Mathematics Alignment Lesson
Grade 2   Quarter 1   Day 12

SCOS Objective(s)

1.01   Develop number sense for whole numbers through 999.
1.01a   Connect model, number word, and number using a variety of representations.
1.01b Read and write numbers.
1.01d Rename
1.01f Use a variety of models to build understanding of place value (ones, tens, hundreds).

Materials Needed:

- Transparency/Blackline *"Ten Frame", "Place Value Mat with Ten Frames"*
- Blackline Master *"Counting to Ten Journal Prompt"*
- Teacher Guide *"Ten Frame Flash"*
- Two Color Counters

Homework Reference Day 12

Blackline Master- *"Counting to 10"*

Assessment Reference Day 12

None Referenced

Vocabulary
Teen Number
Teen Total
Count On

Alignment Lesson
Ten Frame Flash

1. Use the Transparency/Blackline *"Ten Frame"* and two color counters on the overhead to model ten frame quick images. Show an image for a few seconds. Show the image long enough so they see the groupings of 5 and 10 but not long enough to individually count the dots. Ask the children how many dots they saw and how they got that number. Putting a time constraint pushes children to count more efficiently. They can no longer count by ones. After each image have a few children share how they saw the image. See Teacher Guide "Ten Frame Flash Examples" as a guide to which images to flash.

2. After students have practiced images up to 10 on the overhead, give each student a two-part mat (Transparency/Blackline *"Place Value Mat with Ten Frames"*). Ask students to put 10 red counters in one ten frame. Then ask students to add 5 yellow counters on the other side. Together count all of the counters by ones. Count the combination: "Ten and five is fifteen" Turn the mat around: "Five and ten is fifteen". Repeat with other numbers in a random order but without changing the 10 side of the mat.

3. Next have students use the two-part mat and two-color counters to help them with the Counting On 10 strategy (see Alternate Approach MX TE page 79). For example, ask students to place 8 red counters in the ten frame and 5 yellow counters outside the ten frame. Then have children move yellow counters into the ten frame to make a 10. The total is 10 plus the counters outside the ten frame or placed in the second ten frame. Repeat procedure with other numbers that will have students practice adding numbers to show up to 20. Discus how the counters can be placed on the mat so that it is easy to see how many there are. Have students share their ideas until the notion that ten and some more is a teen amount. As students grasp up to 20, begin to challenge them to find ways to show 26 counters or even more.

4. Using Blackline Master *"Counting to 10 Journal Prompt"*, have students write a letter to a family member explaining how to find the total of $5 + 7$ using the Counting On to 10 strategy. Encourage children to use words and pictures in their letter.

Source: Math Expressions Unit 1 Lesson 11, *Partners Grant Grade 2 Module 1,* The Van de Walle Professional Mathematics' Series*: Teaching Student Centered Mathematics Grades K-3*
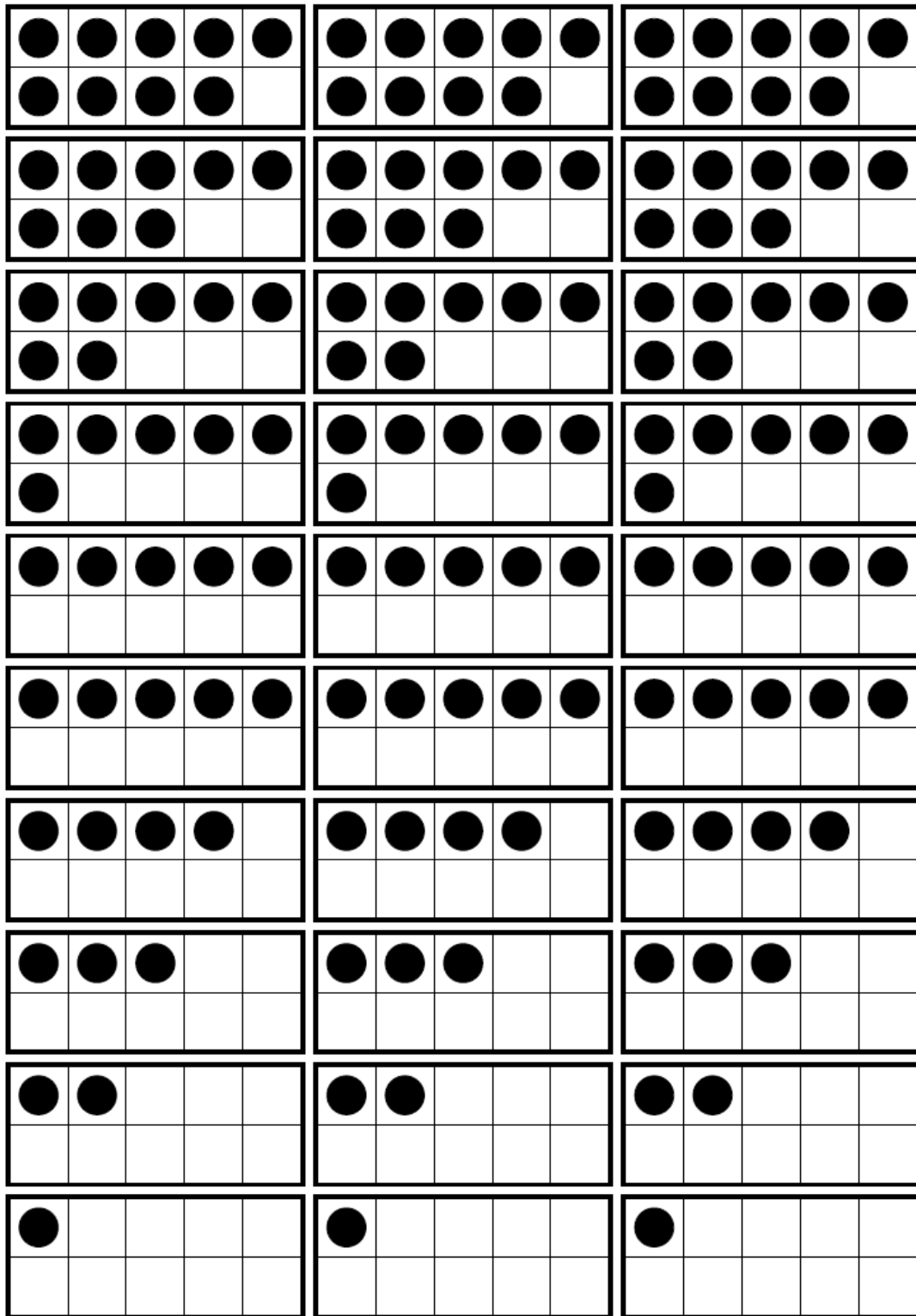
BLM 15—Place-value mat (with ten-frames)

Wake County Public School System, 2010
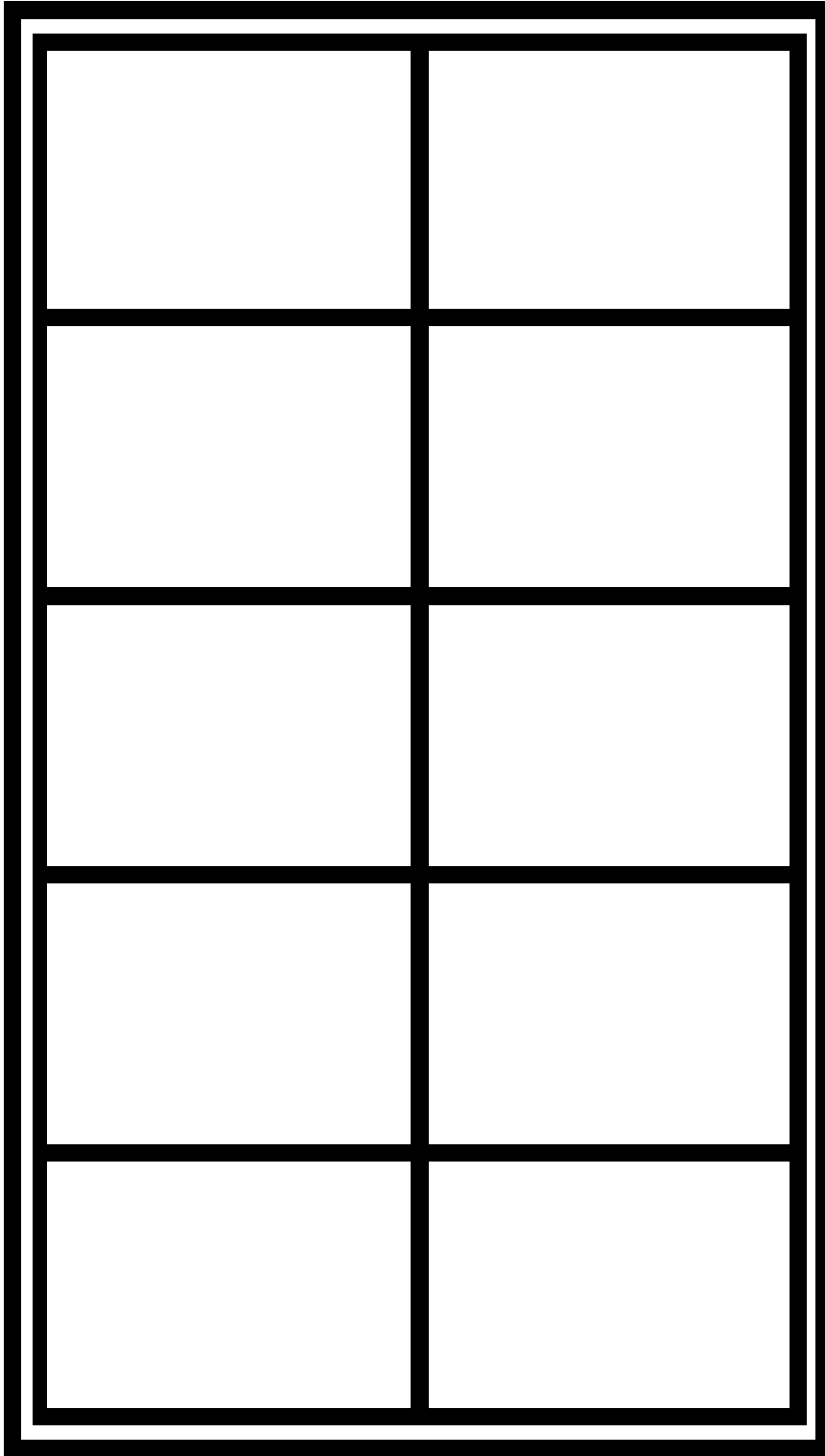
Name_____ **Date**_____

Counting to 10 - Journal Prompt

Write a letter to a family member explaining how to find a total of 5 + 7 using the Counting On to 10 strategy. Use words and pictures in your letter.

Ten Frame Flash Examples

Wake County Public School System, 2010

Mathematics Alignment Lesson
Grade 2   Quarter 1   Day 19

SCOS Objective(s)

1.01 Develop number sense for whole numbers through 999.
a)   Connect model, number word, and number using a variety of representations.
b)   Read and write numbers.
c)   Compare and order

Materials Needed:
- Teacher Guide "Hundred Board Hunt"
- Transparency/Blackline "Hundreds Board"
- Counters
- Cardstock "Broken Hundred Board Activity Cards" (1 set per group)
- Blackline Master "Square Graph Paper"
- Scissors

Homework Reference Day 19

Have students create their own broken hundreds board puzzles for another student to solve.

Assessment Reference Day 19

Use one of the Broken Hundred Board Activity Cards as an assessment or have students create their own. Have students write in their math journals on how they would identify the missing numbers in their charts.

Vocabulary
None Referenced.

Alignment Lesson
Hundred Board Hunt

1. Using Transparency/Blackline "Hundreds Board" and Teacher Guide for "Hundred Board Hunt", use counters to cover up a few numbers on the chart. Ask students to identify the numbers covered and to explain how they know it is that number(s). After students have identified each number covered and described how they knew it was that number, ask "What do the numbers have in common?" "Are there any other numbers that follow this rule or pattern on the chart? If so, which numbers and why?"
2. Allow students to practice with a partner. Each partner group needs a hundreds chart and counters. Student A should cover 10 numbers on the chart. Student B will then tell Student A which numbers are covered and explain how they figured out each number. Repeat with Student B covering up 10 numbers on the chart. If you feel 10 numbers are too many to start with, start with a smaller number or differentiate based on partners' groups.
3. Next, allow student groups to work together on the "Broken Hundred Board Activity Cards". For each broken card, there are missing numbers. Groups can work together to figure out the numbers that are missing on each card. If cards are laminated, you can have students use dry erase markers directly on the card, and erase to put in centers at a later.
4. Select one or two cards to discuss as a whole group. Have groups share with others how they completed the activity card.
5. Have students create their own broken hundred board. Give them Blackline Master "Square Graph Paper" and a pair of scissors to create their broken hundreds boards. Have them exchange with a partner for homework or keep for centers.

Source: Teacher Created

Hundred Board Hunt

Cover up…..	Possible Student Responses	Possible Patterns/Trends/ Rules	Other Possible Numbers on the Chart that fit the Rule
44, 55, 66, 77, 88	Check student responses	digit in the tens place is the same digit in the ones place, +11	11, 22, 33, etc.
21, 24, 27, 30, 36	Check student responses	+3	3, 6, 9, etc.
72, 74, 84, 86, 88	Check student responses	Even numbers	24, 38, 90, etc.
8, 16, 24, 32, 48, 64	Check student responses	+8	40, 56, 72, etc.
16, 26, 36, 46, 56, 66	Check student responses	+10	76, 86, etc.
31, 32, 34, 37, 41, 46	Check student responses	+1, + 2, +3, +4, +5	52, 59, 67, etc.

