Prepare Them	Items to Check for Task Readiness
K.CC.C.6		1. https://www.illustrativemathematics.org/illustrations/1210

Task Materials

1. Picture cards (copy on cardstock and cut out one set for each student)
2. Numeral cards 1-10 (can be made using index cards)

Task Procedure

By the end of this task, students will compare the number of toys on picture cards in various groups by using the terms “greater than,” “less than,” and “equal to.” Students will compare two cards at a time to determine which number is greater than the other, less than the other, or if the two numbers are equal. Students will also compare three groups and use the words “greatest” and “least” to make the comparisons. Students will then find all picture cards that represent numbers greater than, less than, or equal to a given number named by the teacher. Students should have experience counting up to 10 objects shown in a variety of arrangements. Students should also have experience with using the phrases “greater than,” “less than,” and “equal to” prior to this task.

The use of “greater than,” “less than,” and “equal to” is required. When students use words such as “more,” “less,” “fewer,” “bigger,” “smaller,” “larger,” “higher,” and “lower,” the teacher should guide students to use the correct vocabulary. Students could use strategies to match objects in each group to determine which group has the greater number of objects. Students could also use their knowledge of the count sequence to compare the groups. For example, to decide which number is greater than the other, they would consider which number is farther along in the count sequence.

Part A

Arrange students into pairs or groups of three or four. As students engage in the task, they may provide responses by calling out the card letter or holding up the cards. Also, provide opportunities for students to share and discuss responses with their partner/group. To begin the task, give each student a set of cards.

1. Say, "Find cards A and D." Once all students have found the correct cards, have students count the number of toys on each card. Then ask, "Are there more toys on card A or card D?" Encourage students to discuss the answer with their partner/group. After some students share their answer with the class, ask, "How do you know?" Students should use a matching strategy to determine which card has more toys. Tell students, "When one group has more toys than another group, we use the term 'greater than' to compare the groups." Have students practice saying, "The number of toys on card A is greater than the number of toys on card D." Also have students practice saying, "10 is greater than 7" to compare the numbers.
2. Say, "Find cards C and J." Once all students have found the correct cards, have them count the number of toys on each card. Then ask, "Are there fewer toys on card C or card J?" Encourage students to discuss the answer with their partner/group. After some students share their answer with the class, ask, "How do you know?" Students should use a matching strategy to determine which card has more toys. Tell students, "When one group has fewer toys than another group, we use the term 'less than' to compare the groups." Have students practice saying, "The number of toys on card J is less than the number of toys on card C." Also have students practice saying, "4 is less than 6" to compare the numbers.
3. Say, "Find cards K and E." Once all students have found the correct cards, have students count the number of toys on each card. Then ask, "Are there more toys on card K?" Students should answer no. Some may say both cards have the same number of toys. Have students explain how they know that the cards have the same number of toys. Tell students, "When two groups have the same number of toys, we say the two groups are 'equal.'" Have students practice saying, "The number of toys on card K is equal to the number of toys on card E."
4. Continue the same line of questioning with different pairs of cards to provide students additional practice with comparing groups of objects.
5. After the whole-group instruction, have students work in pairs to do the same activity. Have one student pick two cards and the other student make a statement to compare the quantities of toys. Monitor that students are using math vocabulary terms appropriately and that answers are accurate.

Part B

1. Have students find cards D, E, and F. Explain to students that when comparing three groups, the words "greatest" and "least" are used. Explain the meaning of "greatest" as the group that has more toys than both of the other groups. Explain the meaning of "least" as the group that has fewer toys than both of the other groups. Have students count the number of toys on all three cards. Then have students decide which group has the least number of toys (card E). Then have students decide which group has the greatest number of toys (card F).
2. Continue the line of questioning with other sets of cards to provide students with more practice comparing three groups of objects.

Part C

1. Show students the number 4 using the numeral cards. Tell students to work with their partners/group to find all of the cards that have more than 4 toys. Once they have found all of the cards, ask, "What words can we use to describe the number of toys on these cards compared to the numeral 4?" Practice with the students saying,

“The number of toys on each of these cards is greater than 4.” Practice having students use the actual number of toys on the cards as well (e.g., saying “6 is greater than 4”).

2. Have students look at the remaining cards. Ask, “What words can we use to describe the number of toys on these cards compared to the number 4?” Practice with the students saying, “The number of toys on these cards is less than 4.” Practice having students use the actual number of toys on the cards as well (e.g., saying “3 is less than 4”).
3. Repeat the above exercise with other numeral cards. Discuss cards that are equal to the number shown as well.

Task Notes

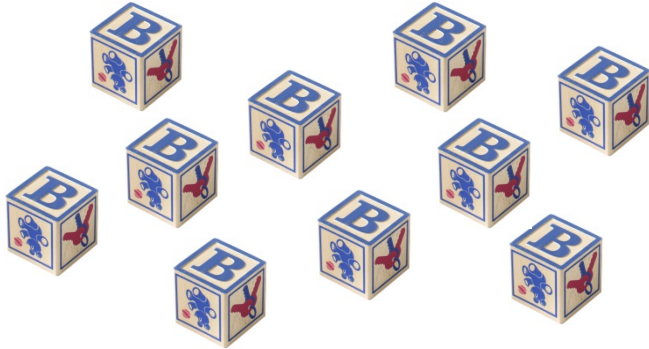
This task may take multiple days to complete. Students should have experience counting up to 10 objects in groups before comparing the groups. Students may also have some experience using more informal language to compare the number of toys on the cards.

If necessary, provide students with manipulatives they can count out to match the number of toys on each card. Students will then be able to physically move the manipulatives to match the objects to determine which group has more or less or if the two groups are equal.

Once students have demonstrated some proficiency with this task, they should be given opportunities to compare the written numerals without pictures.

Picture Cards

A



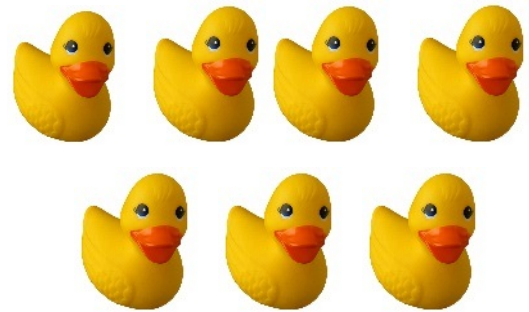
B



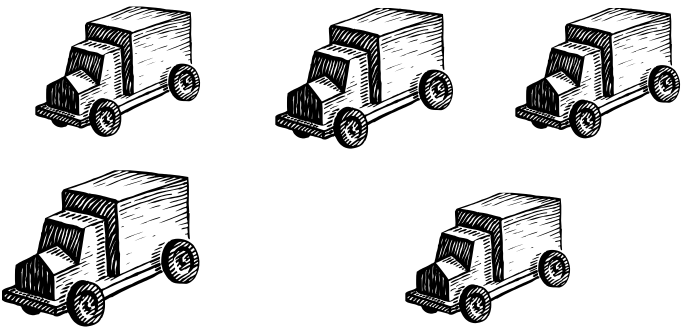
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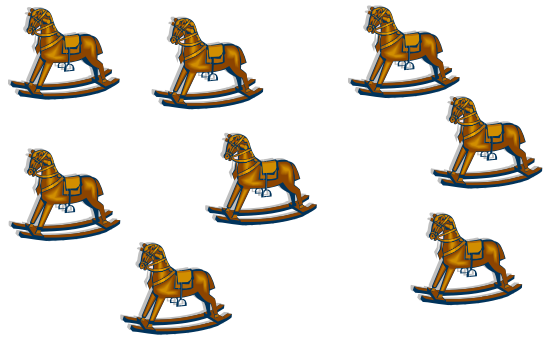
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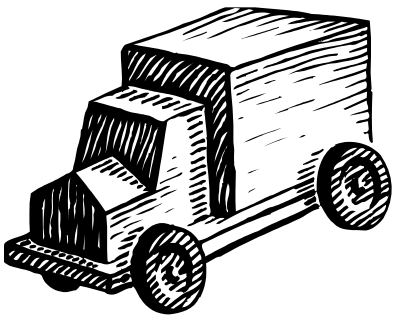
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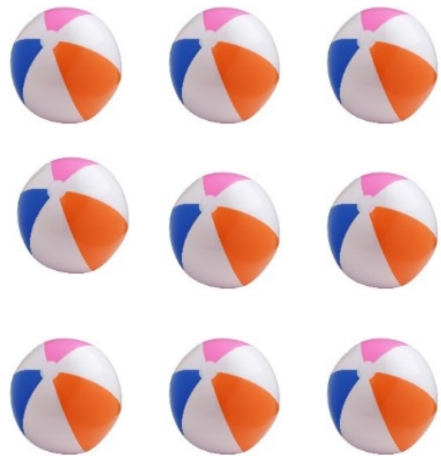
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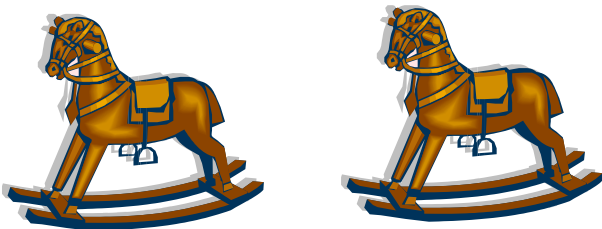
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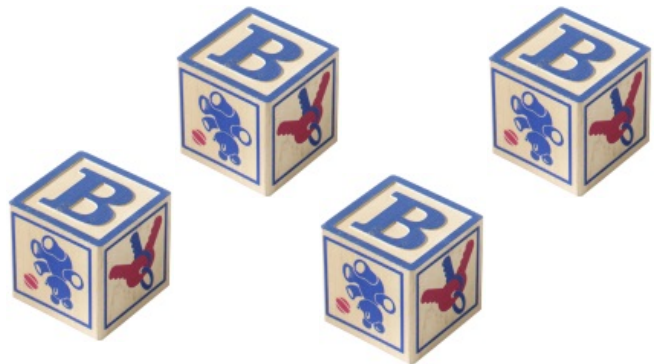
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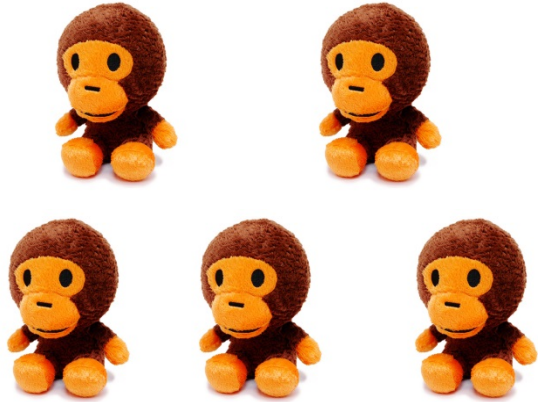
I



J



K



L



Geometry Picture Pages (IT)

Overview

Students will identify shapes presented in different orientations and sizes. They will also describe similarities and differences among a variety of two-dimensional shapes. Students will use pattern blocks to create pictures.

