

Geometry

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Grade 5

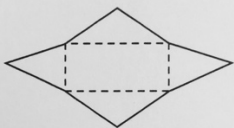
Executive Summary

This is a fifth grade math unit on geometry. Specifically, it addresses how to read a Venn Diagram (which will be used in activities later on), attribute categorizations of 2D shapes, and attribute categorizations of 3D shapes. The focus is on Minnesota fourth and fifth grade math standards. The fourth grade math standards are used as a basis to help struggling students move onto fifth grade math standards. The standards include 4.3.1.1 (describe, classify and sketch triangles, including equilateral, right, obtuse and acute triangles. Recognize triangles in various contexts. Name, describe, classify and sketch polygons), 4.3.1.2 (describe, classify and draw quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms and kites. Recognize quadrilaterals in various contexts), 4.4.1.1 (use tables, bar graphs, timelines and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data), 5.3.1.1 (describe and classify three-dimensional figures including cubes, prisms and pyramids by the number of edges, faces or vertices as well as the types of faces), and 5.3.1.2 (recognize and draw a net for a three-dimensional figure).

This unit is designed for Tier 2 and Tier 3 students who struggle with mathematical concepts. The design of the lesson accounts for 30 minutes of instruction in a small group, including travel time to and from the classroom daily. Students receiving these lessons will not be getting initial instruction on these concepts from the intervention teacher—they will have received 60 minutes of 5th grade math daily from the classroom teacher. Instead, the lessons are designed to give students a “double dip” of specific geometry concepts in a more concrete and activity oriented way to help students make better sense of geometry. Group size for these intervention groups are approximately 4 students.


This unit will help students on fifth grade geometry Minnesota Comprehensive Assessment questions like the following:

5.3.1.2 Which solid figure can you create using this net?



A. triangular pyramid
B. rectangular pyramid
C. rectangular prism
D. triangular prism

5.3.1.1 Which solid figure has 4 sides that look like this shape?



A. triangular pyramid
B. triangular prism
C. cone
D. rectangular prism

Table of Contents

<u>Day</u>	<u>Page</u>
Day 1: Unit I Pre-Test/Blink Game.....	4
Day 2-Day 3: Reading Venn Diagram (Concrete).....	9
Day 4-Day 6: Venn Diagram (shapes, shape attributes).....	12
Day 7: Unit I Post-Test/"I Have... Who Has" Angle Game).....	16
Day 8: Unit II Pre-Test/"I Have.....Who Has" Angle Game.....	20
Day 9-Day 11: Path/Circuit Activity.....	24
Day 12-14: Venn Diagram (categorizing 3D shapes).....	27
Day 15: Unit II Post-Test/Blink Game.....	31
Source Page.....	35

Day 1: Pre-Test/Blink Game

Objective: Students will show their knowledge of geometry by completing a pre-test.

Standards:

- 4.3.1.1 Describe, classify and sketch triangles, including equilateral, right, obtuse and acute triangles. Recognize triangles in various contexts. Name, describe, classify and sketch polygons.
- 4.3.1.2 Describe, classify and draw quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms and kites. Recognize quadrilaterals in various contexts.
- 4.4.1.1 Use tables, bar graphs, timelines and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.

Launch: The teacher will share with her students real life examples of when students use will geometry in their life (examples would include building/architecture, measuring spaces, mapping, and wrapping presents). This will help show students that what they will learn in this unit is applicable to their everyday life and will interest them in their learning.

Explore: Students will take the pre-test individually.

Share: There will be no share today, as students will need most of the time to complete the pre-test.

Summarize: The teacher will conclude the lesson by reiterating to students the importance of geometry in their everyday life. The teacher will also state that all skills in the pre-test will be checked at the end of the unit and used to measure students' learning.

Extension: Students who finish the pre-test early will play the card game Blink. As this is a Mattel card game, the teacher will have to buy enough sets for all student groups in advance. Directions are included in the game.

Available on Amazon: https://www.amazon.com/Blink-The-Worlds-Fastest-Game/dp/B0037W5Y2W/ref=sr_1_1?ie=UTF8&qid=1467134631&sr=8-1&keywords=blink+card+game



What's in the Box

- 60 Symbol Cards
- Travel Tin
- Quick Play Rules

The Object

Be the first player out of cards.

Setting up

1. Shuffle the cards and deal them, face down, to form two equal draw piles.
2. Place one draw pile in front of each player.
3. Place the top card from each draw pile, face down, between the players. These cards should be placed next to each other so they are accessible to both players.
4. Each player takes the top three cards from his or her draw pile to form a hand. Players may look at the cards in their hand.

Playing the Game

1. Players simultaneously turn over the cards that they placed in the center of the table, and the game begins.
2. Without taking turns, players race to play cards from their hand, face up, on either of the center piles. To play a card, it must match at least one characteristic (*color, shape, or count*) of the card on which it is played.
3. As cards are played, players refill their hand by taking cards from their own draw pile. Players may have up to three cards in their hand at any time.
4. The game continues until one of the players is completely out of cards from his or her hand and draw pile.



For example, a card with four yellow stars could be played on any card with yellow symbols (*color*), or on a card with any number of stars (*shape*), or on a card with four symbols of any kind (*count*).

Assessment: The pre-test will give the teacher an idea of where students are with geometric 2D shapes and reading a Venn Diagram. Depending on student results, the teacher may need to shorten or lengthen sections of the unit to fit student need.

Name _____

Geometry Pre-Test

Directions: Answer the following geometry questions by circling the letter of the correct answer. This pre-test will be used to show what you already know about geometry!

4.4.1.D Use the Venn diagram.

The Venn diagram consists of two overlapping circles. The left circle is labeled 'Words That Start with B' and contains the words 'belt' and 'barn'. The right circle is labeled 'Words with 3 Letters' and contains the words 'car' and 'tap'. The overlapping region in the center is shaded.

Which word belongs in the area where the sets overlap?

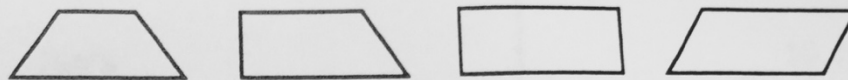
- A. bank
- B. won
- C. bin
- D. boss

4.4.1.D Francis makes a Venn diagram to sort numbers.

The Venn diagram consists of two overlapping circles. The left circle is labeled 'Numbers Less Than 50' and the right circle is labeled 'Numbers Greater Than 25'. The overlapping region in the center is shaded.

Which number belongs in the area where the sets overlap?

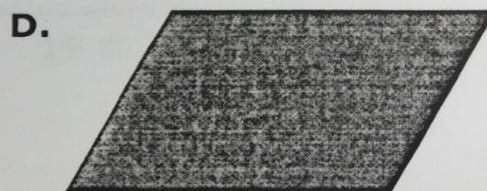
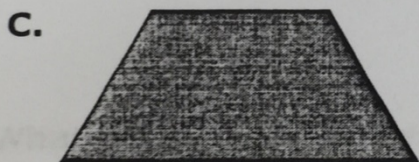
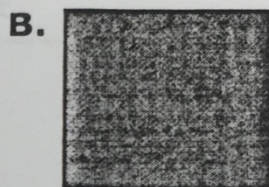
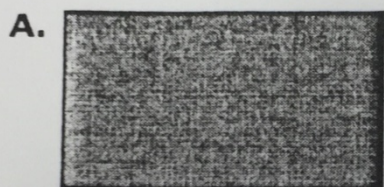
- A. 15
- B. 45
- C. 60
- D. 105