Hundreds Board

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

Activity Card #1

			17	18	19	20
24	25			28	29	30
34	35	36			39	

Activity Card #2

	74	75			78	79
83	84	85				
		95				

Activity Card #3

	63	64	65
			75
	83	84	85
92			95

Activity Card #4

	8	9	10
	18	19	20
	48	49	50

Activity Card #5

		4	5	

32		34	35	36

Activity Card #6

67	68	69	70
77		79	
87		89	90

Square Graph Paper Blackline Master   Grade 2   Day 19   Objective(s) 1.01abc
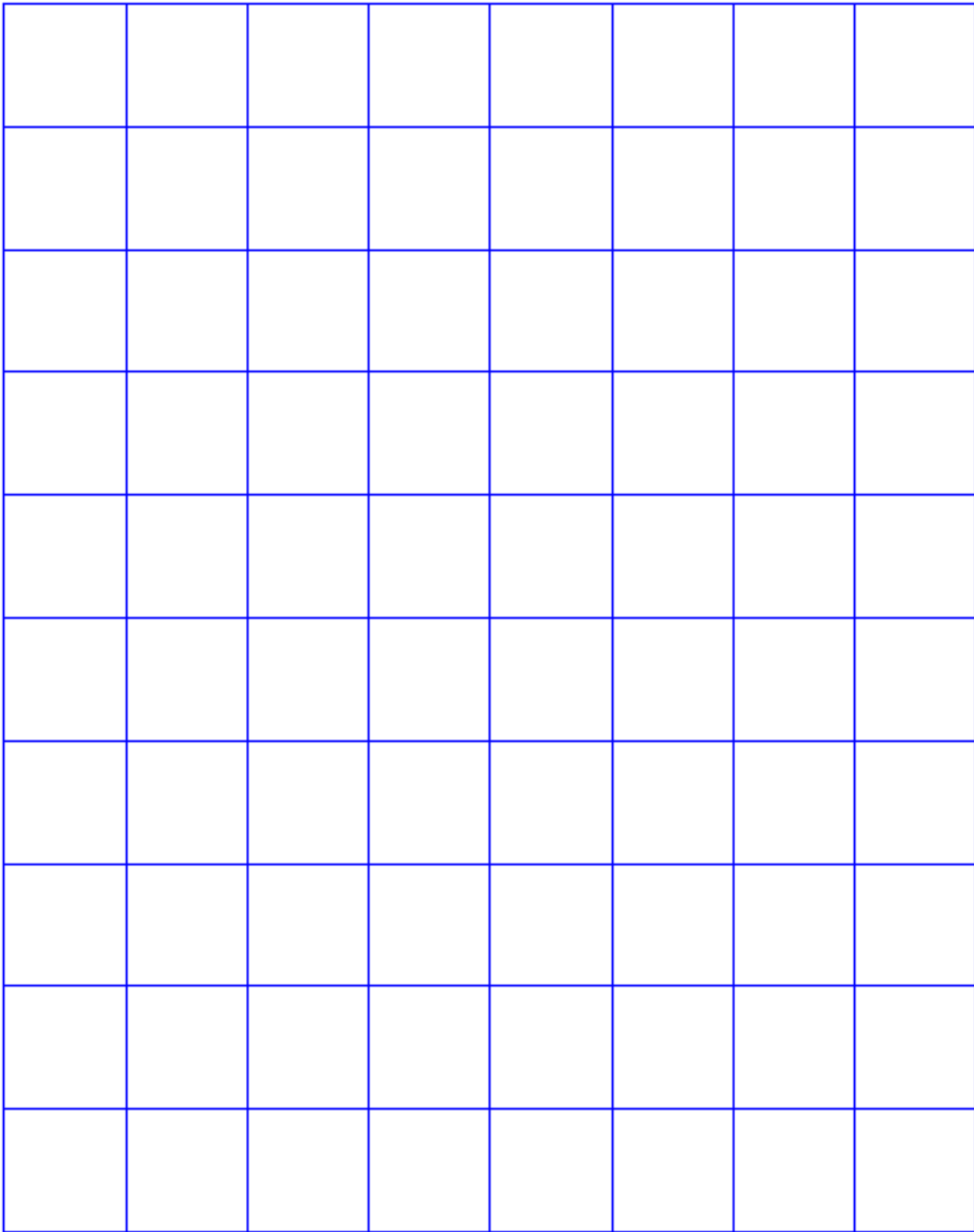
Mathematics Alignment Lesson
Grade 2   Quarter 1   Day 26

SCOS Objective(s)

1.01   Develop number sense for whole numbers through 999.

1.01c   Compare and order.

Background Information
See Vocabulary below

Materials Needed:

- Cardstock, *"Number Cards Sets One, Two & Three"*, *"Student Cards"*, *"Leader Cards"*

Homework Reference Day 26
None

Assessment Reference Day 26
None

Vocabulary
Set
Least
Greatest

Alignment Lesson
Comparing and Ordering Larger Numbers

Note: You will want to have the Cardstock, *"Game Cards"* cut out prior to teaching this lesson.

1. Begin by having 3 students come to the front of the room. Give each of the students a a page from *"Number Card Set 1"*. Ask the class to think about which number is the largest and which is the smallest. Have a volunteer come to the front and arrange the students in order from greatest to least. As the student to explain their thinking as they order the students.
2. Have another student come up. Give them the 4th page from *"Number Card Set 1"*. Ask another student to place the new number where it will go in the order. Ask a student come to the front and re-order the "student numbers" from least to greatest. Repeat the activity again with both the 2nd and 3rd number cards sets.
3. Explain to the students that they will be playing a game to help them practice comparing and ordering numbers. The game **Number Challenge!** is similar to *Around the World*. Pass out one *"Student Card"* to each student. The Teacher or Game Leader will hold the *"Leader Cards"* that say Greatest and Least. Make sure to mix up the cards before playing. The first student will stand next to their neighbor. The game leader will then flash either a greatest or least card. The student whose card matches the description of either greatest or least will more on to the next student the other student will sit down at that desk. The game continues until time is up or until one student has made it all the way back to their desk.
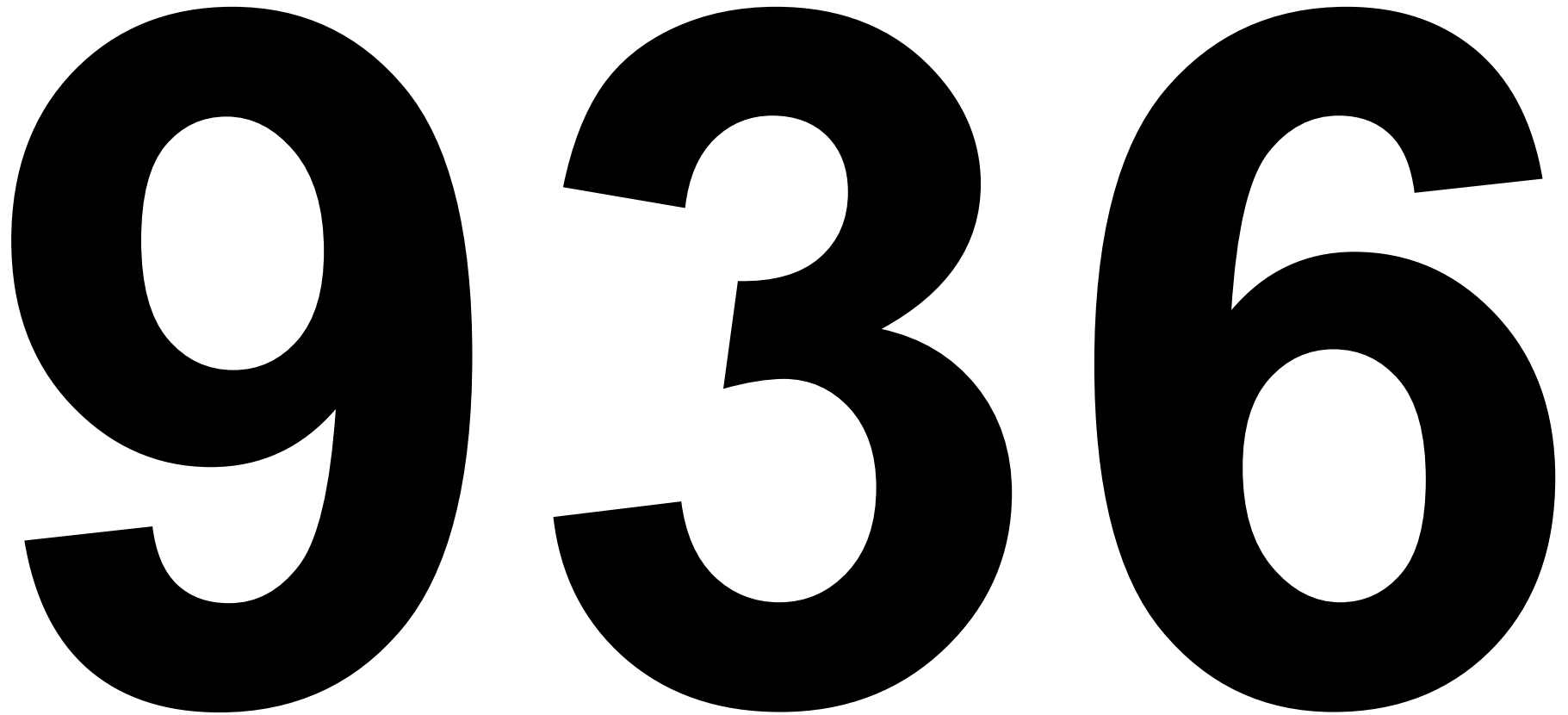
Source: Teacher Created

47

74

63

36

245

254

542

452

693

936

639

369
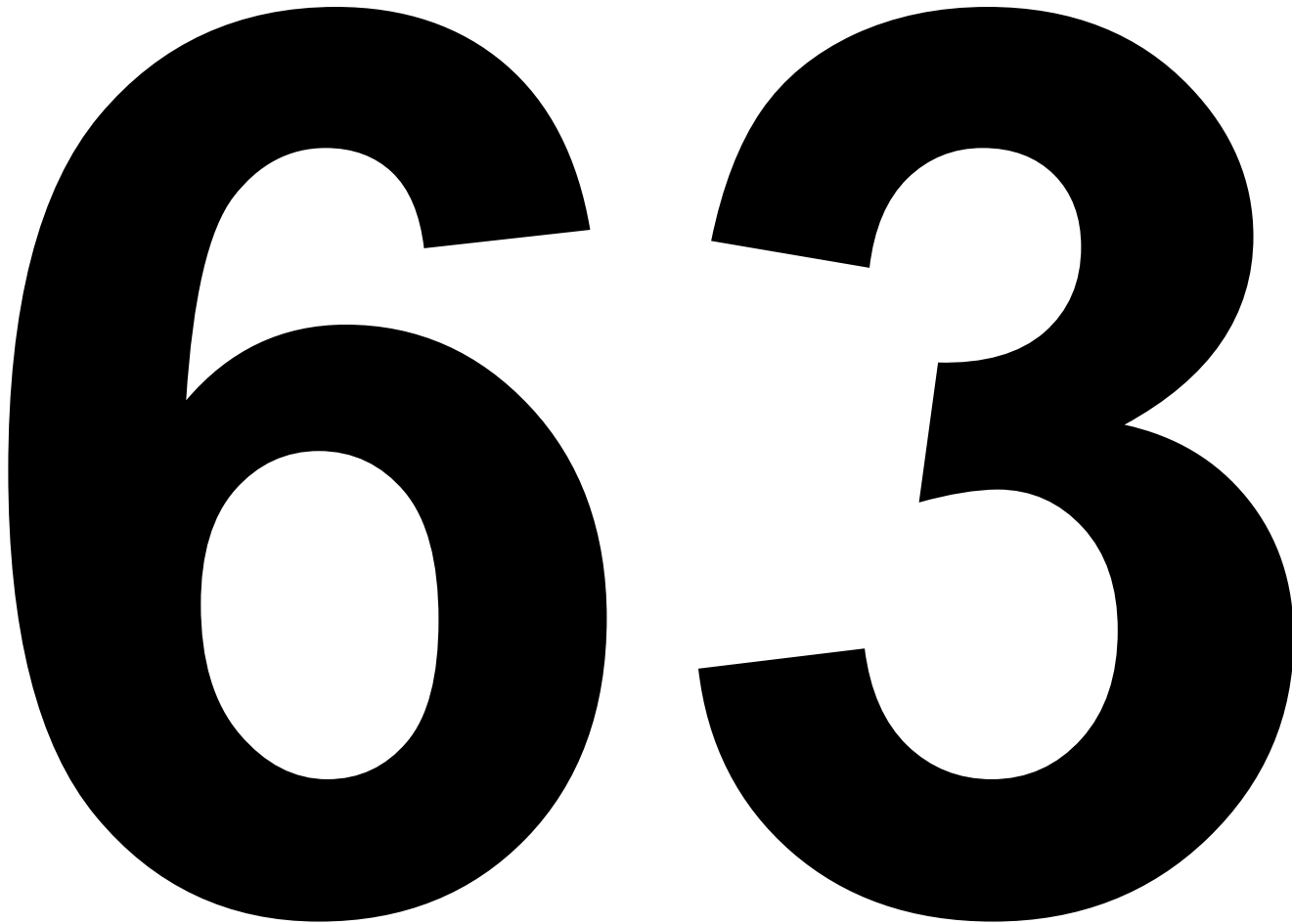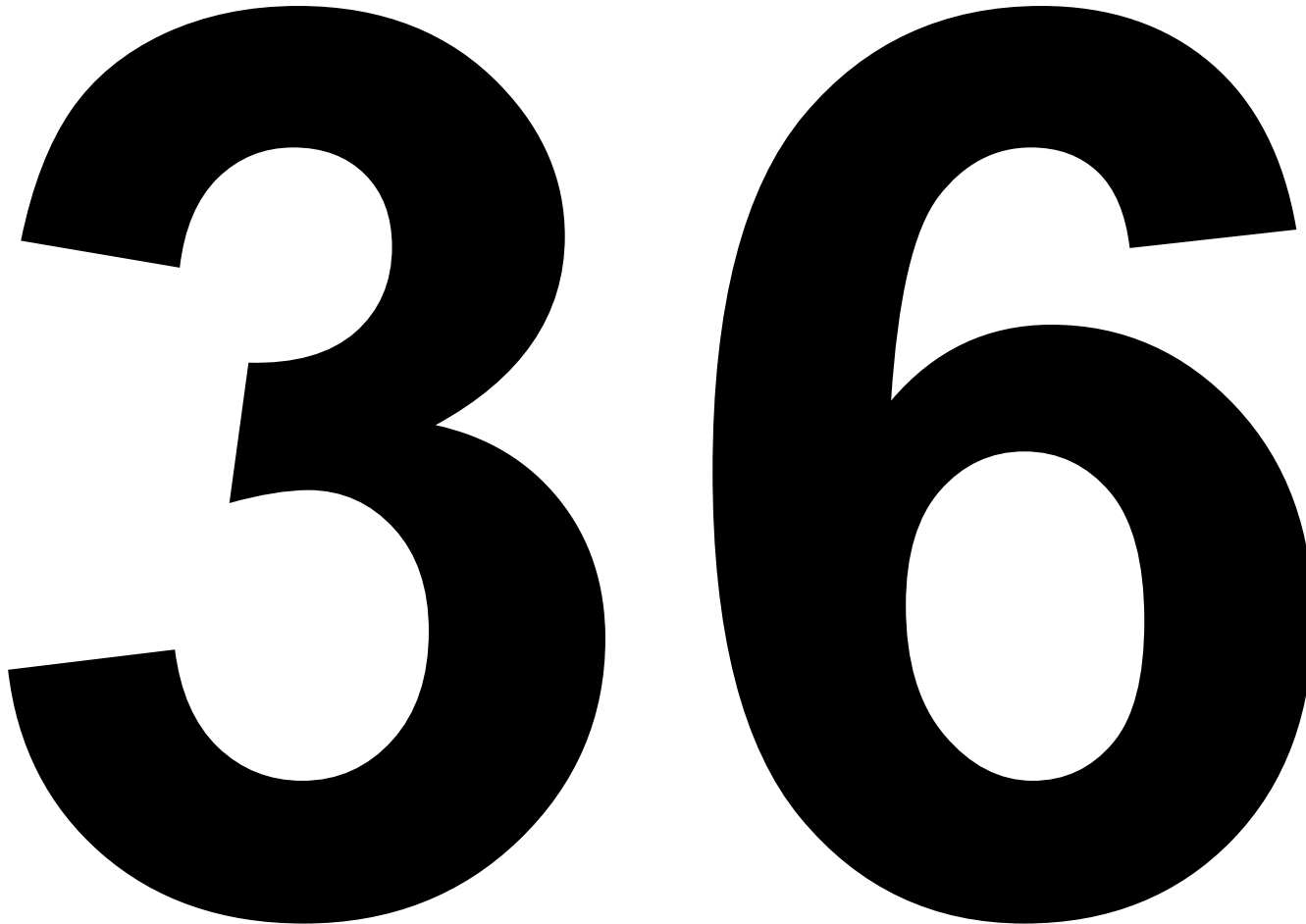
93

