



Preview – Information



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Google Slides Lessons Preview





Saskatchewan Math Curriculum Shape & Space – Grade 5

3-Part Lesson Format

Part 1 – Minds On!

- Learning Goals
- Discussion Questions
- Quotes
- And More!

Learning Goal

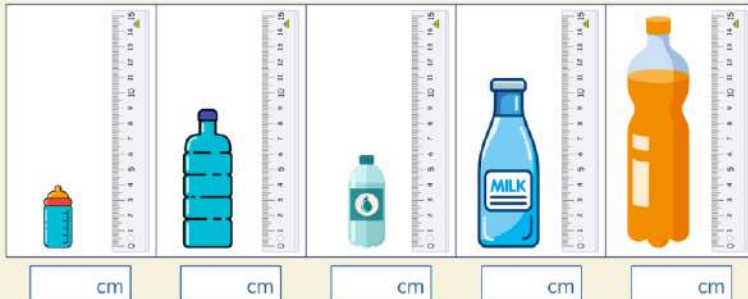
We are learning to use appropriate metric units to estimate and measure length so we can accurately determine and communicate the dimensions of various objects and spaces.



Measuring Height – Bottles

Measure the height of the bottles below. Drag the numbers to answer in the white box.

1 2 3 4 5 6 7 8 9 0



Part 2 – Action!

- Writing
- Matching
- Drag and Drop
- Drawing
- And More!

Part 3 – Consolidation!

- Exit Cards
- Quizzes
- Reflection
- And More!

Exit Card – “I Wonder” Statements

Write two “I wonder...” statements about what you learned today. Your statements can be questions, predictions, or curiosities about area and metric units.

Examples:

- I wonder how many m^2 it would take to cover a soccer field.
- I wonder why we don't use km^2 to measure small rooms.





Saskatchewan Math Curriculum

Shape & Space – Grade 5

Finding the Perimeter of Triangles

Find the perimeter of the triangles below.
Drag the numbers to complete the equations.

1	2	3	4	5	6	7	8	9	0
 $\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} \text{ cm}$			 $\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} \text{ cm}$			 $\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} \text{ cm}$			
 $\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} \text{ cm}$			 $\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} \text{ cm}$						

Calculating Area Using CM

We can draw lines on shapes to segment them into cm squares. Try your best to make the squares equal. Use the draw tool to draw lines to create cm squares. Then count the squares and drag the numbers to determine the area.

1	2	3	4	5
6	7	8	9	0
 Area = $\underline{\quad} \text{ cm}^2$		 Area = $\underline{\quad} \text{ cm}^2$		
 Area = $\underline{\quad} \text{ cm}^2$		 Area = $\underline{\quad} \text{ cm}^2$		
 Area = $\underline{\quad} \text{ cm}^2$				



Saskatchewan Math Curriculum

Shape & Space – Grade 5

Calculating Volume - Blocks

Determine the length, width and height of the rectangular prisms and then calculate their volumes.

1 2 3 4 5 6 7 8 9 0 cm cm³

	Length	Height
	Width	Volume

	Length	Height
	Width	Volume

	Length	Height
	Width	Volume

	Length	Height
	Width	Volume

Capacity

Estimate how many of the smaller things will fit into the container. Drag the numbers to determine your answers.

1 2 3 4 5 6 7 8 9 0

x _____	x _____	x _____	x _____	x _____	x _____
x _____	x _____	x _____	x _____	x _____	x _____
x _____	x _____	x _____	x _____	x _____	x _____

1) c) 1kL d) 50mL		4) a) 5mL b) 4kL c) 3L d) 20mL	
2) a) 250mL b) 8L c) 3000mL d) 2kL		5) a) 2L b) 200mL c) 10mL d) 1kL	
3) a) 50 kL b) 5000 mL c) 1L d) 100 mL		6) a) 100kL b) 10mL c) 1L d) 1mL	



Grade 5 Shape and Space



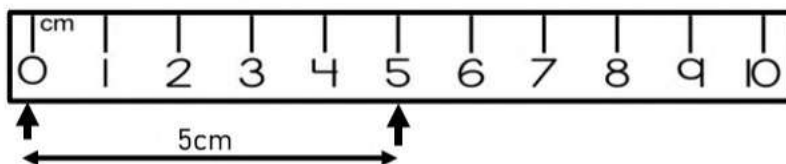
	Curriculum Expectations	Pages
SS5.1	Design and construct different rectangles given either perimeter or area, or both (whole numbers), and draw conclusions.	22-72
SS5.2	Demonstrate understanding of measuring length (mm) by: • selecting and justifying referents for the unit mm • modelling and describing the relationship between mm, cm, and m units.	5-21
SS5.3	Demonstrate an understanding of volume by: • selecting and justifying referents for cm^3 or m^3 units • estimating volume by using referents for cm^3 or m^3 • measuring and recording volume (cm^3 or m^3)	75-87
SS5.4	Preview of 125 pages from this product that contains 319 pages total.	
SS5.5	• parallel • intersecting • perpendicular • vertical • horizontal.	104-114
SS5.6	Identify and sort quadrilaterals, including: • rectangles • squares • trapezoids • parallelograms • rhombuses according to their attributes.	116-131
SS5.7	Identify, create, and analyze single transformations of 2-D shapes (with and without the use of technology).	134-175
TQ	Tests and Quizzes	73-74, 102-103, 132-133, 146-177

Name: _____

5

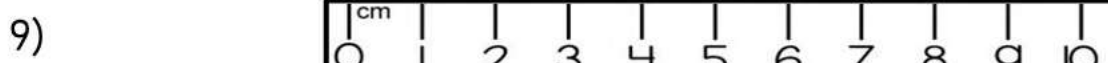
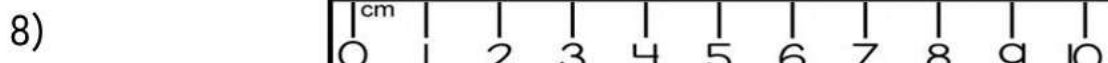
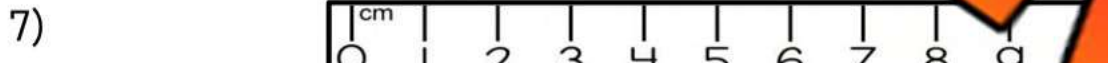
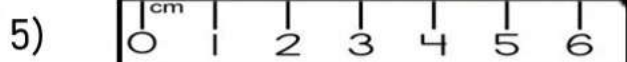
Measuring in Centimetres

We can accurately measure the length of something by using a ruler.



Instructions

Read the rulers below to find the distance between the arrows



Name: _____

6

Curriculum Connection
SS5.2

Measuring in Centimetres and Millimetres

Part 1

Use a ruler to measure the lines below

1)



_____ cm _____ mm

2)



_____ cm _____ mm

3)



_____ cm _____ mm

4)



_____ cm _____ mm

5)



_____ cm _____ mm

6)



_____ cm _____ mm

7)



_____ cm _____ mm

Part 2

Draw a line that is the correct length

1)

70 mm

2)

4 cm

3)

60 mm

4)

2 cm

5)

3 cm

6)

50 mm

Metric System Units – mm, cm, m

Millimetre (mm)	Centimetre (cm)	Metre (m)
Used to measure short distances 	Used to measure short to medium distances 	Used to measure medium to long distances 

Questions: Which unit of measure would you use to measure the following distances?

1) The length of 	
2) The length of your hand 	
3) The length of your eraser 	
4) The length of your classroom 	
5) The width of a worm 	
6) The distance of a 10 second race 	
7) The length of your shoe 	
8) The width your fingernail 	
9) The height of the classroom door 	
10) The length of your school 	

Name: _____

9

Metric System Units - mm, cm, m

Millimetre (mm)	Centimetre (cm)	Metre (m)
$10\text{mm} = 1\text{cm}$ $1000\text{mm} = 1\text{m}$	$1\text{cm} = 10\text{mm}$ $100\text{cm} = 1\text{m}$	$1\text{m} = 100\text{cm}$ $1\text{m} = 1000\text{mm}$
		

Part 1 Fill in the tables below

	cm
10	
20	
40	
50	
	6
	7
	8
90	
100	

cm	m
100	1
	2
300	3
400	
	5
600	
	7
1000	

Part 2 Convert the units of measurement below

1) 1m _____ cm

5) 5m _____ cm

9) 500cm _____ m

2) 20mm _____ cm

6) 50mm _____ cm

10) 500mm _____ cm

3) 2cm _____ mm

7) 100mm _____ cm

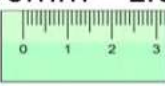
11) 8m _____ cm

4) 50cm _____ mm

8) 30cm _____ mm

12) 300cm _____ m

Metric System Units – Decimal Conversions

Millimetre (mm)	Centimetre (cm)	Metre (m)
$15\text{mm} = 1.5\text{cm}$ $1500\text{mm} = 1.5\text{m}$ 	$5.5\text{cm} = 55\text{mm}$ $430\text{cm} = 4.3\text{m}$ 	$2.5\text{m} = 250\text{cm}$ $1.3\text{m} = 1300\text{mm}$ 

Part 1 Complete the tables below

mm	cm
5	
15	
45	
55	
	6.5
75	
85	
	9.5

cm	m
	0.5
	1.5
250	
350	
	4.5
550	
650	
850	
950	

Part 2 Convert the units of measurement below

1) 1.3m _____ cm

5) 6.2m _____ cm

9) 580cm _____ m

2) 28mm _____ cm

6) 57mm _____ cm

10) 87mm _____ cm

3) 2.7cm _____ mm

7) 134mm _____ cm

11) 8.42m _____ cm

4) 5.3cm _____ mm

8) 3.6cm _____ mm

12) 330cm _____ m

Which is Longer?

Part 1

Which distance is farther? Circle the longest distance.

1)	10.5m	200.2cm	10.5mm	2.5m
2)	32.5cm	380mm	0.5m	1000m
3)	50m	535cm	5.5m	1.5m
4)	3.3m	1000mm	156cm	
5)	712cm	3000mm	4.5m	

Part 2

Read the problem and solve below

1. Nick and Ryan both competed in a jump at track meet. Nick jumped 3.45m and Ryan jumped 329cm. Who jumped farther?
2. Max and Rudy are arguing over whose pencil is longer. Max's pencil is 10cm long and Rudy's is 95mm long. Whose pencil is longer?
3. Fred and Norm both walk to school. Fred walks 5400cm and Norm walks 53m. Who walks further to school?



Memory Game: Matching Equivalent Units

Objective

What are we learning about?

Students will practice converting and matching equivalent units of measurement, such as centimeters to millimeters and meters to centimeters, to enhance their understanding of metric conversions.

Materials

What you will need for the activity.

- Sets of Memory Game cards with units of measurement (provided)
- Tables or clear floor space for groups to lay out their cards



Instructions

How you will complete the activity.

1. Divide the class into groups of 3 or 4 students each.
2. Give each group a set of Memory Game cards.
3. Have each group lay all the cards face down in a grid on a table or floor.
4. Students take turns flipping over two cards at a time, trying to find a match with equivalent units of measurement.
5. If a student finds a match (e.g., 1 meter and 100 centimeters), they remove those cards from the grid and keep them.
6. If the cards do not match, they are turned back over, and the next student takes a turn.
7. The game continues until all the cards have been matched.
8. After the game, review the equivalent units of measurement with the class, ensuring students understand the conversions.

Cards

Memory Game Cards

1 centimeter

10 millimeters

2 meters

200 centimeters

50 centimeters

500 millimeters

3 meters

300 centimeters

20 centimeters

200 millimeters

Cards

Memory Game Cards

5 centimeters

50 millimeters

10 meters

1000 centimeters

4 meters

50 centimeters

8 centimeters

80 millimeters

15 meters

1500 centimeters

PREVIEW

Name: _____

15

Cards

Memory Game Cards

12.5 centimeters

125 millimeters

2.5 meters

250 centimeters

67.5 centimeters

675 millimeters

7.25 meters

725 centimeters

8.5 centimeters

85 millimeters

Cards

Memory Game Cards

2.25 meters

225 centimeters

9.5 meters

950 centimeters

5.5 meters

550 centimeters

0.5 centimeters

5 millimeters

0.75 meters

75 centimeters

PREVIEW

Estimating Distance

Questions

Which distance makes the most sense?

1) Length of a pencil

- a) 30cm
- b) 10mm
- c) 10cm



2) Length of a soccer field

- a) 100m
- b) 500m
- c) 500cm



3) Distance of a 200m race

- a) 100 metres
- b) 50mm
- c) 2000m

4) Length of a gym

- a) 15m
- b) 3m
- c) 300cm
- d) 20mm



5) Width of a computer monitor

- a) 2m
- b) 40cm
- c) 20mm



6) Length of your shoe

- a) 15cm
- b) 15m
- c) 2m



7) Height of a desk

- a) 2m
- b) 90cm
- c) 200mm



8) Height of an NBA player (person)

- a) 2m
- b) 100cm
- c) 200mm



9) Length of a bus

- a) 13m
- b) 200cm
- c) 2000mm



10) Width of an eraser on the end of a pencil

- a) 2m
- b) 10cm
- c) 10mm

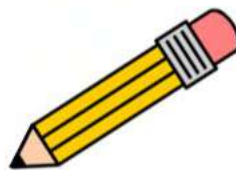


Estimating the Distance

In life, we often need to be able to estimate the distance or length of things. We first need to choose the correct unit of measurement – mm, cm, or m. Then we estimate by using our understanding of these units.

Example

- my walk to school is around 500m
- my pencil is approximately 10cm long
- my eraser is about 8mm wide



Questions: Answer the questions below by estimating the distances

1) How far do you live away from school?	
2) How wide is your classroom?	
3) How wide is your thumbnail?	
4) How tall is your desk/table?	
5) How tall are you?	
6) How tall is your water bottle?	
7) How far is the nearest store?	
8) How wide is your sheet of paper?	
9) How wide is your gym?	
10) How thick is the last book you read?	

Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Convert the units of measurement below.

a) 4 mm = _____ cm

b) 9.57 m = _____ cm

c) 640 cm = _____ m

2) Solve the problem below

Ben and Tom are measuring toy cars. Ben's car is 8.3 cm long. Tom's car is 85 mm long. Whose car is longer?

Name: _____

1) Convert the units of measurement below.

a) 69 mm = _____ cm

b) 9.57 m = _____ cm

c) 640 cm = _____ m

2) Solve the problem below

Ben and Tom are measuring toy cars. Ben's car is 8.3 cm long. Tom's car is 85 mm long. Whose car is longer?

Name: _____

1) Convert the units of measurement below.

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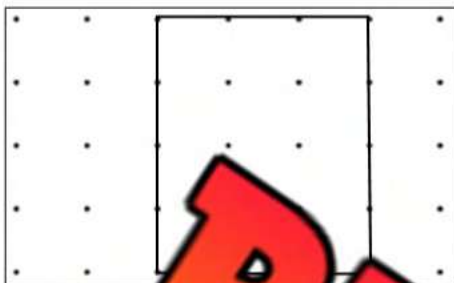
2) Solve the problem below

Ben and Tom are measuring toy cars. Ben's car is 8.3 cm long. Tom's car is 85 mm long. Whose car is longer?

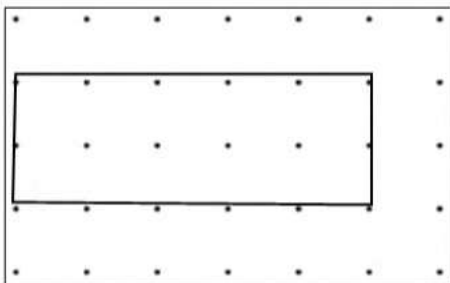
Finding the Perimeter of Irregular Shapes

Part 1

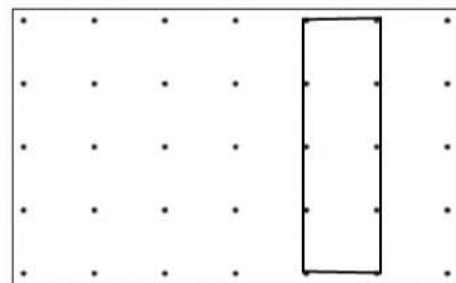
Find the perimeter of the rectangles below



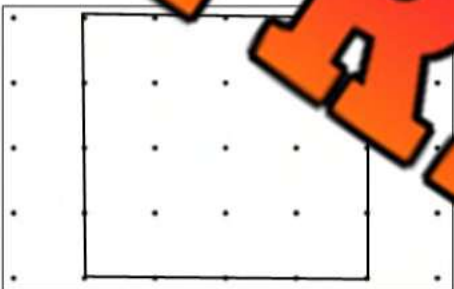
1) Perimeter = _____



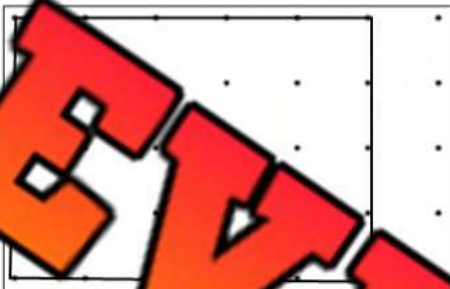
2) Perimeter = _____



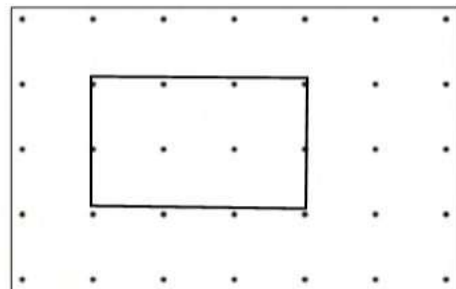
3) Perimeter = _____



4) Perimeter = _____



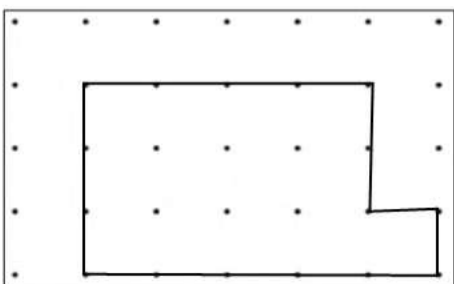
5) Perimeter = _____



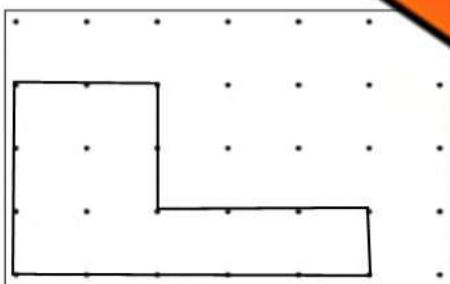
6) Perimeter = _____

Part 2

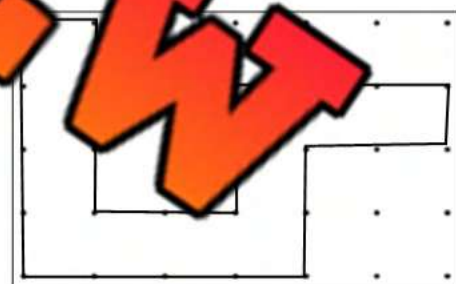
Find the perimeter of the polygons below