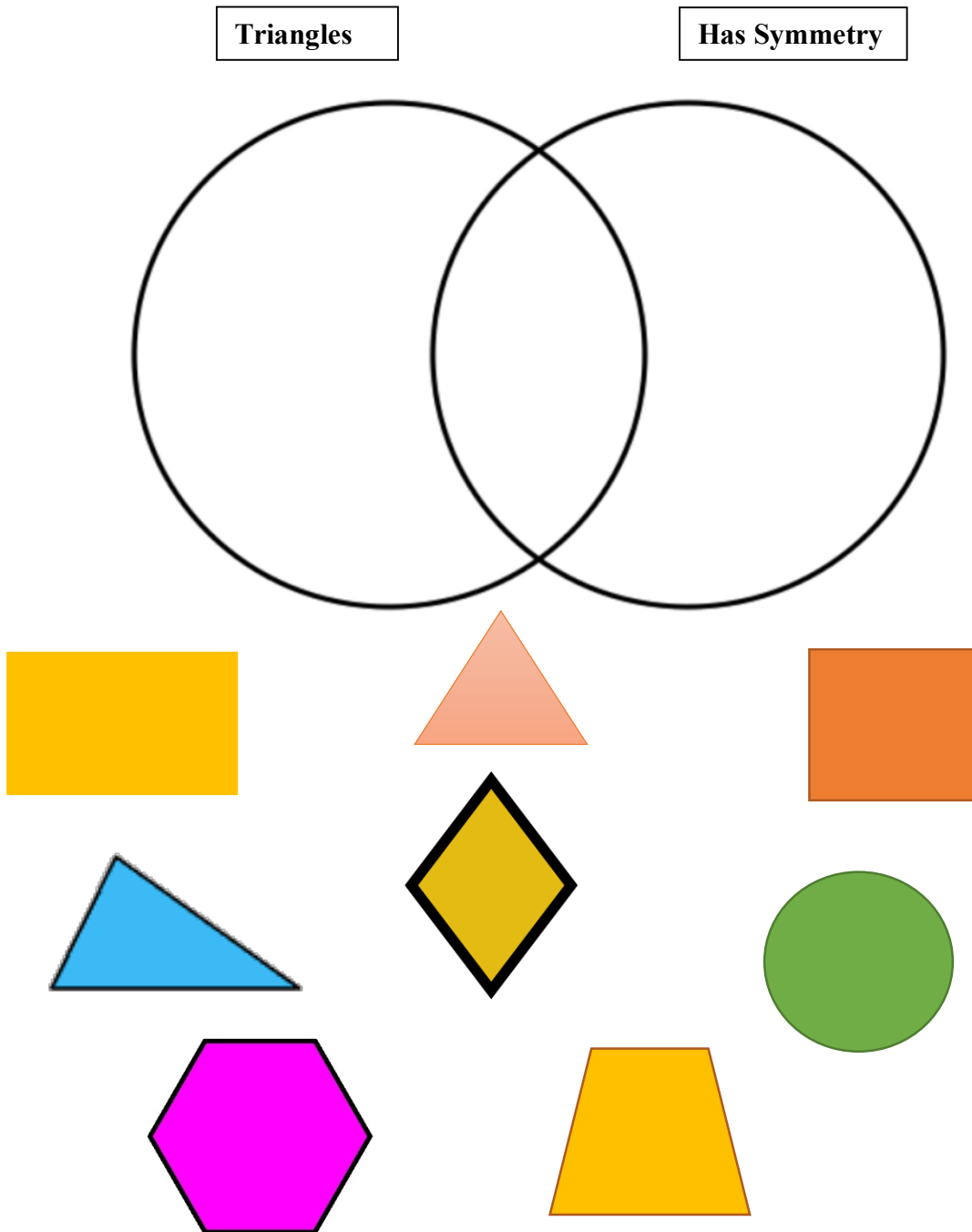
What type of polygons do the figures represent?

- A. Quadrilaterals
- B. Rhombuses
- C. Hexagons
- D. Triangles

4.3.1.2 Veronica draws a figure that has exactly 1 pair of parallel sides. Which figure does she draw?



Directions: Put the shapes into the correct region of the Venn Diagram. You may use arrows or you may redraw the shapes.



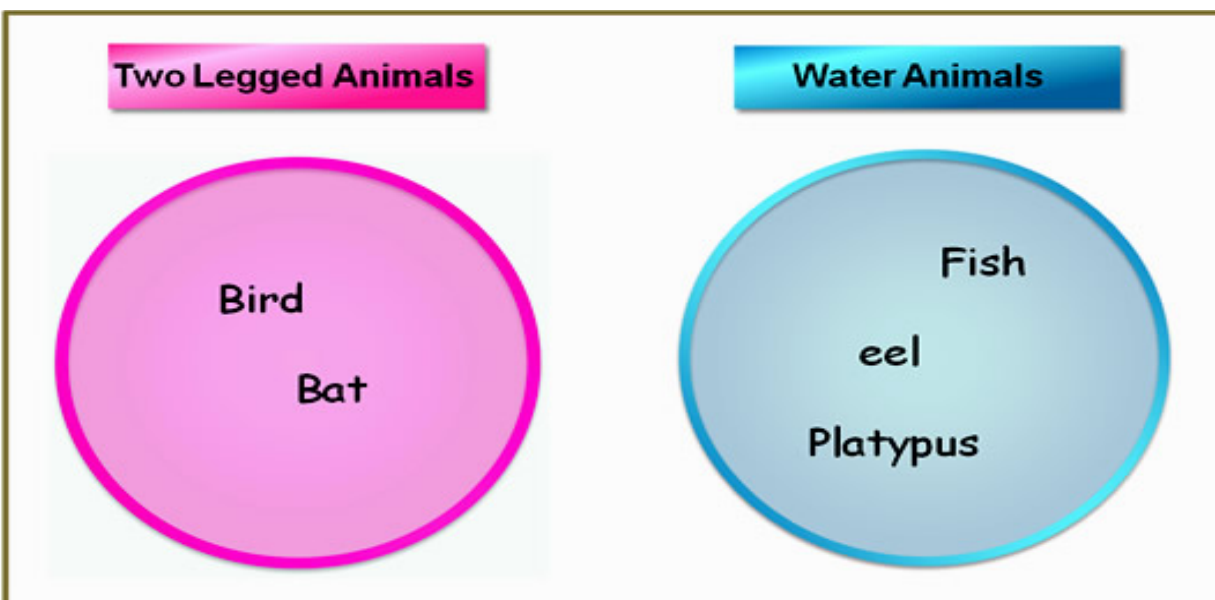
Day 2-3: Lesson One (Reading Venn Diagrams)

Objective: Students will be able to classify information into a Venn Diagram according to attributes.

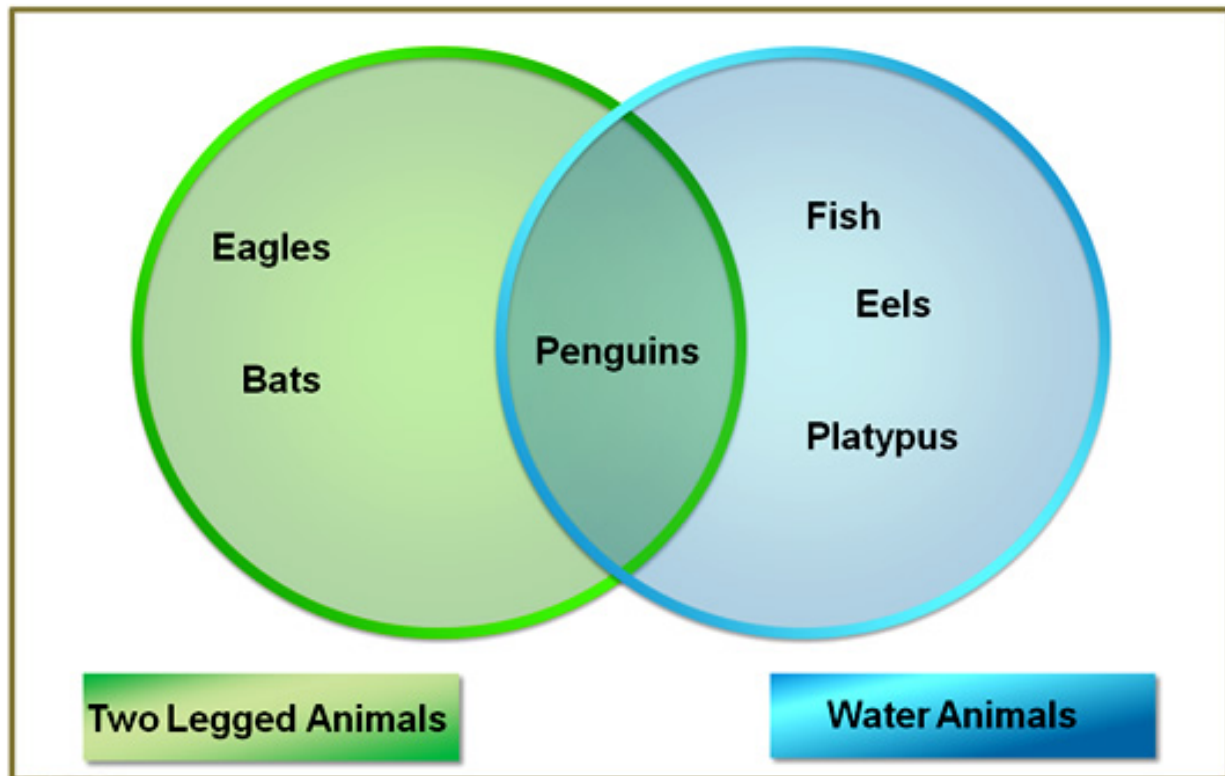
Standards: 4.4.1.1 Use tables, bar graphs, timelines and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.