89

72

123

231	177
233	278

328

376

407

426

459

1996

509

0995

519

540

612

659

677

707

789

1077

829	834
901	800

937 9

8711

9913

981 1

Greatest

Greatest

Greatest

Greatest

Greatest

Greatest

Greatest

Greatest

Least

Least

Least

Least

Least

Least

Least

Least

Number Challenge!
Guide

Example- Student A has card 937, Student B has card 871. The Teacher flashes Greatest. Student "A" would move on.

Sample classroom set up and suggested game movement chart.

A   B

END
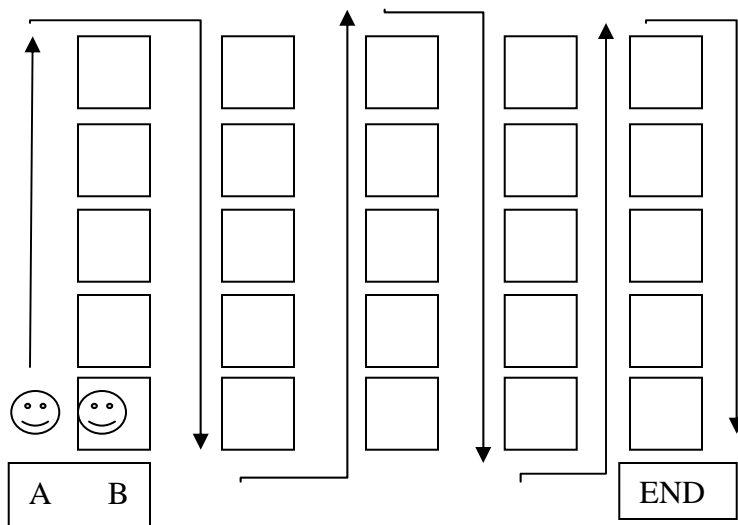
Alternate Scenario- Student A has card 937, Student B has card 871. The Teacher flashes Least. Student "B" would move on. Student A would sit at student B's desk.

Mathematics Alignment Lesson
Grade 2   Quarter 2   Day 29

SCOS Objective(s)

2.01   Estimate and measure using appropriate units.

2.01b   Temperature (Fahrenheit).

Materials Needed:

- Blackline Masters- "Help These Kids", "Is It a Nice Day?"
- Cardstock- "What's the Temperature?"

Homework Reference Day 29

Blackline Master- "Name That Temperature"

Assessment Reference Day 29

None referenced

Alignment Lesson
What's The Temperature?

1. Discuss with students how we determine temperature. "Where do you hear people discussing temperature?" "How do you know whether to wear shorts or a sweater or whether or not you need to bring an umbrella?" (Using Math Talk Protocol)

2. Show students Cardstock- "What's the Temperature?" (Teacher will need to be laminate this page so it can be reused for models or by students in centers). Discuss the blank thermometer, determining what it is 'counting by' (begin with thermometers that count by 2s)

3. Color in the thermometer so it reads 32°F. Discuss that since there is not much colored in that means the temperature is low and it is colder. Discuss with students what they might wear in this type of temperature.

4. Repeat with 60°F, 80°F, and 100°F. For each, guide students to notice that the higher the 'colored portion' the hotter the temperature.

5. Have students practice reading thermometers using Blackline Master "Is it a Nice Day?"

6. Guide students to problem solve as they complete Blackline Master "Help These Kids!"

7. Review homework assignment with students.

Source: DPI Indicators

### Vocabulary

Temperature-degree of hotness or coldness measured on a thermometer

Thermometer- an instrument for determining temperature

Fahrenheit-relating to a thermometric scale on which under standard atmospheric pressure the boiling point of water is at 212 degrees above the zero of the scale, the freezing point is at 32 degrees above zero
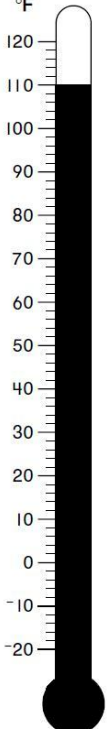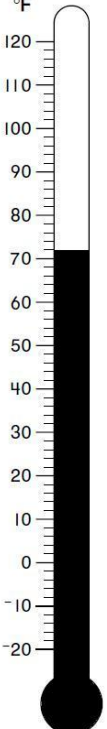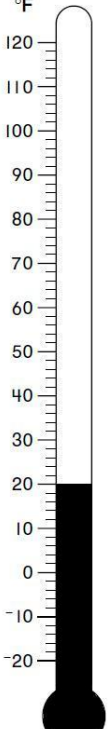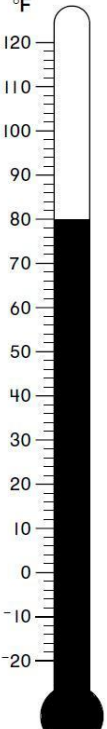
Name: _____ **Date:** _____

What's the Temperature?

°F
- 120
- 110
- 100
- 90
- 80
- 70
- 60
- 50
- 40
- 30
- 20
- 10
- 0
- ⁻10
- ⁻20
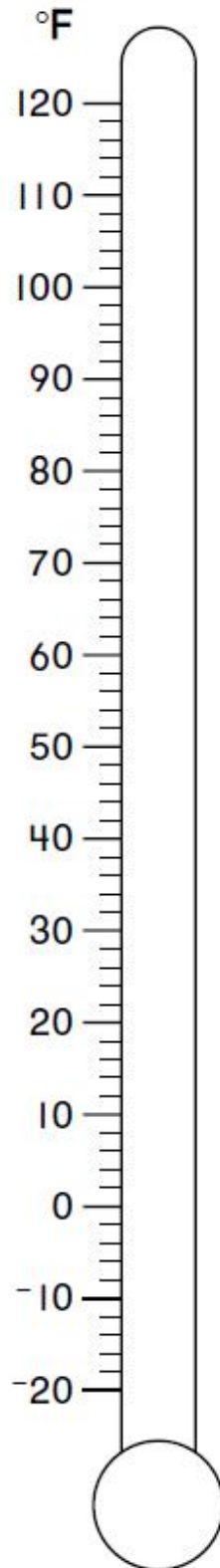
Is It a Nice Day?

Read each thermometer. Remember to count by 2s. Write the temperature shown and decide if that temperature is too cold, nice, or too hot.

°F

Temperature:

_____

Too cold, nice, or Too hot?

_____

°F

Temperature:

_____

Too cold, nice, or Too hot?

_____

°F

Temperature:

_____

Too cold, nice, or Too hot?

_____

°F

Temperature:

_____

Too cold, nice, or Too hot?

_____

Help These Kids!

**These kids need your help to solve their problems. Will you help them?**

Carla wanted to swim in the ocean. Her mother said she could swim if it was hotter than 75°F. Look at the thermometer. Will Carla be able to go swimming? How do you know?
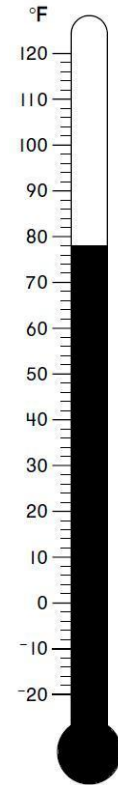
Nicole wanted to wear her new sweater to school on Monday. Look at the thermometer. If it is this temperature on Monday will she be able to wear her new sweater? How do you know?
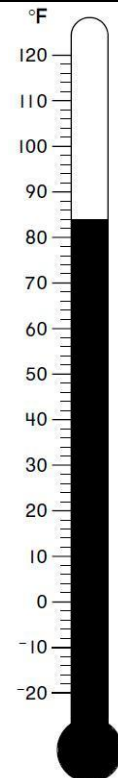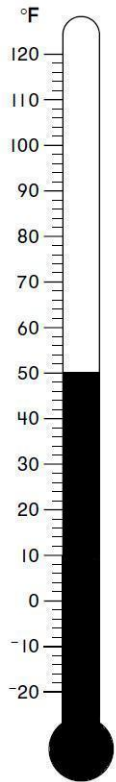
Mark wanted to wear shorts to play with his friends at the park. His mom said he could only wear shorts if it was at least 76°F. Look at the thermometer. Will Mark be able to wear shorts? How do you know?

°F

120

110

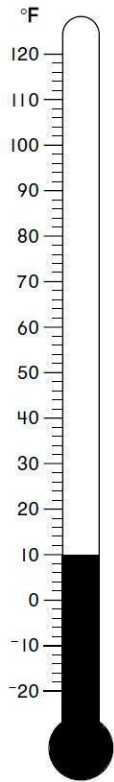100

90

80

70

60

50
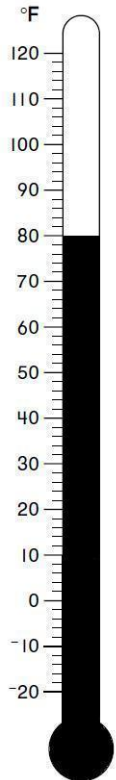
40

30

20

10

0

⁻10

⁻20
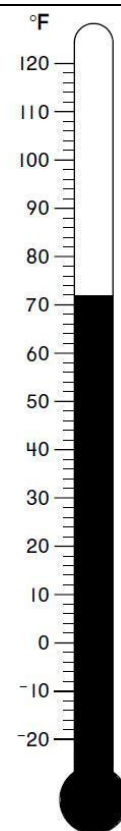
Name That Temperature

Write the temperature shown on each thermometer. Then, draw a picture of what someone would wear if it were that temperature.
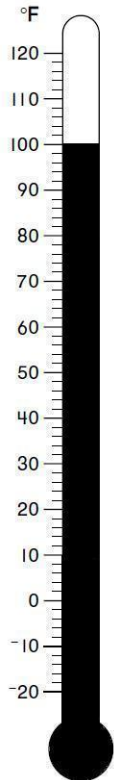
°F

Temperature:_____

°F

Temperature:_____

°F

Temperature:_____

°F

Temperature:_____

Wake County Public School System, 2009

Mathematics Alignment Lesson
Grade 2   Quarter 1   Day 33

SCOS Objective(s)
3.02   Describe the change in attributes as two- and three-dimensional figures are cut and rearranged.

Background Information
See Vocabulary below

Materials Needed:
- Transparency, *"Triangle Attribute Observations"*
- Blackline Master *"Shape Attribute"*
- Transparency/Blackline Master, *"Exploring Attributes"*
- Cardstock- Demonstration Shapes (7)

Homework Reference Day 33
None

Assessment Reference Day 33
None

Alignment Lesson
Shape Observations

Note: Be sure to have the 7 demonstration shapes cut out ahead of time.