Standards

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

K.G.A.2 Correctly name shapes regardless of their orientation or overall size.

Analyze, compare, create, and compose shapes.

K.G.B.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”), and other attributes (e.g., having sides of equal length).

K.G.B.6 Compose simple shapes to form larger shapes. For example, “*Can you join these two triangles with full sides touching to make a rectangle?*”

Prior to the Task

Standards Preparation: The material in the chart below illustrates the standards and sample tasks that are prerequisites for student success with this task’s standards.

Grade Level Standards	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
K.G.A.2		1. Provide students with different shapes in different sizes and orientations. Have students identify the shapes.	
K.G.B.4	<ul style="list-style-type: none">• K.G.A.2• K.G.A.3	1. https://www.illustrativemathematics.org/illustrations/515	<ul style="list-style-type: none">• http://standardstoolkit.k12.hi.us/name-that-shape/• http://standardstoolkit.k12.hi.us/i-spy-shapes-k-g-2k-g-3/
K.G.B.6	<ul style="list-style-type: none">• K.G.A.2	1. Have students use pattern blocks to determine how many smaller pattern blocks they would need to make larger shapes (e.g., how many triangles are needed to make a hexagon or trapezoid).	

Task Materials

1. One set of Part A: Shapes for each pair of students (cut the page on the dotted line)
2. One set of Part A: Shape Cards for each pair of students (copy on cardstock, cut apart, and put in a zipper bag or other container)
3. Pattern Blocks (manipulatives or paper shapes)
4. Pattern Block Pictures (set of 6 per pair of students)
5. Pencils, markers, or crayons

Task Procedure

By the end of this task, students will identify a variety of shapes presented in different orientations. Students will also analyze and describe characteristics of shapes through discussion and hands-on activities. Students will use pattern blocks to explore different shapes and build pictures using the smaller shapes. For each picture the students create, they will state the number of each type of pattern block they use. Students should have had some experience identifying shapes prior to this task. Review vocabulary that could be used to describe shapes, such as *corners*, *sides*, *skinny*, *wide*, *curved*, *straight*, *round*, *same*, *different*, etc.

Part A

1. Give each pair of students a copy of Part A: Shape 1.
2. Tell students that while at field day (or some other recent event), you heard someone claim that “Triangles always point up.” Ask students if they agree (thumb up) or disagree (thumb down) with this statement.
3. Have students look at Part A: Shape 1 and describe the shape to their partner. Have Partner A describe the shape to Partner B by stating the number of sides, number of corners, and the name of the shape.
4. Distribute Part A: Shape 2 and ask students to look at the new shape. Have Partner B describe the shape to Partner A by stating the number of sides, number of corners, and the name of the shape. Have students identify similarities (*the number of sides and corners*) and differences (*the size, color, and one is pointing up while the other is pointing to the side*; informal language use to describe the shapes is acceptable here). Ask, “Are these two shapes named the same? How do you know?” Students should recognize that the size, color, and orientation do not change the name of the shape.
5. If necessary, have students analyze other shapes in the same manner.
6. Give each pair of students a set of the Part A: Shape Cards cut apart and placed in a zipper bag or other container.
7. Using a document camera or other means of projection, show the students the different shapes they have in the bag.
8. Each student will pull one card from the bag to create a pair. Students will take turns saying one thing that makes the shapes alike. Then students will take turns saying one thing that makes the shapes different. When students feel they cannot name anything else, they will each draw a new card to create a new pair. Explain that if students pull a blank card, he or she can draw any shape he or she would like. Then the students will compare the shape one partner drew to the shape his or her partner selected. As students work in their pairs, monitor their responses, asking prompting/probing questions as needed.
9. Have the class come back together as a whole group and have partners share some of the similarities and differences they identified with the class. *Some possible pairings with similarities and differences students might identify in their conversations are provided following the Shape Cards later in this task.*

Part B

1. Give each pair of students a set of pattern blocks. If using paper pattern blocks, copy the pages at the end of this task on a color copier and cut them out.
2. Have students discuss the shapes with their group. Students should name characteristics of each shape they have in their set of pattern blocks.
3. Have students determine how many smaller pattern blocks make up the larger blocks (e.g., how many triangles make up a hexagon, trapezoid, or rhombus; whether the hexagon can be created using shapes other than triangles).
4. After students have had some time exploring the pattern blocks, provide each group of students with the set of six Pattern Block Pictures. Have each student select one picture.
5. Working with a partner, have students create the picture their partner chose by covering the shapes with pattern blocks. For each picture, students should record the number of each type of pattern block they used to create the picture.

Task Notes

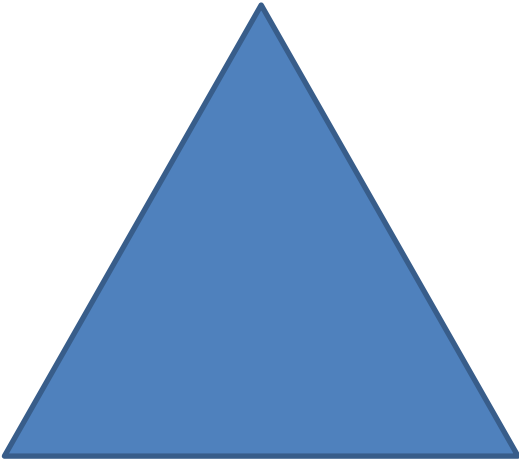
The shape cards provided for Part A were selected to ensure they are the same relative size so students discuss the “aliqueness” based on number of sides and corners as well as general characteristics (straight, curvy, round, skinny, fat). The blank cards can be removed prior to the activity, if students are not ready to draw their own shapes.

For Part B, pattern blocks pictures can be added to fit the needs of the classroom. These can be found at <http://prekinders.com/pattern-blocks/> and other sources. Pattern block stamps, pattern block stickers, or die-cut pattern blocks may also be used in place of the three-dimensional version.

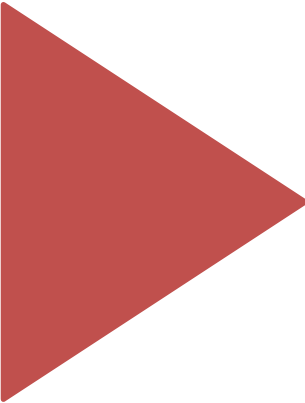
In Part B, if students require modifications, provide pictures that have the outlines for each shape (pictures two, three, and four) as opposed to the shapes that have the outer outline only (pictures one, five, and six).

After students have had some practice with pattern blocks and creating pictures, have students create their own picture by using paper pattern block shapes and gluing them to a blank sheet of paper. Have students identify the types of shapes used and how many of each shape they used.