Launch: The teacher will say to the students, "I am going to ask you five questions about yourself. Please write down your answers. What is your age? What is your grade? How many brothers and sisters do you have? What is your favorite? How many letters are in your first and last name?" After the students write down their answers, the teacher will pair them up. She will ask them to compare their answers with their partner, and list what is the same and what is different. She will then tell students, "A great way to see what is the same and what is unique about two people is to make a Venn Diagram. Today we will be learning how to use a Venn Diagram to show and read information."

Explore: The teacher will draw two non-overlapping circles on the board. She will label the first circle two legged animals and the second circle water animals. She will write the animals bird, bat, fish, eel, and platypus on the board. Working together, the group will sort them into the correct circle. The teacher will discuss, after categorizing, how if there is no overlap it means that it is mutually exclusive (nothing belongs to both categories). The teacher will demonstrate how to write the information as a set, or a collection of things.



The teacher will then ask the students, “Where would I put penguins?” The students will recognize that if there is something that fits both categories, the circles must overlap. The teacher will demonstrate that if there is overlap, there is a new set formed and show students how to write the new set.



The teacher will then ask the students, “Where would I put butterflies?” The students will recognize that if there is something that fits none of the categories, it must be placed outside the circles. This forms a new set of information (non two-legged and non-water animals).

The teacher will then have the students practice making non-overlapping or overlapping Venn Diagrams, complete with set notation, with the following information:

*States with an M, States with an A (Alabama, Minnesota, Hawaii, Vermont, Michigan, New Mexico)

*Types of Drinks, Types of Food (water, strawberries, potato chips, milk, coca cola, bread)

*Sports that use a ball, Sports that you play alone (hockey, golf, soccer, bull riding, swimming, wrestling)

Day 3

Launch: The teacher will have students create sets based on their five launch questions from Day 2. Example—age 10 {John, Jim, Alex, Jade} favorite color red [Alex, John, Kim]

Share:

Student will take turns explaining their learning about how to create Venn Diagrams and write set notation. By this point, hopefully students understand that overlap means something can belong in both categories, something that is outside belongs to none, and something that is in just one circle belongs to just one category. Students will have hopefully realized that sometimes, a Venn Diagram may have nothing in an area. Students will share examples of each.

Summarize: The teacher will remind students that overlap means something can belong in both categories, something that is outside belongs to none, and something that is in just one circle belongs to just one category. Sometimes, a Venn Diagram may have nothing in an area.

Assessment: Informal assessment during the explore/share portions of the lesson will provide the teacher with an idea if students are successful with the concept. Students will be formally assessed during the post-test. The teacher should also assess how successful the lesson was and what should be kept/changed for next year.

Day 4-6: Lesson Two (Venn Diagrams with Shapes)

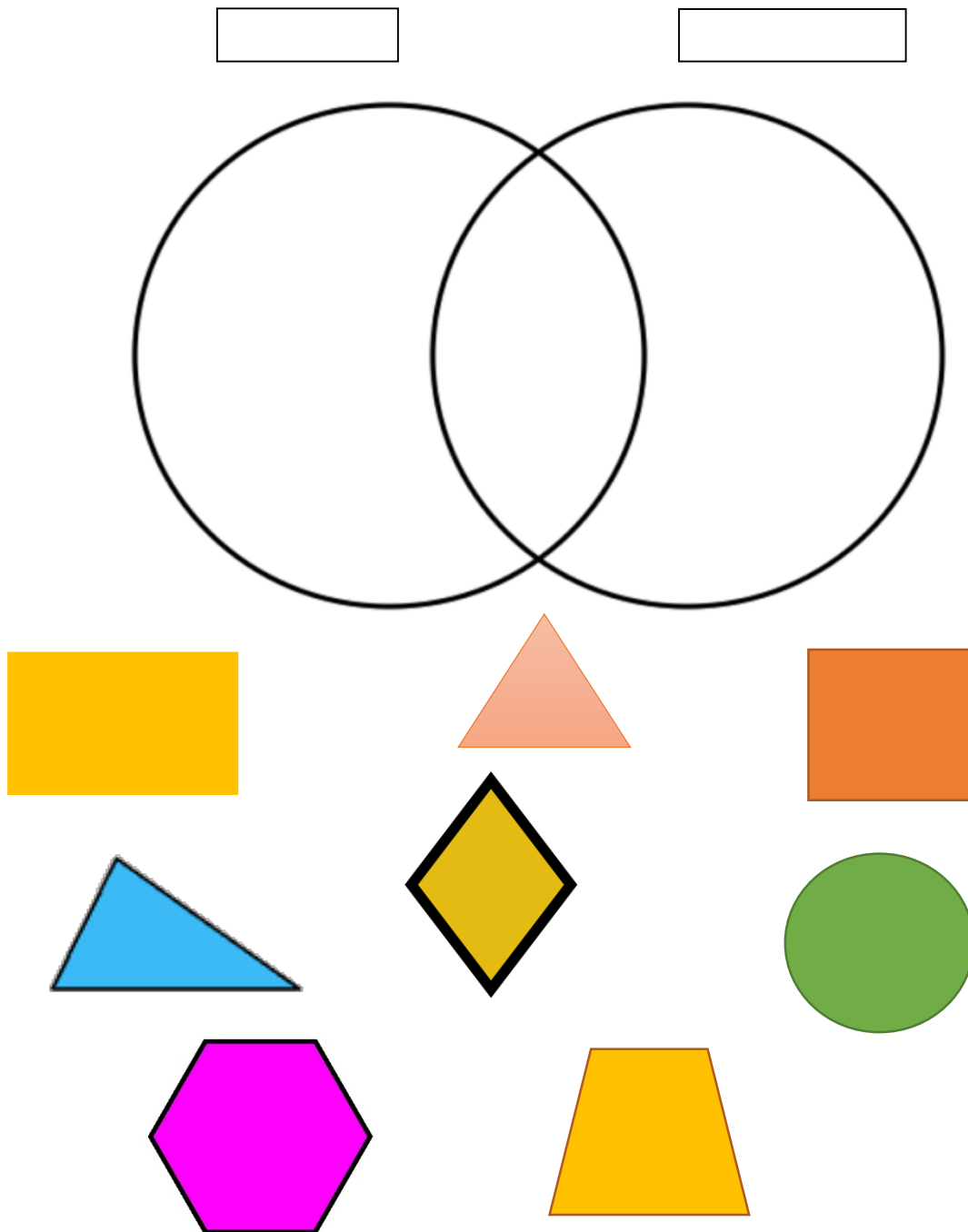
Objective: Students will be able to classify shapes into a Venn Diagram according to attributes.