1. Begin by holding up Cardstock, *"Triangle A"*. Ask students to look at the shape and think about its attributes. (You may need to remind students what attribute means) Have students turn to a neighbor to share some the attributes they noticed. Finally have the students share out their discussions with the class. Model recording the student's observations using Transparency, *"Triangle Attribute Oberservations"*. Observations may include that the shape is triangle, that it has 3 sides and 3 angles. If students do not volunteer the information, help them see that the triangle is not symmetrical. (You may need to fold the triangle)
2. Put students into groups of 3 or 4 and pass out the remaining 6 shapes, one per group. Have the students examine the shapes and create a list of attributes that they notice using Blackline Master, *"Shape Attributes"*. Instruct students to rotate the shapes to several groups so that each group has had a chance to observe 3 different shapes. After students have completed 3 shaoes, hold up several shapes and have students share some of the attributes they recorded.
3. Students can work with a partner, or as a class to complete Transparency/Blackline Master, " Exploring Attributes."

Source: Teacher Created, DPI Indicators

Vocabulary
Symmetry
Angles
Sides
Faces
Surfaces

Triangle Attribute Observations

Our shape was a **Triangle**. We noticed that the shape _____

_____

_____

_____

_____

_____

_____

Name: _____ **Date:** _____

<u>Shape Attributes</u>

Our first shape was a _____. We noticed that the shape

_____

_____

_____

_____

_____

Our second shape was a _____. We noticed that the shape

_____

_____

_____

_____

_____

_____

Our third shape was a _____. We noticed that the shape

_____

_____

_____

_____

_____

_____

Triangle A

Triangle B

Cube

Cylinder

Trapezoid

Hexagon
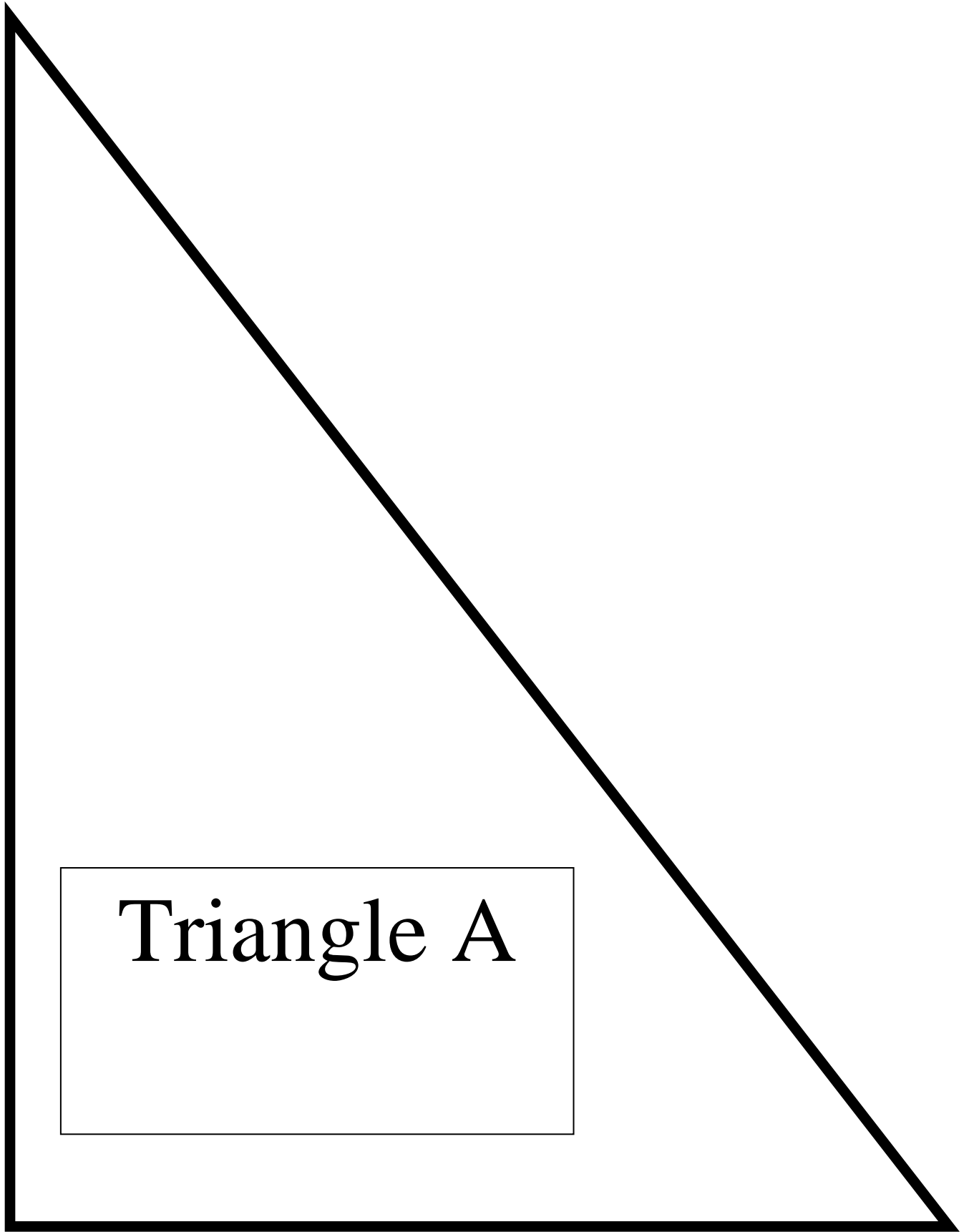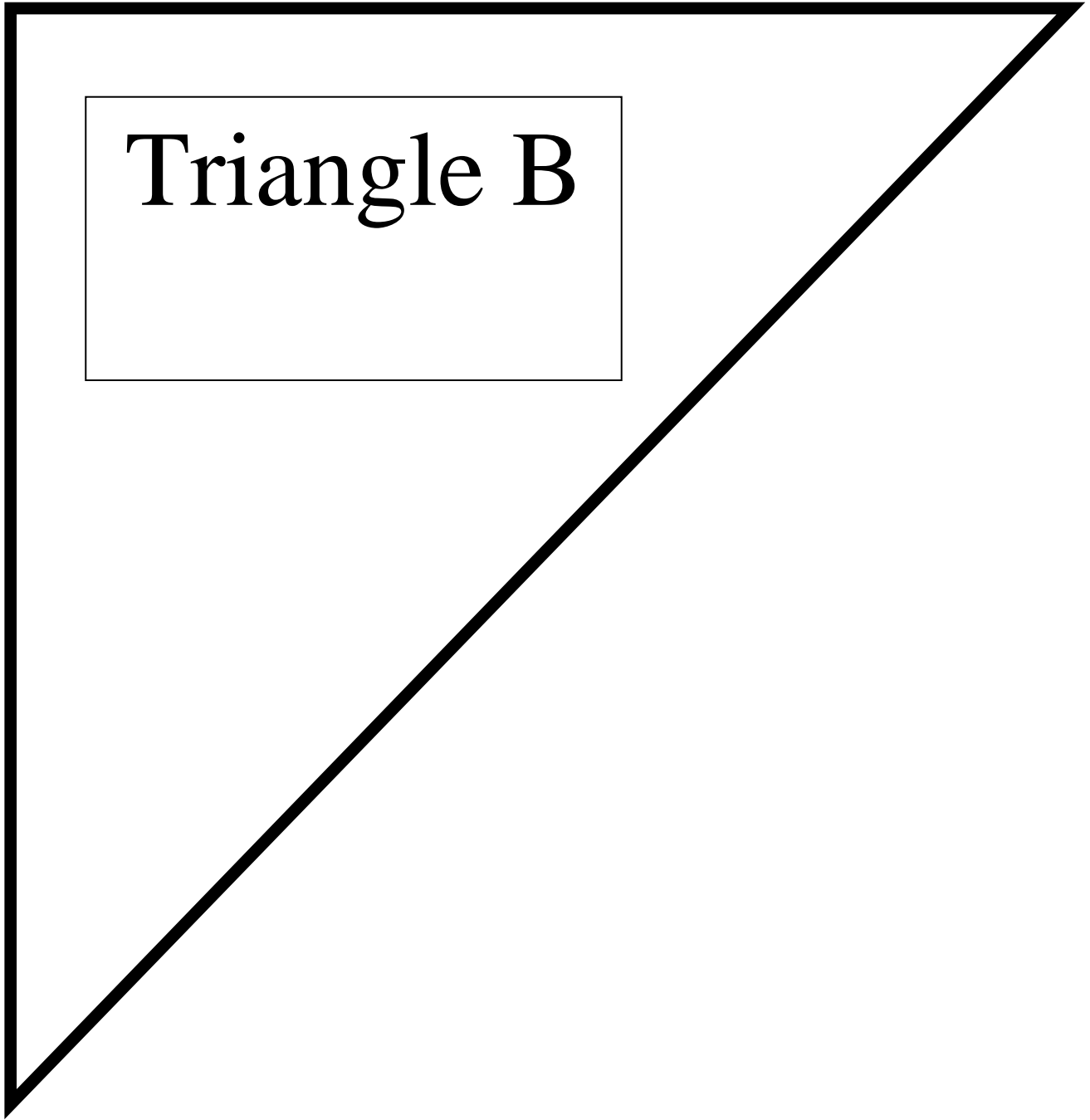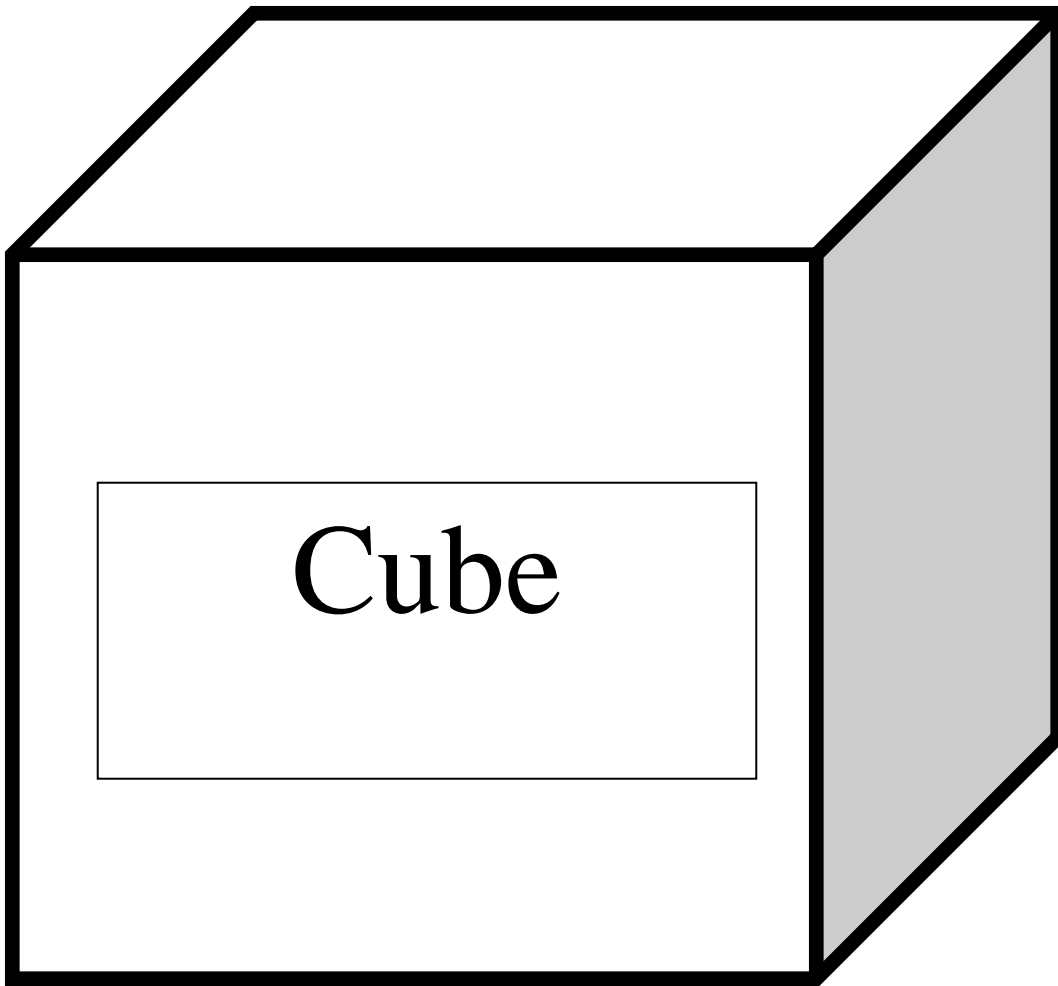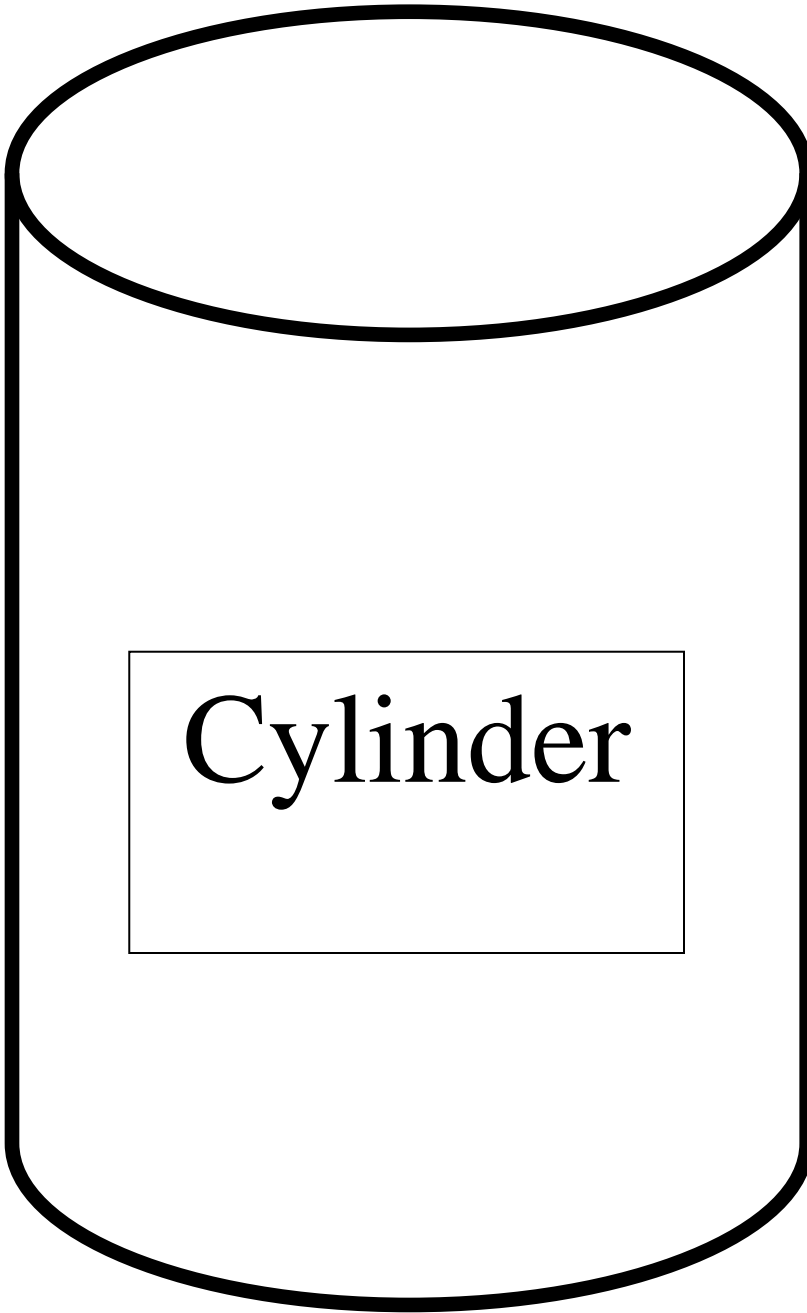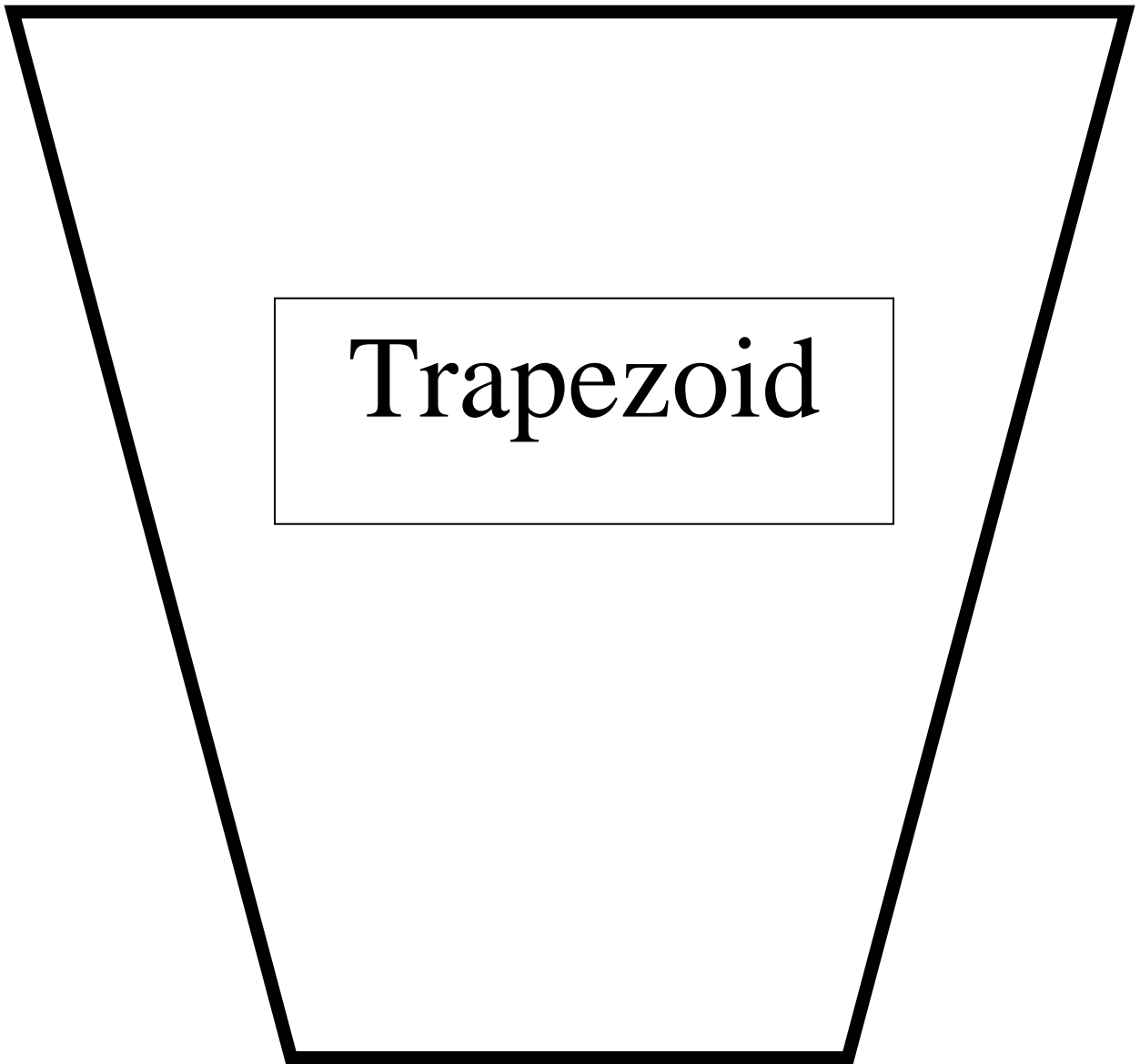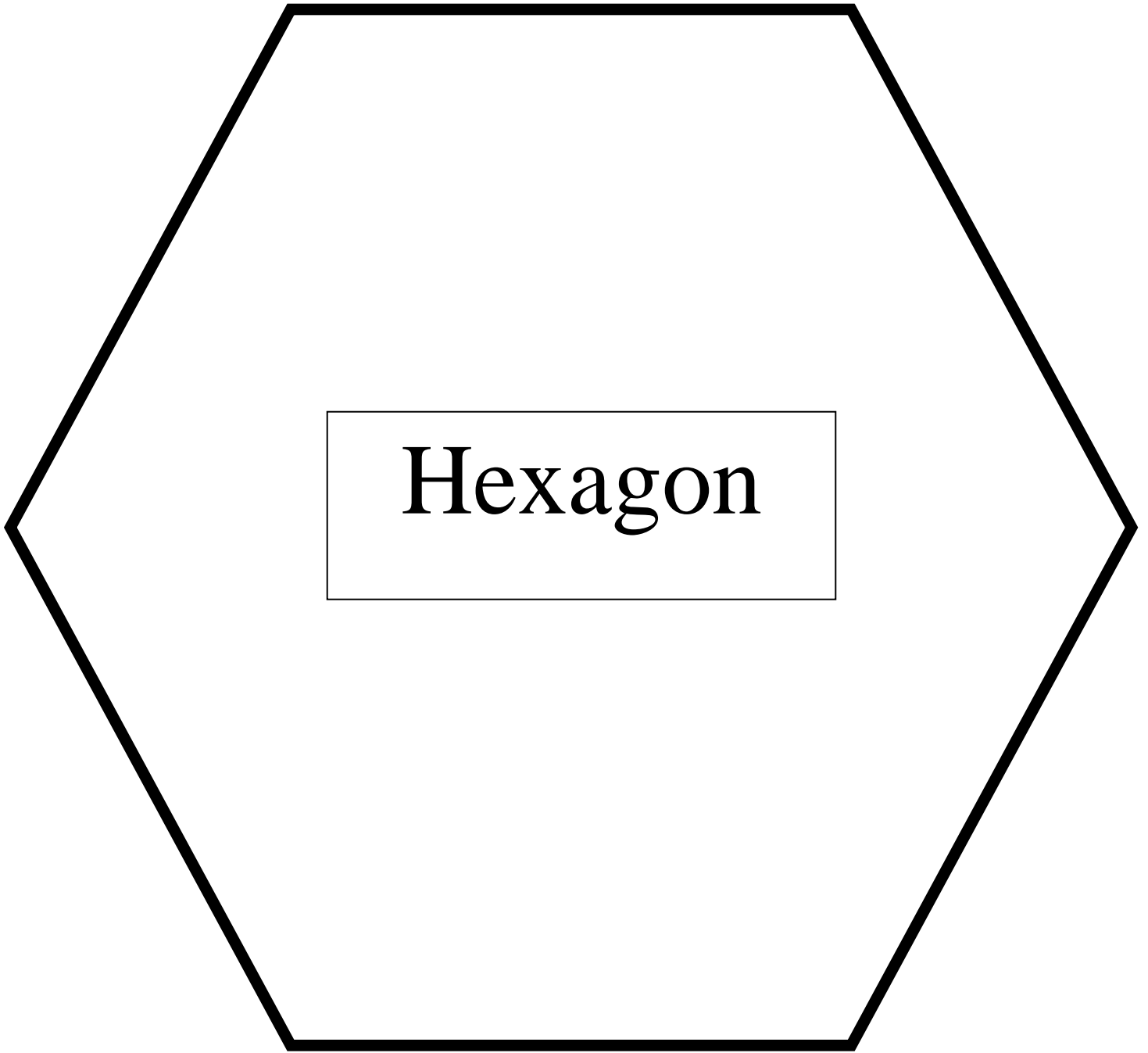
Rectangle