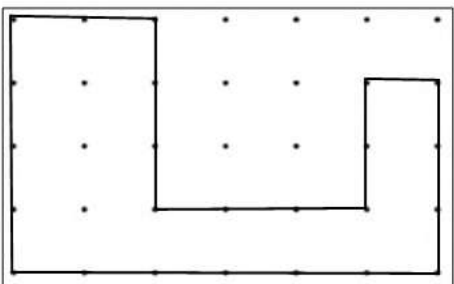
1) Perimeter = _____



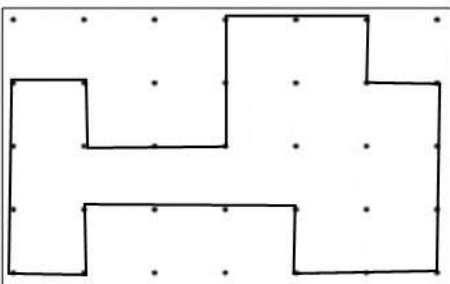
2) Perimeter = _____



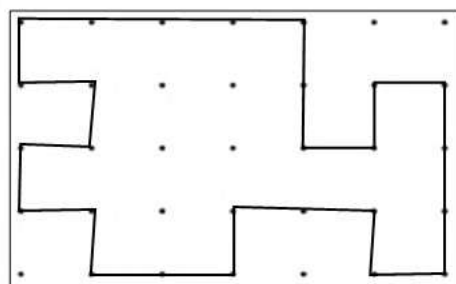
3) Perimeter = _____



4) Perimeter = _____

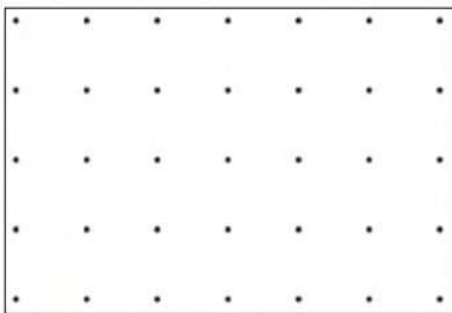
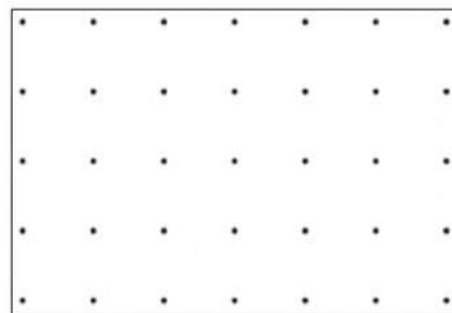
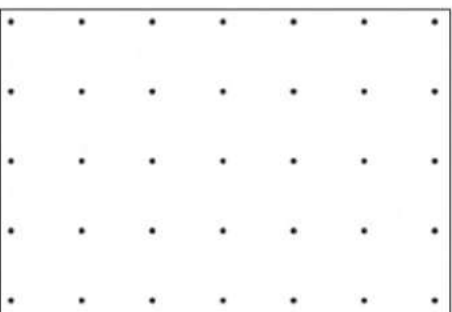
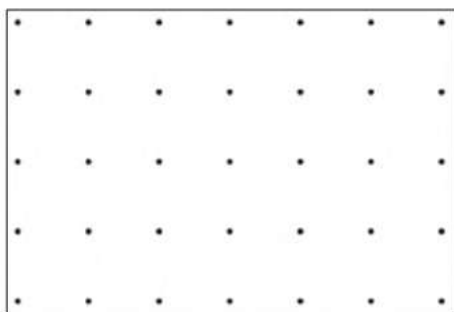
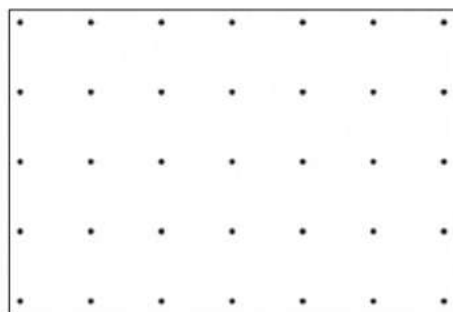


5) Perimeter = _____



6) Perimeter = _____

Drawing Shapes Using Perimeter

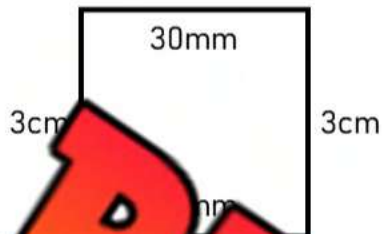
Part 1Draw a **square** with the perimeter that is given to you1) Perimeter = 82) Perimeter = 43) Perimeter = 12**Part 2**Draw a **rectangle** with the perimeter that is given to you4) Perimeter = 65) Perimeter = 106) Perimeter = 167) Perimeter = 88) Perimeter = 149) Perimeter = 1810) Perimeter = 2011) Perimeter = 12

Perimeter of Regular Polygons

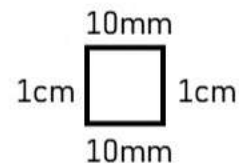
Part 1

Step 1 - Convert the units so they are all the same
Step 2 - Use a formula to calculate the perimeter

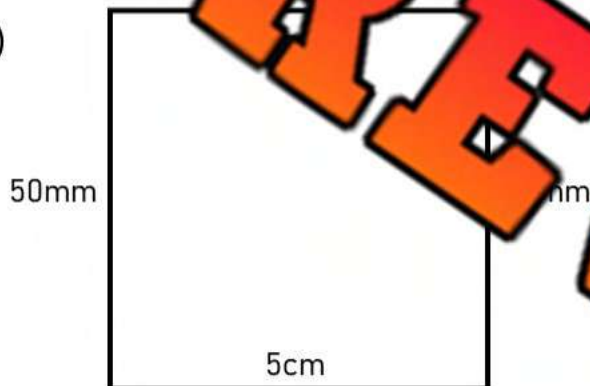
1)



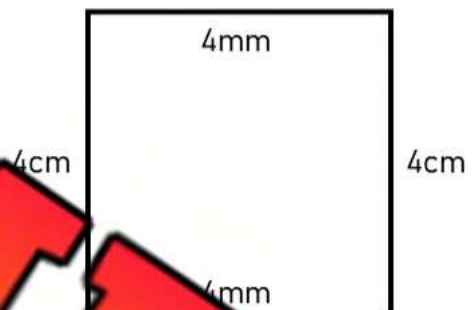
2)



3)



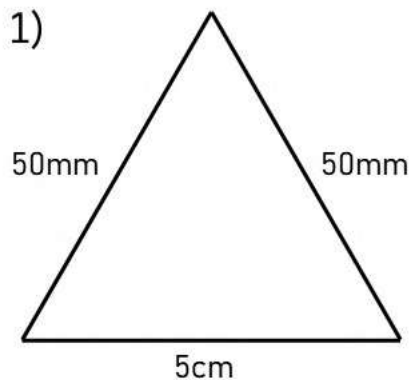
4)



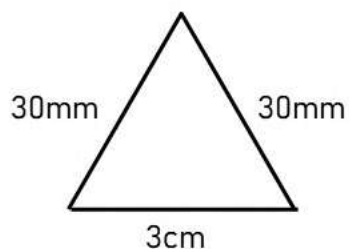
Part 2

Find the perimeter of the equilateral triangles below

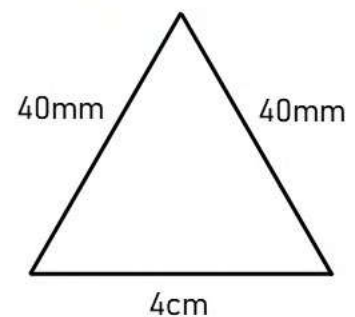
1)



2)



3)



Finding the Perimeter of Shapes

The perimeter is the distance around a shape. We can find the perimeter by adding up all of the side lengths.

Example: $2 + 2 + 2 + 2 = 8\text{cm}$

2cm

2cm

2cm

2cm

Part 1

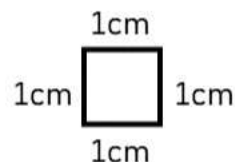
Find the perimeter of the squares below

1)



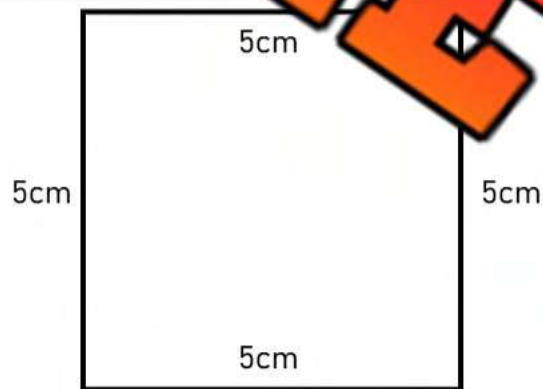
Perimeter= _____

2)

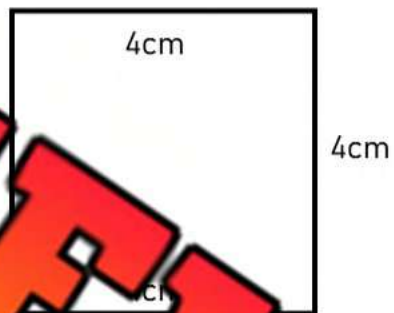


Perimeter= _____

3)



Perimeter= _____

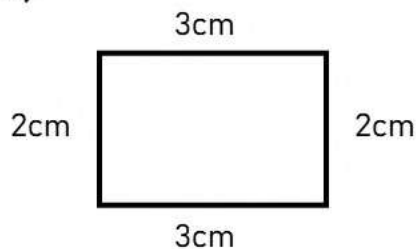


Perimeter= _____

Part 2

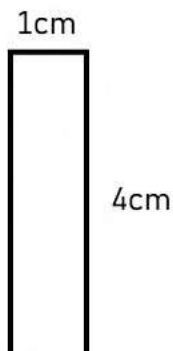
Find the perimeter of the rectangles below

1)



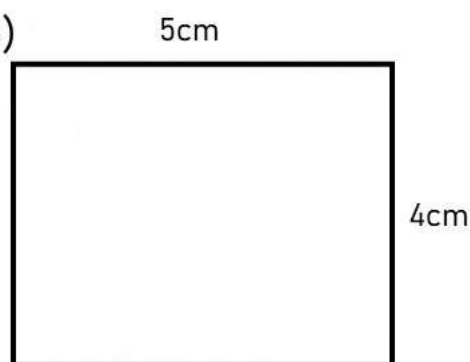
Perimeter= _____

2)



Perimeter= _____

3)



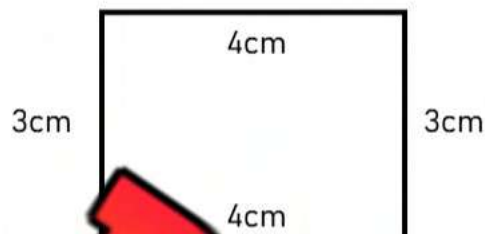
Perimeter= _____

Finding the Perimeter of Rectangles

Part 1

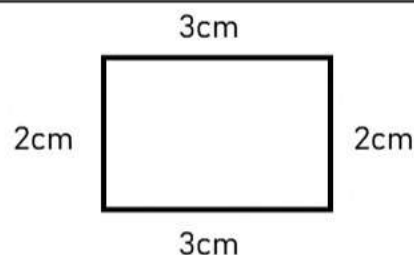
Find the perimeter of the rectangles below

1)



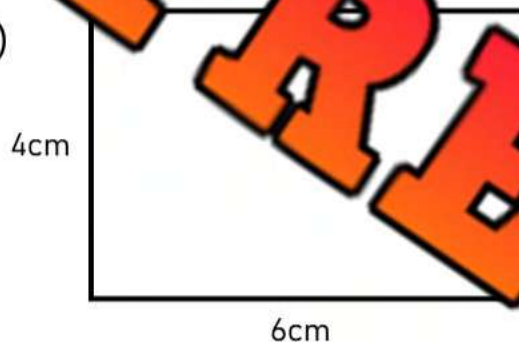
Perimeter = _____

2)



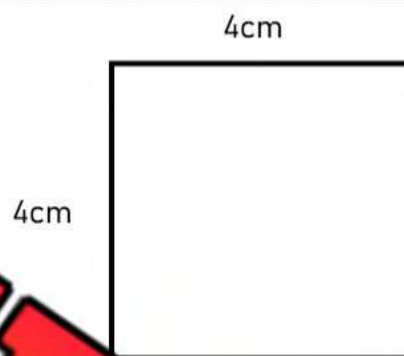
Perimeter = _____

3)



Perimeter = _____

4)



Perimeter = _____

Part 2

Answer the word problems below

- 1) A rectangular basement has a length of 15m and a width of 7m. What is the perimeter of the basement?



- 2) The perimeter of a rectangular playground is 40m. If the length of the playground is 15m, what is the width?



- 3) The basketball court has a width of 12 metres and a perimeter of 72 metres. What is the length of the basketball court?



Finding Perimeter – Converting cm and mm

Instructions

Step 1 - Convert the units so they are all the same
Step 2 - Add up all the units

*** not to scale

1)

3cm

40mm

Perimeter = _____ cm _____ mm

2)

3cm

20mm

Perimeter = _____ cm _____ mm

3)

Perimeter = _____ cm _____ mm

4)

7cm

30mm

Perimeter = _____ cm _____ mm

5)

50mm

2cm

Perimeter = _____ cm _____ mm

6)

40mm

2cm

Perimeter = _____ cm _____ mm

7)

90mm

5cm

Perimeter = _____ cm _____ mm

8)

40mm

Perimeter = _____ cm _____ mm

9)

2cm

100mm

Perimeter = _____ cm _____ mm

10)

3cm

50mm

Perimeter = _____ cm _____ mm

Perimeter Word Problems

Instructions

Draw a picture of the problem and then find the perimeter

1) A computer screen is 22cm by 12cm. What is the perimeter of the screen?

2) Pat is running around his yard. His yard is 25m by 12m. What is the perimeter of his yard?



3) The school yard is a rectangle that is 30m by 20m. What is the perimeter of the yard?

4) A poster is 1.2m by 160cm. What is the perimeter of the poster?



5) Mrs. Wilson is putting a border around her bulletin board. The board is 320cm by 1.6m. What is the perimeter of the bulletin board?



Perimeter Formulas

Mathematicians use formulas to help them solve questions faster and easier. When finding the perimeter of a quadrilateral, we can use the following formulas.

Formula 1

$$a + b + a + b$$

$$9 + 3 + 9 + 3 = 24\text{cm}$$



9cm

3cm

Formula 2

$$a + b \times 2$$

$$9 + 3 \times 2 = 24\text{cm}$$

Instruction Use both formulas to calculate the perimeter of the quadrilaterals

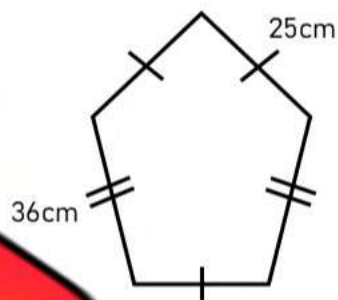
		Formula 1	Formula 2
1)	 5cm		
2)	 11cm		
3)	 15m		
4)	 22mm		
5)	 17cm		
6)	 7cm		

Perimeter – Compound Shapes

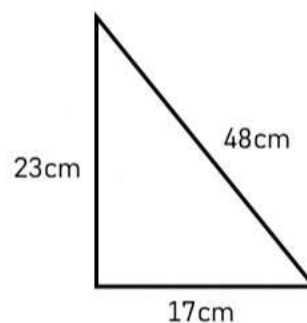
Instructions

Convert the units and calculate the perimeter of the shapes

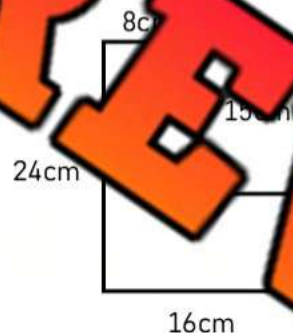
1)



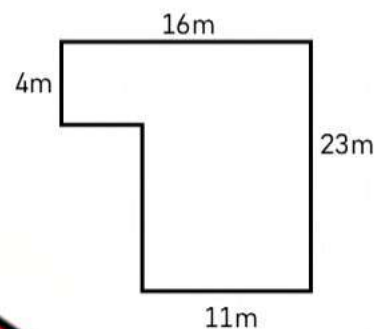
2)



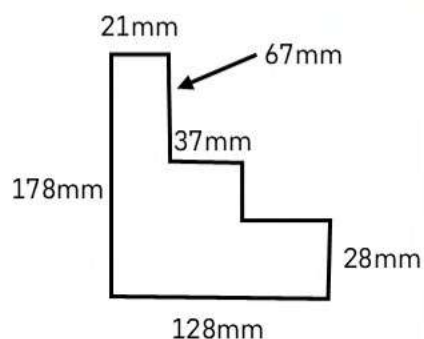
3)



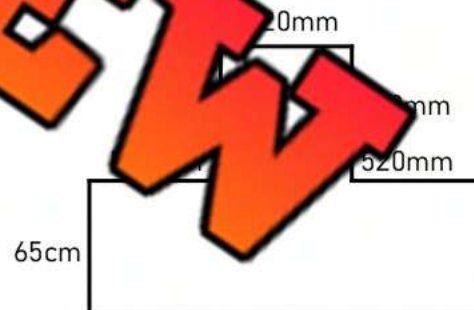
4)



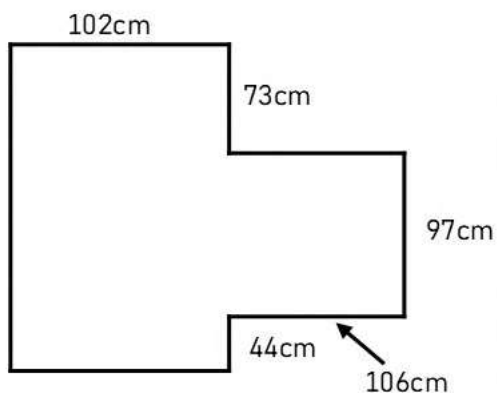
5)



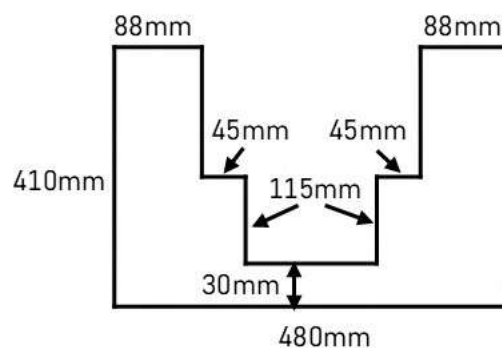
6)



7)



8)



Regular and Irregular Polygons – Word Problems

Instructions

Draw a picture of the problem and then find the perimeter

1) Henry built a fence using stones in his yard. The fence was shaped like a regular pentagon. The regular pentagon had side lengths of 13m. What is the perimeter of the shape?



2) Detective Carter taped a crime scene in an irregular shape. The irregular shape had 6 sides with the following measurements: 9m, 28m, 16m, 35m, 12m, and 47m. What is the distance of the perimeter?



3) Jayden ran a perimeter around his neighbourhood. The perimeter he ran around was a regular hexagon. Each side was 415m long. What is the distance Jayden ran?



Title: Perimeter Patrol: Measuring Shapes!

Objective

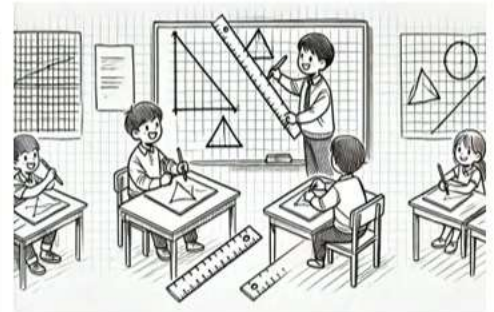
What are we learning about?

Students will learn to find the perimeter of regular and irregular polygons by measuring and adding the lengths of their sides.

Materials

What you will need for the activity.