Standards:

- 4.3.1.1 Describe, classify and sketch triangles, including equilateral, right, obtuse and acute triangles. Recognize triangles in various contexts. Name, describe, classify and sketch polygons.
- 4.3.1.2 Describe, classify and draw quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms and kites. Recognize quadrilaterals in various contexts.
- 4.4.1.1 Use tables, bar graphs, timelines and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.

Launch: The teacher will ask the students, “Now that we understand how to read and construct a Venn Diagram with information, let’s think about how we would apply this to math. How would a Venn Diagram be helpful to use in math?”

Explore: The teacher will give cut outs of the following shapes to students along with a blank Venn Diagram. She will tell them, “I want you to arrange the shapes into the different parts of the Venn Diagram so that there is at least one shape in each of the three parts. You may not use all of the shapes, and that’s ok. Anything that doesn’t fit, you can leave outside of the Venn Diagram. You must put labels in the boxes so that I understand how you have arranged your shapes. Think of when we used our names as labels—without those names, I wouldn’t have any idea who was being described in each Venn Diagram.” The students will have the rest of Day 2 to put shapes into their Venn Diagrams (they will be in partner groups).



Day 5

Launch: The teacher will hand each student a small object. As she reads the story Goodnight Moon, by Margaret Wise Brown, she will instruct students to listen for their object. If they hear their object, they will put it in a bucket that's in the center of the table. If they don't hear their object, they will keep it in their hand. At the end of the story, each student will go up to the board

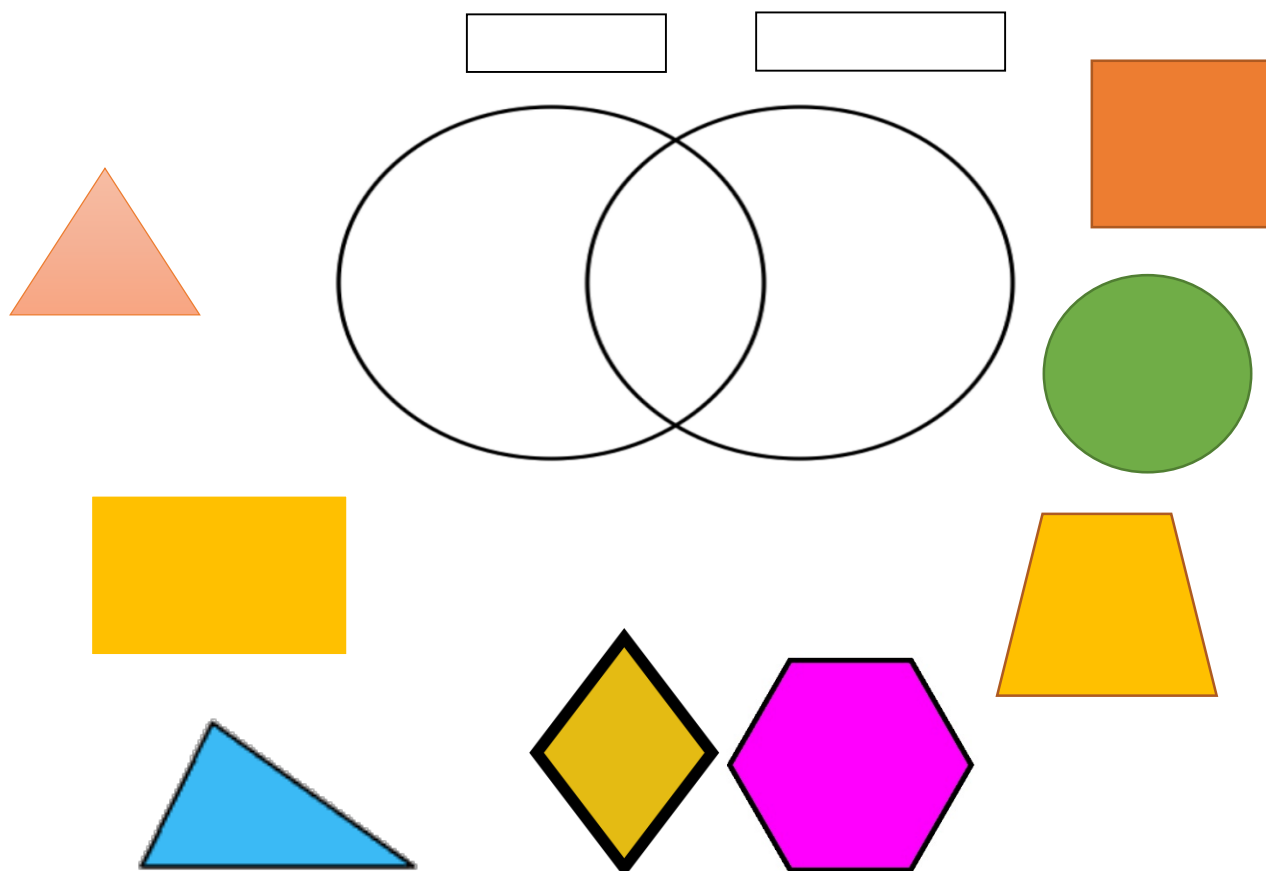
and write their object on the board, starting with the students whose object was in the story. The teacher will ask the students, “What labels do you think I used for this Venn Diagram?” After discussing, the teacher will say to the students, “I know that yesterday, I had you create labels where there was at least one shape in every section. Does there always have to be something in each part of a Venn Diagram?”

Explore Continued: The teacher will have student groups each share how they sorted shapes. The teacher will discuss how, depending on the labels being used, it determines where the shapes would go. Using the same shapes as yesterday, the teacher will give labels and have students sort shapes into 2 categories. Students will have to write a label (students will be using individual whiteboards to draw the Venn Diagram/labels and the cut out shapes to put into them). They will also write out set notation.

Round 1 categories: symmetry, triangles

Round 2 categories: parallelograms, quadrilaterals (this will address what happens if there is a set within a set—every parallelogram has to be a quadrilateral but not every quadrilateral is a parallelogram)

Round 3 categories: Even number of sides, Odd number of sides (this will address what happens if there is no overlap—mutually exclusive)



Day 6:

Launch: The teacher will ask the students, “Is there a way to categorize these shapes that we haven’t done already?” The students will share their answers.

Share:

Student will take turns explaining how labels affect where things go in a Venn Diagram. The teacher will ask the students, “I asked you before, but I want to revisit this question. Does there always have to be something in each part of a Venn Diagram? How does changing the category labels affect where things are put? Was each shape always in the same spot? How could a Venn Diagram give you information quickly?”

Summarize: The teacher will summarize the important points in reading a Venn Diagram. The teacher will also summarize pertinent shape attribute information (quadrilaterals, parallel lines, symmetry, etc.).

Assessment: Informal assessment during the explore/share portions of the lesson will provide the teacher with an idea if students are successful with the concept. Students will be formally assessed during the post-test. Hopefully, students have enough knowledge to now move onto this idea using 3D shapes. The teacher should also assess how successful the lesson was and what should be kept/changed for next year.

Day 7: Post-Test/“I Have...Who Has?” Game

Objective: Students will demonstrate they have learned geometric principles and how to read a Venn Diagram by scoring 80% or above on their post-test.

Standards:

- 4.3.1.1 Describe, classify and sketch triangles, including equilateral, right, obtuse and acute triangles. Recognize triangles in various contexts. Name, describe, classify and sketch polygons.
- 4.3.1.2 Describe, classify and draw quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms and kites. Recognize quadrilaterals in various contexts.
- 4.4.1.1 Use tables, bar graphs, timelines and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.

Launch: The teacher will have the students relook at their pre-test score. The teacher will remind students that the post-test will be used to measure growth that they have made. Students will set a “growth goal” for themselves before they begin the post-test.