Name: _____   **Date:** _____

Exploring Attributes

1. **Look at the shape below. Draw a line of symmetry for it.**
   If it is cut along the line of symmetry, do each of the two parts have a line of symmetry? How do you
   know? _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
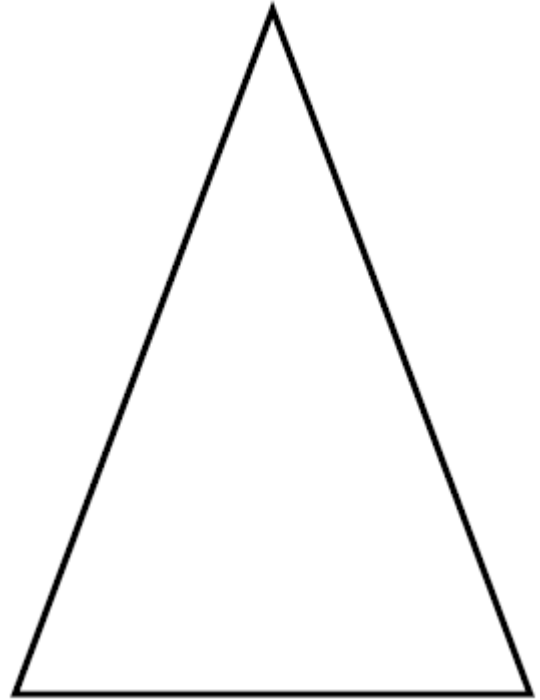
2. **If a cylinder is cut in half, will the parts be cylinders? Explain your answers with pictures, words, or numbers.** _____
   _____

   _____
   _____
   _____
   _____
   _____

Draw Your Picture Here
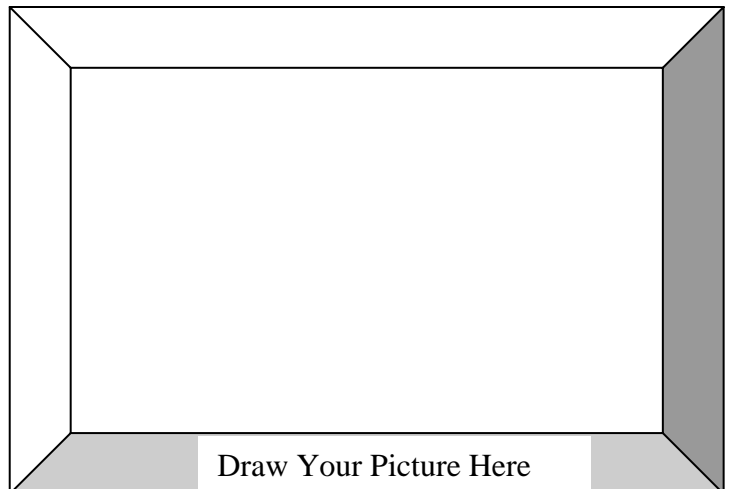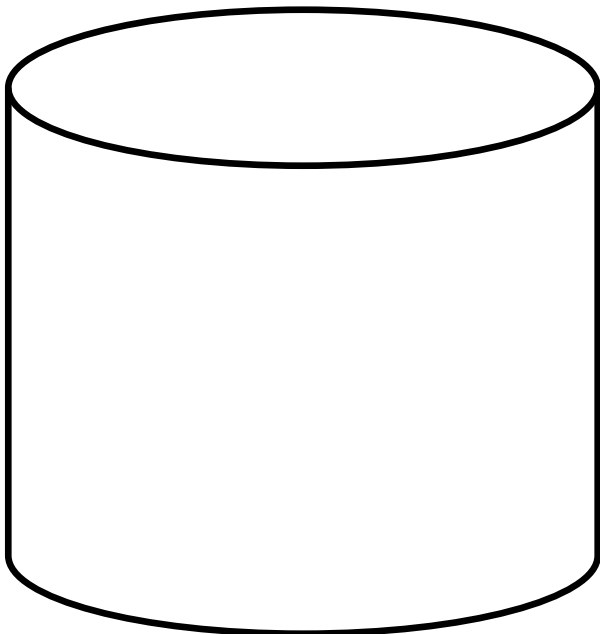
Name: _____ **Date:** _____

Exploring Attributes Continued

3. **Draw one line to divide this rectangle into equal parts.**

What shape is each part? How do you know? _____

_____

_____

_____

Now draw one line to divide this rectangle into equal parts in a different way.