- Large sheets of paper or graph paper
- Markers or pencils
- Rulers or measuring tape
- Scissors



Instructions

How you will complete the activity

1. Start the activity by explaining what a perimeter is and how to calculate it by adding up the lengths of all sides of a polygon.
2. Hand out graph paper, rulers, pencils, and erasers to each student.
3. Have the students draw several different polygons on their graph paper, both regular (e.g., squares, rectangles) and irregular (e.g., shapes with sides of different lengths).
4. Ask students to carefully measure each side of their polygons using the rulers and write down the measurements.
5. Instruct students to add up the lengths of all sides for each polygon to find the perimeter.
6. Optional: Once students have calculated the perimeters, let them cut out their polygons and create a display on a bulletin board.

Name: _____

39

Curriculum Connection
SS5.1

Draw

Draw regular polygons below. Label their perimeter inside the shape.

Regular Polygons

PREVIEW

Name: _____

40

Curriculum Connection
SS5.1

Draw

Draw irregular polygons below. Label their perimeter inside the shape.

Irregular Polygons

PREVIEW

Reflection

Answer the questions below.

1) How did you measure the sides of your polygons accurately?

2) What strategies did you use to add up the side lengths?

3) Were there any shapes that were easier to find the perimeter of? Why?

4) How does the perimeter change if you make one side longer or shorter?

5) How did working in a team help you in this activity?

Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Convert the units so they are all the same and calculate the perimeter.

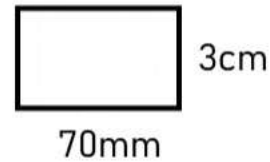


Perimeter = _____ cm _____ mm

2) A soccer field has a length of 20m and a perimeter of 90m. What is the width of the soccer field?

Name: _____

1) Convert the units so they are all the same and calculate the perimeter.

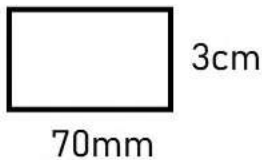


Perimeter = _____ cm _____ mm

2) A soccer field has a length of 20m and a perimeter of 90m. What is the width of the soccer field?

Name: _____

1) Convert the units so they are all the same and calculate the perimeter.



Perimeter = _____ cm _____ mm

2) A soccer field has a length of 20m and a perimeter of 90m. What is the width of the soccer field?

Name: _____

1) Convert the units so they are all the same and calculate the perimeter.



Perimeter = _____ cm _____ mm

2) A soccer field has a length of 20m and a perimeter of 90m. What is the width of the soccer field?

Introduction to Area

Area is the amount of surface or space inside a two-dimensional region.

Example - The area of the shape is 7 squares.



Instructions

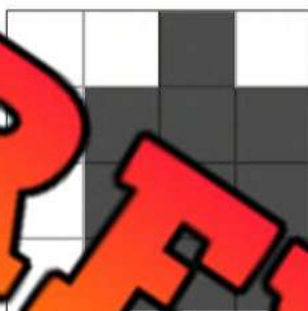
What is the area of the shape in squares?

1)



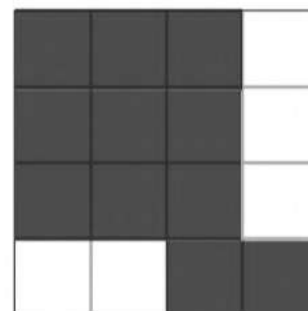
_____ squares

3)



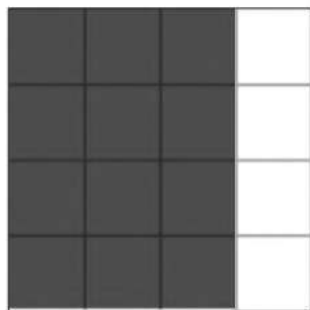
_____ squares

4)



_____ squares

5)



_____ squares

6)



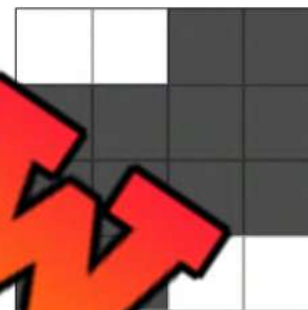
_____ squares

7)



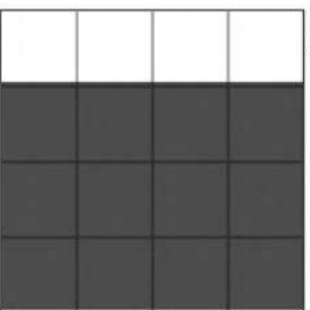
_____ squares

8)



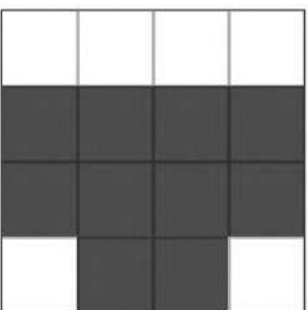
_____ squares

9)



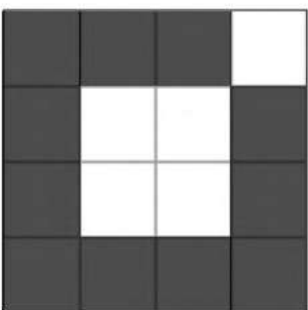
_____ squares

10)



_____ squares

11)



_____ squares

12)



_____ squares

Name: _____

44

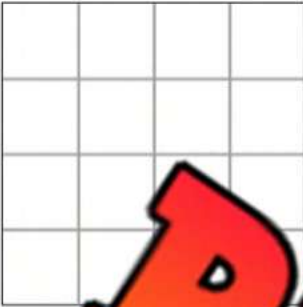
Curriculum Connection
SS5.1

Introduction to Area

Instructions

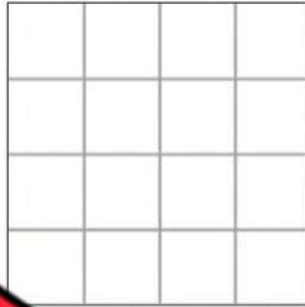
Shade in the area

1)



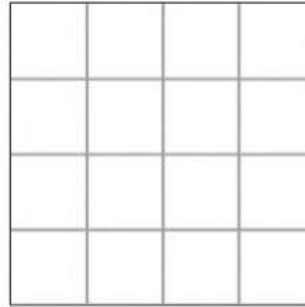
4 squares

2)



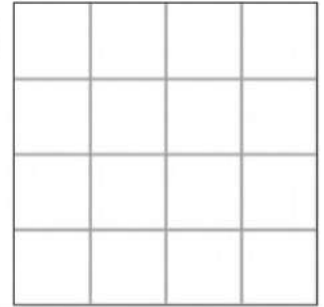
10 squares

3)



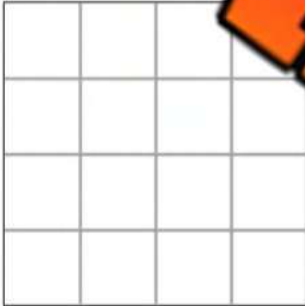
7 squares

4)



9 squares

5)



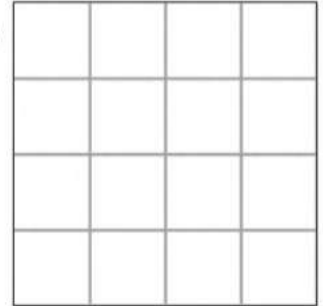
14 squares

7)



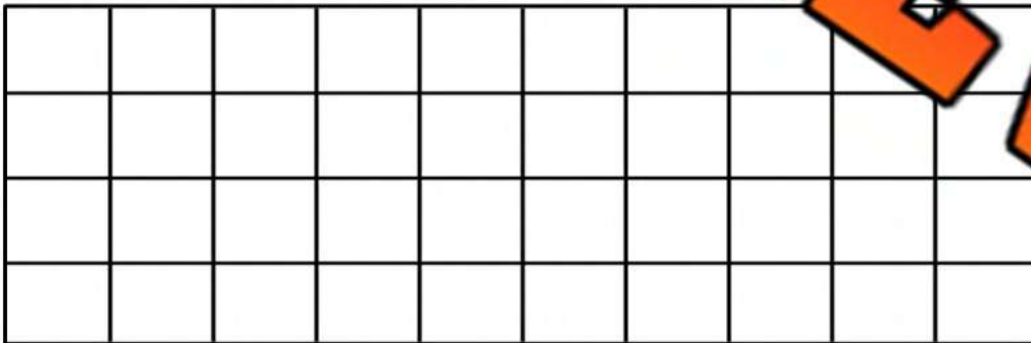
12 squares

8)



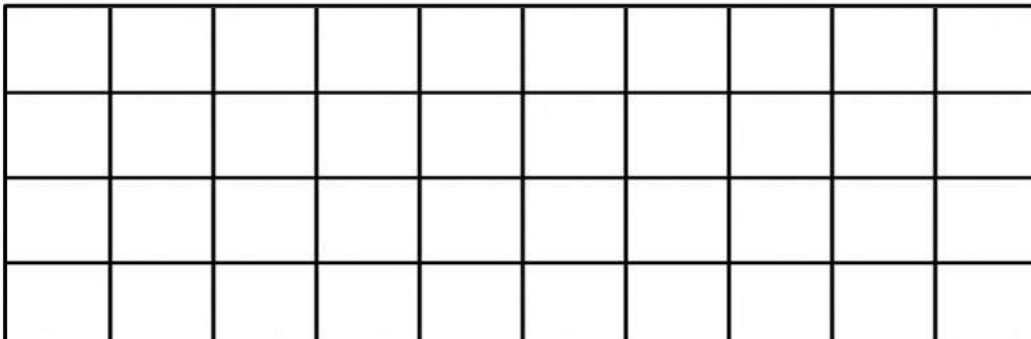
16 squares

9)



36 squares

10)

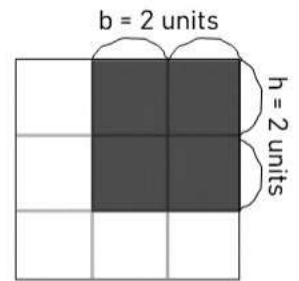
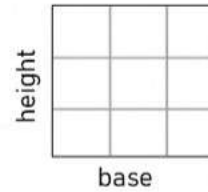


36 squares

Area - Units Squared

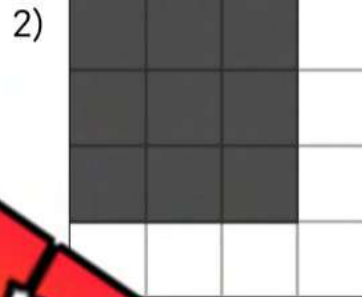
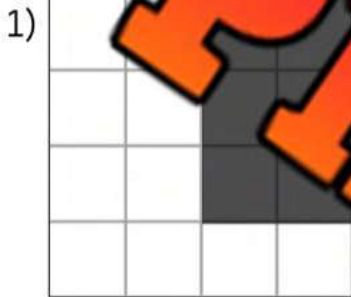
When we calculate the area of a shape, we can use the following formula

$$A = \text{base (b)} \times \text{height (h)}$$

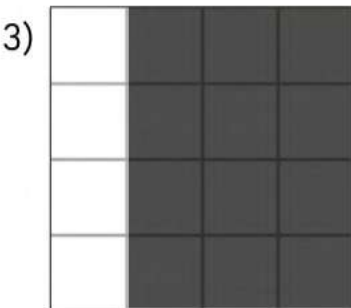


$$\begin{aligned} A &= b \times h \\ A &= 2 \times 2 \\ A &= 4 \text{ units}^2 \end{aligned}$$

Instructions Find the area of the shapes below



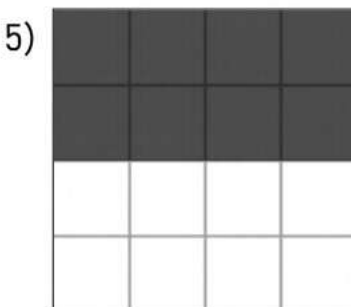
$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$



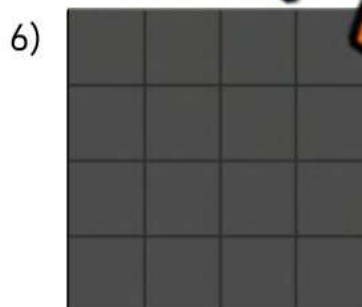
$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$



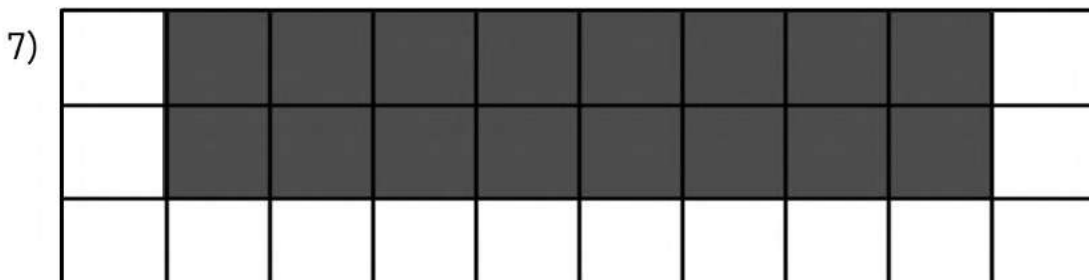
$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$



$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$



$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$



$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$

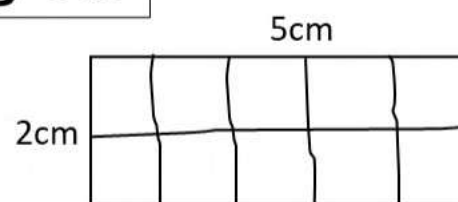
Name: _____

48

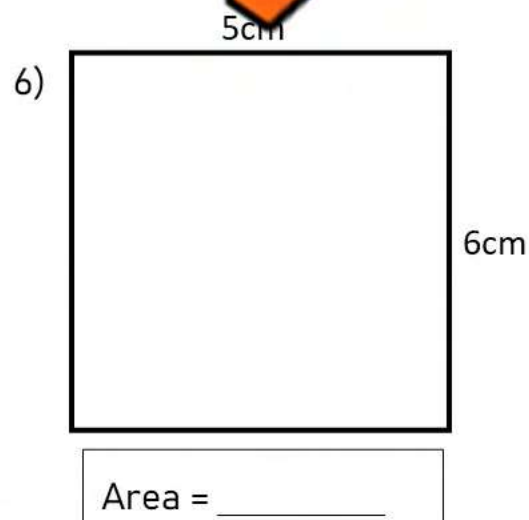
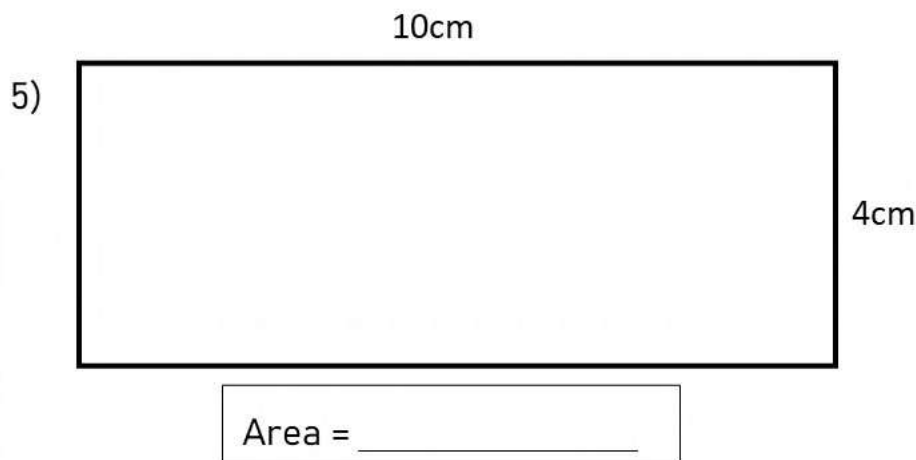
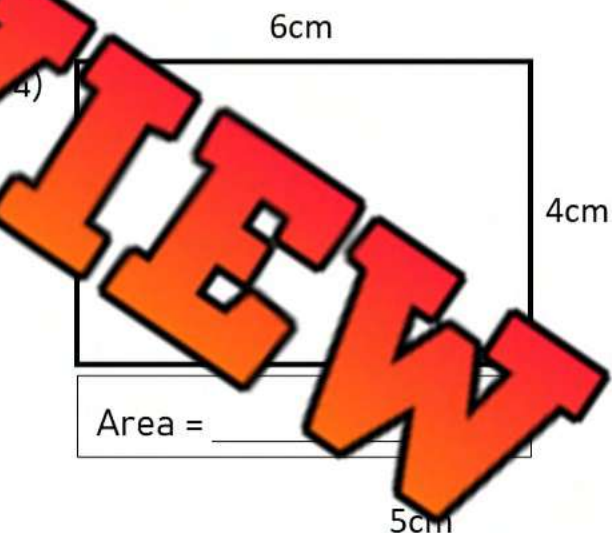
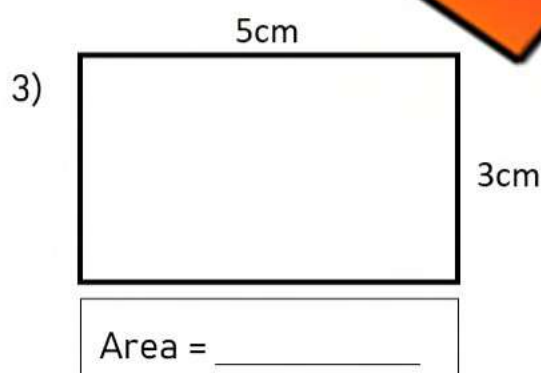
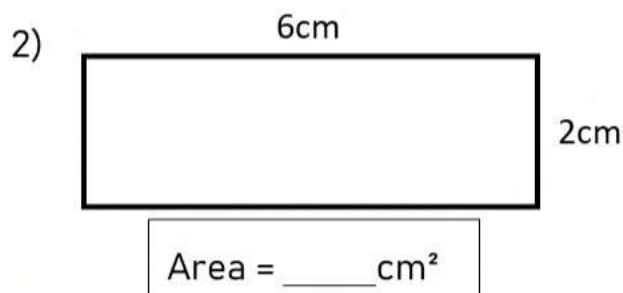
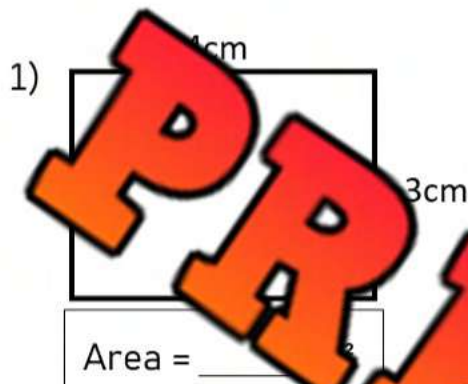
Curriculum Connection
SS5.1

Calculating Area Using CM

We can draw lines on shapes to segment them into cm squares. Try your best to make the squares equal.