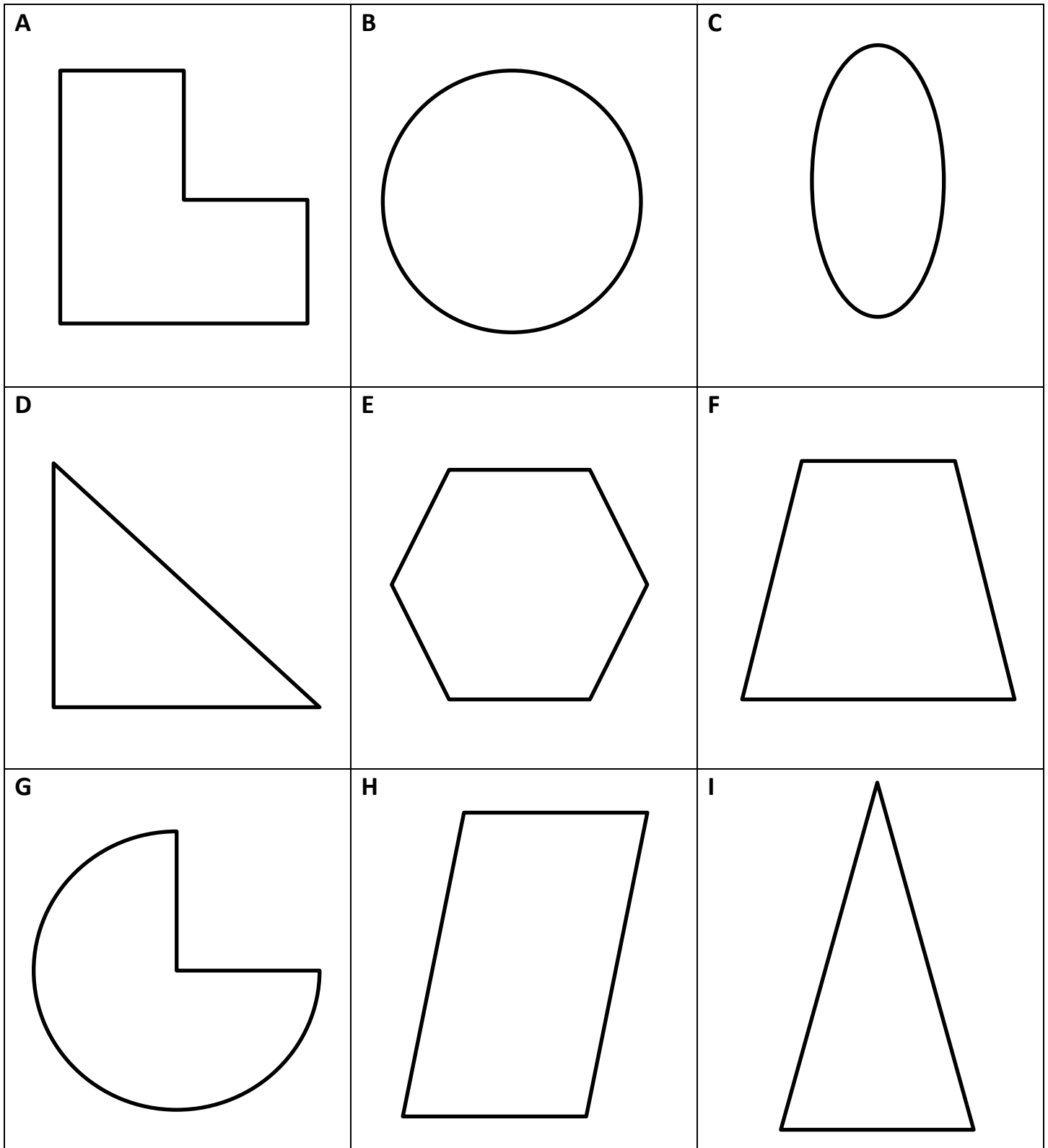
Part A: Shape 1

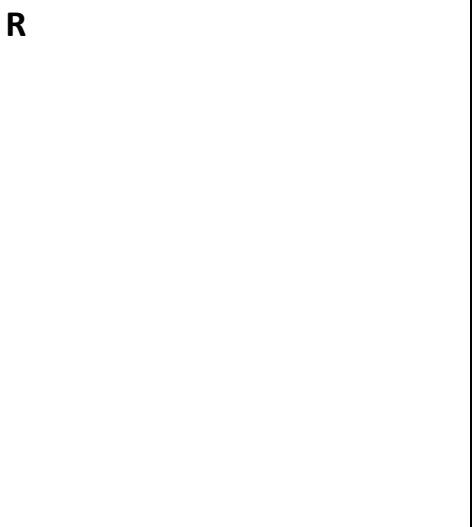
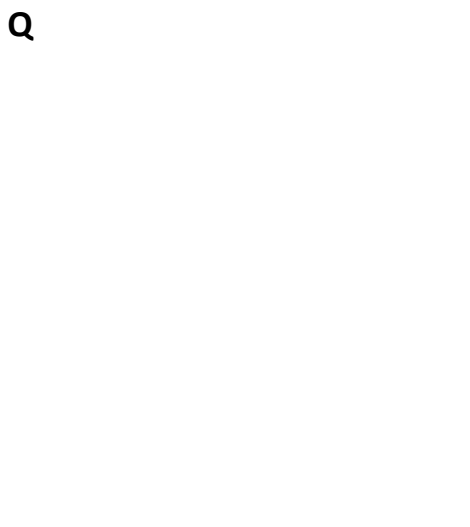
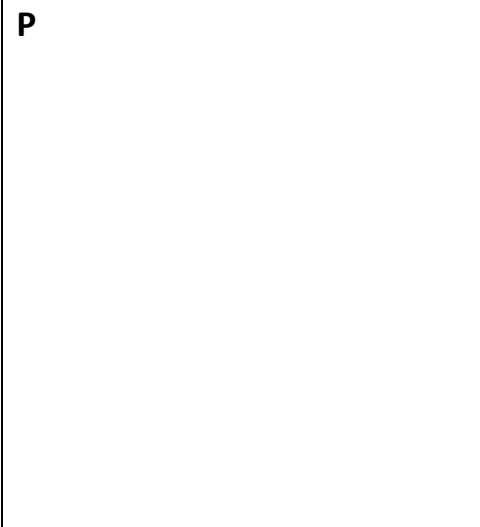
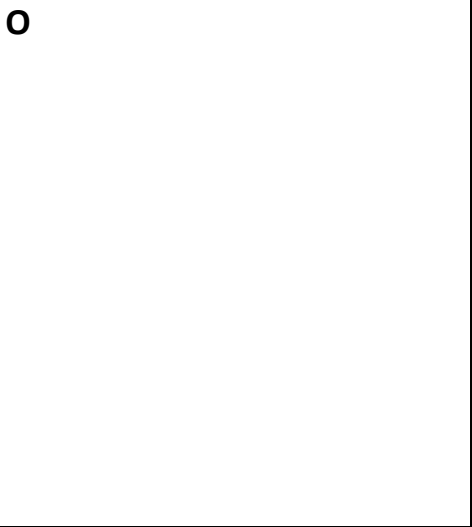
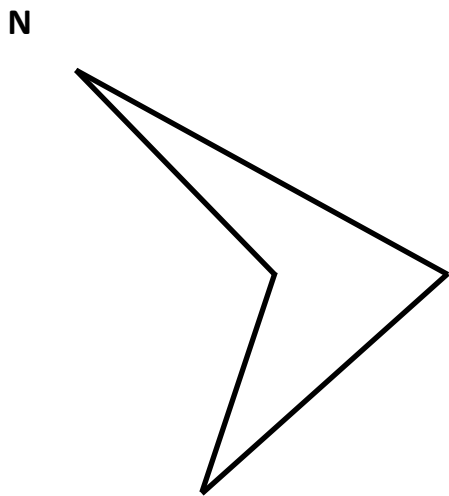
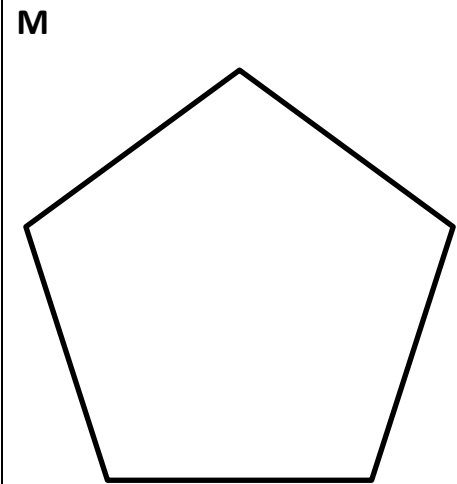
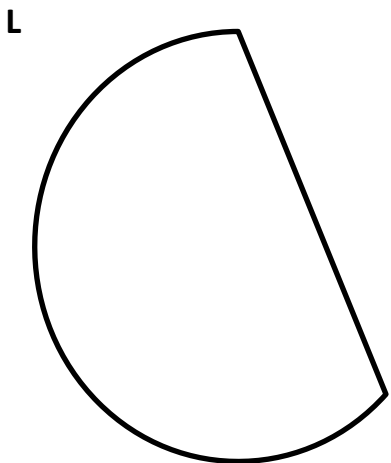
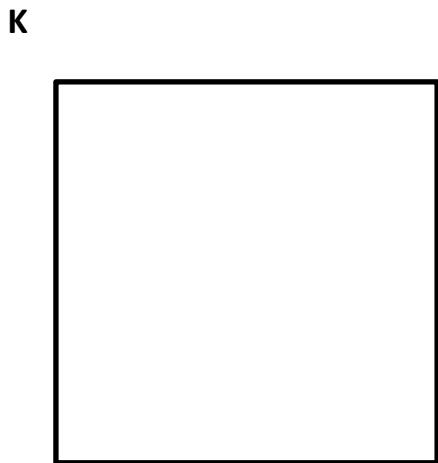
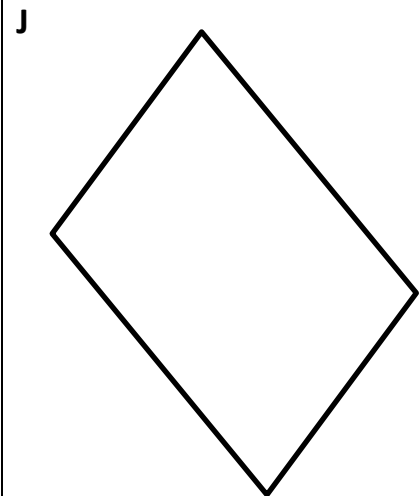


Part A: Shape 2



Part A: Shape Cards (*cut apart—one set per pair of students*)



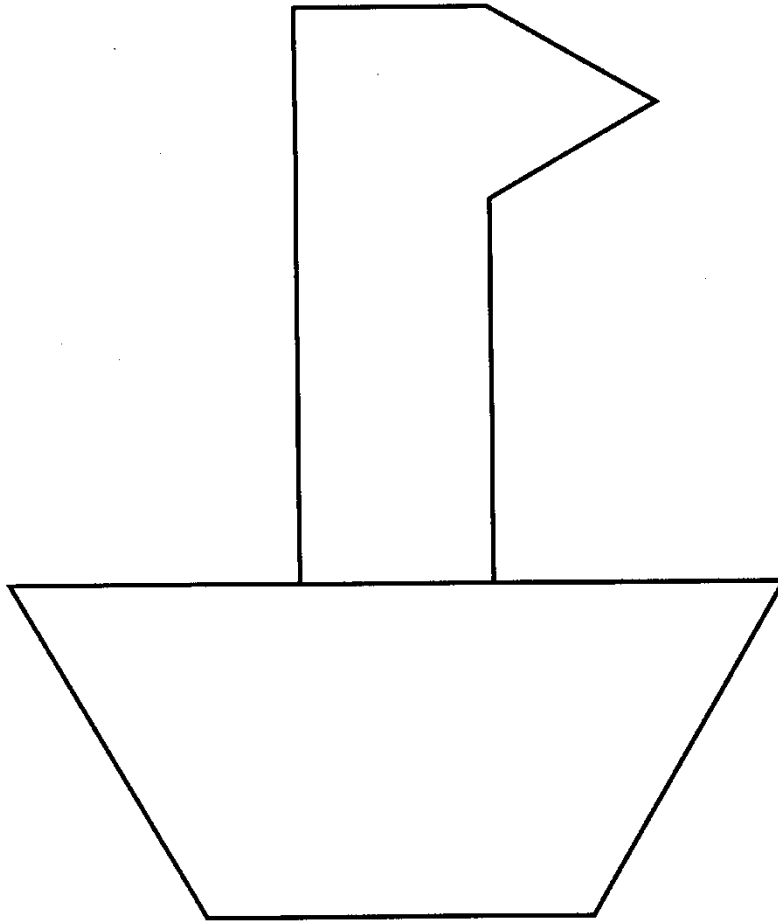








Part A: Shape Cards (*possible pairings—statement of alike and different*)