What shape is each part? How do you know? _____

_____

_____

_____

-Adapted from DPI Incidators

Mathematics Alignment Lesson
Grade 2   Quarter 1   Day 34

SCOS Objective(s)

3.01   Combine simple figures to create a
       Given shape.

Materials Needed:

- Pattern blocks
- Overhead pattern blocks
- Pattern blocks (One bag per student)
- Transparencies/Blackline Masters-
  *"Hexagon Hunt", "More Ways to
  Fill the Hexagon",
  "Combining Simple
  Figures", "Snail
  Nim Game"*

Homework Reference Day 25
None Referenced

Assessment Reference Day 25
None Referenced

Alignment Lesson
Puzzling Poylgons

1. Display Transparency "Hexagon Hunt". Tell students they are going to use their pattern blocks to fill the hexagon.
2. Distribute Blackline Master "Hexagon Hunt".
3. Give students time to fill the hexagon.
4. Have a Student Leader use the overhead to show one way to fill the hexagon.
5. Ask the class "Is there another way to fill the hexagon?"
6. Students will continue working and will record their results at the bottom of the "Hexagon Hunt" Blackline Master.
7. Students can then share their findings by using the overhead and Math Talk.
8. Display the "Combining Simple Figures" Transparency and distribute the "Combining Simple Figures" Blackline Master.
9. Have the students use their pattern blocks to complete B-F and trace the shapes on a separate piece of paper to show their work.
10. Share answers using the overhead.
11. If time allows, students can play the "Snail Nim" game in pairs. You can also use it in a center as a follow up activity.
12. In the "Snail Nim" game, players will take turns placing triangles, parallelograms, trapezoids and hexagons on the snail. The person who places the last block loses.
13. Game Variation: The person who places the last block wins.

Note: The blue parallelogram is also called a rhombus.

Source: DPI Indicators

Vocabulary

Triangle-a three-sided polygon
Square-a rectangle with four sides of the same length
Hexagon-a six-sided polygon
Parallelogram-a quadrilateral with both pairs of opposite sides parallel.
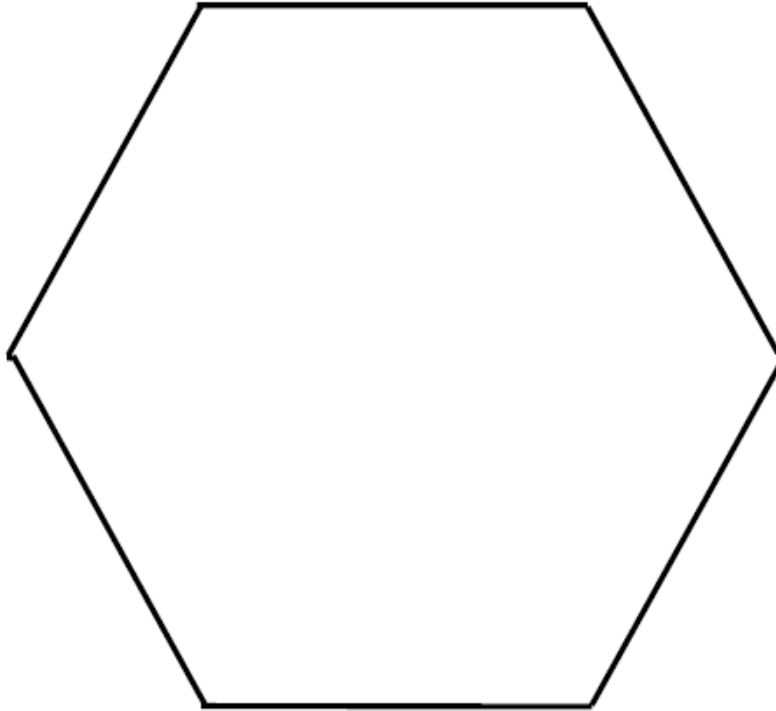**Rhombus- a parallelogram with congruent sides.**
Trapezoid-a quadrilateral with exactly one pair of parallel sides.

Name: _____   **Date:** _____

Hexagon Hunt

A. Use pattern blocks to fill the hexagon.

To fill the hexagon I used:

____triangles ____squares_____ parallelograms
____hexagons _____trapezoids

Is there more than one way to do this?

How many ways are there?

More Ways to Fill the Hexagon

_____triangles _____squares_____ parallelograms
_____hexagons _____trapezoids

_____triangles _____squares_____ parallelograms
_____hexagons _____trapezoids

_____triangles _____squares_____ parallelograms
_____hexagons _____trapezoids

_____triangles _____squares_____ parallelograms
_____hexagons _____trapezoids

_____triangles _____squares_____ parallelograms
_____hexagons _____trapezoids

_____triangles _____squares_____ parallelograms
_____hexagons _____trapezoids

More Ways to Fill the Hexagon Answer Key

There are many answers to this question. Some of the answers are below. An easy way to find the answer is to follow this formula:

The number of (triangles x 1) + (the number of parallelograms x 2) + (the number of trapezoids x 3) + (the number of hexagons x 6) = 24

What other solutions can your students find? What patterns do they see in the data?

Triangle x 1	Parallelogram x 2	Trapezoid x 3	Hexagon x 6
24	0	0	0
22	1	0	0
20	2	0	0
18	3	0	0
16	4	0	0
14	5	0	0
12	6	0	0
10	7	0	0
8	8	0	0
6	9	0	0
4	10	0	0
2	11	0	0
0	12	0	0
3	0	3	0
3	0	2	2
3	0	1	4
3	0	0	6
2	2	3	0
2	2	2	2
2	2	1	4
2	2	0	6
1	4	3	0
1	4	2	2
1	4	1	4
1	4	0	6
0	6	3	0
0	6	2	2
0	6	1	4
0	6	0	6

<u>Combining Simple Figures</u>

B. Use three blue parallelograms to make a hexagon

C. Use two squares and two triangles to make a hexagon

D. Use only two blue parallelograms to make a hexagon

E. Use three triangles, a trapezoid and a blue parallelogram to make one large parallelogram.

Combining Simple Fractions Answer Key
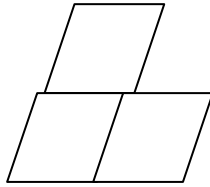## B. Use three blue parallelograms to make a hexagon

C. Use two squares and two triangles to make a hexagon
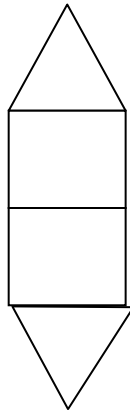
D. Use only two blue parallelograms to make a hexagon

E. Use three triangles, a trapezoid and a blue parallelogram to make one large parallelogram

(3.01)
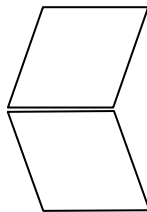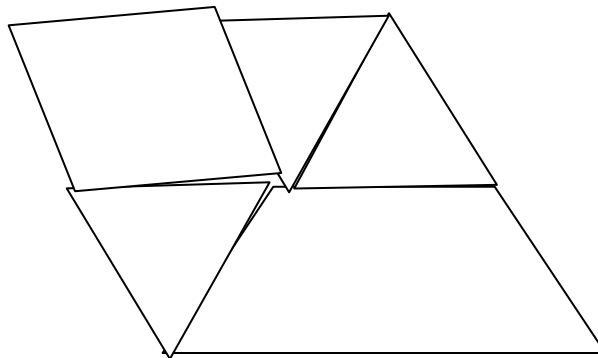
SNAIL NIM

Number of Players: Two
Materials: Gameboard, pattern blocks
Directions: Players take turns placing triangles, parallelograms, trapezoids and hexagons on the snail. The person who places the last block loses.
Variation: Person who places the last block wins.

Mathematics Alignment Lesson
Grade 2   Quarter 2   Day 49

SCOS Objective(s)

3.01   Combine simple figures to create a given figure.

3.02   Describe the change in attributes as two- and three- dimensional figures are cut and rearranged.

Materials Needed:

- Blackline Masters- *"Shapes! Shapes!! Shapes!!!"*
- Tangrams
- Pattern blocks
- Glue
- Scissors
- Optional Blackline Masters-
      "Pattern Blocks", "Tangrams"

Homework Reference Day 49
None

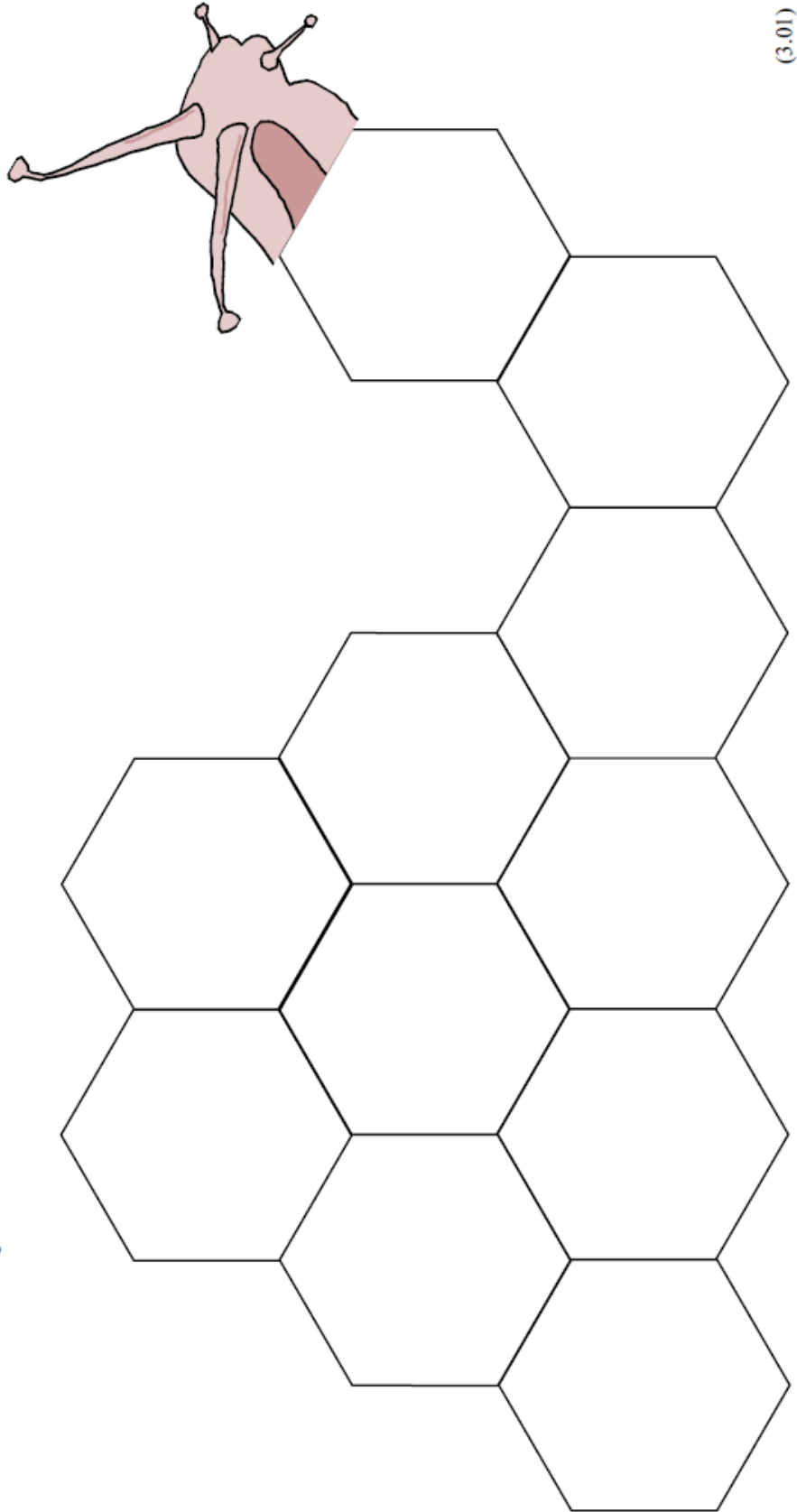### Assessment Reference Day 49
None

Alignment Lesson
Shapes! Shapes!! Shapes!!!

1. Explain to the class that today during math they are going to explore shapes and learn how to use shapes to make pictures and new shapes.

2. Provide groups of students with tangrams. (Use the blackline master or classroom tangrams) Invite students to see if they can use the tangrams to create more shapes. Invite students to share their findings.

3. Ask students
-How many ways can you make a square?
-How many ways can you make a rectangle?
-What other shapes can you make?

4. If using paper copies of the shapes, students should glue the shapes to their recording sheet and write about the new shape. Students can also draw their new shapes.

5. After students have created new shapes, provide them with a copy of the pattern blocks and explain that now they are going to explore what happens when shapes are cut in half. (You may want to have extra copies in case students want to explore the same shape more than once.)