Instructions Draw lines in the shapes below to create cm squares. Then count the squares



Name: _____

50

Curriculum Connection
SS5.1

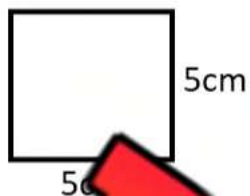
Finding the Area of Rectangles

Instructions

Find the area ($A = b \times h$)

*Not to Scale

1)



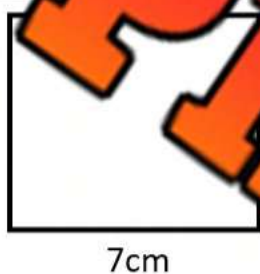
Area = _____

2)



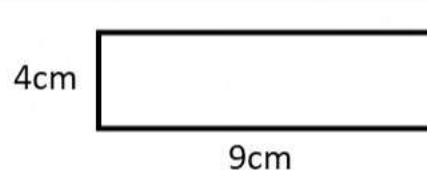
Area = _____

3)



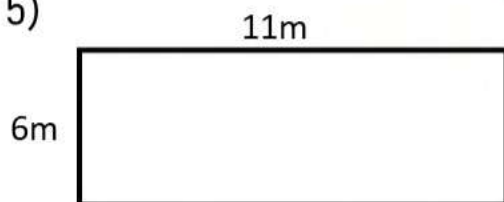
Area = _____

4)



Area = _____

5)



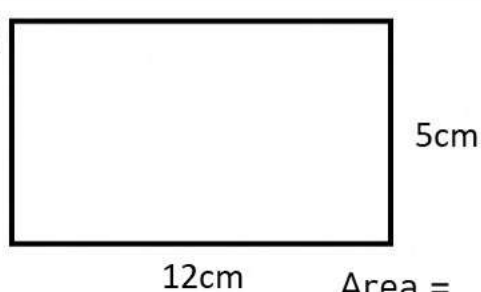
Area = _____

6)



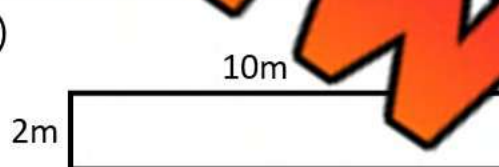
Area = _____

7)



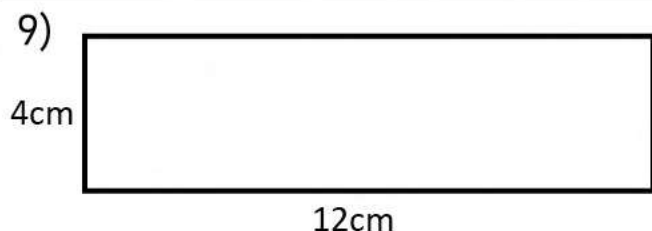
Area = _____

8)



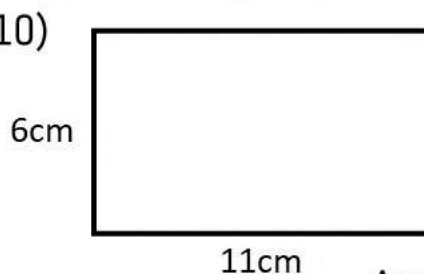
Area = _____

9)



Area = _____

10)



Area = _____

Exit Cards

Cut Out

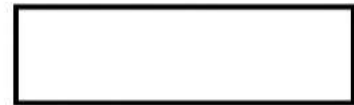
Cut out the exit cards below and have students complete them at the end of class

Name: _____

Find the area ($A = b \times h$)

a)

3cm



8cm

Area = _____

b)



7m

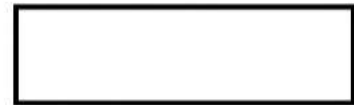
$A = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$
 $A = \underline{\hspace{1cm}} \text{ m}^2$

Name: _____

Find the area ($A = b \times h$)

a)

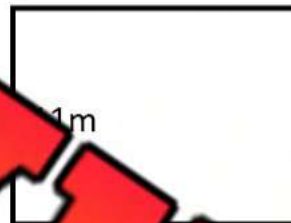
3cm



8cm

Area = _____

b)



7m

$A = b \times h$

$A = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

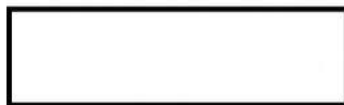
$A = \underline{\hspace{1cm}} \text{ m}^2$

Name: _____

Find the area ($A = b \times h$)

a)

3cm



8cm

Area = _____

b)



7m

$A = b \times h$

$A = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

$A = \underline{\hspace{1cm}} \text{ m}^2$

Name: _____

Find the area ($A = b \times h$)

a)

3cm



8cm

Area = _____

b)



7m

$A = b \times h$

$A = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

$A = \underline{\hspace{1cm}} \text{ m}^2$

Name: _____

52

Curriculum Connection
SS5.1

Perimeter and Area

Instructions

Step 1 - Find the perimeter (add up all the sides)

Step 2 - Find the area ($A = b \times h$)

1)

6m



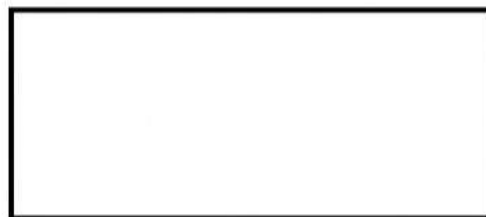
3m

Perimeter: _____

Area: _____

2)

7m



4m

Perimeter: _____m

Area: _____ m²

3)

6m



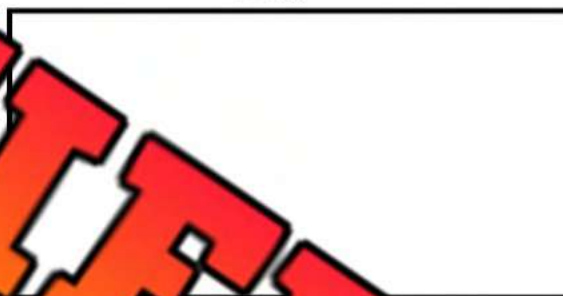
4m

Perimeter: _____

Area: _____

4)

10m



7m

Perimeter: _____

Area: _____

5)

8m



6m

Perimeter: _____

Area: _____

6)

9m



5m

Perimeter: _____

Area: _____

Same Area – Different Perimeter

Instructions Is it possible for a shape to have the same area and a different perimeter?

1)

8m



2m

Perimeter: _____

Area: _____

2)

4m



4m

Perimeter: _____ m

Area: _____ m²

3)

16m



1m

Perimeter: _____ m

Area: _____ m²

4)

6cm



4cm

Perimeter: _____ cm

Area: _____ cm²

5)

3cm



Perimeter: _____ cm

Area: _____ cm²

6)

24cm



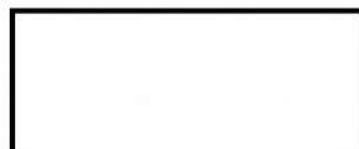
2cm

Perimeter: _____ cm

Area: _____

7)

12m



3m

Perimeter: _____ m

Area: _____ m²

8)

6m



6m

Perimeter: _____ m

Area: _____ m²

9)

18m



2m

Perimeter: _____ m

Area: _____ m²

Area Word Problems

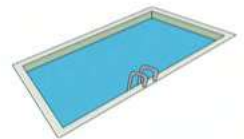
Instructions

Draw a picture of the problem and then find the area

1) A phone is 12cm by 6cm. What is the area of the phone?



2) A pool is 11m by 5m. What is the area of the pool?



3) A candy wrapper is 4cm wide and 3cm long. What is the area of the wrapper?



4) A square box is 12cm wide. What is the area of the box?



5) A door is 2m by 1.5m. What is the area of the door?



Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Find the perimeter and the area of the shape below



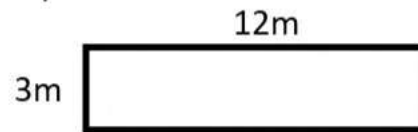
Perimeter: _____ m

Area: _____ m²

2) A kitchen table is 3m by 100cm.
What is the area of the kitchen table?

Name: _____

1) Find the perimeter and the area of the shape below



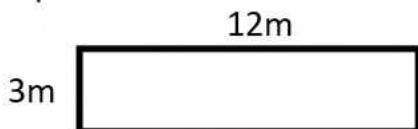
Perimeter: _____ m

Area: _____ m²

2) A kitchen table is 3m by 100cm.
What is the area of the kitchen table?

Name: _____

1) Find the perimeter and the area of the shape below



Perimeter: _____ m

Area: _____ m²

2) A kitchen table is 3m by 100cm.
What is the area of the kitchen table?

Name: _____

1) Find the perimeter and the area of the shape below



Perimeter: _____ m

Area: _____ m²

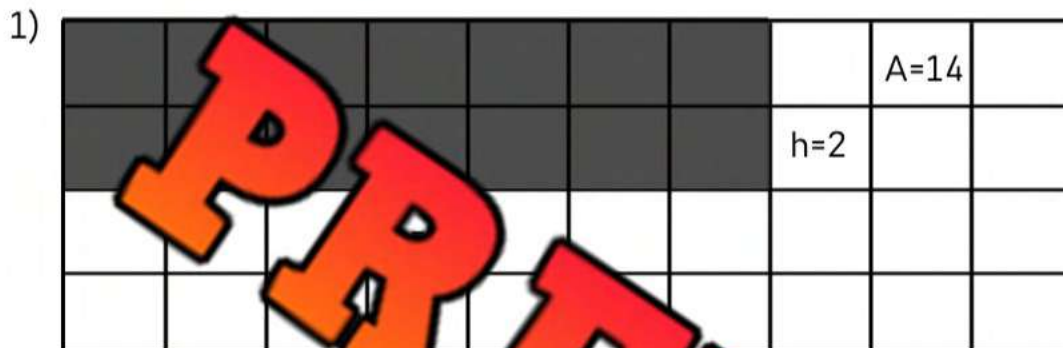
2) A kitchen table is 3m by 100cm.
What is the area of the kitchen table?

Finding the Missing Information - Visuals

To find the area of a rectangle, we need 2 of 3 pieces of information – base, height, and area. With the base and the height, we can find the area. With the area and the base, we can find the height and with the area and height, we can find the base.

Instructions

Find the missing piece of information



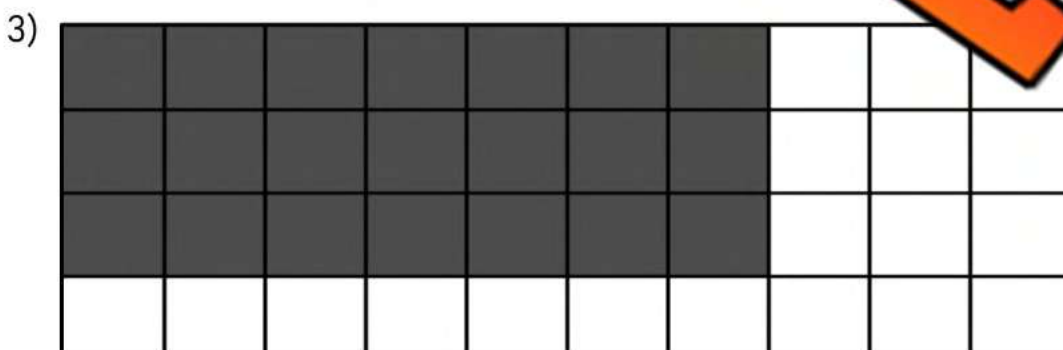
$$A = b \times h$$

$$14 = \underline{\quad} \times 2$$



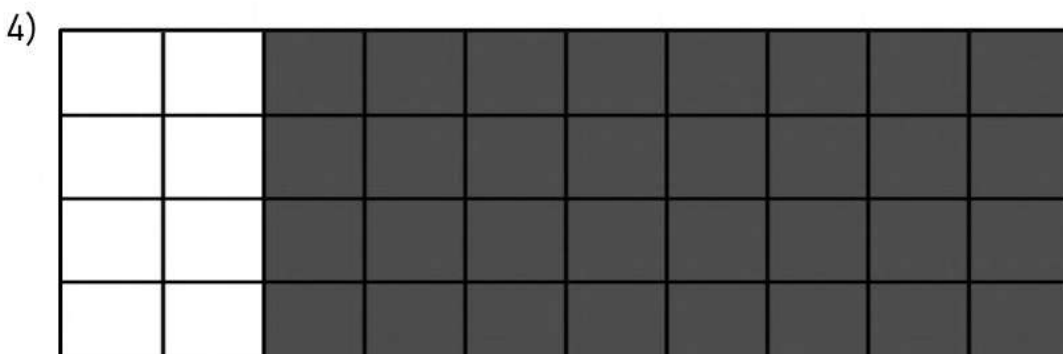
$$A = b \times h$$

$$36 = 9 \times \underline{\quad}$$



$$A =$$

$$21 = \underline{\quad} \times 3$$



$$A = b \times h$$

$$32 = 8 \times \underline{\quad}$$

Finding the Missing Information

InstructionsFind the missing value ($A = b \times h$)

1)



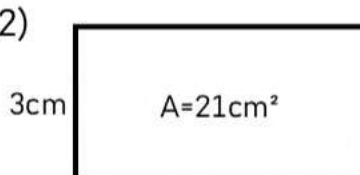
5cm

Base = _____

Height = _____

Area = _____

2)



3cm

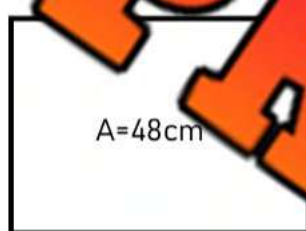
 $A = 21\text{cm}^2$

Base = _____

Height = _____

Area = _____

3)

 $A = 48\text{cm}^2$

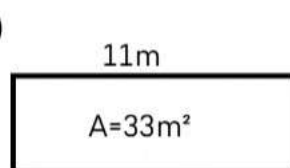
8cm

Base = _____

Height = _____

Area = _____

4)



11m

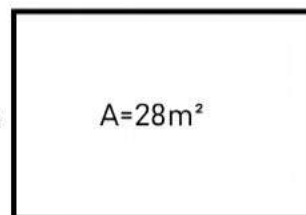
 $A = 33\text{m}^2$

Base = _____

Height = _____

Area = _____

5)



4m

 $A = 28\text{m}^2$

Base = _____

Height = _____

Area = _____

6)

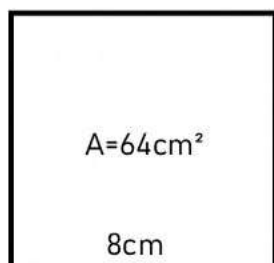
 $A = 2$

Base = _____

Height = _____

Area = _____

7)

 $A = 64\text{cm}^2$

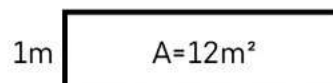
8cm

Base = _____

Height = _____

Area = _____

8)



1m

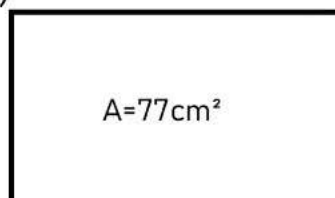
 $A = 12\text{m}^2$

Base = _____

Height = _____

Area = _____

9)

 $A = 77\text{cm}^2$

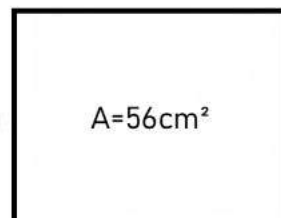
11cm

Base = _____

Height = _____

Area = _____

10)



7cm

 $A = 56\text{cm}^2$

Base = _____

Height = _____

Area = _____

Finding the Missing Information - Word Problems**Instructions**

Use the information you have to find the missing height or base

- 1) A piece of paper has an area of 88cm^2 . The base of the paper is 8cm . What is the height of the paper?



- 2) Jacob's yard has an area of 56m^2 . The height of the yard is 8m . What is the base?



- 3) A bus has an area of 24m^2 . The height of the bus is 3m . What is the base?



- 4) A square poster has an area of 36cm^2 . What is the base and height?



- 5) A cookie sheet has an area of 72cm^2 . The base of the sheet is 9cm . What is the height of the cookie sheet?



Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Find the missing value ($A = b \times h$)

8cm

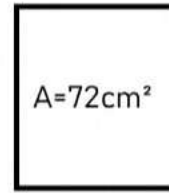
Base = _____

Height = _____

Area = _____

2) A garden has an area of 45m^2 . The base of the sheet is 9m. What is the height of the garden?

Name: _____

1) Find the missing value ($A = b \times h$) $A = 72\text{cm}^2$

8cm

Base = _____

Height = _____

Area = _____

2) A garden has an area of 45m^2 . The base of the sheet is 9m. What is the height of the garden?

Name: _____

1) Find the missing value ($A = b \times h$) $A = 72\text{cm}^2$

8cm

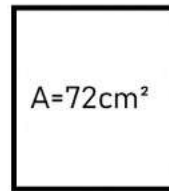
Base = _____

Height = _____

Area = _____

2) A garden has an area of 45m^2 . The base of the sheet is 9m. What is the height of the garden?

Name: _____

1) Find the missing value ($A = b \times h$) $A = 72\text{cm}^2$

8cm

Base = _____

Height = _____

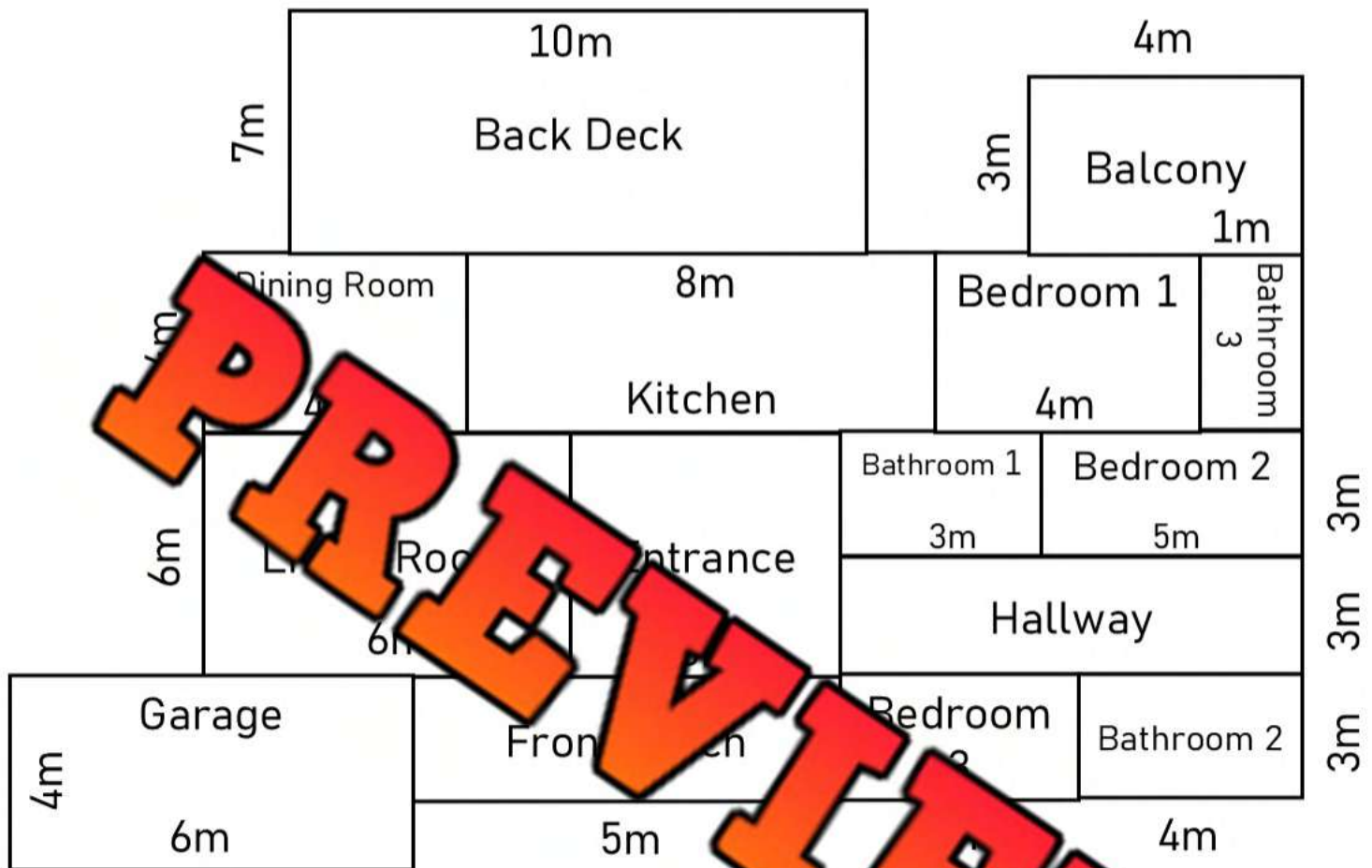
Area = _____

2) A garden has an area of 45m^2 . The base of the sheet is 9m. What is the height of the garden?