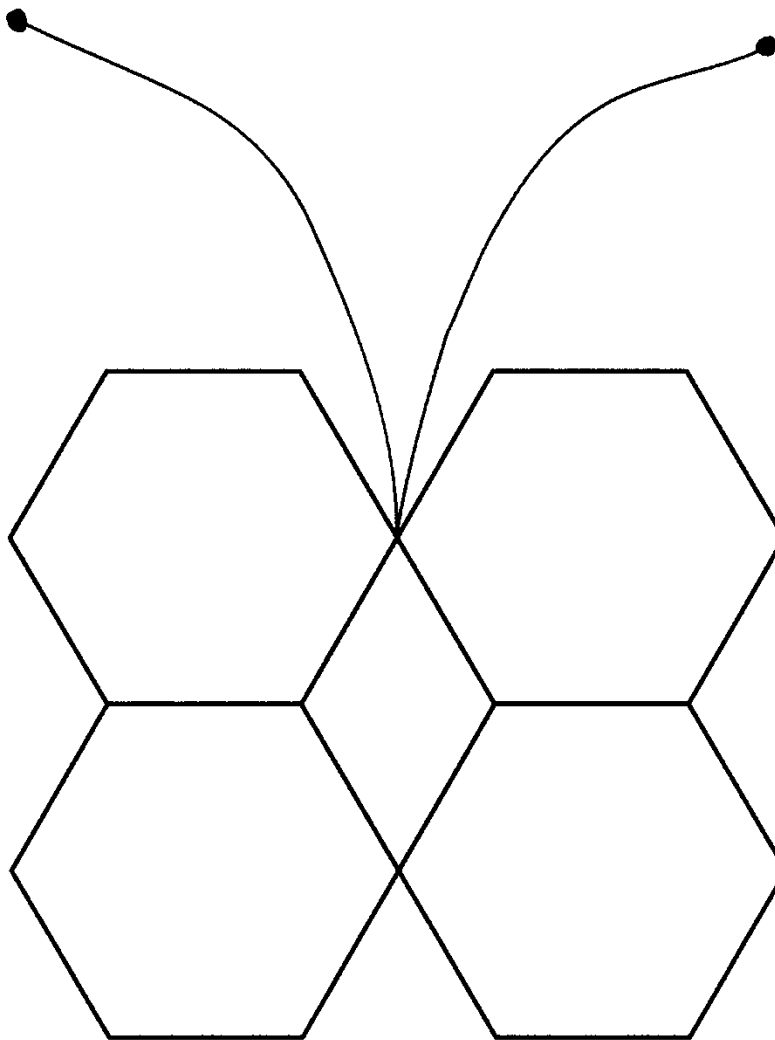
Shape 1	Shape 2	Alike	Different
H	K	Both have 4 sides	H is skinny; K is wide K is square; H is not
E	F	Both have corners	E has 6 sides; F has 4 sides
A	N	Both have one side that “goes in”	A has 6 sides; N has 4 sides
B	G	Both have a curved part	B is a full circle, but G has a part missing
H	J	Both have 4 sides	They are going different directions
C	B	Both are curvy/rounded	C is skinnier than B
B	M	They are almost the same size or look like they take up the same amount of space	B is round; M has corners B does not have any sides; M has 5 sides
D	I	Both have 3 sides Both have 3 corners	D is wider than I







The language used here is informal, which is acceptable for these standards. To determine more about a student’s understanding, additional probing questions may be necessary.

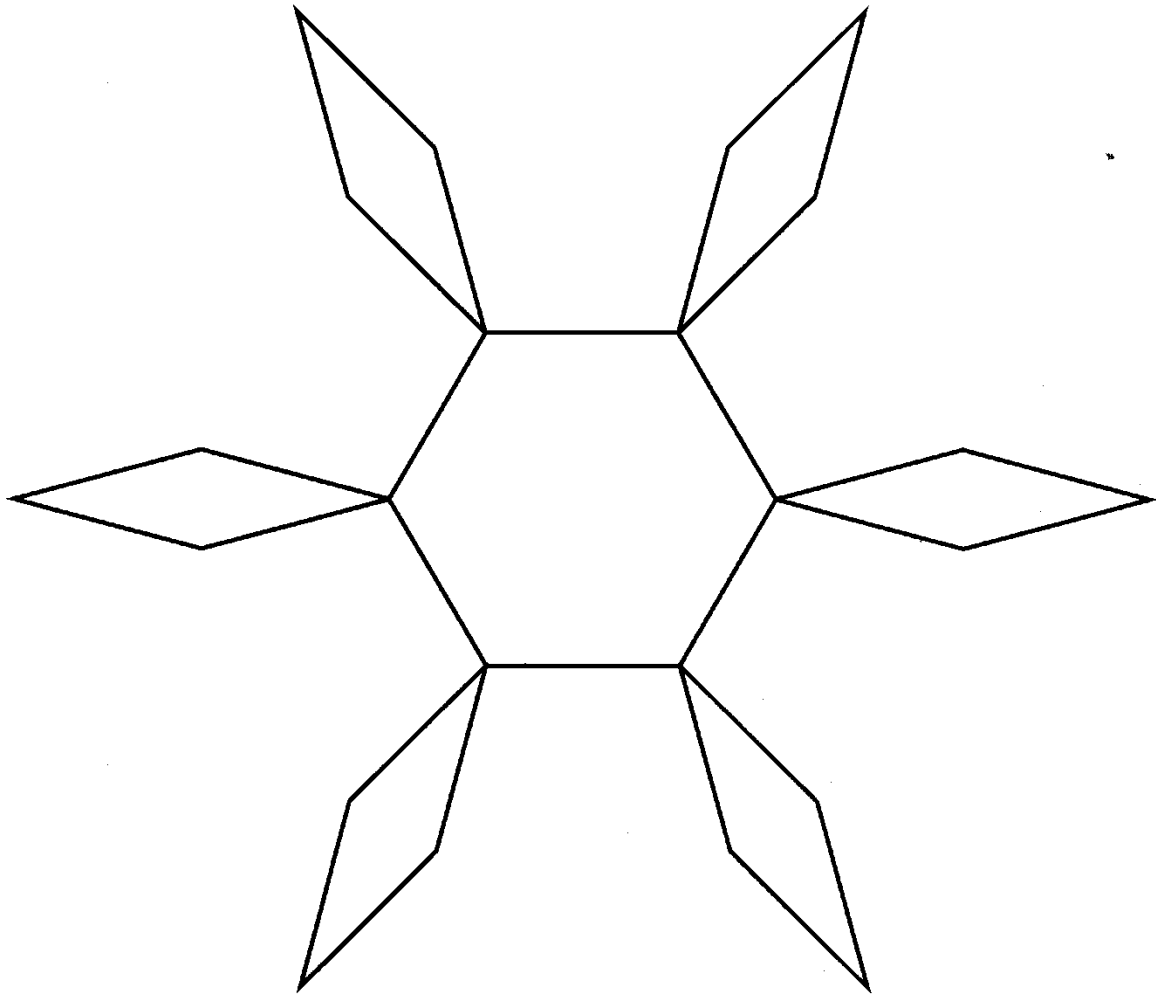
Part B: Pattern Block Pictures









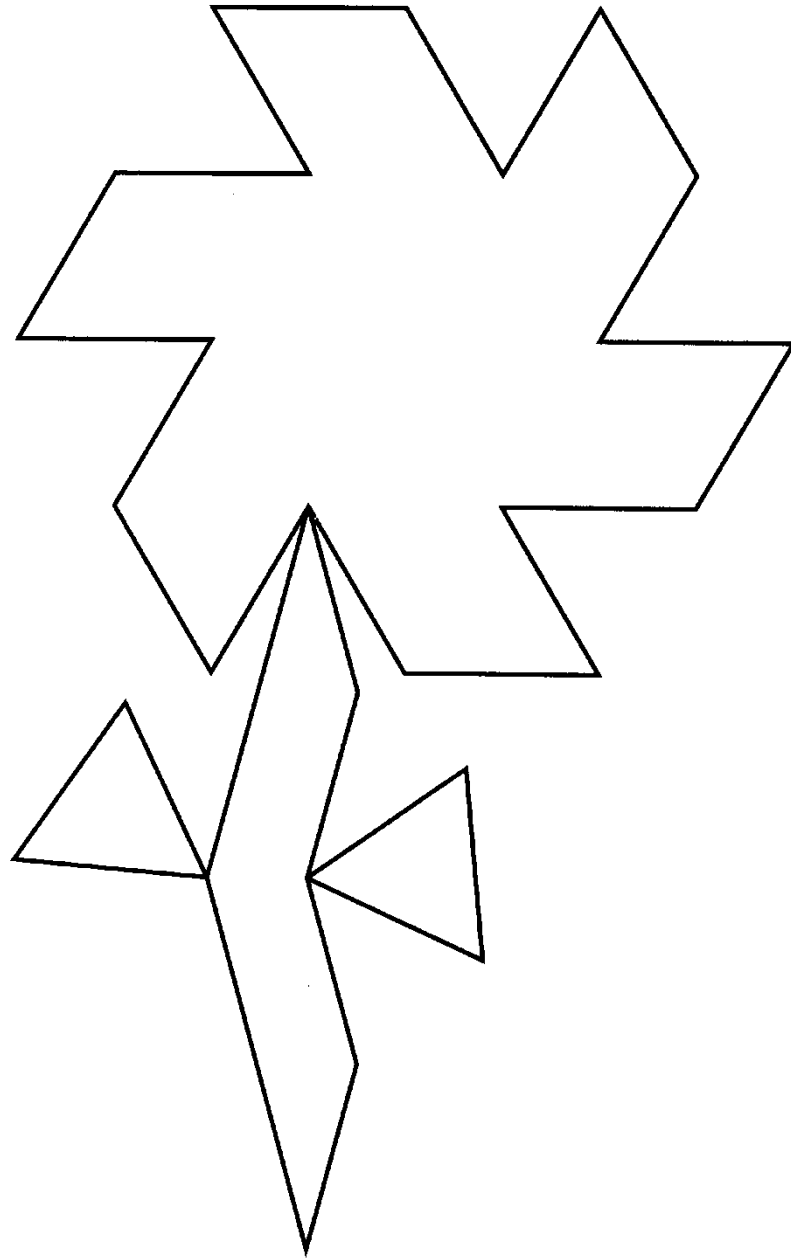
Shape						
How Many?						