Explore: Students will take the post-test.

Share: The teacher will have students share how they solved each problem. Students will correct their test as each problem is discussed, and at the end, figure out their grade.

Summarize: The teacher will (hopefully) be able to tell students that they have all made good progress with geometric shapes and Venn Diagrams.

Extension: Students who finish their post-test early will begin setting up cards for the game “I Have...Who Has.” As the game requires measuring angles with a protractor, students who finish early will get a protractor and measure as many angles as they can. This way, the game will be ready to be played tomorrow after the next unit’s pre-test.

Source: “I Have Who Has Game for Measuring Angles with a Protractor” from Teachers Pay Teachers (students will have to measure angles beforehand).

Assessment: The post-test will give the teacher data about how successful the unit was, and what changes should be made for the following year.

Name _____

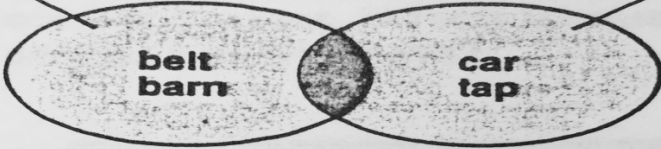
Geometry Post-Test

Directions: Answer the following geometry questions by circling the letter of the correct answer. This post-test will be used to show what you have learned about geometry!

4.4.1.D Use the Venn diagram.

Words That Start with B

Words with 3 Letters



Which word belongs in the area where the sets overlap?

A. bank

B. won

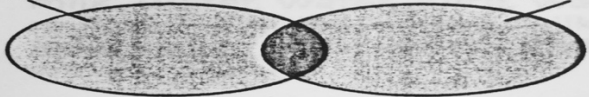
C. bin

D. boss

4.4.1.D Francis makes a Venn diagram to sort numbers.

Numbers Less Than 50

Numbers Greater Than 25



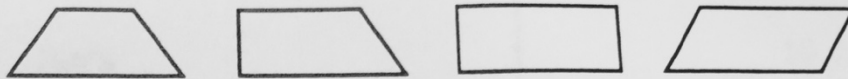
Which number belongs in the area where the sets overlap?

A. 15

B. 45

C. 60

D. 105

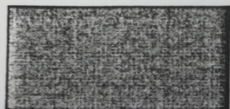


What type of polygons do the figures represent?

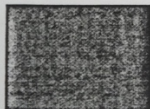
- A. Quadrilaterals
- B. Rhombuses
- C. Hexagons
- D. Triangles

4.3.1.2 Veronica draws a figure that has exactly 1 pair of parallel sides. Which figure does she draw?

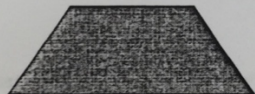
A.



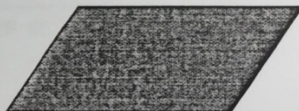
B.



C.



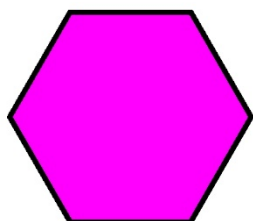
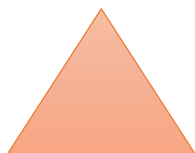
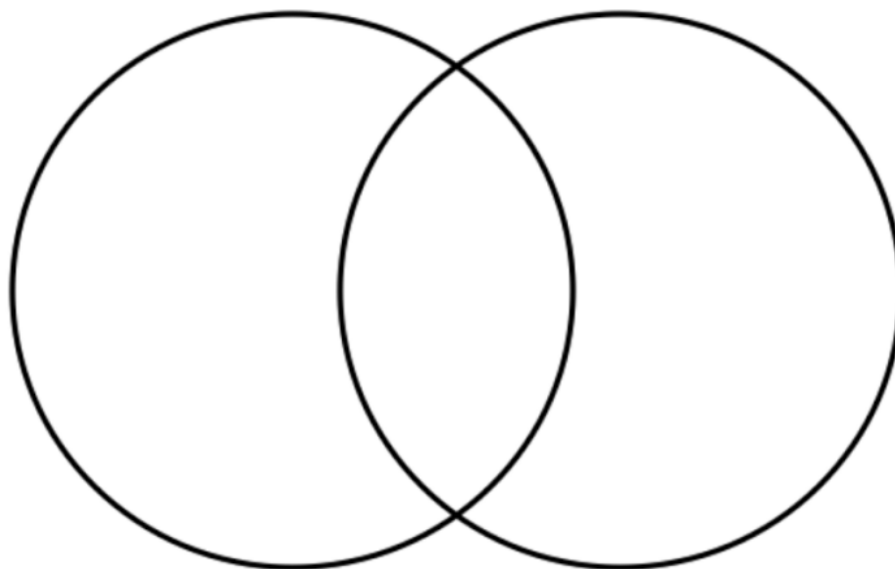
D.



Directions: Put the shapes into the correct region of the Venn Diagram. You may use arrows or you may redraw the shapes.

Triangles

Has Symmetry



Day 8: Pre-Test/”I Have...Who Has?” Game

Objective: Students will show their knowledge of geometry by completing a pre-test.

Standards:

- 4.4.1.1 Use tables, bar graphs, timelines and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.
- 5.3.1.1 Describe and classify three-dimensional figures including cubes, prisms and pyramids by the number of edges, faces or vertices as well as the types of faces.
- 5.3.1.2 Recognize and draw a net for a three-dimensional figure.

Launch: The teacher will share with her students real life examples of when students use 3 dimensional shapes (dice, pop can, toilet paper roll, cereal boxes, etc.). She will share that 3D shapes are capable of holding things inside of them, unlike 2D shapes. She will ask them to imagine how they would pour cereal out of a square or roll a triangle to play a game. This will help show students that what they will learn in this unit is applicable to their everyday life and will interest them in their learning.

Explore: Students will take the pre-test individually.

Share: There will be no share today, as students will need most of the time to complete the pre-test.

Summarize: The teacher will conclude the lesson by reiterating to students the importance of geometry in their everyday life. The teacher will also state that all skills in the pre-test will be checked at the end of the unit and used to measure students' learning.

Extension: Students who finish their post-test early will play the game “I Have...Who Has” with the cards they started yesterday.

Source: “I Have Who Has Game for Measuring Angles with a Protractor” from Teachers Pay Teachers (students will have to measure angles beforehand).

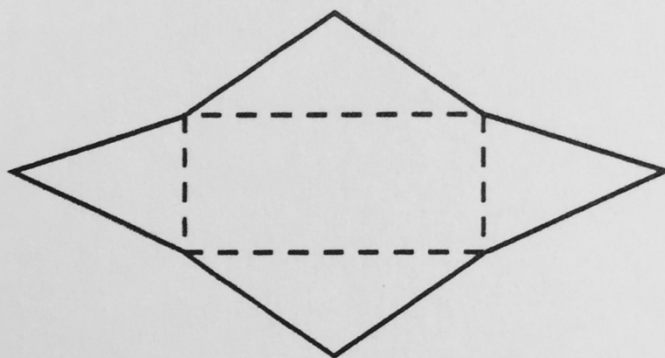
Assessment: The pre-test will give the teacher an idea of where students are with geometric 3D shapes. Depending on student results, the teacher may need to shorten or lengthen sections of the unit to fit student need.

Name _____

Unit II Geometry Pre-Test

Directions: Answer the following geometry questions by circling the letter of the correct answer. This pre-test will be used to show what you already know about geometry!

5.3.1.2 Which solid figure can you create using this net?

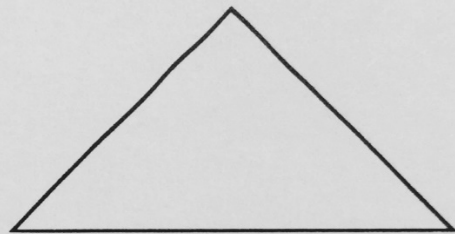


- A. triangular pyramid
- B. rectangular pyramid
- C. rectangular prism
- D. triangular prism

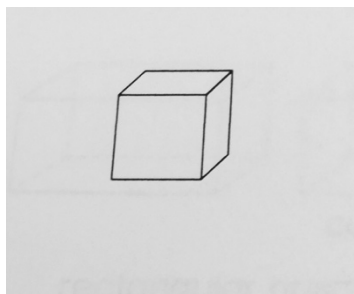
5.3.1.1 Which solid figure has 6 vertices?