Name: _____

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Calculating Area and Perimeter - House



Instructions

Calculate the area and perimeter for each room in the house

Room	Perimeter	Area
Garage		
Front Porch		
Living Room		
Entrance		
Hallway		
Dining Room		
Kitchen		
Balcony		

Room	Perimeter	Area
Back Deck		
Bathroom 1		
Bathroom 2		
Bathroom 3		
Bedroom 1		
Bedroom 2		
Bedroom 3		

Perimeter and Area – Room Size

Instructions

Answer the word problems below



Ben and Brayden are arguing over who's room is larger. Both of their rooms are rectangular. Ben's room has a perimeter of 14 metres and Brayden's room has a perimeter of 18 metres.

1) Whose room is larger? Explain why you think that?

2) Draw pictures of Ben's room and Brayden's room below. Label them with the dimensions (length and width in metres).

Ben's Room

A large, empty rectangular box intended for drawing a representation of Ben's room.

Brayden's Room

A large, empty rectangular box intended for drawing a representation of Brayden's room.

3) a) What is the area of Ben's room? _____

b) What is the area of Brayden's room? _____

4) Could Brayden and Ben have different shaped rooms? Draw them again.

Ben's Room

A large, empty rectangular box intended for drawing a different shaped version of Ben's room.

Brayden's Room

A large, empty rectangular box intended for drawing a different shaped version of Brayden's room.

5) a) What is the area of this version of Ben's room? _____

b) What is the area of this version of Brayden's room? _____

Calculating Area and Perimeter - Gym

Questions

Answer the word problems below



Roger is building a gym. His walls can have a perimeter of 44 metres. He wants the largest area possible for his gym.

- 1) Draw the gym below. Label the walls with the dimensions (measurements in metres).

- 2) What is the area of the gym?

- 3) What is the perimeter of the gym?

- 4) What shape is the gym? Why does this shape give the largest area?

- 5) What perimeter of the gym would provide the smallest area? Draw the gym and label the walls with the new dimensions.

Perimeter and Area - Garden

Questions

Answer the word problems below

Rob is building a flower garden in his backyard. His garden has an area of 36m^2 .

- 1) What is the least amount of fencing that he needs to enclose the garden?



PREVIEW

- 2) What is the perimeter of the garden?

- 3) What shape is the garden?

Scavenger Hunt: Area and Perimeter

Objective

What are we learning about?

Students will practice calculating the area and perimeter of various shapes, enhancing their understanding of these geometric concepts through a fun and engaging scavenger hunt.

Materials

What you will need for the activity.

- Set of index cards with area and perimeter questions (provided)
- Small bags or envelopes for teams to collect their cards
- Small prizes or checkmarks for correct answers
- Tape to hide cards around the classroom or a designated safe outdoor area

$$5 + 3 = 8$$



Instructions

How you will complete the activity.

- 1) **Prepare the Cards:** Write different area and perimeter questions on index cards. Use the questions generated above.
- 2) **Hide the Cards:** Hide the cards around the classroom or a designated safe outdoor area. Tape them under chairs, desks, or tuck them into non-obvious places.
- 3) **Divide into Teams:** Divide the class into small teams and give each team a small bag or envelope to collect their cards.
- 4) **Explain the Game:** Explain the game to the students. Each team will hunt for a card, solve the problem on it as quickly as they can, and return to you for verification.
- 5) **Start the Game:** Say "Go!" and each team rushes to find their first card.
- 6) **Verify Answers:** When a team thinks they have the correct answer, they come back to you. If correct, they receive a small prize (or a checkmark) and move on to find the next card.
- 7) **Continue Playing:** The game continues until all cards are found or you call time. The team with the most correct answers wins.
- 8) **Discuss:** After the game, discuss the problems and solutions each team encountered, focusing on the methods used to calculate the area and perimeter.

Index cards

Cut out the cards below

A garden has an area of 45m^2 . The base of the garden is 9m. What is the height of the garden?

Henry built a fence using stones in his yard. The fence was shaped like a regular pentagon. The regular pentagon had side lengths of 13m. What is the perimeter of the shape?

Find the missing value (A)
Base = 8cm, Height = 7cm
Area = _____

A computer screen is 22cm by 12cm. What is the perimeter of the screen?

A piece of paper has an area of 88cm^2 . The base of the paper is 8cm. What is the height of the paper?

A rectangular basement has a length of 12m and a width of 5m. What is the perimeter of the basement?

A phone is 12cm by 6cm. What is the area of the phone?

A square has a side length of 10cm. What is the area of the square?

Index cards

Cut out the cards below

A rectangle has a perimeter of 50m. If the length is 15m, what is the width?

A rectangle has an area of 120cm^2 . If the height is 10cm, what is the base?

A rectangular garden has a length of 12m and a width of 8m. What is the area of the garden?

A rectangular field has an area of 200m^2 . If the width is 10m, what is the length?

A square playground has an area of 81m^2 . What is the length of one side of the playground?

A square garden has a side length of 6m. What is the area of the garden?

A rectangular sheet of paper has a perimeter of 60cm. If the width is 10cm, what is the length?

A rectangular box has a length of 10cm, a width of 5cm, and a height of 3cm. What is the perimeter of the base?

Index cards

Cut out the cards below

A rectangular plot of land has a length of 50m and a width of 20m. What is the perimeter of the plot?

A rectangular garden has an area of 64m^2 . If the length is 8m, what is the width?

A square has a side length of 10m. What is the area of the square?

A rectangle has a length of 14m and a width of 5m. What is the area of the rectangle?

A rectangle has a length of 8m and a width of 5m. What is the perimeter of the rectangle?

A rectangle has an area of 72cm^2 and a base of 9cm. What is the height?

A rectangular pool has a length of 30m and a width of 10m. What is the area of the pool?

A rectangular classroom has a length of 10m and a width of 6m. What is the perimeter of the classroom?

Index cards

Cut out the cards below

A rectangular piece of fabric has an area of 42cm^2 . If the width is 6cm, what is the length?

A rectangular fence has a length of 15m and a width of 9m. What is the perimeter of the fence?

A square tile has a side length of 9cm. What is the area of the tile?

A rectangular piece of wood has an area of 32cm^2 . If the height is 4cm, what is the base?

A rectangular field has a width of 10m and a length of 25m. What is the area of the field?

A rectangular glass has a perimeter of 40m. If the width is 12m, what is the length?

A rectangle has an area of 84cm^2 . If the base is 7cm, what is the height?

A rectangle has an area of 48m^2 . If the width is 6m, what is the length?

Name: _____

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Curriculum Connection
TQ1

Measurement Unit Test

Part 1

Measure the side lengths and then find the area and perimeter

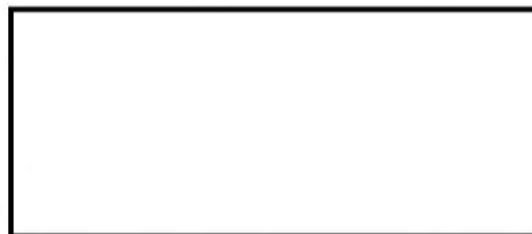
1)



Perimeter: _____ cm

Area: _____ cm^2

2)



Perimeter: _____ cm

Area: _____ cm^2

3)



Perimeter: _____ cm

Area: _____ cm^2

4)



Perimeter: _____ cm

Area: _____ cm^2

Part 2

Find the area

1)

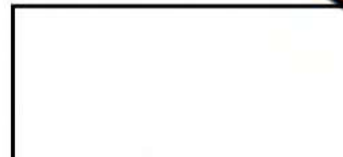


3m

3m

Area: _____ m^2

2)

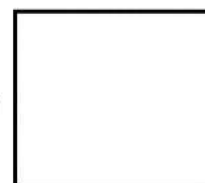


3cm

5cm

Area: _____ cm^2

3)



5cm

5cm

Area: _____ cm^2

4)



2m

5m

Area: _____ m^2

Part 3

Solve the word problems below. Make sure to show your work

1) A piece of paper is 8cm wide and 10cm tall. What is the area of the paper?

2) Henry's picture frame has an area of 56cm^2 . The frame has a base of 7cm. What is the height of the frame?

3) The side of a bus is an area of 40m^2 . The height of the bus is 4m. What is the base?

Part 4

Solve the word problem below. Make sure to show your work

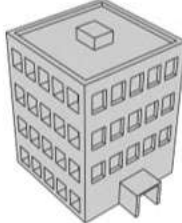
Brad is building a flower garden in his backyard. His garden will be a square of 49m^2 .

1) What is the least amount of fencing that he needs to enclose the garden? How many metres will Brad need?

2) What is the perimeter of the garden?

3) What shape is the garden?

Measuring Volume – CM Cubed and M Cubed

Centimetre Cubed (cm^3)	Metre Cubed (m^3)
Used to measure the volume of smaller objects	Used to measure volume of larger objects
	

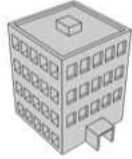
Part 1 Use the information to decide which unit you would use to measure

1) House		6) Juice box	
2) Pool		7) Recycling bin	
3) Lunch box		8) Transport container	
4) Living room		9) Bookshelves	
5) Classroom		10) Clothing Dryer	

Part 2 Write something that you would measure using the unit of measurement

1) cm^3		5) cm^3	
2) m^3		6) m^3	
3) cm^3		7) cm^3	
4) m^3		8) m^3	

Estimating Volume Using Referents

Centimetre Cubed (cm^3)	Metre Cubed (m^3)
Rubik's Cube = 216cm^3 	3 Story Building = 2000m^3 

Instruct

Circle which volume matches the description

1) Juice box

- a) 300cm^3
b) 10cm^3
c) 300m^3



2) Train car

- a) 20cm^3
b) 1000m^3
c) 20m^3



3) Recycling bin

- a) 42000cm^3
b) 200cm^3
c) 750m^3



4) School

- a) 20cm^3
b) 20m^3
c) 2000m^3



5) Skyscraper

- a) 2500cm^3
b) $250,000\text{m}^3$
c) 1000m^3



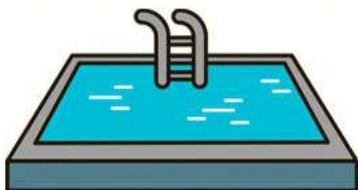
6) Pencil sharpener

- a) 750cm^3
b) 50cm^3
c) 1000m^3



7) Pool

- a) 80cm^3
b) 80m^3
c) 1000m^3



8) Shoe box

- a) 3000m^3
b) 3000cm^3
c) 1000m^3



9) House

- a) 750m^3
b) 750cm^3
c) 2000m^3



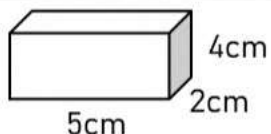
10) Candy Box

- a) 320cm^3
b) 2000cm^3
c) 300m^3



Calculating Volume - Blocks**Rectangular Prism - Calculating Volume**

To find the volume of a rectangular prism, multiply the length by the width by the height.



$$\begin{aligned}v &= l \times w \times h \\v &= 5\text{cm} \times 2\text{cm} \times 4\text{cm} \\v &= 40\text{cm}^3\end{aligned}$$

Instructions

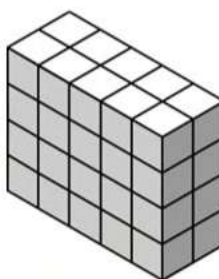
Label the rectangular prisms and then calculate the volume

1)



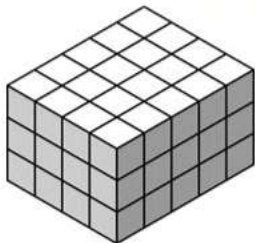
l = _____
w = _____
h = _____

2)



l = _____
w = _____
h = _____
v = _____

3)



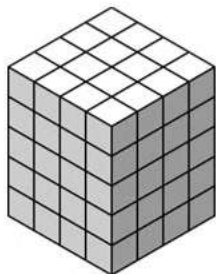
l = _____
w = _____
h = _____
v = _____

4)



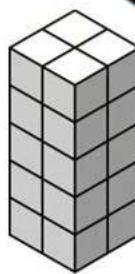
l = _____
w = _____
h = _____
v = _____

5)



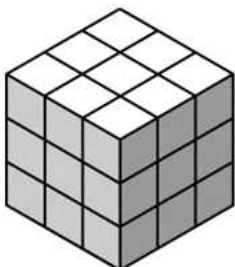
l = _____
w = _____
h = _____
v = _____

6)



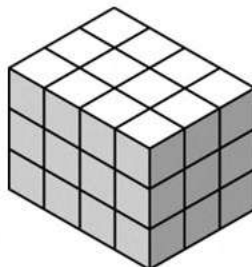
l = _____
w = _____
h = _____
v = _____

7)

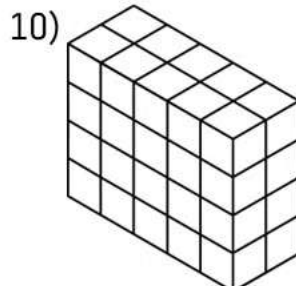
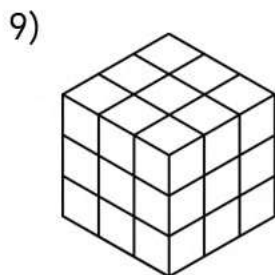
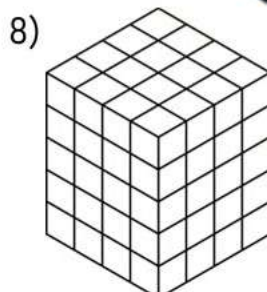
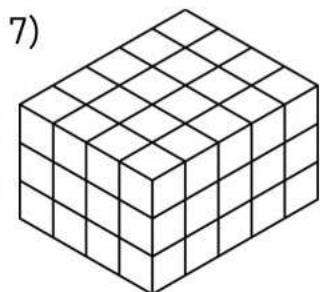
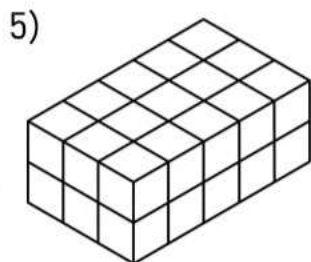
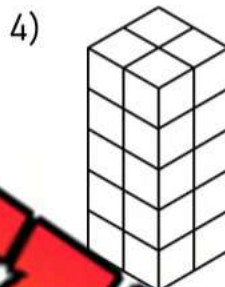
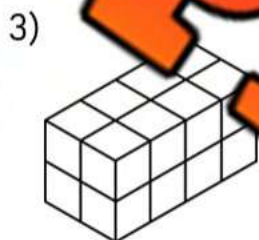
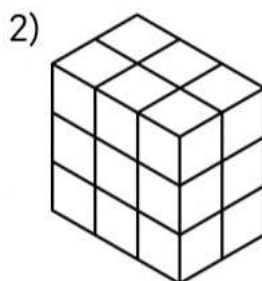
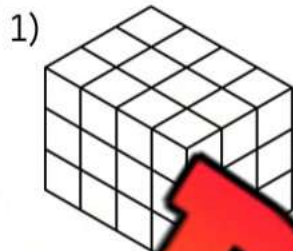


l = _____
w = _____
h = _____
v = _____

8)



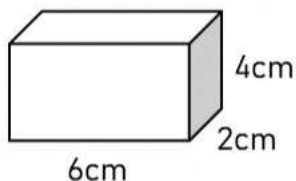
l = _____
w = _____
h = _____
v = _____

Calculating Volume - Blocks**Instructions**Calculate the volume of the rectangular prisms below - $l \times w \times h$ 

Calculating Volume of Rectangular Prisms

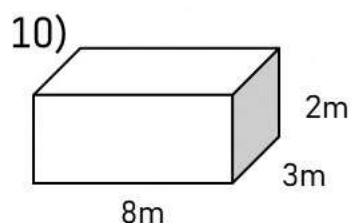
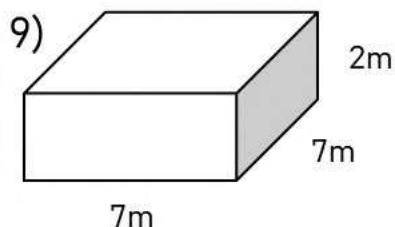
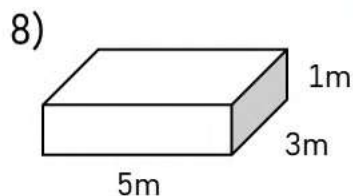
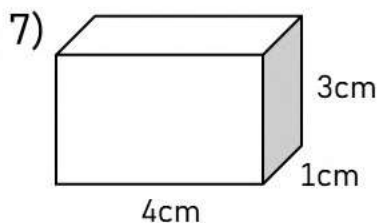
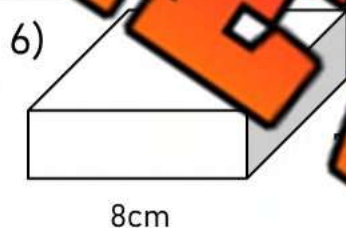
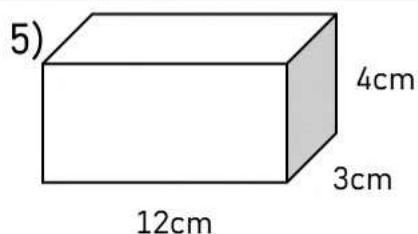
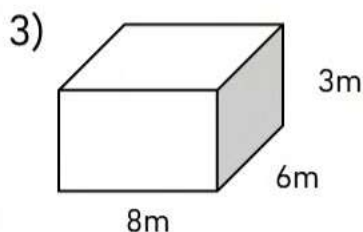
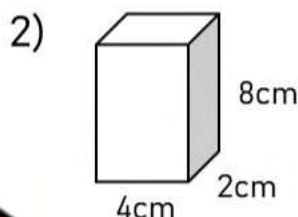
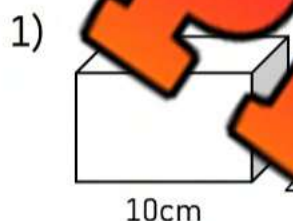
Rectangular Prism - Calculating Volume

To find the volume of a rectangular prism, multiply the length by the width by the height.



$$\begin{aligned}v &= l \times w \times h \\v &= 6\text{cm} \times 2\text{cm} \times 4\text{cm} \\v &= 48\text{cm}^3\end{aligned}$$

Instructions Calculate the volume of the rectangular prisms

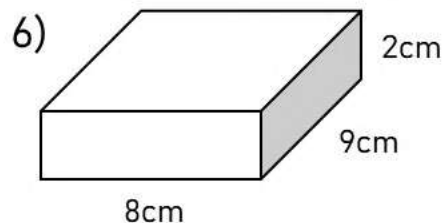
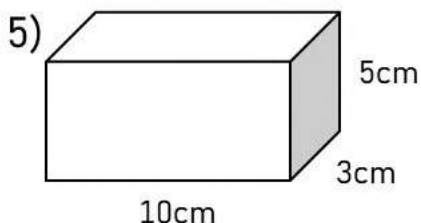
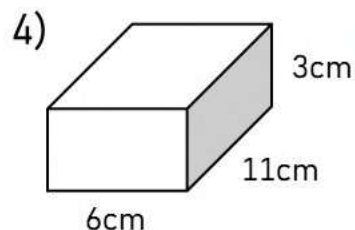
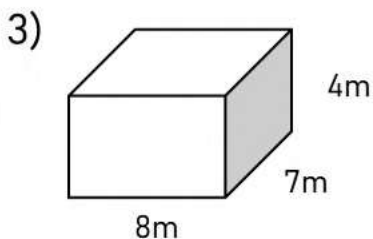
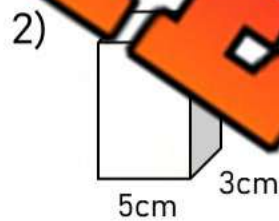
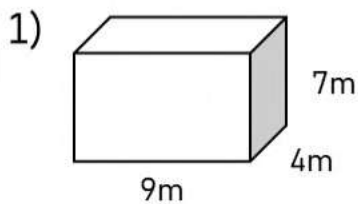