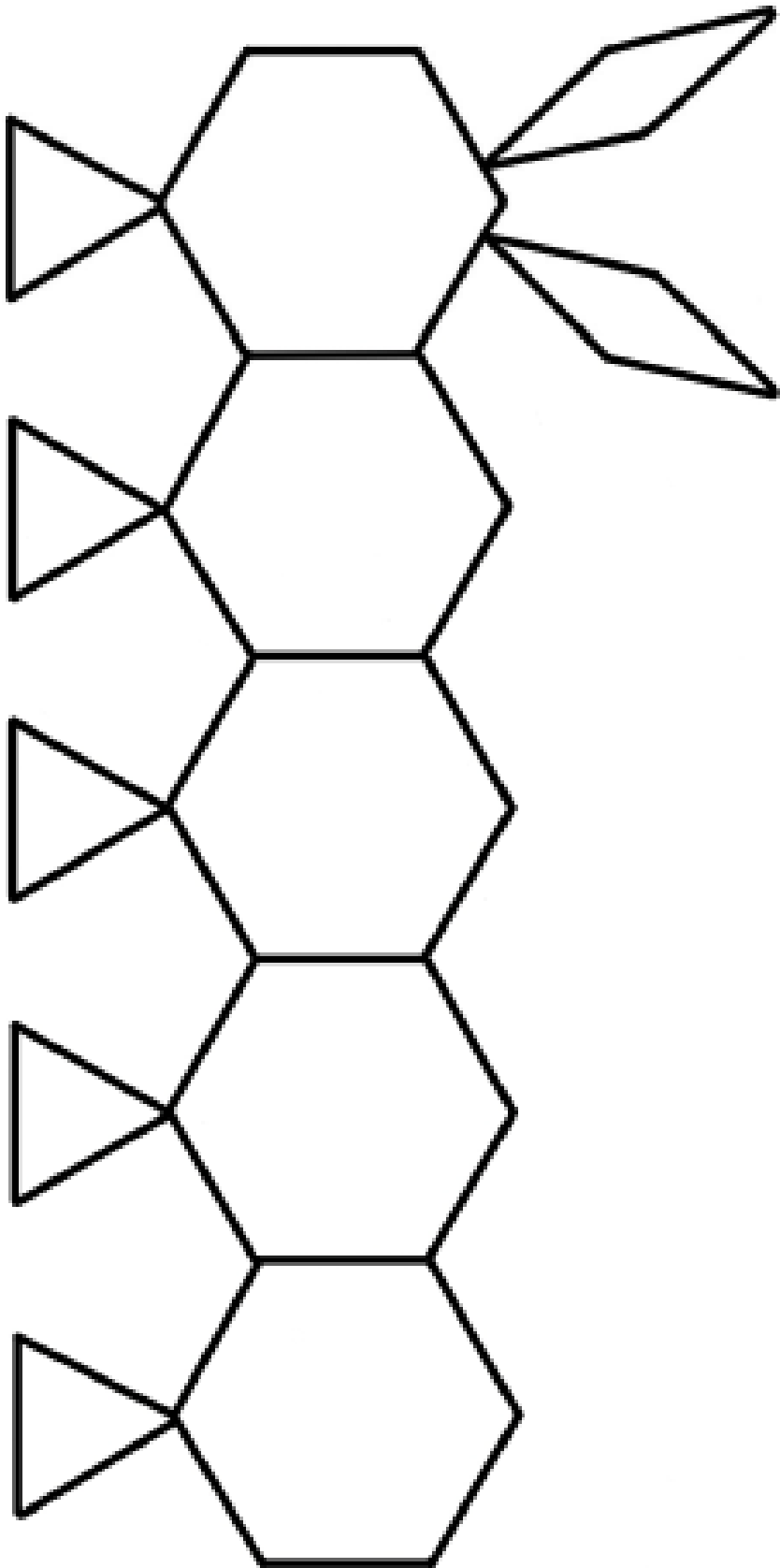
Shape						
How Many?						









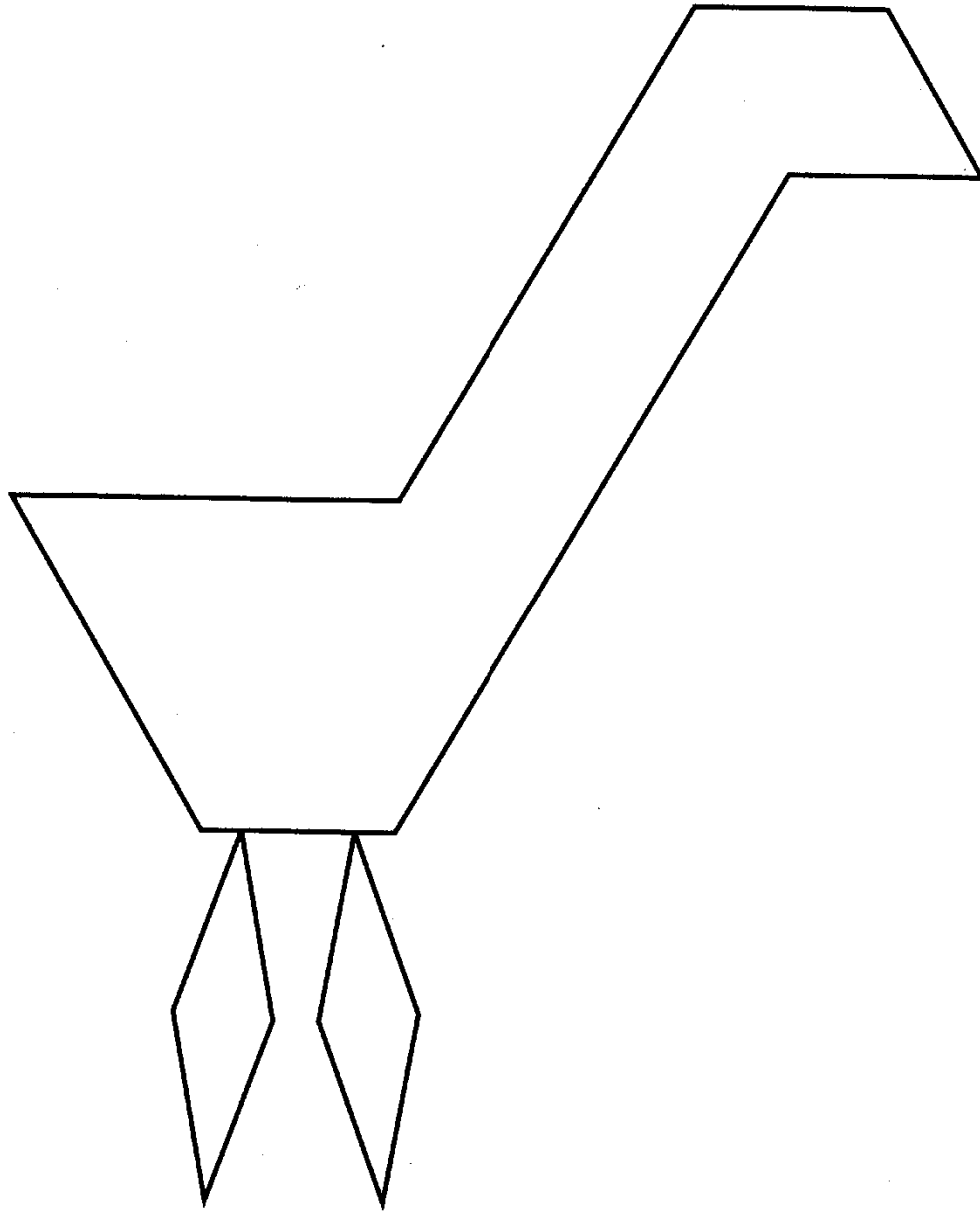
Shape						
How Many?						









Shape						
How Many?						