- A. triangular pyramid
- B. triangular prism
- C. cube
- D. rectangular pyramid

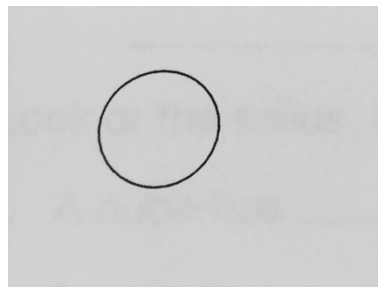
5.3.1.1 Which solid figure has 4 sides that look like this shape?



- A. triangular pyramid
- B. triangular prism
- C. cone
- D. rectangular prism



- A: 6 edges
- B: 4 edges
- C: 12 edges
- D: 8 edges



- A: 4 vertices
- B: 2 vertices
- C: 1 vertex
- D: 0 vertices

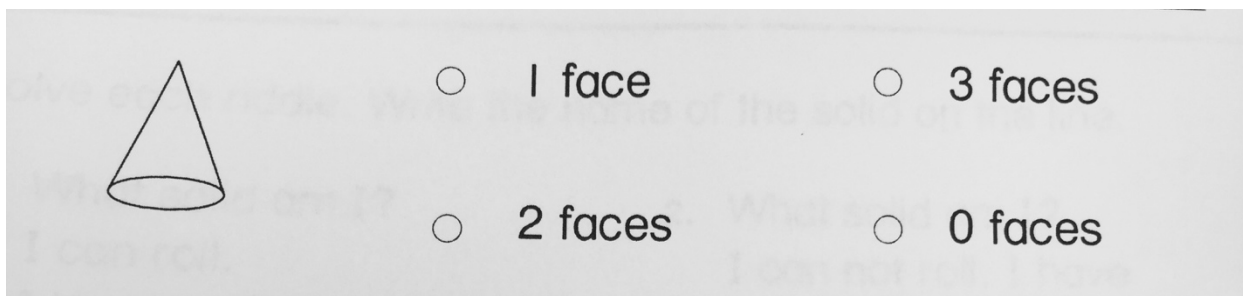


Figure 1 Figure 2 Figure 3 Figure 4

Word Bank	
Faces	Triangle
Bases	Rectangle
Edges	Square
Sides	

Leon had an art class assignment to draw the four 3-dimensional figures shown.

Part A Which figures are prisms? Explain your answer using words from the word bank.

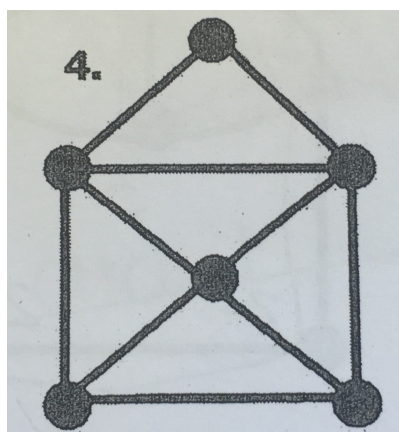
Part B Which figures are pyramids? Explain your answer using words from the word bank.

Day 9-11: Lesson One (Path/Circuit Activity)

Objective: Students will be able to define a vertex, edges, and face of a shape.

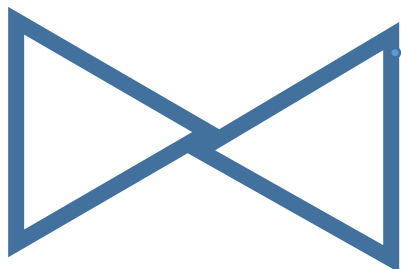
Standard: 5.3.1.1 Describe and classify three-dimensional figures including cubes, prisms and pyramids by the number of edges, faces or vertices as well as the types of faces.

Launch: The teacher will put a graph on the board. She will instruct students, “You need to find a way to draw this graph without removing your pencil from the paper and without retracing any part of the graph.” Students will have time to try.



Explore: The teacher will explain the activity for the day. Students will act as vertices (the teacher won't call them that though...she will refer to them as objects such as cities, stores, etc.—it will change with each round), and they will be connected together into a shape by string held with their hands (the string will act as edges, which the students will make a connection to at the end of the activity). The object of the game will be to get one walking student to go down each string, or “road,” and touch each person, or “object,” only once (much like the launch activity with paper/pencil). However, students will work to achieve this together. As the walker walks down a “road,” the two students holding the ends of the “road” will let it drop to the ground. This will show everyone that the road has been used. Likewise, when the walker gets to an “object,” that person will sit down to show that the object has been used. If it gets to the point where the walker can't make any moves, the group will reset into the original shape and try a different way.

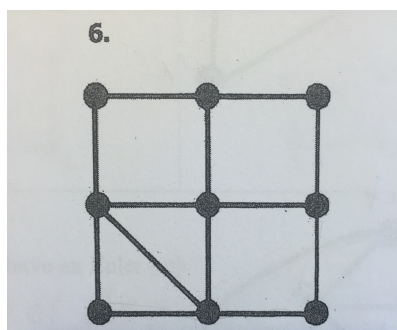
Round 1: The teacher will have each student labeled as a different classroom in the school.



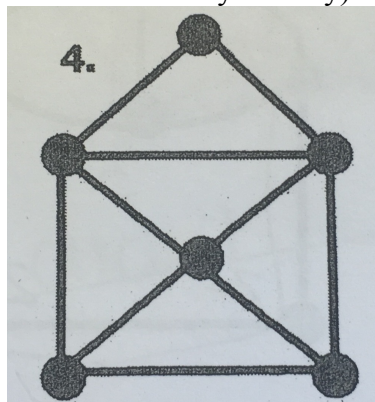
Day 10:

Launch: The teacher will put a graph on the board. She will instruct students, “You need to find a way to draw this graph without removing your pencil from the paper and without retracing any part of the graph.” Students will have time to try.

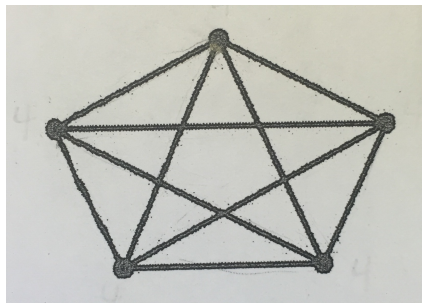
Explore Continued:



Round 2: The teacher will have each student labeled as a different store in the city (they will use the launch from yesterday).



Round 3: The teacher will have each student labeled as a vertex (vertex 1, vertex 2, vertex 3, vertex 4, vertex 5).



Day 11:

Launch: The teacher will put a graph on the board. She will instruct students, “You need to find a way to draw this graph without removing your pencil from the paper and without retracing any part of the graph.” Students will have time to try.

Share: Students will talk about how they solved the activity (strategy). The teacher will then ask them, “Why would I have you do this activity to help learn about edges, faces, and vertices?” Students will discuss how they represented vertices, the string (road) represented edges, and the flat shape (space in between students) represented a face.

Summarize: The teacher will remind students that when they start to look at 3D shapes, they need to realize that a vertex is a point that connects two edges (like what they represented), an edge is a road between two vertices (like the string), and a face is the flat space in between everything.

Assessment: Informal assessment during the explore/share portions of the lesson will provide the teacher with an idea if students are successful with the concept. Students will be formally assessed during the post-test. The teacher should also assess how successful the lesson was and what should be kept/changed for next year.