Calculating Volume of Rectangular Prisms

Part 1 A variety of small boxes are used for packaging. Find the volume of each box

Box Type	Length	Width	Height	Volume
Box 1	10cm	8cm	2cm	
Box 2	6cm	7cm	10cm	
Box 3	7cm	9cm	2cm	
Box 4	6cm	8cm	5cm	
Box 5	10cm	9cm	7cm	
Box 6	12cm	10cm	7cm	
Box 7	9cm	11cm	3cm	

Part 2 Calculate the volume of the rectangular prisms

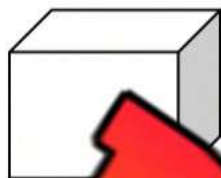


Calculating Volume of Rectangular Prisms

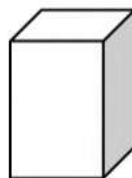
Instructions

Label the rectangular prisms and then calculate the volume

1)

 $l = 5\text{cm}$
 $w = 3\text{cm}$
 $h = 5\text{cm}$ $v = \underline{\hspace{2cm}}$

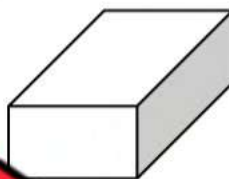
2)

 $l = 3\text{m}$
 $w = 2\text{m}$
 $h = 9\text{m}$ $v = \underline{\hspace{2cm}}$

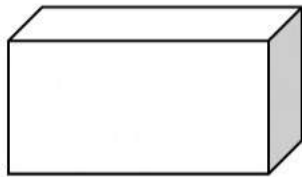
3)

 $l = 10\text{cm}$
 $w = 5\text{cm}$
 $h = 3\text{cm}$ $v = \underline{\hspace{2cm}}$

4)

 $l = 6\text{cm}$
 $w = 11\text{cm}$
 $h = 3\text{cm}$ $v = \underline{\hspace{2cm}}$

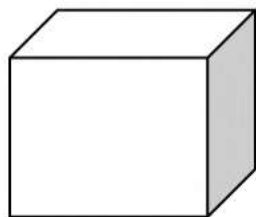
5)

 $l = 10\text{cm}$
 $w = 2\text{cm}$
 $h = 5\text{cm}$ $v = \underline{\hspace{2cm}}$

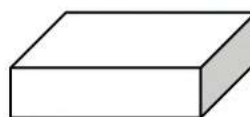
6)

 $l = 7\text{m}$
 $w = 10\text{m}$
 $h = 2\text{m}$ $v = \underline{\hspace{2cm}}$

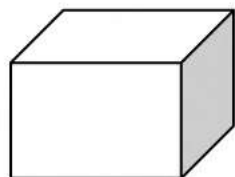
7)

 $l = 8\text{m}$
 $w = 3\text{m}$
 $h = 6\text{m}$ $v = \underline{\hspace{2cm}}$

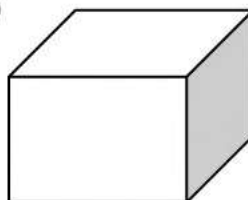
8)

 $l = 4\text{m}$
 $w = 3\text{cm}$
 $h = 1\text{cm}$ $v = \underline{\hspace{2cm}}$

9)

 $l = 7\text{cm}$
 $w = 6\text{cm}$
 $h = 5\text{cm}$ $v = \underline{\hspace{2cm}}$

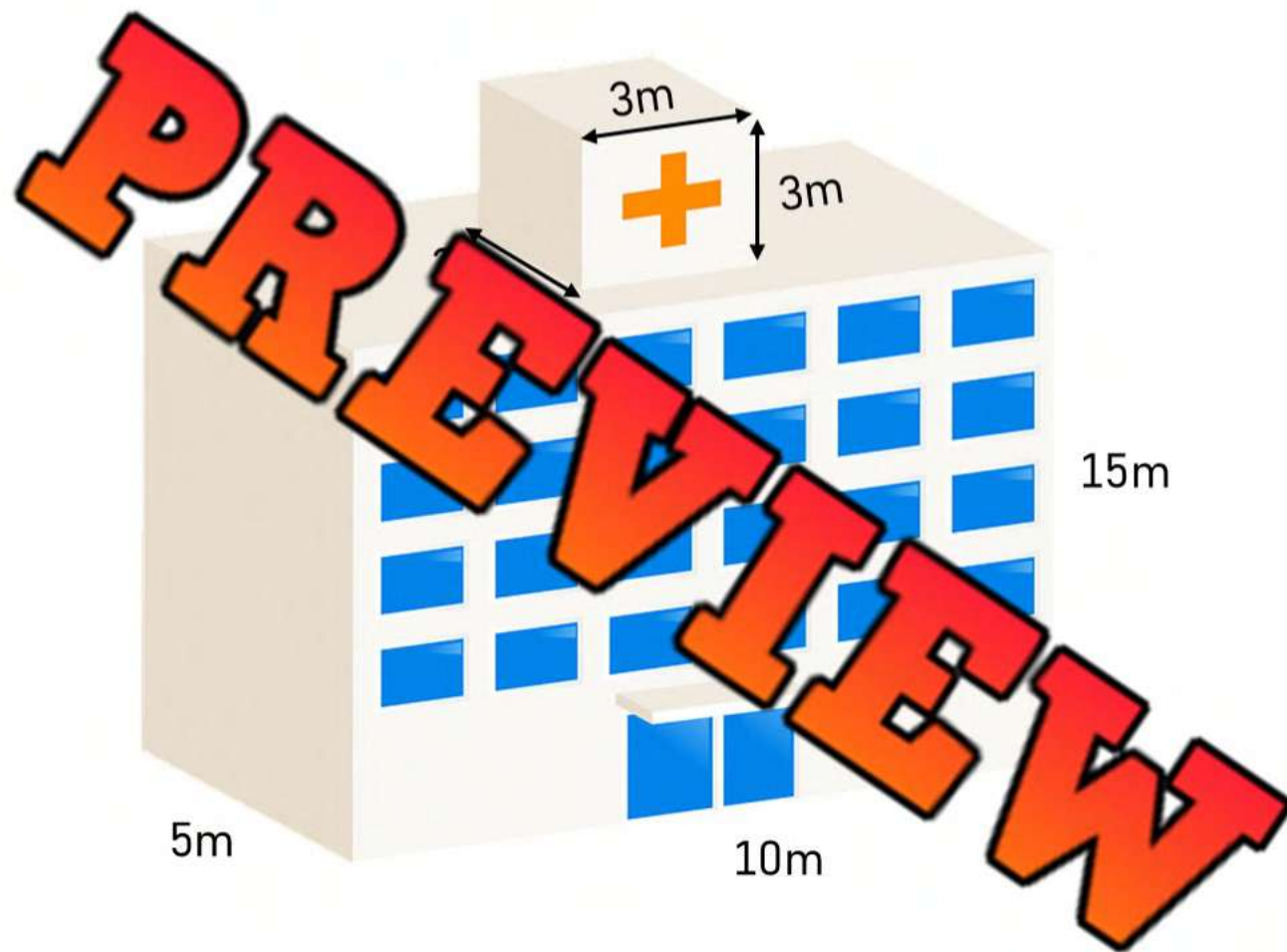
10)

 $l = 10\text{m}$
 $w = 9\text{m}$
 $h = 8\text{m}$ $v = \underline{\hspace{2cm}}$

Volume – Word Problem**Instructions**

Solve the word problem below

The hospital below is made of 2 rectangular prisms. Calculate the volume of both rectangular prisms and add your answers together to find the total volume.



Volume of large part of the hospital = _____ x _____ x _____ = _____

Volume of structure on top of the hospital = _____ x _____ x _____ = _____

Total volume of the hospital = _____ + _____ = _____

Volume – Word Problem**Instructions**

Solve the word problem below

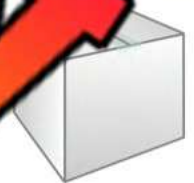
1) Howard can build a box that has a volume of 36m^3 . Draw the box and label the dimensions of the box.



2) Nora needs a box that has a volume of 400cm^3 . Draw the box and label the dimensions of the box below.



3) Kennedy has started building a box. The length is 10cm and the height is 7cm. The volume of the box needs to be 420cm^3 . What does the width need to be?



4) Alexa is measuring the volume of a cereal box. She's figured out that the height is 40cm and the width is 8cm. The volume is $4,800\text{cm}^3$. What is the length of the cereal box?



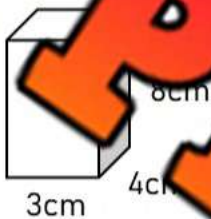
Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

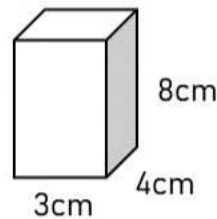
- 1) What is the volume of the rectangular prism?



- 2) A water tank has a volume of 60m^3 . If the base area is 12m^2 , what is the height of the tank?
- _____

Name: _____

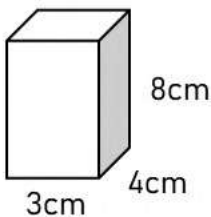
- 1) What is the volume of the rectangular prism?

 $V =$ _____

- 2) A water tank has a volume of 60m^3 . If the base area is 12m^2 , what is the height of the tank?
- _____

Name: _____

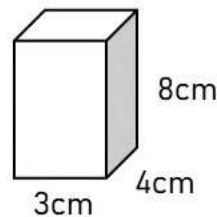
- 1) What is the volume of the rectangular prism?

 $V =$ _____

- 2) A water tank has a volume of 60m^3 . If the base area is 12m^2 , what is the height of the tank?
- _____

Name: _____

- 1) What is the volume of the rectangular prism?

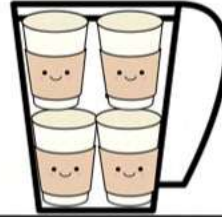
 $V =$ _____

- 2) A water tank has a volume of 60m^3 . If the base area is 12m^2 , what is the height of the tank?
- _____

Capacity

Capacity is the amount a container can hold. We can use smaller containers to fill a larger container. It is important to not underfill or overfill when we are measuring the capacity of a container.

Example – 4 smaller paper cups fill the larger cup



Instructions – Estimate how many of the smaller things will fit into the container



X _____



X _____



X _____



X _____



X _____



X _____



X _____



Measuring Capacity – Millilitre (mL) and Litre (L)

Millilitre (mL)	Litre (L)
Used to measure capacity of small containers	Used to measure capacity of mid to large sized containers
	

Part 1 Use the information above to decide which unit you would use to measure

1) Cup of apple juice	6) Wheelbarrow of liquid	
2) Dump truck of cement	7) Box	
3) Can of pop	8) Water in tub	
4) Spoonful of medicine	9) Spoon of medicine	
5) Bucket of water	10) Bathtub full of water	

Part 2 Write something that you would measure using the unit of measurement

1) Millilitre		5) Millilitre	
2) Litre		6) Litre	
3) Millilitre		7) Millilitre	
4) Litre		8) Litre	

Metric System Units – Capacity – Decimal Conversions

Millilitre (mL)	Litre (L)
1000 mL = 1L 1800 mL = 1.8L 	1.5L = 1500mL 3.3L = 3300mL 

Part 1 Fill in the tables below

mL	L
1000	1
2000	
3000	
	5
6000	
7000	
8000	
	9
	10

mL	L
1500	
	2.5
	3.5
4500	
5000	
6500	
	7.5
10500	

Part 2 Convert the units of measurement below

1) 1.7L _____ mL

5) 2100mL _____ L

9) 4.5L _____ mL

2) 5.4L _____ mL

6) 4700mL _____ L

10) 5500mL _____ L

3) 8400mL _____ L

7) 3.6L _____ mL

11) 4500mL _____ L

4) 3L _____ mL

8) 7200mL _____ L

12) 2500mL _____ L

Which has the Largest Capacity?

Part 1

Which measurement has the largest capacity?

1)	5.2L	510mL	2300mL	1.9L
2)	10.3L	3500mL	2.1L	1600L
3)	67	608L	2300L	3.5L
4)	9L	4500mL	6500L	1.6L
5)	3600mL		2200mL	3.1L

Part 2

Read the problem and choose the correct answer below

- 1) Henry and Ruby both have juice boxes. Henry's juice box is 231ml and Ruby's is 0.5L. Who's juice box has a larger capacity?
- 2) Jesse is ordering soup from a restaurant. She can choose between the 1100mL soup or the 1100mL soup. Which option should she choose if she wants the larger soup?
- 3) Traci and Emma are arguing over who's water bottle has the larger capacity. Traci's bottle has a capacity of 2.2L and Emma's bottle holds 1955mL.



Around the World Math Race: Converting L and ML

Objective

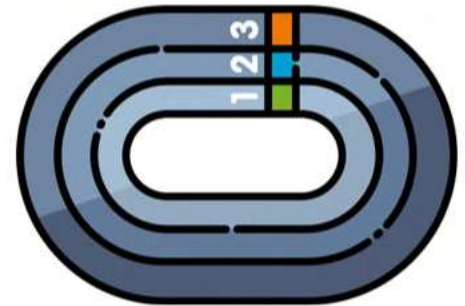
What are we learning about?

Students will practice converting between liters and milliliters by quickly answering conversion questions in a competitive and engaging game format.

Materials

What you will need for the activity.

- Liters and milliliters conversion questions (e.g., converting liters to milliliters and vice versa)
- Optional: Timer or stopwatch
- Chairs arranged in a circle



Instructions

How you will complete the activity

1. Setup: Arrange chairs in a circle, with one student seated in a chair. One student stands behind a seated student to start the game.
2. Explain the Game: Explain to the students that they will be participating in a race around the circle by answering conversion questions. The student who answers correctly moves around the entire circle and return to their original position.
3. Start the Game: The teacher reads out a conversion question (e.g., "How many milliliters are in 2.2 liters?").
4. Answering the Question: The standing student and the seated student in front of them compete to answer the question first. The student who answers correctly first moves to stand behind the next seated student, while the other student remains seated.
5. Continue the Race: The teacher continues reading out questions, and the process repeats. The standing student continues to move around the circle, answering questions at each stop.
6. Winning the Game: The first student to make it around the entire circle and return to their original position wins the race.
7. Review: After the game, review some of the questions and answers with the class to reinforce the concepts and ensure understanding.

Questions

Use the questions below for the game

Questions

What is the equivalent of 1.5 liters in milliliters?

How many milliliters are in 2.2 liters?

How many liters are in 600 milliliters?

How many liters are in 6200 milliliters?

What is the equivalent of 0.75 liters in milliliters?

How many milliliters are in 3.5 liters?

How many liters are in 450 milliliters?

How many liters are in 1800 milliliters?

What is the equivalent of 0.25 liters in milliliters?

How many milliliters are in 4.2 liters?

How many liters are in 1200 milliliters?

How many liters are in 5000 milliliters?

What is the equivalent of 1.25 liters in milliliters?

How many milliliters are in 6.3 liters?

How many liters are in 700 milliliters?

How many liters are in 3600 milliliters?

What is the equivalent of 2.5 liters in milliliters?

How many milliliters are in 5.8 liters?

How many liters are in 900 milliliters?

How many liters are in 4700 milliliters?

What is the equivalent of 0.5 liters in milliliters?

How many milliliters are in 7.4 liters?

Questions

Use the questions below for the game

Questions

How many liters are in 300 milliliters?

How many liters are in 2400 milliliters?

What is the equivalent of 3 liters in milliliters?

How many milliliters are in 8.5 liters?

How many liters are in 1500 milliliters?

How many liters are in 1000 milliliters?

What is the equivalent of 1.5 liters in milliliters?

How many milliliters are in 10.1 liters?

How many liters are in 2000 milliliters?

How many liters are in 4200 milliliters?

What is the equivalent of 0.9 liters in milliliters?

How many milliliters are in 10.1 liters?

How many liters are in 2000 milliliters?

How many liters are in 5600 milliliters?

What is the equivalent of 4.5 liters in milliliters?

How many milliliters are in 12 liters?

How many liters are in 800 milliliters?

How many liters are in 3300 milliliters?

What is the equivalent of 0.4 liters in milliliters?

How many milliliters are in 2.75 liters?

How many liters are in 950 milliliters?

How many liters are in 3750 milliliters?

Capacity - Comparing mL

There are 250 mL in one cup. The average juice box holds 200mL. A can of soda holds 355 mL, while a larger bottle of soda could hold 591 mL, 710 mL, or up to 2000 mL (2L). A tablespoon holds 15 mL.



Part 1

Does the container hold more or less than 500 mL?

1)

more

2)



less

3)



more

less

4)



more

less

6)



more

less

more

less

7)



more

less

8)



more

less

more

less

Part 2

Give examples of containers that hold more or less than 500 mL

Containers More Than 500 mL	Containers Less Than 500 mL

Which Capacity is the Largest?

Instructions

Which measurement makes the most sense for the picture shown

1) A pool

- a) 30,000L
- b) 1000m
- c) 50L



2) A cup

- a) 300L
- b) 250mL
- c) 3L



3) A bottle

- a) 1L
- b) 100mL
- c) 5000mL



4) A spoon

- a) 10kL
- b) 1L
- c) 500mL



5) A wheelbarrow

- a) 100L
- b) 10L
- c) 500mL



6) A bucket

- a) 10L
- b) 100mL
- c) 300mL



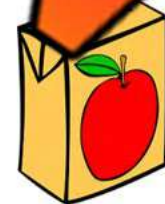
7) A hot tub

- a) 20L
- b) 2000L
- c) 500mL



8) A juice box

- a) 250mL
- b) 1L
- c) 20L



9) A bath tub

- a) 5L
- b) 300L
- c) 500mL



10) A gas tank

- a) 50L
- b) 500mL
- c) 1000mL



Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Convert the units of measurement below:

a) _____ mL

b) _____ L

c) 6.8 L = _____ mL

2) Solve the problem below:

Alice is buying a drink. She can choose the 1.2 L bottle or the 900 mL bottle. Which option should she choose if she wants more to drink?

Name: _____

1) Convert the units of measurement below:

a) 2.4 L = _____ mL

b) 9800 mL = _____ L

c) 6.8 L = _____ mL

2) Solve the problem below:

Alice is buying a drink. She can choose the 1.2 L bottle or the 900 mL bottle. Which option should she choose if she wants more to drink?

Name: _____

1) Convert the units of measurement below:

a) 2.4 L = _____ mL

b) 9800 mL = _____ L

c) 6.8 L = _____ mL

2) Solve the problem below:

Alice is buying a drink. She can choose the 1.2 L bottle or the 900 mL bottle. Which option should she choose if she wants more to drink?

Name: _____

1) Convert the units of measurement below:

a) 2.4 L = _____ mL

b) 9800 mL = _____ L

c) 6.8 L = _____ mL

2) Solve the problem below:

Alice is buying a drink. She can choose the 1.2 L bottle or the 900 mL bottle. Which option should she choose if she wants more to drink?

Measurement Unit Test

Part 1 Would you measure the containers below using litres or millilitres?