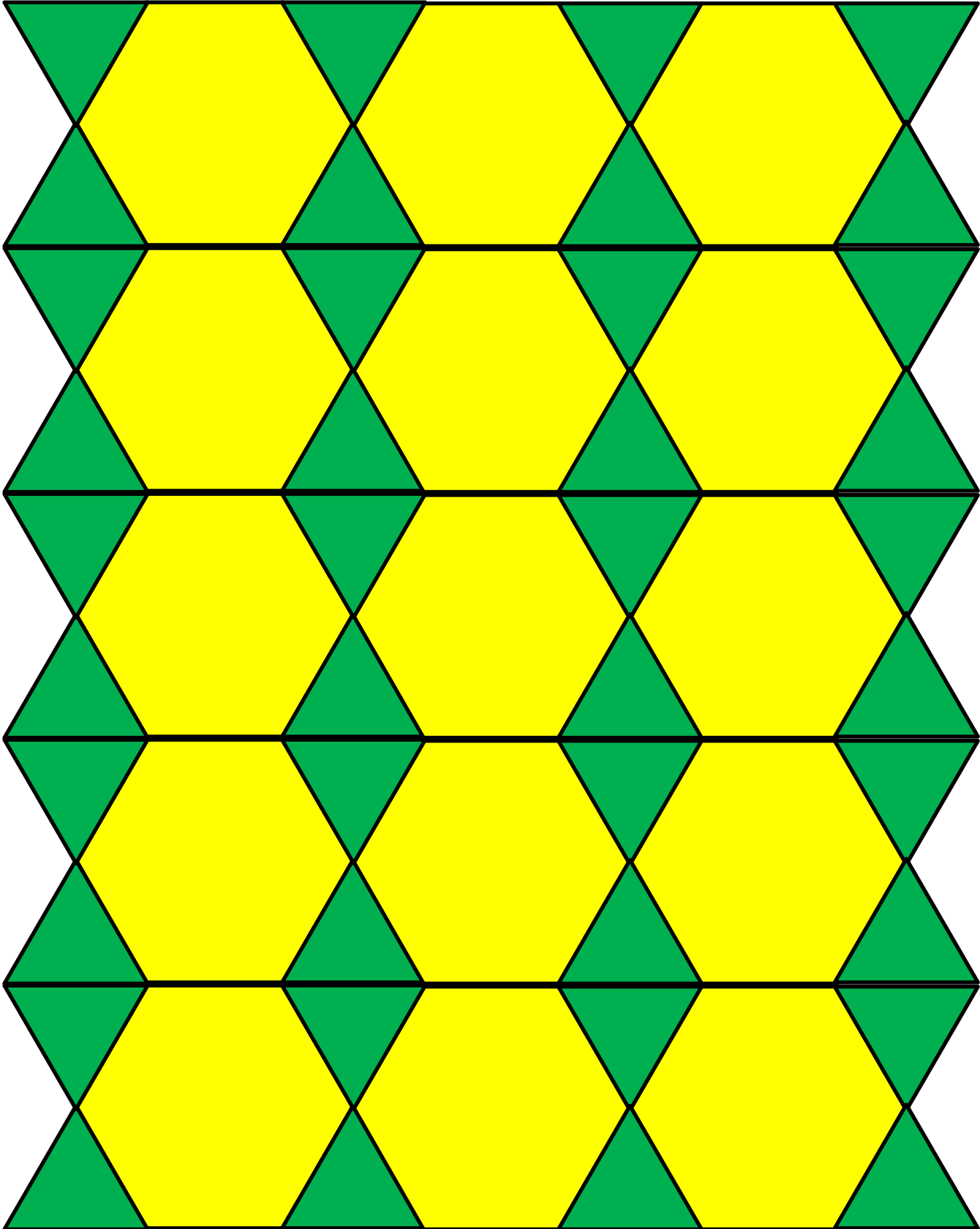


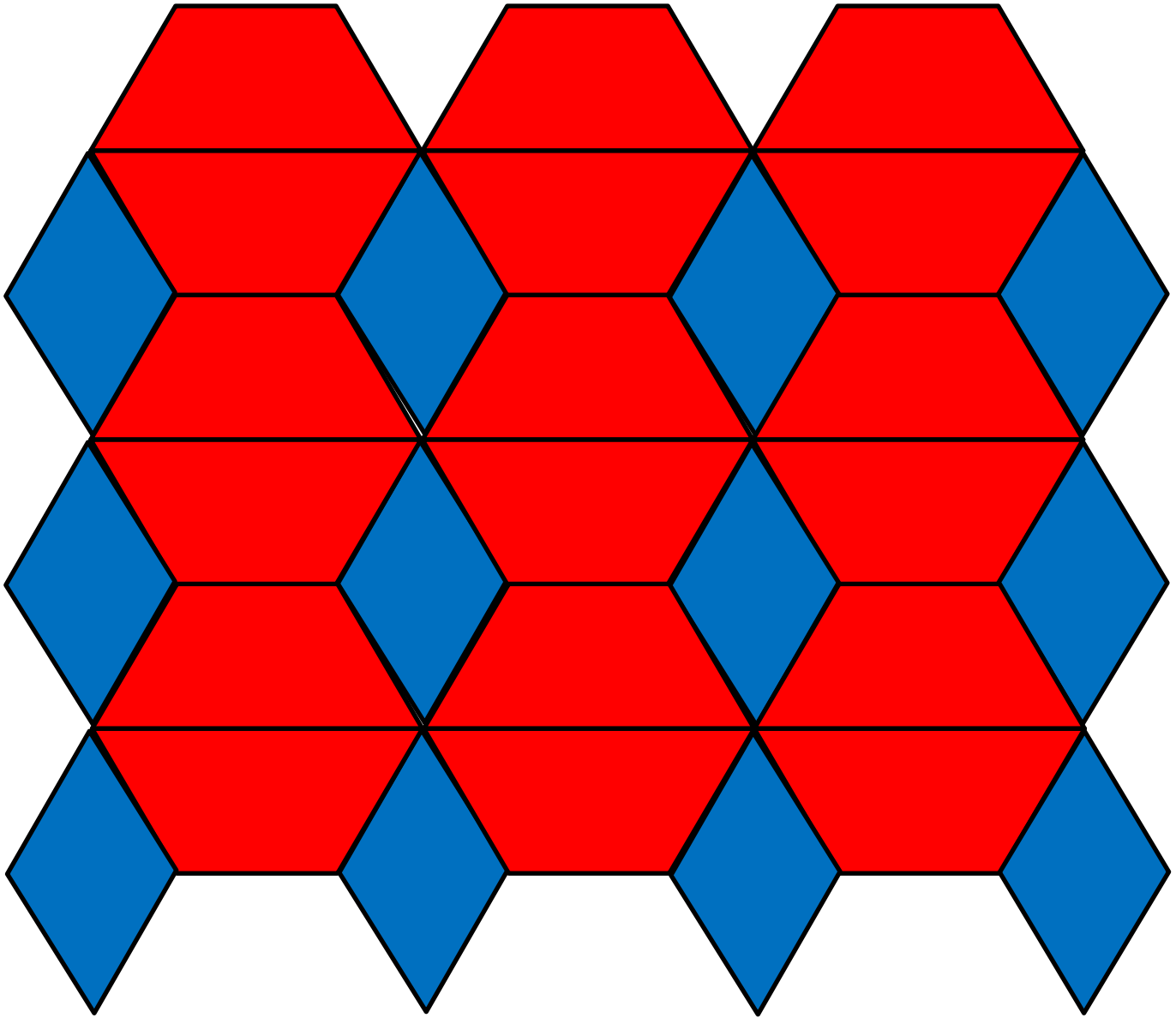
Shape	How Many?
	
	
	
	
	
	

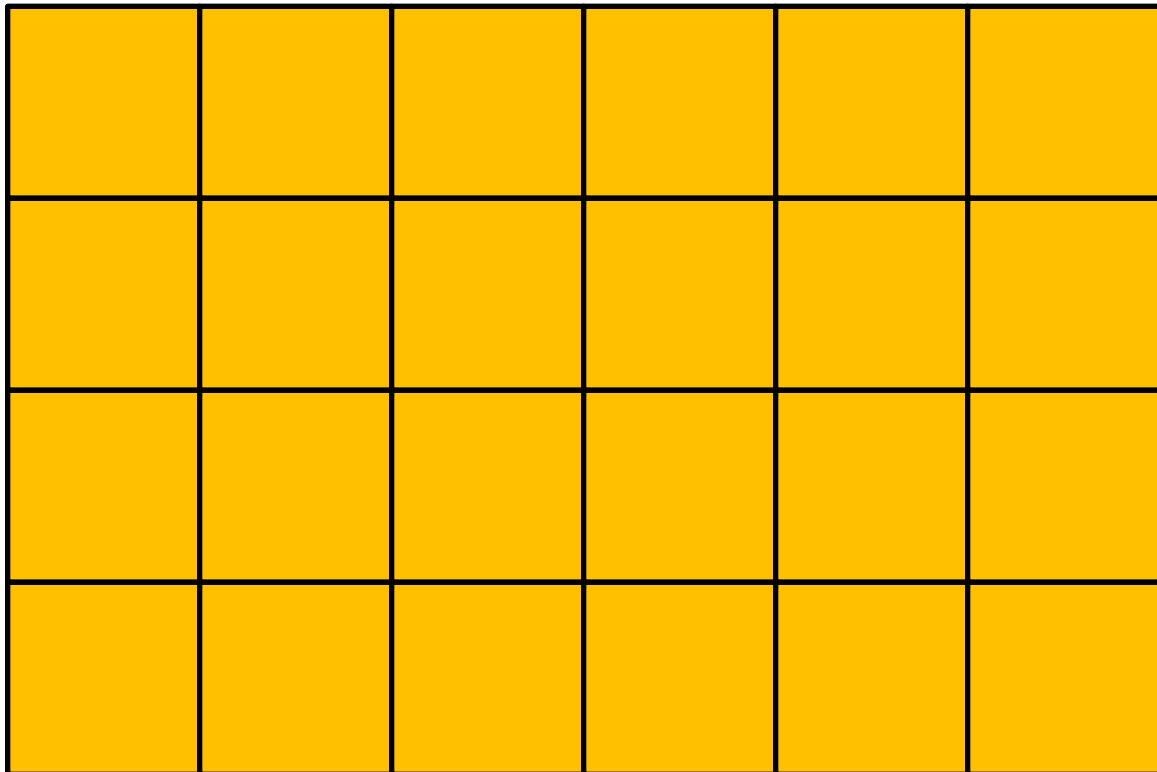
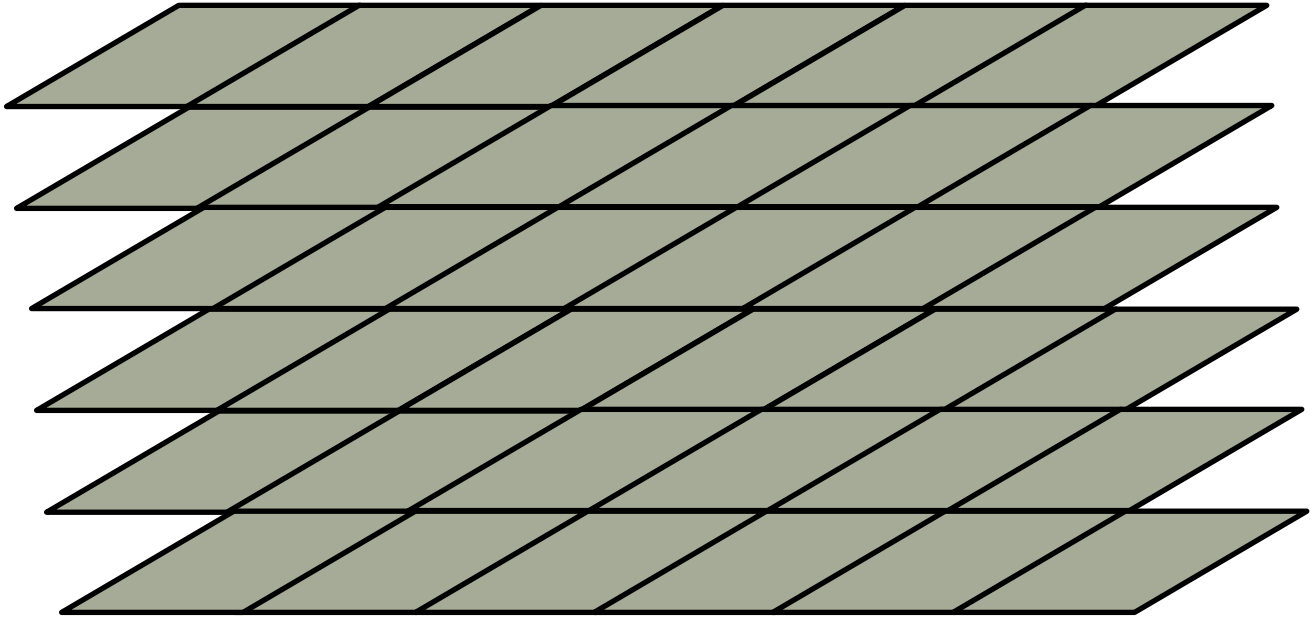


Shape						
How Many?						