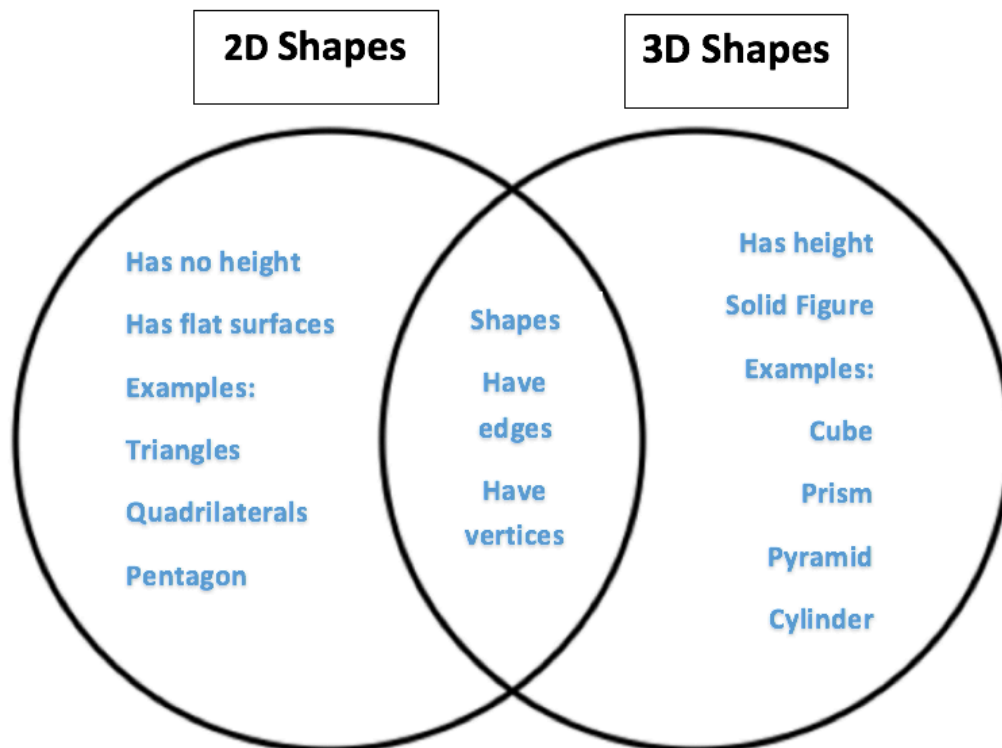
Day 12-14: Lesson Two (Venn Diagram—3D Shapes)

Objective: Students will be able to

Standard: 5.3.1.1 Describe and classify three-dimensional figures including cubes, prisms and pyramids by the number of edges, faces or vertices as well as the types of faces. 5.3.1.2 Recognize and draw a net for a three-dimensional figure.

Launch: The teacher will make a Venn Diagram with the labels “2D Shape” and “3D Shape.” Students will work together to put as much information that they know about 2D and 3D shapes into the Venn Diagram.

Explore: The teacher will go over the Venn Diagram with students. She will help them fill out missing information and address any misconceptions. When completed, the chart should show the following:

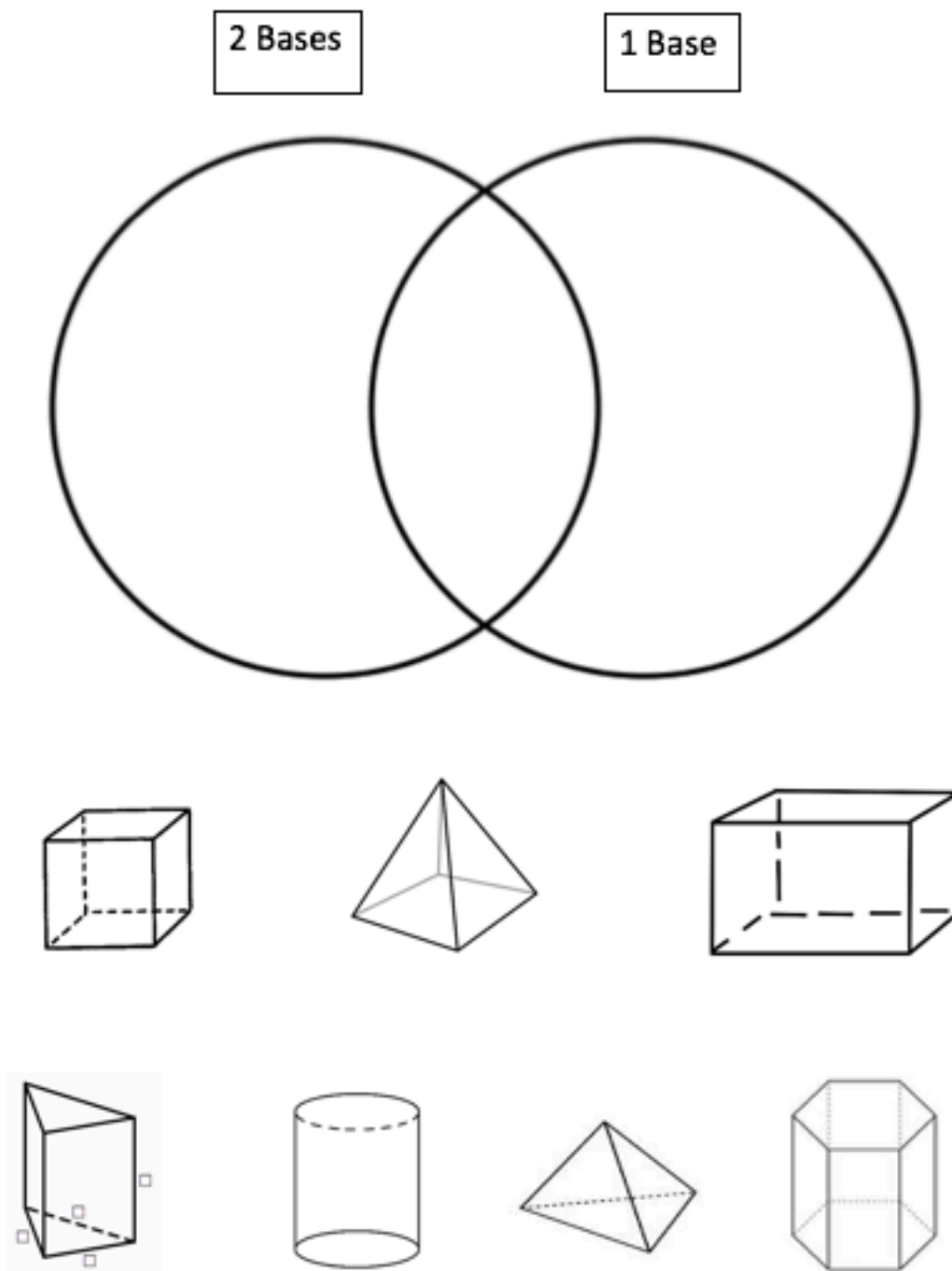


Explore: The teacher will give cut outs of the following shapes to students along with a blank Venn Diagram. She will tell them, “I want you to arrange the shapes into the different parts of the Venn Diagram so that there is at least one shape in each of the three parts. You may not use all of the shapes, and that’s ok. Anything that doesn’t fit, you can leave outside of the Venn Diagram. You must put labels in the boxes so that I understand how you have arranged your shapes. Think of when we used our names as labels—without those names, I wouldn’t have any idea who was being described in each Venn Diagram.” The students will have the rest of Day 12 to put shapes into their Venn Diagrams (they will be in partner groups).

Day 13

Launch: The teacher will ask students, “What is one way you use a 3D shape in your life?” (possible answers should include sports equipment, food boxes/containers, houses, etc.).

Explore Continued: The teacher will have student groups each share how they sorted shapes. The teacher will discuss how, depending on the labels being used, it determines where the shapes would go. Using the same shapes as yesterday, the teacher will give labels and have students sort shapes into 2 categories. Students will have to write a label (students will be using individual whiteboards to draw the Venn Diagram/labels and the cut out shapes to put into them). They will also write out set notation.