1) Cup of apple juice	
2) Dump truck of cement	
3) Can of	

4) Wheelbarrow of liquid	
5) Juice box	
6) Water in a hot tub	

Part 2 Fill in the blanks below

mL	
1000	
2000	
3000	
	4
	5
6000	
7000	
8000	
	9
	10

mL	L
1500	
	2.5
	3.5
6500	
8500	
	9.5
10500	

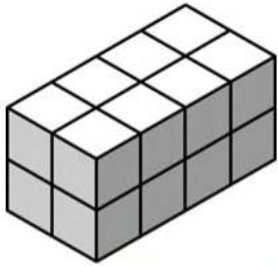
Part 3 Convert the units of measurement below

1) 1.7L	_____ mL	2) 2100mL	_____ L	3) 4.5L	_____ mL
4) 5.4L	_____ mL	5) 4700mL	_____ L	6) 5500mL	_____ L

Part 4

Fill in the blanks and determine the volume

1)



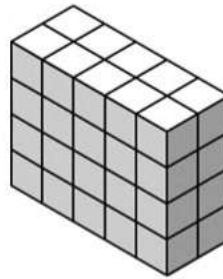
l = _____

w = _____

h = _____

v = _____

2)



l = _____

w = _____

h = _____

v = _____

3)



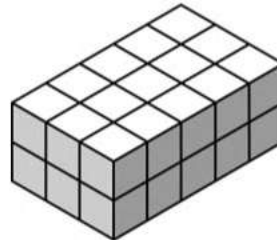
l = _____

w = _____

h = _____

v = _____

4)



l = _____

w = _____

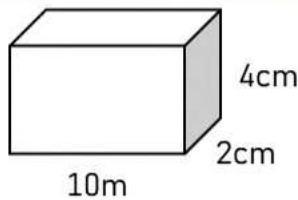
h = _____

v = _____

Part 5

Calculate the volume of the regular prisms below

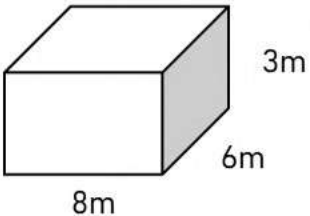
1)



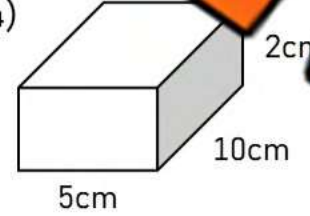
2)



3)



4)



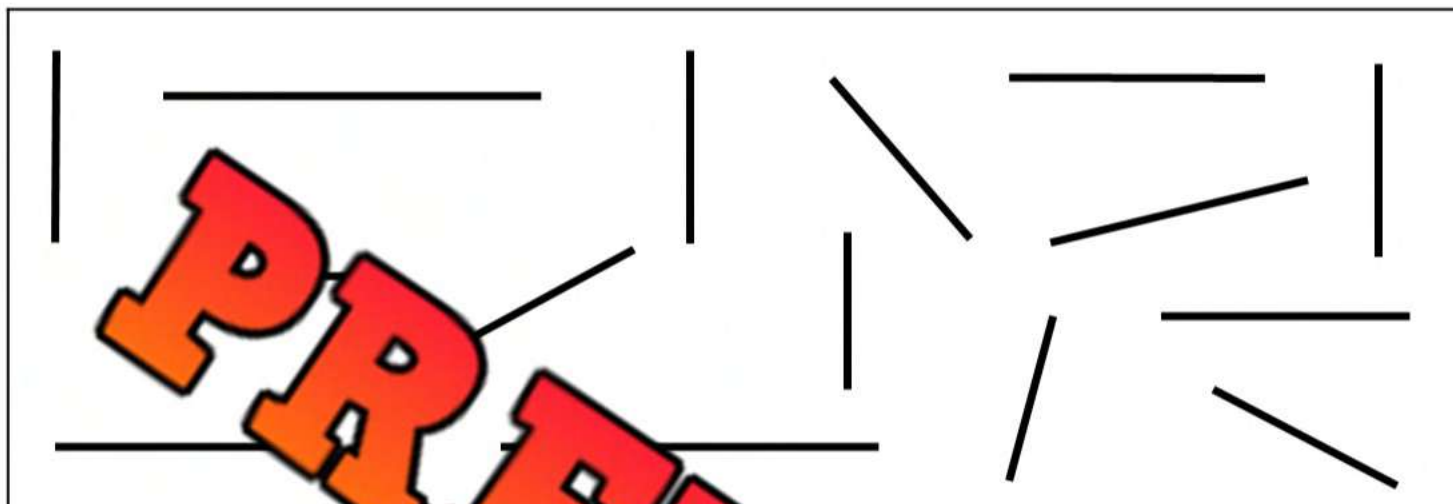
Part 6

Solve the word problem below. Make sure to show your work

Elissa is making a box that needs to have a volume of 180cm^3 . What could the dimensions of the box be?

Horizontal and Vertical Lines

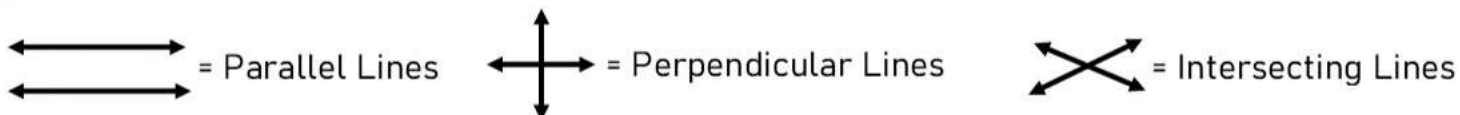
Part 1 Draw a circle around the vertical lines and a rectangle around the horizontal lines



Part 2 Label the lines in the house as either horizontal or vertical



Parallel, Perpendicular and Intersecting Lines



Part 1

Label the lines parallel, perpendicular, or intersecting

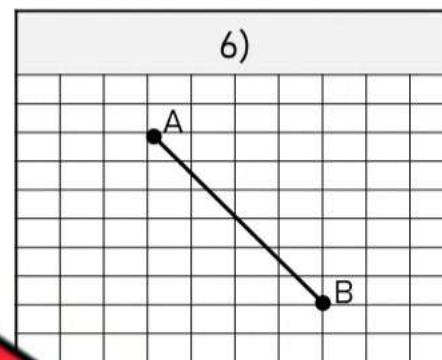
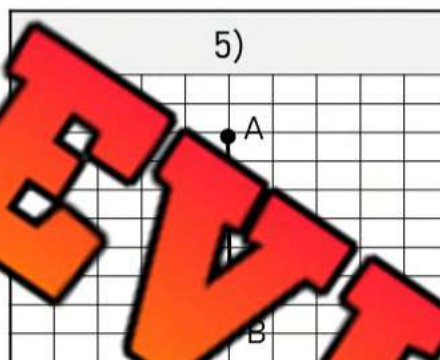
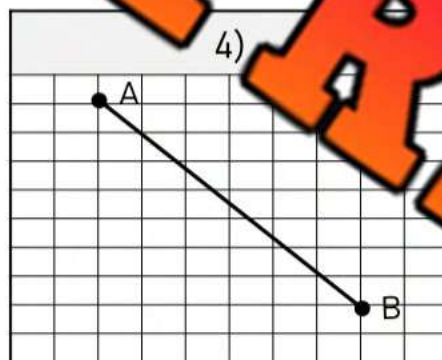
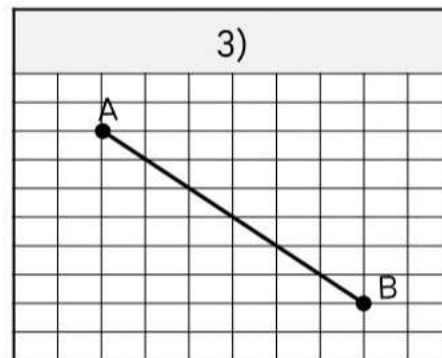
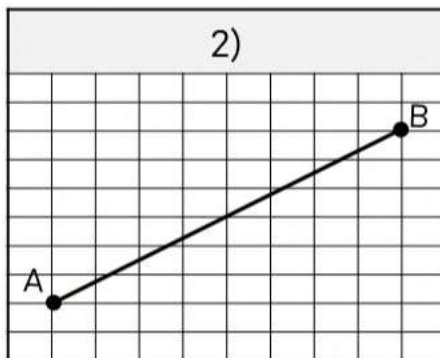
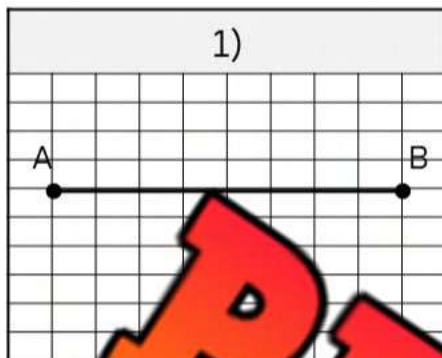
1)	2)	3)	4)
5)	6)	7)	8)

Part 2

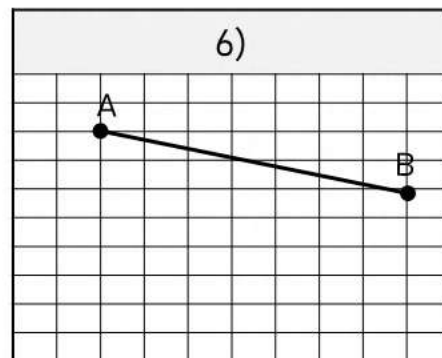
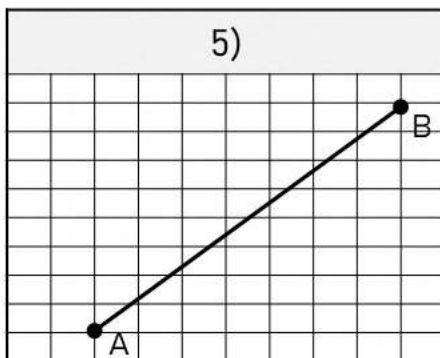
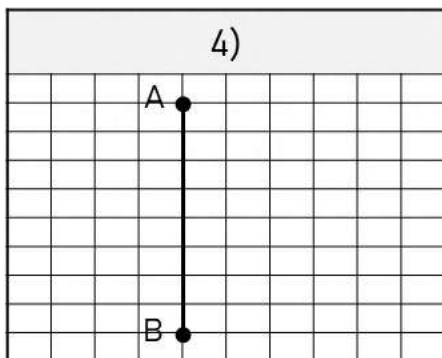
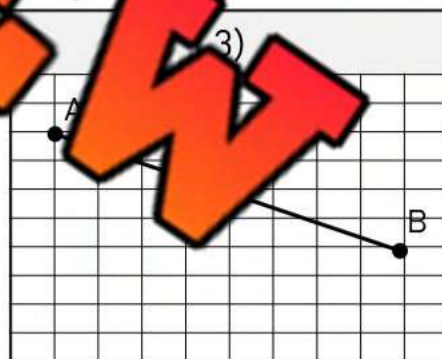
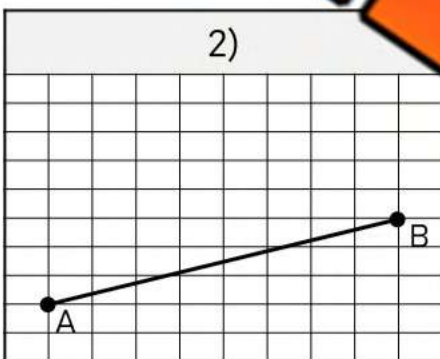
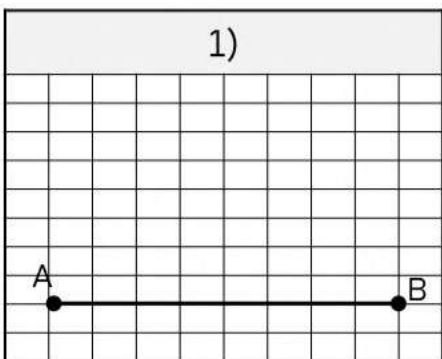
Draw a second line that is intersecting, perpendicular, or parallel to the other line

1)	2)	3)	4)
Perpendicular	Parallel	Intersecting	Parallel
5)	6)	7)	8)
Intersecting	Perpendicular	Intersecting	Parallel

Perpendicular and Parallel Line Segments

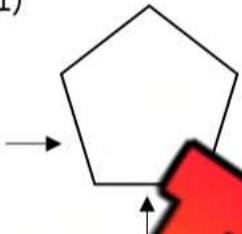
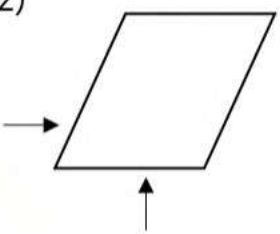
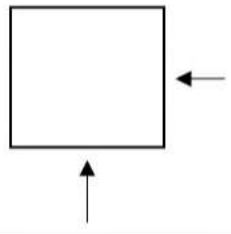
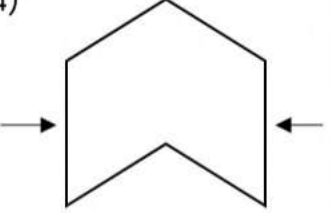
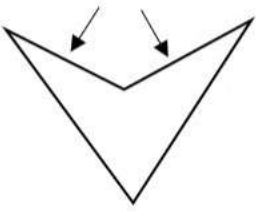
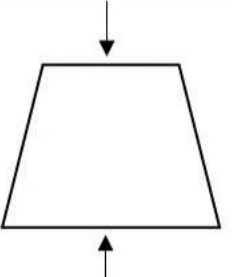
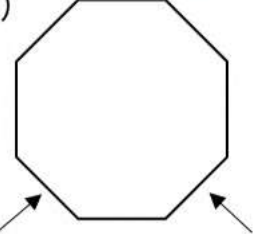
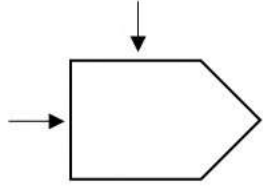
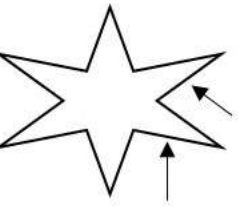
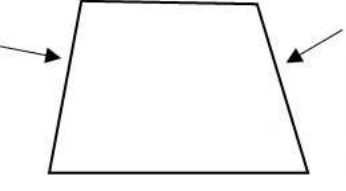
Part 1Construct perpendicular lines of the line segments $\overline{AB}$ **Part 2**

Construct parallel lines of the line segment



Parallel, Perpendicular and Intersecting Lines in Shapes**Instructions**

What is the relationship between the two lines with the arrows?

1) 	2) 	3) 	4) 
5) 	7) 	8) 	
9) 	10) 	11) 	
13) 	14) 	15) 	16) 

Quadrilaterals - Lines

Word Bank

Kite Trapezoid Parallelogram Rectangle Rhombus Square

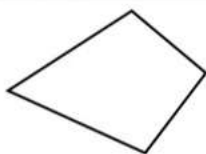
Practice

1. Label the quadrilaterals using the word bank (can be used twice).
2. How many pairs of perpendicular, intersecting, and parallel lines are there?

1)



2)



3)



Name:

Name:

Name:

Perpendicular Lines:

Perpendicular Lines:

Perpendicular Lines:

Parallel Lines:

Parallel Lines:

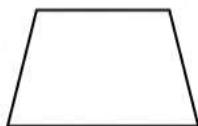
Parallel Lines:

Intersecting Lines:

Intersecting Lines:

Intersecting Lines:

4)



5)



6)



Name:

Name:

Name:

Perpendicular Lines:

Perpendicular Lines:

Perpendicular Lines:

Parallel Lines:

Parallel Lines:

Parallel Lines:

Intersecting Lines:

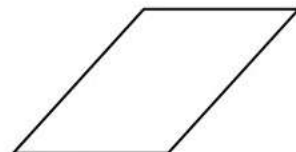
Intersecting Lines:

Intersecting Lines:

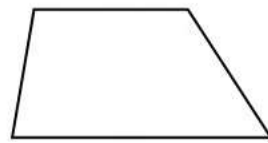
7)



8)



9)



Name:

Name:

Name:

Perpendicular Lines:

Perpendicular Lines:

Perpendicular Lines:

Parallel Lines:

Parallel Lines:

Parallel Lines:

Intersecting Lines:

Intersecting Lines:

Intersecting Lines:

Math Activity: Line Hunt Explorers

Objective

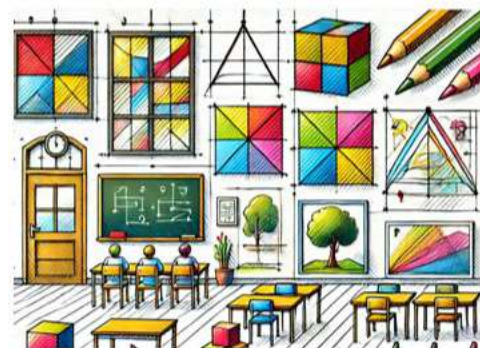
What are we learning about?

To help students identify and understand parallel, perpendicular, and intersecting lines in both 2D shapes and 3D objects through an interactive and exploratory "line hunt" around the classroom or school.

Materials

What you will need for the activity.

- Coloured pencils or pens
- Grid paper
- Notebooks or paper pads



Instructions

How you complete the activity

1. Begin the activity by explaining the concepts of parallel lines (lines that never meet), perpendicular lines (lines that intersect at a 90-degree angle), and intersecting lines (lines that cross at any angle).
2. Hand out grid paper, rulers, coloured pencils, and markers (optional) to each student.
3. Instruct students to start the activity by exploring their classroom or school environment to find examples of parallel, perpendicular, and intersecting lines.
4. Ask students to sketch the examples they find on their grid paper, labeling each type of line (parallel, perpendicular, intersecting) directly on the sketches. Encourage them to include both 2D shapes (like windows or doors) and 3D objects (like chairs or trees) in their sketches.
5. After students have completed their sketches, have them highlight the parallel, perpendicular, and intersecting lines within these 2D shapes and 3D objects using different colored pencils or markers.
6. Encourage students to compare their findings and sketches with a partner and discuss any patterns or interesting observations they made.
7. Gather the class together to share their discoveries and discuss the importance of these types of lines in everyday life.

Draw

Option 1: Draw examples in the spaces below

Parallel Lines

Parallel Lines

Perpendikuler Linie

Perpendicular Lines

Intersecting Lines

Intersecting Lines

Draw

Option 2: Draw as many examples as you can fit in the spaces below

Parallel Lines

Particular Lines

Intersecting Lines

PREVIEW

Perpendicular Lines

Intersecting Lines

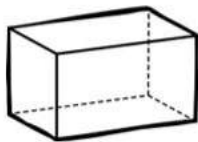
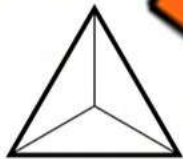
Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

Draw arrows that point to intersecting, parallel, and perpendicular lines.



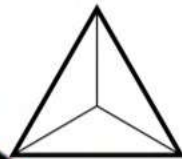
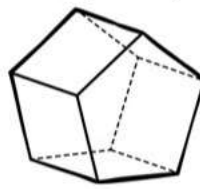
Parallel

Intersecting

Perpendicular

Name: _____

Draw arrows that point to intersecting, parallel, and perpendicular lines.



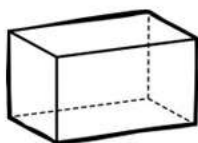
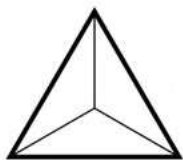
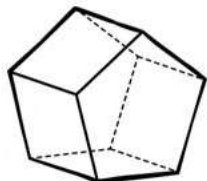
Parallel

Intersecting

Perpendicular

Name: _____

Draw arrows that point to intersecting, parallel, and perpendicular lines.



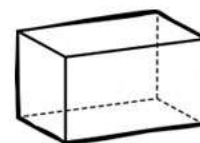
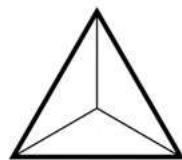
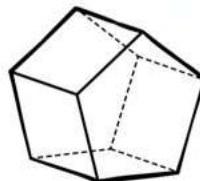
Parallel

Intersecting

Perpendicular

Name: _____

Draw arrows that point to intersecting, parallel, and perpendicular lines.