Paper Pattern Blocks







Exploring the Teen Numbers (IT)

Overview

Students will learn to recognize quantities greater than 10 as 10 ones and some further ones by using unit cubes, drawings, and equations.

Standard

Work with numbers 11-19 to gain foundations for place value.

K.NBT.A.1 Compose and decompose numbers from 11 to 19 into 10 ones and some further ones (e.g., by using objects or drawings) and record each composition or decomposition using a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of 10 ones and one, two, three, four, five, six, seven, eight, or nine ones.

Prior to the Task

Standards Preparation: The material in the chart below illustrates the standards and sample tasks that are prerequisites for student success with this task's standards.

Grade Level Standard	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
K.NBT.A.1	<ul style="list-style-type: none">K.OA.A.3	1. https://www.illustrativemathematics.org/illustrations/1404	<ul style="list-style-type: none">https://www.illustrativemathematics.org/illustrations/177https://www.illustrativemathematics.org/illustrations/176https://www.illustrativemathematics.org/illustrations/165

Task Materials

- Numeral cards with 11-19
- One copy of Counting Hands for each student
- Two copies of Addition Sentences for each student
- Document camera (or other means of projection)
- 20 unit cubes per student (other manipulatives may also be used)
- One spinner with numerals 0-9 for each pair of students
- Pencils, markers, or crayons
- One copy of Student Worksheet for each student
- Matching Cards (five sets—copy each set on a different color cardstock and cut out; each pair of students will need all five sets)

Task Procedure

By the end of this task, students will explore the “teen” numbers by counting out 10 ones and some further ones. Students will build the “teen” numbers by spinning a spinner and adding that number of cubes to a tower of 10. Students will record their work with addition sentences and drawings. Finally, students will match cards with different representations of the numerals 11-19. This task is best used after students have had experience counting out up to 20 objects and recording addition sentences.

Part A

Begin the task with a whole-group activity by having students count chorally from 1 to 20. After counting, tell the students that they will explore the numbers 11-19 today. Give each student a copy of Counting Hands, a copy of Addition Sentences, and 20 unit cubes (or other manipulatives).

1. Show students the numeral card for 11.
2. Say, “Using the unit cubes you have, count out 11 unit cubes.” After students have counted out the correct number, direct students to look at the Addition Sentences sheet. Using the document camera (or other means of projection), write “11” in the first blank for the first addition sentence (11 is ____ and ____). Tell students to do the same on their paper.
3. Then direct students to look at the Counting Hands sheet and ask, “Do you think we have enough unit cubes to put one on each finger?” Have students discuss their thoughts with their partners and share some responses with the whole class.
4. Say, “Place one unit cube on each finger on the paper.” As the students are working, model the task using a document camera. Ask students, “How many total unit cubes did you put on the fingers?” Students should respond “10” (some students might count each cube). Write this number in the second blank of the first addition sentence (11 is 10 and ____). Direct the students to do the same.
5. Then ask, “How many unit cubes do you have left over?” Students should respond “1 unit cube.” Write the number 1 in the last blank of the first addition sentence (11 is 10 and 1). Direct the students to do the same.
6. Ask, “How many unit cubes do we have altogether?” Students should respond “11.” If necessary, guide students to count all of the cubes again. Then have students read the number sentence aloud chorally. Explain to students that the cubes on the two hands show a group of 10 cubes, and when one more cube is added, there are 11 cubes.
7. Have students draw a picture next to their addition sentence and circle the group of 10 cubes with one cube outside of the circle. Students can use any shape or symbol to represent the cubes. Model drawing the picture as the students are completing their drawing.
8. Repeat the modeling and counting with the numbers 12 through 19 in order. With each new number, students may start to recognize a pattern. Discuss as a class any patterns they recognize. Have students complete the addition sentences and drawings for each number.

Part B

Prior to beginning the task, write the numerals 0-9 on one spinner per student pair. Copy the spinner page on cardstock. Cut out the arrow and fasten it to the center of the spinner using a brad fastener.

In this part of the activity, students will take turns with a partner spinning a spinner to create the “teen” numbers. Model the activity first using a document camera or other means of projection. Have students volunteer to help model the activity.

1. Students will start by building a tower of 10 cubes. They will use this same tower for each of the six towers they will make.
2. After each student builds a tower of 10 cubes, Partner A will spin the spinner. Both students will write the number the spinner points to in the first blank of the number sentence on the Student Worksheet.
3. Then Partner A will count out the same number of cubes as the number the spinner landed on.
4. Partner A will count the total number of cubes, and both students will write the total in the last blank in the number sentence (e.g., 10 and 4 is 14).
5. Partner B will check Partner A’s work.
6. Then both students will draw a picture to represent the tower of 10 cubes and some more cubes.
7. After students have completed their drawings, they will switch roles. Students should keep their tower of 10 cubes for each new round. Partner B will begin the new round by spinning the spinner. Students will follow the same series of steps with Partner A checking Partner B’s work.

As students are working, walk around to check for understanding. Ask students to explain how the drawing they have matches the number sentence. When students are counting the total number of cubes, make a note of those students who are counting on from 10 and those who are counting each cube individually. Also pay attention to students whose drawings do not match the number sentences. Provide feedback to students in order to address misunderstandings.

Part C

In this final part of the activity, students will match five sets of cards that show the decomposition of the “teen” numbers. Give every pair of students each of the five sets of cards. Having the cards on different colored cardstock will help students know that they have chosen at least one card for each number 11-19. The five sets of cards are:

- Set A: Double Ten Frames that show 10 ones and some more ones
- Set B: Stars grouped as ten ones and some more ones
- Set C: Equations with symbols
- Set D: 10 and ____ (addition expressions in words)
- Set E: Numeral Cards

Tell students to mix up the numeral cards and choose one without looking. Have partners work together to match the correct 10 frame, stars, equation, and addition expression cards to the selected numeral. After they think they have matched all of the correct cards to the selected numeral, have the students raise their hands to have their work checked. Once their work is correct, the team should select a new numeral card and start the process over until all cards have been matched.

Task Notes

This task is designed to last multiple days. Students may need multiple days for each part of the task.

To modify the task in Part A, use double 10 frames in place of the counting hands for students who may need more structure. Another way to modify the activity is to have students only create drawings to represent the numeral in Part A

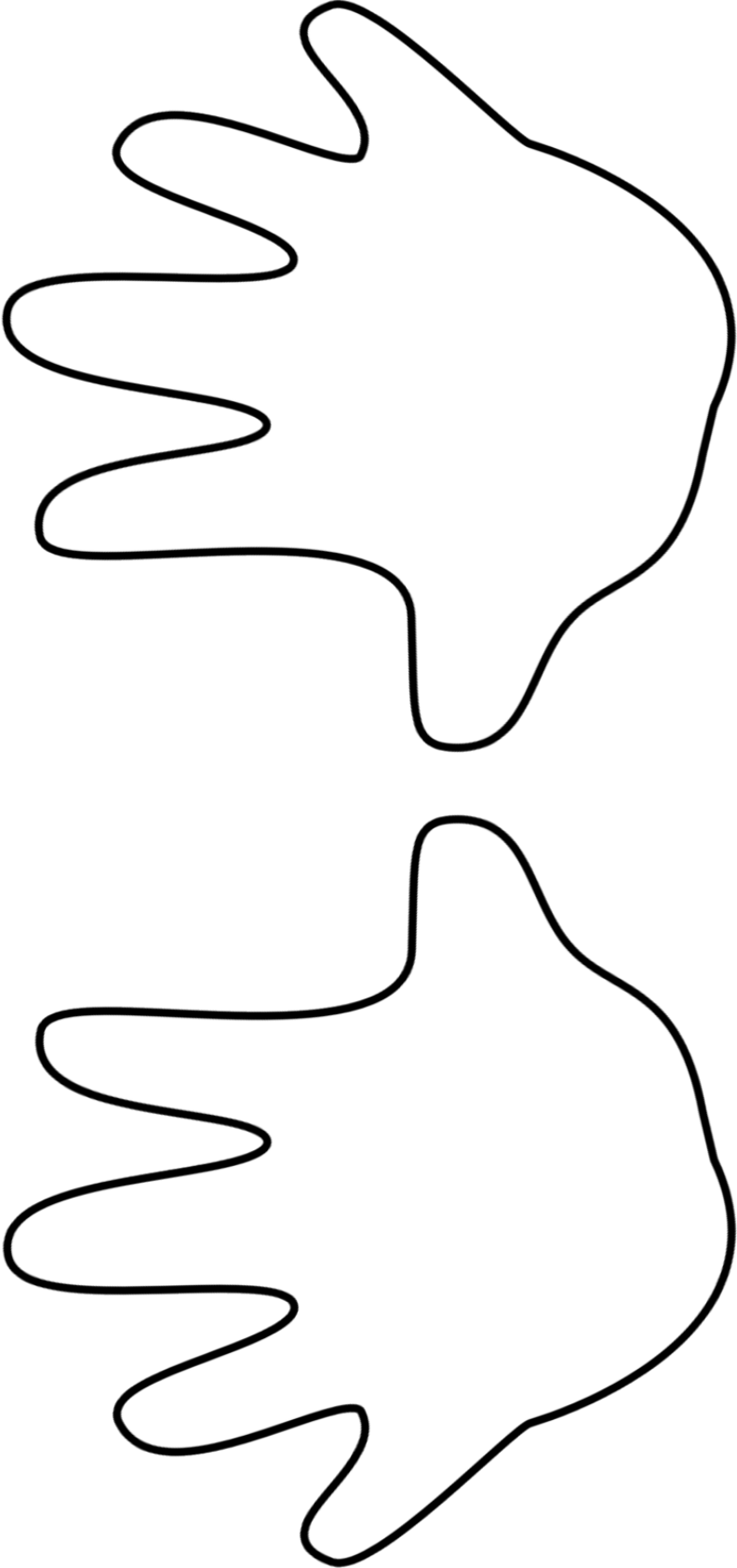
and to save writing the addition sentences for a different time. The numeral 10 can also be written into the addition sentences before the page is copied to help guide students through the activity. Change the addition sentences by using symbols instead of words for more advanced students.