Round 1 categories: 2 base, 1 base

Round 2 categories: Prisms, Cubes

Round 3 categories: 6 or more vertices, 6 or more faces

Round 4 categories: Odd vertices, Pyramid

Round 5 categories: Vertices + Faces = Edges + 2, Prisms

Day 14

Launch: The teacher will show a video, “3D Shape Songs for Kids—Faces, Edges, and Vertices” by NumberRock.

Video Source: <http://www.youtube.com/watch?v=uZ8Jy1xgqPU&sns=em>

Share:

Student will take turns explaining how they categorized 3D shapes into a Venn Diagram. The teacher will ask the students, “I asked you before, but I want to revisit this question. Does there always have to be something in each part of a Venn Diagram? How does changing the category labels affect where things are put? Was each shape always in the same spot? How could a Venn Diagram give you information quickly?” Students will, hopefully, have made the connection that they can follow the formula $\text{Vertices} + \text{Faces} = \text{Edges} + 2$ for every shape but a cylinder.

Summarize: The teacher will summarize the important points in reading a Venn Diagram. The teacher will also summarize pertinent shape attribute information (faces, edges, vertices) and remind students to think of the Path/Circuit activity to help them remember the difference. She will remind them that using the formula $\text{Vertices} + \text{Faces} = \text{Edges} + 2$ is a good way to check their work.

Assessment: Informal assessment during the explore/share portions of the lesson will provide the teacher with an idea if students are successful with the concept. Students will be formally assessed during the post-test. Hopefully, students have enough knowledge to now move onto this idea using 3D shapes. The teacher should also assess how successful the lesson was and what should be kept/changed for next year.

Day 15: Post-Test/Blink Game

Objective: Students will demonstrate they have learned geometric principles and how to read a Venn Diagram by scoring 80% or above on their post-test.

Standards:

- 4.3.1.1 Describe, classify and sketch triangles, including equilateral, right, obtuse and acute triangles. Recognize triangles in various contexts. Name, describe, classify and sketch polygons.
- 4.3.1.2 Describe, classify and draw quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms and kites. Recognize quadrilaterals in various contexts.
- 4.4.1.1 Use tables, bar graphs, timelines and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.

Launch: The teacher will have the students relook at their pre-test score. The teacher will remind students that the post-test will be used to measure growth that they have made. Students will set a “growth goal” for themselves before they begin the post-test.

Explore: Students will take the post-test.

Share: The teacher will have students share how they solved each problem. Students will correct their test as each problem is discussed, and at the end, figure out their grade.

Summarize: The teacher will (hopefully) be able to tell students that they have all made good progress with geometric shapes and Venn Diagrams.

Extension: Students who finish their post-test early will begin setting up cards for the game “I Have...Who Has.” As the game requires measuring angles with a protractor, students who finish early will get a protractor and measure as many angles as they can. This way, the game will be ready to be played tomorrow after the next unit’s pre-test.

Source: “I Have Who Has Game for Measuring Angles with a Protractor” from Teachers Pay Teachers (students will have to measure angles beforehand).

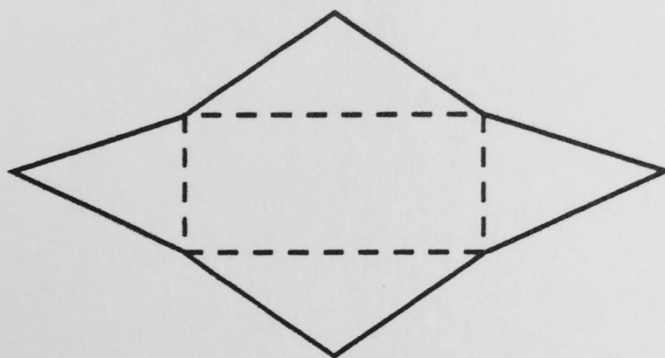
Assessment: The post-test will give the teacher data about how successful the unit was, and what changes should be made for the following year.

Name _____

Unit II Geometry Post-Test

Directions: Answer the following geometry questions by circling the letter of the correct answer. This post-test will be used to show what you have learned about geometry!

5.3.1.2 Which solid figure can you create using this net?

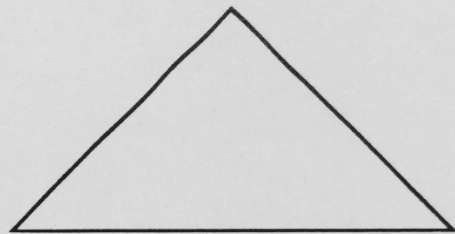


- A. triangular pyramid
- B. rectangular pyramid
- C. rectangular prism
- D. triangular prism

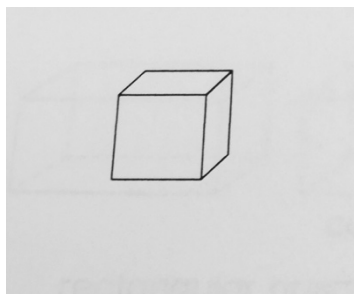
5.3.1.1 Which solid figure has 6 vertices?

- A. triangular pyramid
- B. triangular prism
- C. cube
- D. rectangular pyramid

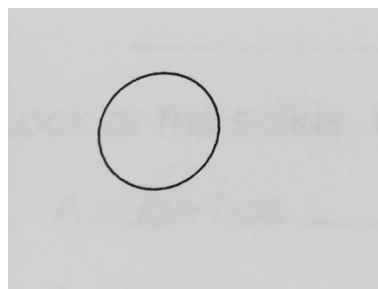
5.3.1.1 Which solid figure has 4 sides that look like this shape?



- A. triangular pyramid
- B. triangular prism
- C. cone
- D. rectangular prism



- A: 6 edges
- B: 4 edges
- C: 12 edges
- D: 8 edges



- A: 4 vertices
- B: 2 vertices
- C: 1 vertex
- D: 0 vertices

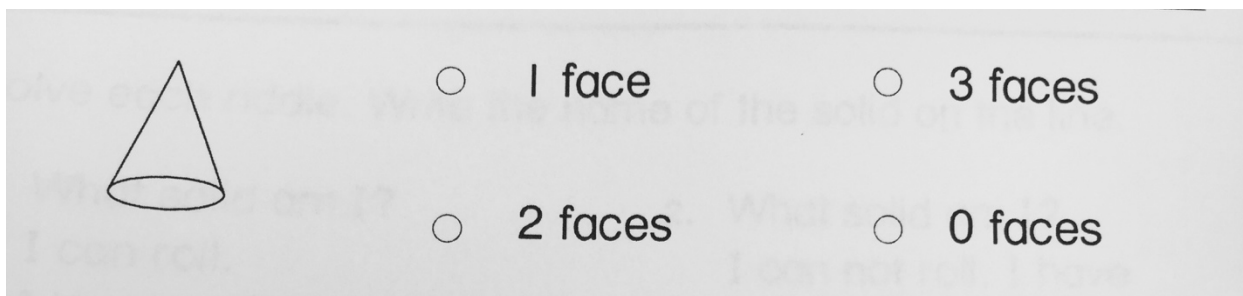


Figure 1 Figure 2 Figure 3 Figure 4

Word Bank	
Faces	Triangle
Bases	Rectangle
Edges	Square
Sides	

Leon had an art class assignment to draw the four 3-dimensional figures shown.

Part A Which figures are prisms? Explain your answer using words from the word bank.

Part B Which figures are pyramids? Explain your answer using words from the word bank.

Sources

Brown, Margaret Wise, and Clement Hurd. *Goodnight Moon*. New York: Harper, 1947. Print.

NumberRock. 3D Shape Songs for Kids—Faces, Edges, and Vertices, YouTube, n.d. Web. 29 June 2016.

Wilda, Kevin. "I Have Who Has Game for Measuring Angles with a Protractor." *Teachers Pay Teachers*. N.p., n.d. Web. 28 June 2016.