6. Provide time for students to explore their new shapes.

7. Invite students to share their findings and to fill out the blackline master.

8. When students have finished, let them use their tangrams to create a picture.

Source: Teacher Create Materials, *DPI* for copies of tangrams and pattern blocks Blackline Masters

Vocabulary

Square
Rectangle
Triangle
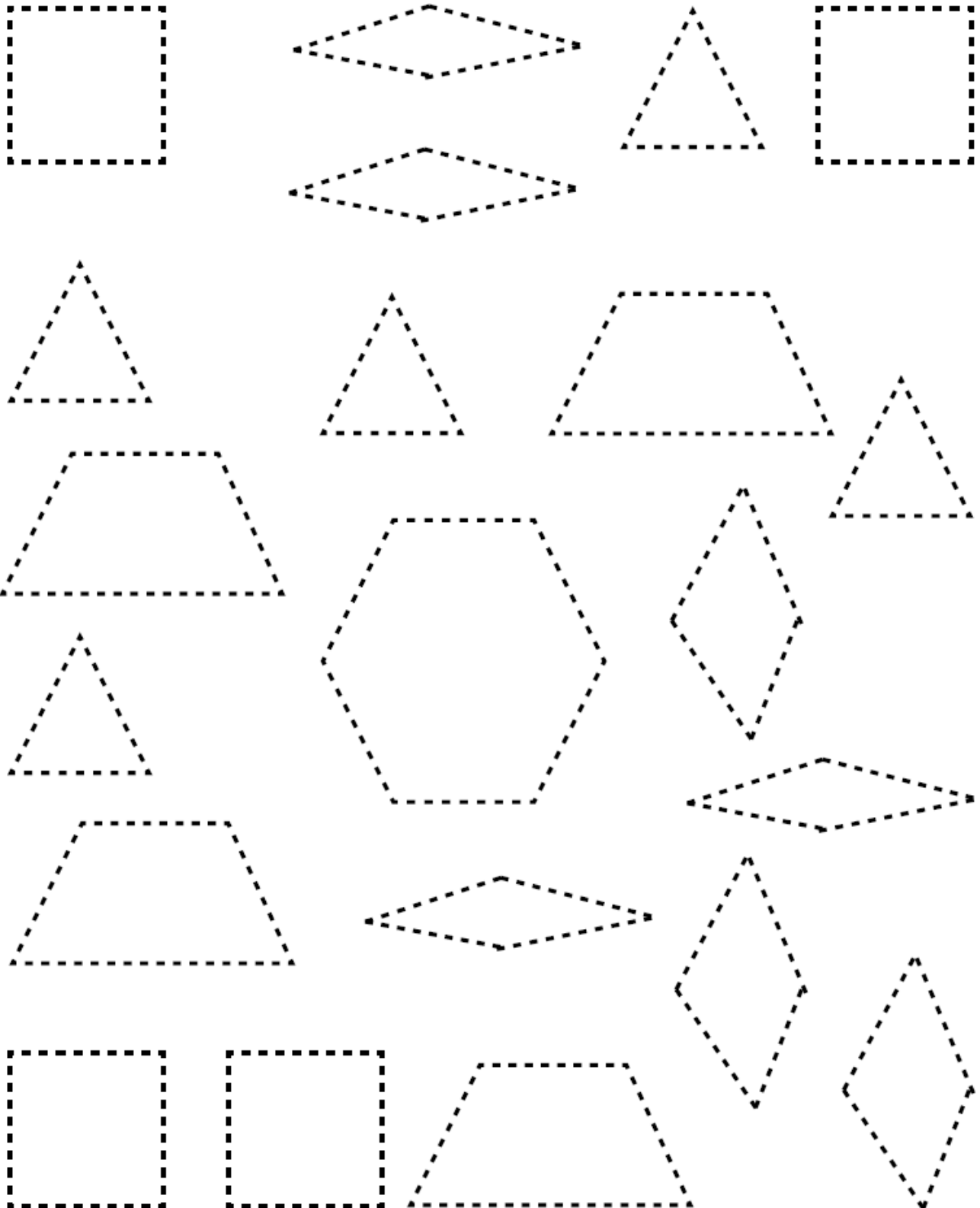**Trapezoid**
Parallelogram

Name: _____ **Date:** _____

Shapes! Shapes!! Shapes!!!
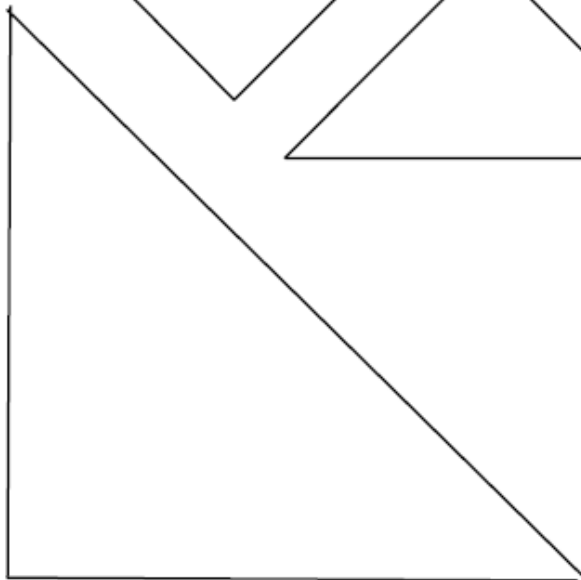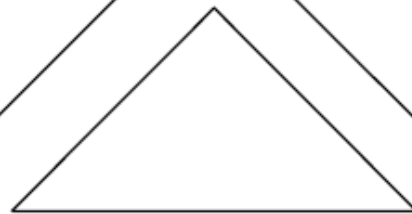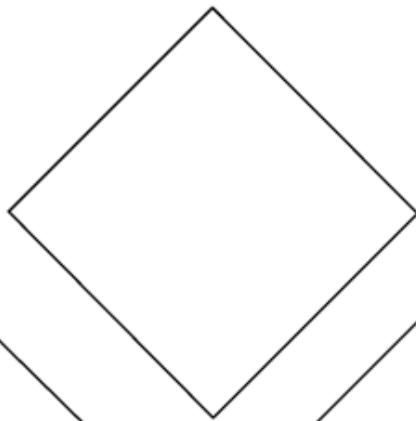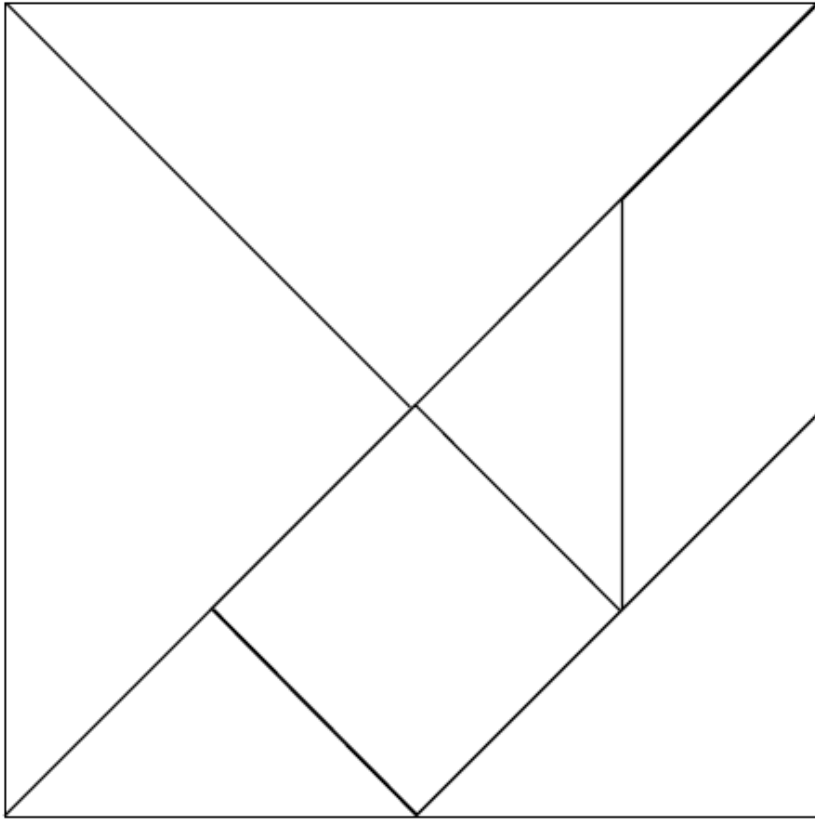
1. Glue or trace your new shape here.

2. Cut one of the shapes into two parts. Glue the shapes and tell about each new shape.

_____

_____

_____

Pattern Blocks

Tangrams
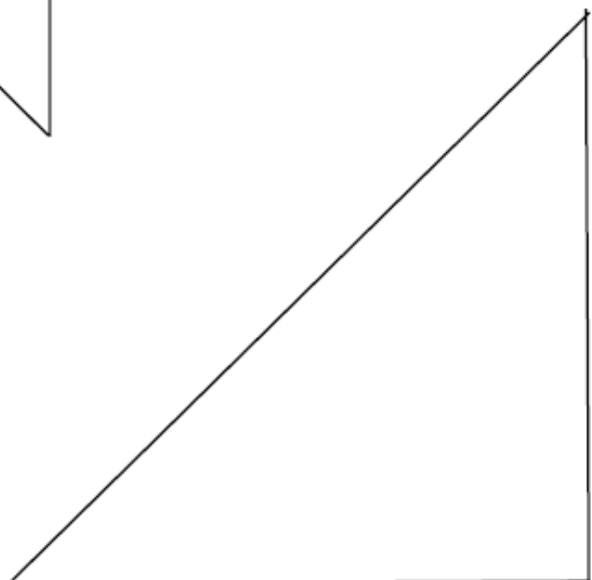
Mathematics Alignment Lesson
Grade 2   Quarter 2   Day 51

SCOS Objective(s)

1.04   Develop fluency with multi-digit addition and subtraction through 999 using multiple strategies.

1.04b   Estimation of sums and differences in appropriate situations.

Materials Needed:

- Base-Ten Blocks
- Overhead Base-Ten blocks (if available)
- Transparency/Blackline Masters- "Estimating Sums and Differences" & "Estimation Word Problems".

Homework Reference Day 51
None Referenced

Assessment Reference Day 51
None Referenced

Alignment Lesson
Guesstimation vs Estimation

1. While the overhead is off, place the number 37 on the overhead with your base-ten pieces. Tell the students that they are going to estimate the number you are about to flash on the overhead.
2. Flash the overhead on for a few seconds and then have the students estimate the number. Have them explain their reasoning for their estimation.
3. Repeat with other numbers such as 97, 102, 166, 214, 325.
4. Go over the rounding rule for two-digit estimation. If there is a zero-four in the ones place, you round down to the nearest ten. If there is a 5-9 in the ones place, you round up to the nearest ten. Students can use the number line on their Math Expressions dry erase boards if needed.
5. Using the Transparency/Blackline Master "Estimating Sums and Differences" , solve problems A-F together on the overhead.
6. Using the Transparency/Blackline Master "Estimation Word Problems," have students work in small groups to solve 1-4.
7. Share answers using "Math Talk."

Note: Make that students understand that rounding is one type of estimation. Many teachers use the words estimation and rounding interchangeably and they are not the same thing. Choose your words carefully so students do not develop mathematical misconceptions.

Source: DPI indicators, DPI Glossary of Mathematical Terms

Vocabulary

Estimation- a number that tells *about* how much, how many or how long.

Name: _____ **Date:** _____

Estimating Sums and Differences

A.   36
   - **29**

B.   65
   + **13**

C.   72
    -38

D.   96
    -25

E.   58
   +**16**

F.   46
    -27

Estimation Word Problems

1. Bill has more than 60 flowers in his garden. Clara picked less than 15 flowers for her mother. About how many flowers are still in the garden?

    A. more than 75
    B. between 45 and 75
    C. between 30 and 45
    D. less than 30

2. Shabazz has more than 15 dolls but less than 30 dolls. Ramona has more than 10 dolls but less than 20 dolls. If the girls put their dolls together, which <u>best</u> describes how many dolls the girls have?

    A. less than 20
    B. between 20 and 25
    C. between 25 and 50
    D. more than 50

3. Linda has wheels for 6 tricycles and 15 bicycles. Charlie has lots of boxes that hold 10 wheels each. About how many boxes will they need if they are going to send wheels to the factory?

    A. less than 3
    B. between 3 and 6
    C. between 7 and 10
    D. more than 10

4. Without adding, which is greater

    456+379 or 413+360 ?

    How do you know?

<u>Estimating Sums and Differences-Answer Key</u>

A. 36--$\rightarrow$40   **F.** 46--$\rightarrow$50
  - <u>29--$\rightarrow$30</u>   <u>-27--$\rightarrow$30</u>
       10   20

B. 65--$\rightarrow$70
  + <u>13--$\rightarrow$10</u>
       80

C. 72--$\rightarrow$70
   <u>-38--$\rightarrow$40</u>
        30

D. 96--$\rightarrow$100
   <u>-25--$\rightarrow$ 30</u>
         70

E. 58--$\rightarrow$60
  +<u>16--$\rightarrow$20</u>
        80

Estimation Word Problems-Answer Key

1. **B (Bill has to have at least 45)**

2. **C**

3. **B (round 48 wheels to 50, which would be 5 boxes)**

4. **456+379**

Mathematics Alignment Lesson
Grade 2   Quarter 2   Day 52

SCOS Objective(s)

1.01   Develop number sense for whole numbers through 999.

1.01e   Estimate.

1.04   Develop fluency with multi-digit addition and subtraction through 999 using multiple strategies.

1.04a   Strategies for adding and subtracting numbers.

1.04b   Estimation of sums and differences in appropriate situations.

5.02   Write addition and subtraction number sentences to represent a problem; use symbols to represent unknown quantities.

Materials Needed:
- Blackline Master- *"Crayon Problem Solving"*
- Cardstock- "Number Cards"
- Number Lines
- Manipulatives, including base ten blocks, hundreds boards and two hundreds boards, and cubes.

Homework Reference Day 52
None

Assessment Reference Day 52
None

Alignment Lesson
Number Line Estimation and Problem Solving

1. Begin today's lesson with a review of estimation. Invite 2 students to stand in the front of the room. Student A should be at one end of the chalkboard and Student B should stand at the other end. Give each student one of the attached cards; Student A should have the lowest number and Student B should have the highest (ie. 0 and50). Ask students to discuss the numbers and think about what numbers should go in between the two cards. Invite a third student to stand in the middle of the chalkboard and ask students to determine what number card this student should hold (Card number 25).