For Part B, provide a variety of manipulatives to have students stack—marshmallows, Lego® blocks, and wooden blocks. It may be a good idea to have students stack the blocks by laying them on the table or on a tray on the floor rather than stacking them vertically where the towers could be knocked over. Also, the task can be modified for advanced students by having students roll a number cube with 8, 9, and 10 marked on two sides each, and the spinner in the original task. Students would then add the two numbers (one from the number cube and the other from the spinner), and then write the total as a group of 10 ones and some more ones (if the number is larger than 10).

Five sets of cards may be a lot for students to work with at the beginning. In order to modify the task, provide students with the set of numeral cards, the set of 10 frames, and the set of stars to begin. After some practice, exchange the 10 frames or stars for the number sentence or addition expressions. Work up to using all five sets of cards. Another option is to have students glue or tape the matching cards to a blank sheet of paper labeled with the numeral and have them check each other's work.

These activities can be used in small-group settings with the teacher. Part C can also be used in centers to allow students to have more practice with exploring the “teen” numbers. If Part C is used in centers, provide students with a key so they can check their work. One way to create the key is to put letters or other pictures on the back of each card and list which combination of letters/pictures should be matched to a numeral.

Counting Hands



Addition Sentences

_____ is _____ and _____.

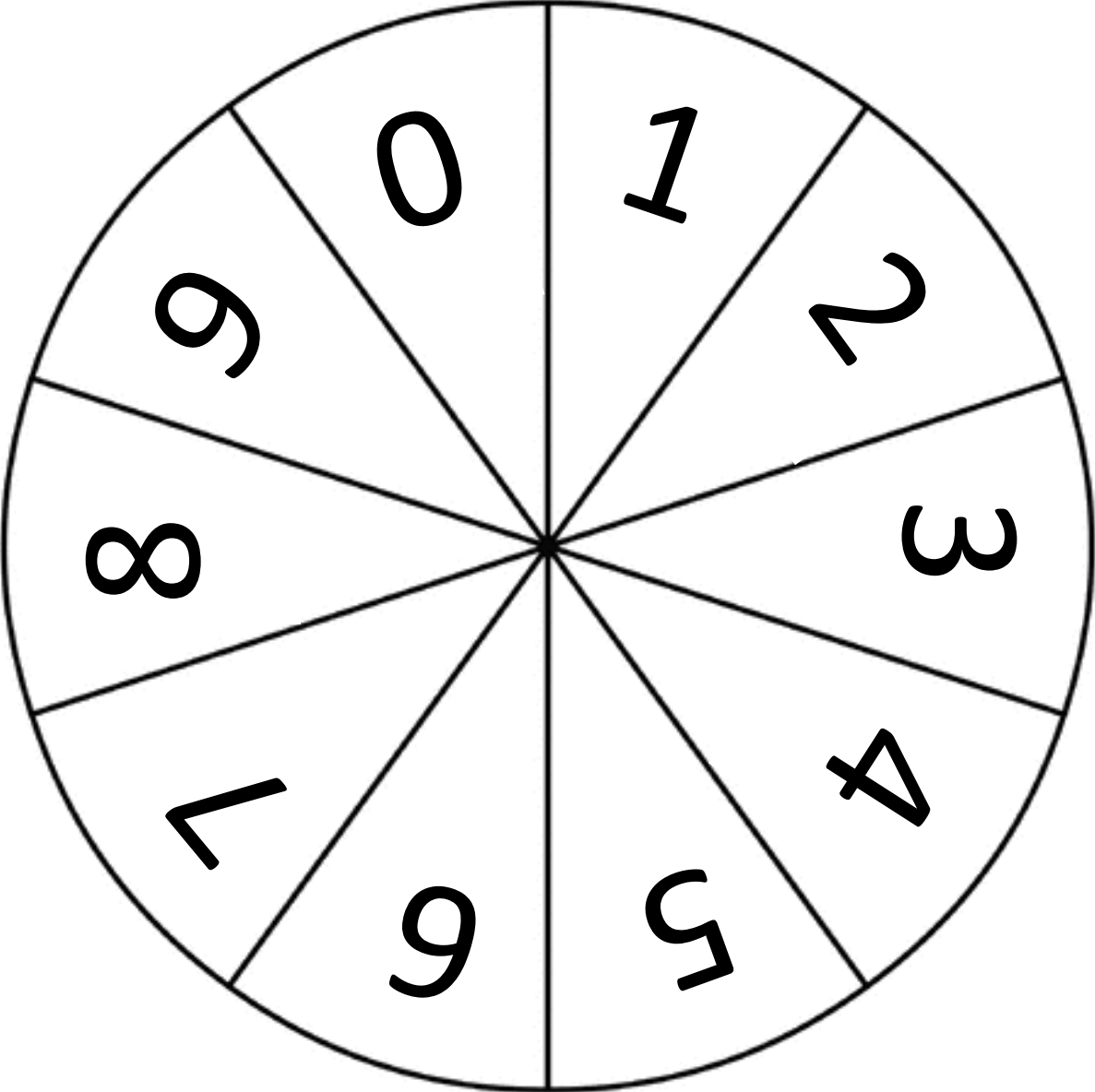
_____ is _____ and _____.

_____ is _____ and _____.

_____ is _____ and _____.

_____ is _____ and _____.

Spinner



Drawings

10 and _____ is _____.

10 and _____ is _____.

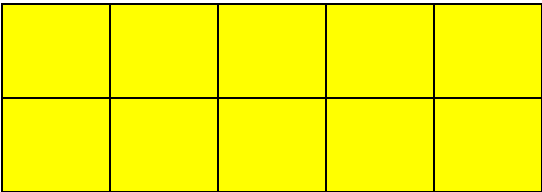
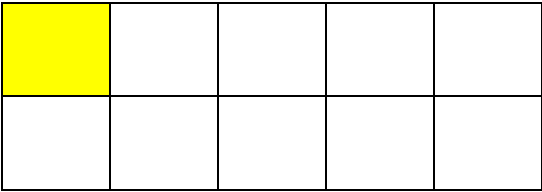
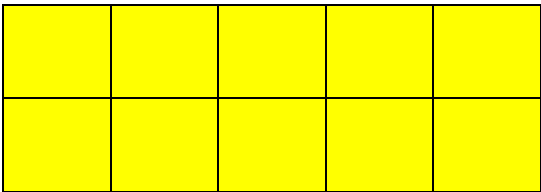
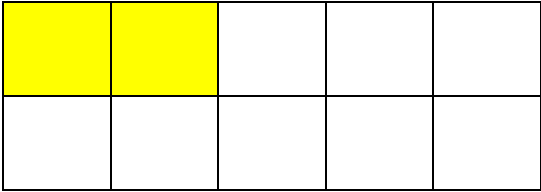
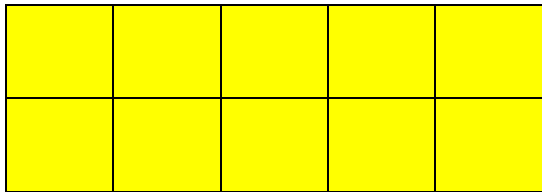
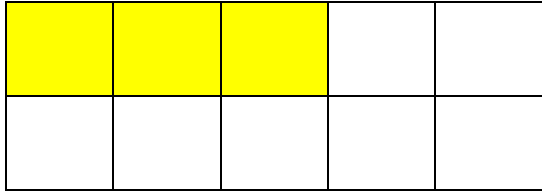
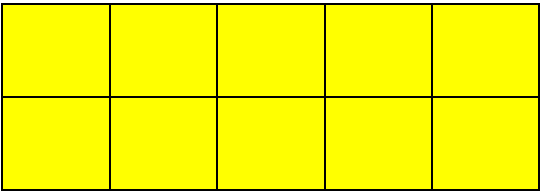
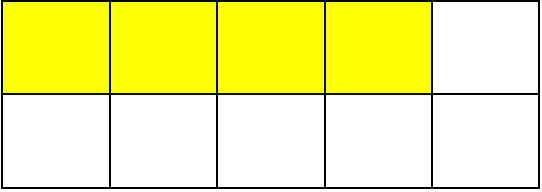
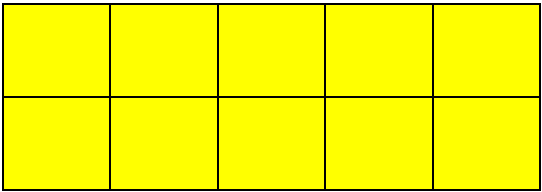
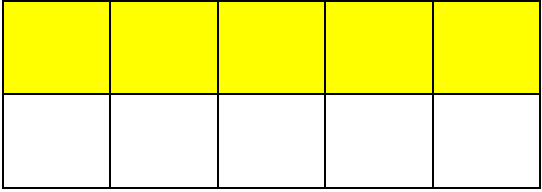
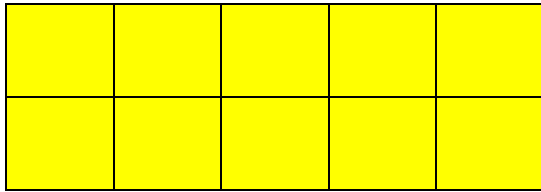
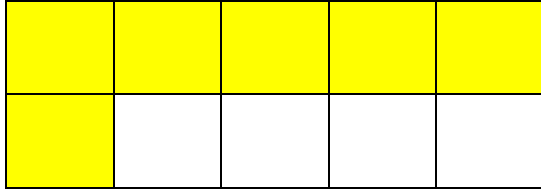
10 and _____ is _____.

10 and _____ is _____.

10 and _____ is _____.

10 and _____ is _____.

Matching Cards Set A

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Matching Cards Set B



Matching Cards Set C

$$10 + 1 = 11$$

$$10 + 2 = 12$$

$$10 + 3 = 13$$

$$10 + 4 = 14$$

$$10 + 5 = 15$$

$$10 + 6 = 16$$

$$10 + 7 = 17$$

$$10 + 8 = 18$$

$$10 + 9 = 19$$

Matching Cards Set D

10 and 1

10 and 2

10 and 3

10 and 4

10 and 5

10 and 6

10 and 7

10 and 8

10 and 9

Matching Cards Set E

11

12

13

14

15

16

17

18

19