2. Repeat this activity with the other two sets of cards and discuss number lines with students. If available, share number lines with students and provide them for student use during the following problem solving activity.

3. Remind students that when solving problems, students can use a variety of ways to problem solve. Invite students to share some of the manipulatives and/or strategies they like to use.

4. Provide each student with a copy of Blackline Master, *"Crayon Problem Solving"* and a variety of manipulatives. Read the problem to the class and invite students to share what information they know from the problem and what they have to find out. Students should solve the problem two different ways and should write about their solution.

5. After students have completed their work, invite two or three students who used different strategies to share their solution strategies. Emphasize what was similar and different in the students' strategies. Students should also write a number sentence to match their work.

6. Finally, explain to students that they are going to write a story problem to match the number sentences provided on the blankline master.

7. Students should write a story problem and then solve the problem.

8. Invite students to share their story problems and their solution strategies.

Source: Teacher Created Materials

Vocabulary
Number lines
Manipulatives
Strategies
Number Sentences

Number Cards

0	**25**	**50**
0	**40**	**80**
100	**200**	**300**

Name: _____ **Date:** _____

Crayon Problem Solving

On Monday, Susie had some crayons.
On Tuesday, her dad gave her twenty-five (25) more crayons.
Now Susie has fifty-two (52) crayons.
How many crayons did Susie have on Monday?

_____
_____
_____
_____

$$20 + \boxed{} = 45$$

_____
_____
_____
_____
_____
_____
_____

Mathematics Alignment Lesson
Grade 2   Quarter 2   Day 53

SCOS Objective(s)

1.01   Develop number sense for whole numbers through 999.

1.01a   Connect model, number word, and number using a variety of representation.

1.01b   Read and write numbers.

1.01c   Compare and order.

1.01f   Use a variety of models to build understanding of place value (ones, tens, hundreds).

Materials Needed:

- Cardstock- *"Building Number Cards"* – One per Group
- Blackline Master- *"Making Numbers"*
- Base Ten Blocks
- Optional- Envelopes or Baggies

Homework Reference Day 53
None

Assessment Reference Day 53
None

Alignment Lesson
Showing Numbers in Two Different Ways

1. Explain to the class that today they are going to work on using base ten blocks to represent numbers in two different ways.

2. Provide students with base ten blocks. Write the number "32" on the board and ask students to build that number with the blocks.

3. Invite two students to share how they built "32" using different ways.

4. Provide each group of students a stack of Cardstock- *"Building Number Cards"*. (You will need to pre-cut these cards). Choose one student at the table to be the "Material Manager". The Material Manager is in charge of flipping the cards to show the number and calling on students to share how they built the number. The groups should go through the stack of cards, building each number in two different ways and sharing with their group.

5. After the groups have finished their group work, invite students to share some of the ways they built the various numbers.

6. For independent practice, provide students Blackline Master- *"Making Numbers"*. Provide them time to show how to make each number in two different ways. If students finish early, they can challenge themselves by choosing their own numbers and showing two different ways for each number.

Note: Cardstock- "Building Number Cards", will need to be cut out and separated for each group. (Placed in baggies or envelopes)

Source: Teacher Created Materials

Vocabulary

Tens
Ones
Hundreds

Building Number Cards

43	77	81
66	95	58
72	99	55

Name: _____   **Date:** _____

Making Numbers

61	____ Tens + ____ Ones	or	____ Tens + ____ Ones
97	____ Tens + ____ Ones	or	____ Tens + ____ Ones
85	____ Tens + ____ Ones	or	____ Tens + ____ Ones
52	____ Tens + ____ Ones	or	____ Tens + ____ Ones
78	____ Tens + ____ Ones	or	____ Tens + ____ Ones

	____ Tens + ____ Ones	or	____ Tens + ____ Ones
	____ Tens + ____ Ones	or	____ Tens + ____ Ones
	____ Tens + ____ Ones	or	____ Tens + ____ Ones

Mathematics Alignment Lesson
Grade 2   Quarter 2   Day 57

SCOS Objective(s)

1.01   Develop number sense for whole numbers through 999.

1.01a   Connect model, number word, and number using a variety of representation.

1.01b   Read and write numbers.

1.01c   Compare and order.

1.01f   Use a variety of models to build understanding of place value (ones, tens, hundreds).

Materials Needed:

- Blackline Masters- *"Center #1", "Center # 2", & "Center # 3"*
- Extra paper for Center #2 (if needed)
- Base Ten Blocks
- Glue
- Scissors

Homework Reference Day 57
None

Assessment Reference Day 57
None

Alignment Lesson
Number Sense Math Centers

Note: This lesson will have students working in 3 different centers. You will need to decide if you want the students to carry their Blackline Masters with them, or whether they will be sitting at each station.

For today's math class, group students and explain that they will rotate through three various centers.

Center 1: Using Blackline Master, *"Center #1"*, students will use base ten blocks to build each number. They will show how to make that number in a variety of ways. Students may write the number word, use tally marks, addition/subtraction sentences or base ten blocks.

Center 2: Using Blackline Master, *"Center #2"*, number word cards, students will cut them apart, read each number word and place them in numerical order. After gluing them in order, students will write the number under each number word.

Center 3: Using Blackline Master, *"Center #3"*, students will use base ten blocks to build that number using the smallest number of ones. Students will then write the numbers in order from greatest to least.

Source: Teacher Created Materials

Vocabulary

Base ten blocks	Least
Hundreds	Numerical Order
Tens	Tally Marks
Ones	Number Words
Greatest	Addition/Subtraction Sentences

Name: _____ **Date:** _____

Center #1

Use base ten blocks to build each number. Then show how to make that number in a variety of ways. You may write the number word, use tally marks, addition/subtraction sentences or base ten blocks.

52

95

67

Name: _____ **Date:** _____

Center #2

Cut apart the cards. Read each number word and place them in numerical order. Glue them in order and then write the number under each number word.

four hundred	three hundred six	two hundred five
one hundred twelve	forty	ninety-one
fifty-one	eighty	one hundred
seventy-one	ninety-nine	three hundred

Name: _____ **Date:** _____

Center #3

Build each number with base ten blocks. Then write the numbers in order from greatest to least.

Put these numbers in order from greatest to least.

241   214   142   124

_____, _____, _____, _____
greatest   **least**

Put these numbers in order from greatest to least.

621   126   612   216

_____, _____, _____, _____
greatest   **least**

Put these numbers in order from greatest to least.

532   325   523   235

_____, _____, _____, _____
greatest   **least**

Mathematics Alignment Lesson
Grade 2   Quarter 2   Day 69

SCOS Objective(s)

1.04   Develop fluency with multi-digit addition and subtraction through 999 using multiple strategies.

1.04a   Strategies for adding and subtracting numbers.

Materials Needed:

- Transparencies/Blackline Masters- *"Book Buying", & "Birthday Fun!"*
- Manipulatives including base ten blocks, play money, hundreds boards, cubes, and number lines.

Homework Reference Day 69
None

Assessment Reference Day 69
None

Alignment Lesson
Problem Solving with Money

1. Explain to the students that today during math they are going to use various strategies to problem solve. Ask the students to share the strategies they like to use when problem solving. (Base ten blocks, money, number lines, pictures, hundreds board…)

2. Distribute Transparency/Blackline Master, *"Book Buying"* and read the first problem to the class. You may want to use the transparency as you read the problem. Ask the students to explain what information is provided in the problem and what they need to find out.

3. Remind students to solve the problem two different ways. Students should explain how they solved their problem using pictures and/or words. As the students are working, interact with individuals as they show you how their solution strategies. As hard as it is, try not to show them how to solve it. If a student is stuck, ask questions to help move them along. (ie, What information do we know? What do we need to find out? Can you show me how much money Lauren earned? What do we need to do first? Next? Last?)

4. After students have worked, invite 2-3 students to the share their strategies. Encourage other classmates to ask questions.

5. Ask students to write a number sentence to match their problem.

6. Repeat the steps using Transparency/Blackline Master, *"Birthday Fun!"*.

Source: Teacher Created Materials

Vocabulary

Math strategies	Hundreds
Dollars	Tens
Cents	Ones
Earned	
Spent	

Name: _____ **Date:** _____

Book Buying

Lauren wants to buy a book that costs $10.00. On Monday, she earned $3.50 for washing the dishes. How much more money does Lauren have to earn to have enough to buy the book?

Name: _____ **Date:** _____

Birthday Fun!

Max was given $10.00 for his birthday. He spent $4.25 on a new football. How much money does Max have left?

_____

_____

_____

_____

_____

_____

_____

_____

SCOS Objective(s)

5.01   Identify, describe, translate, and extend repeating and growing patterns.

Materials Needed:

- Transparencies/ Blackline Masters- *"Growing Houes", & "Growing Fish"*
- Pattern blocks
- Overhead pattern blocks
- crayons

Homework Reference Day 73

Have students create their own growing patterns to share with the class.

Assessment Reference Day 73

Are students able to demonstrate a working knowledge of growing patterns?

Are students able to identify the pattern core and make predictions on how the pattern will grow?

Alignment Lesson
Pattern Block Patterns

1. Explain to the students that today's math lessons is going to focus on patterns. Invite a couple of students to demonstrate a repeated pattern. Invite another couple of students to demonstrate a growing pattern.

2. Explain that today they are going to create patterns using pattern blocks. Show the overhead transparency of Transparency/Blackline Master, *"Growing Houses"*. Tell students that they are going to create a house using pattern blocks. They will make the pattern grow by adding more blocks. As they do this, they will record their findings on their paper. Show students Transparency/Blackline Master- *"Growing Fish"*. Explain to students that when they finish making houses, they will create fish. Again, as they make the growing pattern, they will complete the table with their information.

3. Challenge students to use the pattern blocks to create their own repeating and/or growing patterns.

4. Invite students to share their findings about the houses and the fish using overhead pattern blocks. Also, encourage students to share their new patterns. The new patterns can be drawn on the back of their recording sheet.

Source: Teacher Created Materials

Vocabulary

Repeating pattern	Number Sentences
Growing pattern	
Hexagon	
Trapezoid	
Triangle	
Square	
Pattern blocks	

Name: _____   **Date: _____**
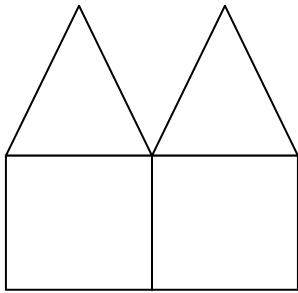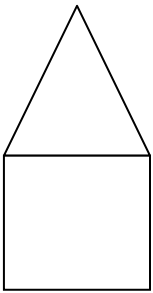
Growing Houses

Use pattern blocks to make a house. Show how many blocks will be needed for House 3 and House 4. Draw the houses.

House 1   House 2

Complete the table.

	# of Triangles	# Squares	Number sentence to show total number of blocks
House 3			
House 4			
House 5			
House 6			
House 7			

How many squares will be used for House 10? _____

How many triangles will be used for House 10? _____

Draw House 10 on the back of this paper.

Name: _____   **Date: _____**

Growing Fish

Use pattern blocks to make a fish. Show how many blocks will be needed for Fish 3 and Fish 4. Draw the Fish.

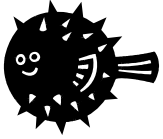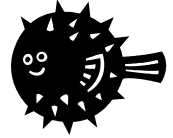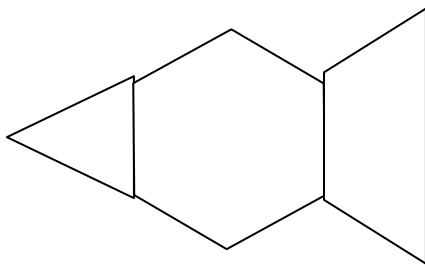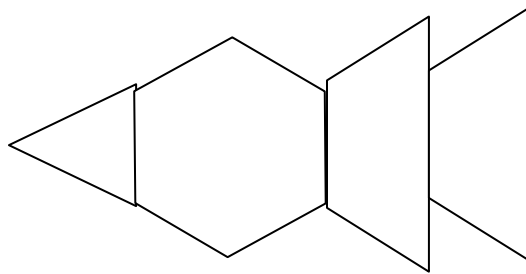Fish 1   Fish 2

Complete the table.

	# of Triangles	# of Hexagons	# of Trapezoids	Number sentence to show total number of blocks
Fish 3				
Fish 4				
Fish 5				
Fish 6				
Fish 7				

How many hexagons will be used for Fish 10? _____

How many triangles will be used for Fish 10? _____

How many trapezoids will be used for Fish 10? _____

Draw Fish 10 on the back of this paper.

Growing Houses and Growing Fish
Answer Keys

Growing Houses

	# of Triangles	# Squares	Number sentence to show total number of blocks
House 3	3	3	3 + 3 = 6
House 4	4	4	4 + 4 = 8
House 5	5	5	5 + 5 = 10
House 6	6	6	6 + 6 = 12
House 7	7	7	7 + 7 = 14

How many squares will be used for House 10? _____**10**_____

How many triangles will be used for House 10? _____**10**_____

Growing Fish

	# of Triangles	# of Hexagons	# of Trapezoids	Number sentence to show total number of blocks
Fish 3	1	1	3	1 + 1 + 3 = 5
Fish 4	1	1	4	1 + 1 + 4 = 6
Fish 5	1	1	5	1 + 1 + 5 = 7
Fish 6	1	1	6	1 + 1 + 6 = 8
Fish 7	1	1	7	1 + 1 + 7 = 9

How many hexagons will be used for Fish 10? _____**1**_____

How many triangles will be used for Fish 10? _____**1**_____

How many trapezoids will be used for Fish 10? _____**10**_____