Parallel

Intersecting

Perpendicular

Quadrilaterals

Trapezium



No sides are parallel

Trapezoid



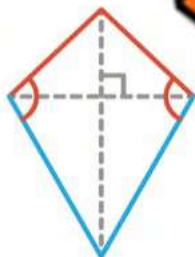
Two sides are parallel

Parallelogram



Two pairs of parallel sides

Kite



Two pairs of adjacent sides are of equal length

Rhombus

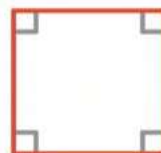
Four sides are of equal length

Rectangle



Four right angles

Square

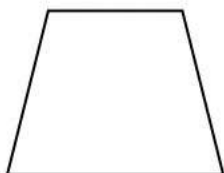


All four sides are of equal length

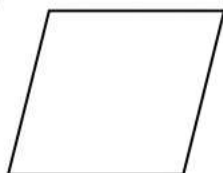
Directions

Write the names of the quadrilaterals in the boxes below.

1)



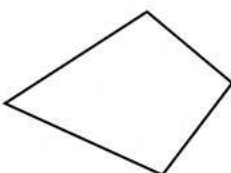
2)



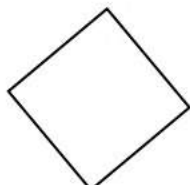
3)



5)



6)



7)



8)



Name: _____

117

Curriculum Connection
SS5.6

Quadrilaterals

Directions

Describe the geometric properties and draw each of the quadrilaterals

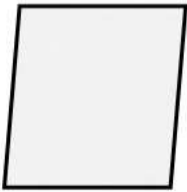
Quadrilateral	Geometric Properties	Draw Shape
Kite		
Rhombus		
Trapezoid		
Trapezium		
Square		
Rectangle		
Parallelogram		

Quadrilaterals

Explain

What are the differences between a rectangle and a...

Square	Rectangle
	
Similarities	Differences

Rhombus	Rectangle
	
Similarities	Differences

Quadrilaterals

Explain

What are the differences between a rectangle and a...

Trapezoid	Rectangle
	
Similarities	Differences

Parallelogram	Rectangle
	
Similarities	Differences

Quadrilaterals

Directions

How many trapezoids are there?
Count only those that have the
entire perimeter outline visible. For
example, 1, and not 2.

Reminder

A trapezoid is a 4-sided shape with
at least one pair of parallel sides.

Interesting Fact:

In the world, the terms
trapezoid and trapezium are
used interchangeably.

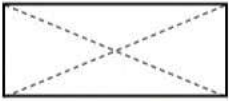
In the United States,
a trapezoid is a
quadrilateral with at least one
pair of parallel sides.

In other English countries, a
trapezoid is called a
trapezium. The difference in
these two terms was a result
of an error in Charles
Hutton's mathematical
dictionary!

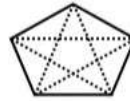
Answer: _____

Diagonals

A diagonal is a line segment that links 2 non-adjacent vertices of a polygon. This means it is a line that connects two corners that are not beside each other.



A rectangle has 2 diagonals



A pentagon has 5 diagonals

Part 1 How many diagonal lines do the polygons have? Draw them and write the number

1)



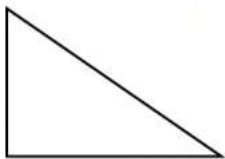
3)



4)



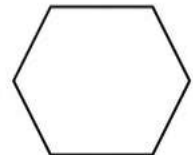
5)



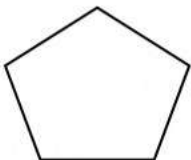
6)



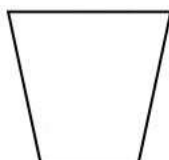
8)



9)



10)



11)

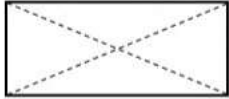


Part 2 Draw a polygon with the specified number of diagonals

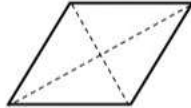
13)	9	14)	0	15)	14

Diagonals

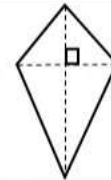
Diagonals can be categorized based on the following:



Whether they are of
equal length



Whether they intersect at
their midpoint



Whether they intersect
at right angles

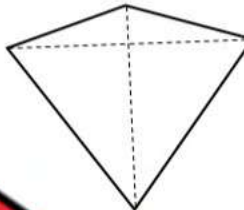
Part 1 Do the diagonals equal length?

1)



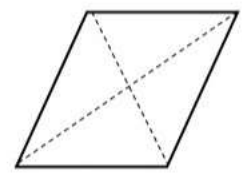
Yes No

3)



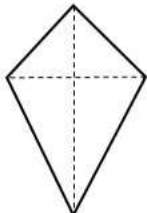
Yes No

4)



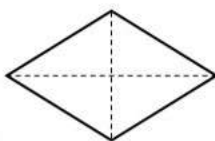
Yes No

5)



Yes No

6)



Yes No

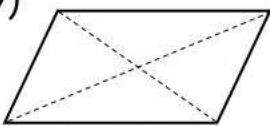
7)



Yes No

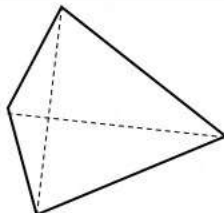
Part 3 Do the diagonals intersect at right angles?

9)



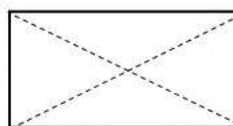
Yes No

10)



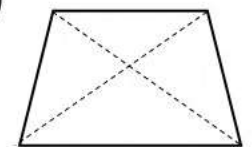
Yes No

11)



Yes No

12)



Yes No

Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

How many diagonal lines do the polygons have? Draw them and write the number.

1)



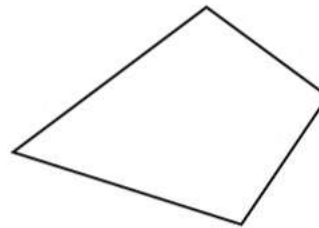
2)



Name: _____

How many diagonal lines do the polygons have? Draw them and write the number.

1)



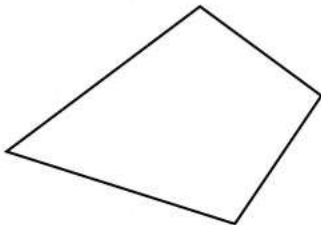
2)



Name: _____

How many diagonal lines do the polygons have? Draw them and write the number.

1)



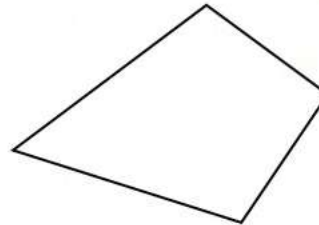
2)



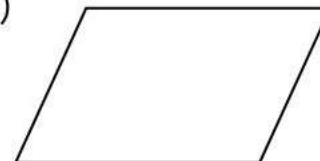
Name: _____

How many diagonal lines do the polygons have? Draw them and write the number.

1)

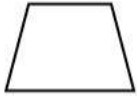


2)



Quadrilaterals - Trapezoids

A trapezoid has at least one pair of parallel sides



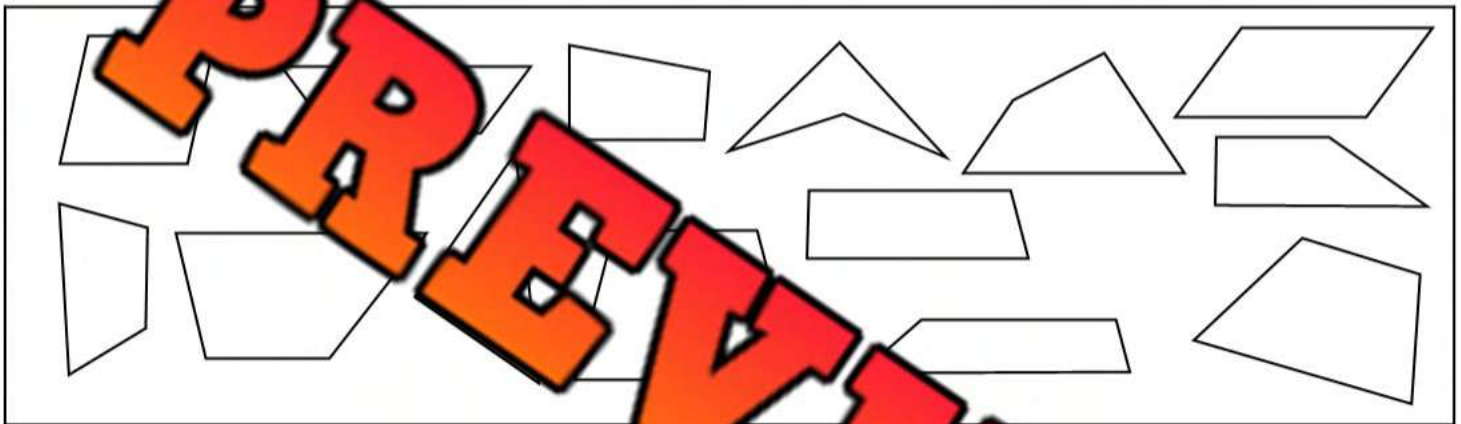
2 pairs of parallel lines



1 pair of parallel lines

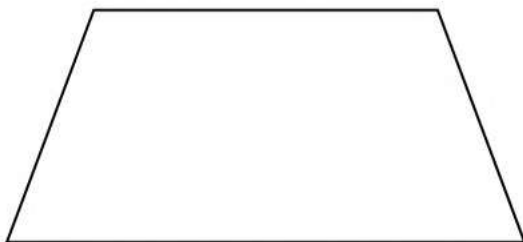
This means parallelograms, rectangles, and squares are all considered trapezoids.

Part 1 Color or circle the trapezoids in the collection of quadrilaterals below



Part 2 Describe the trapezoids below using geometric properties

1)



2)



Intersect at Midpoint? Y N

Intersect at Right Angle? Y N

Diagonals Same Length? Y N

Circle the parallel lines above

How many sides does the trapezoid have?

Intersect at Midpoint? Y N

Intersect at Right Angle? Y N

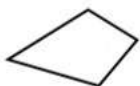
Diagonals Same Length? Y N

Circle the parallel lines above

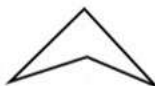
How many sides does the trapezoid have?

Quadrilaterals - Kite

A kite can look like a traditional kite that we fly or a dart that has a reflex angle and a diagonal outside of its shape.



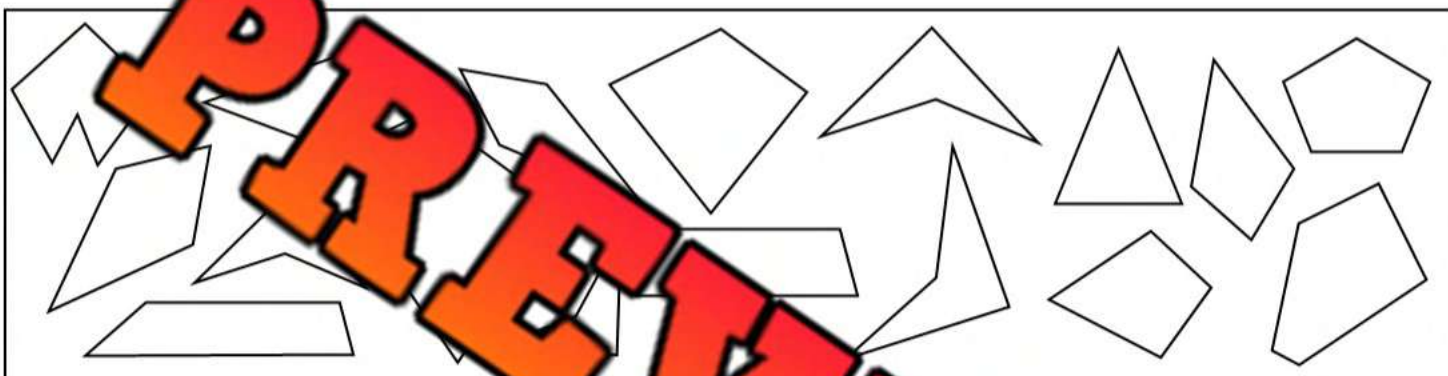
Traditional Kite



Dart

Part 1

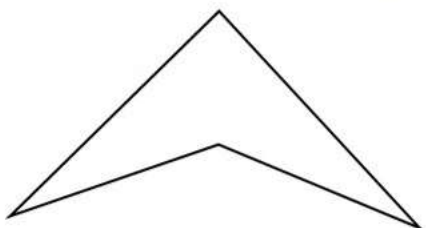
Colour or circle the kites in the collection of polygons below



Part 2

Describe the kites below using their general properties

1)



2)



Intersect at Midpoint? Y N

Intersect at Right Angle? Y N

Diagonals Same Length? Y N

Circle the perpendicular lines

Put a square on the intersecting lines

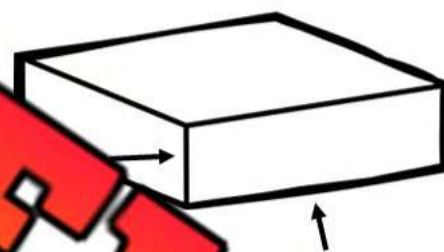
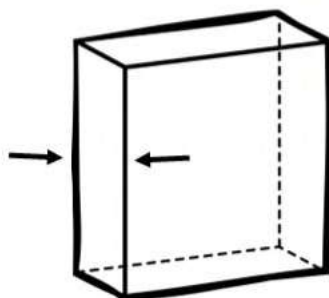
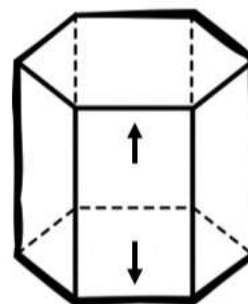
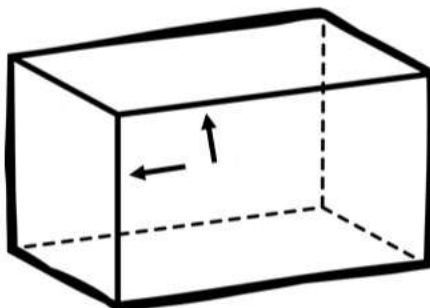
Intersect at Midpoint? Y N

Intersect at Right Angle? Y N

Diagonals Same Length? Y N

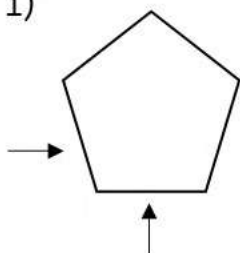
Circle the perpendicular lines

Put a square on the intersecting lines

Quiz – Lines**Part 1**Are the lines parallel, intersecting, or perpendicular?**Part 2**

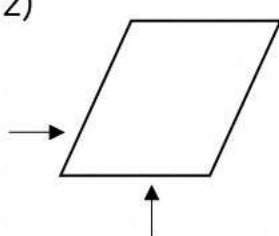
What is the relationship between the two lines with the arrows

1)

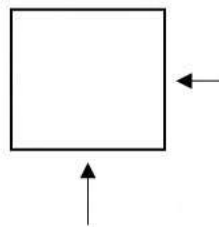


Intersecting

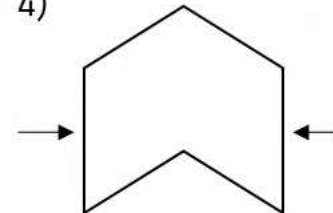
2)



3)



4)



Part 3

Label the lines parallel, perpendicular, or intersecting

1)



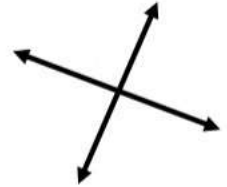
2)



3)



4)



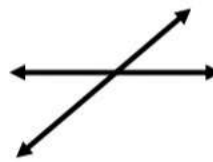
5)



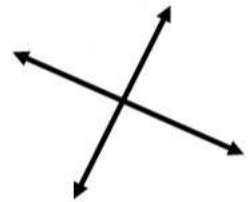
6)



7)

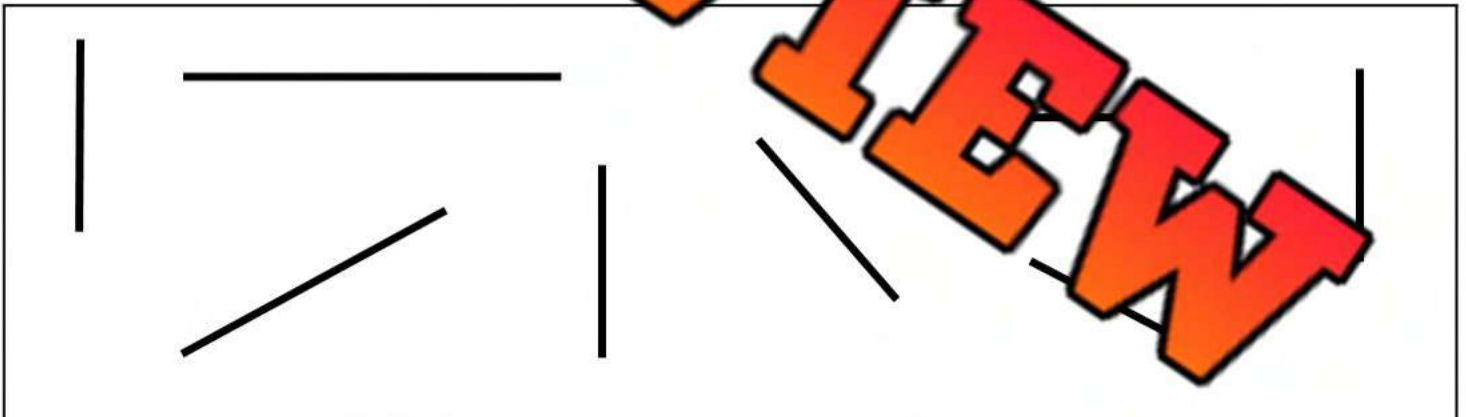


8)



Part 4

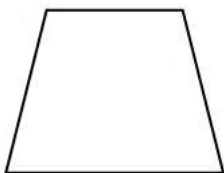
Draw a circle around the vertical lines and an angle around the horizontal lines



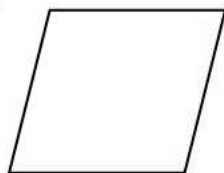
Part 5

Write the names of the quadrilaterals below

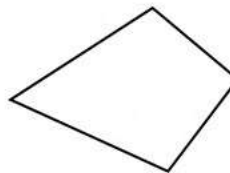
1)



2)



3)



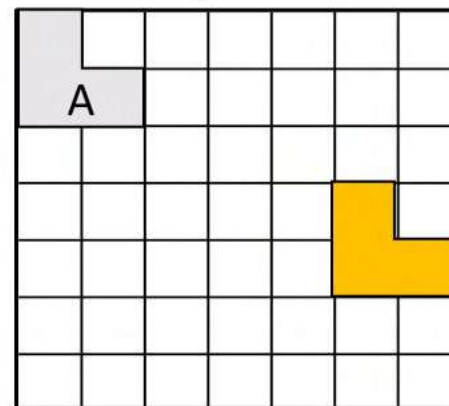
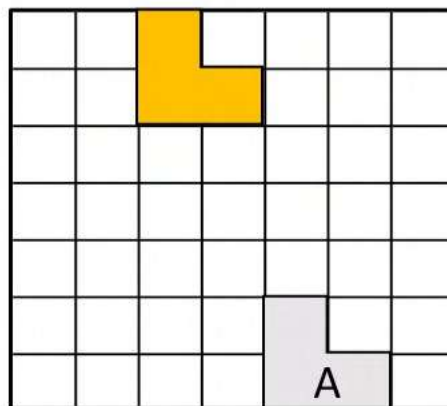
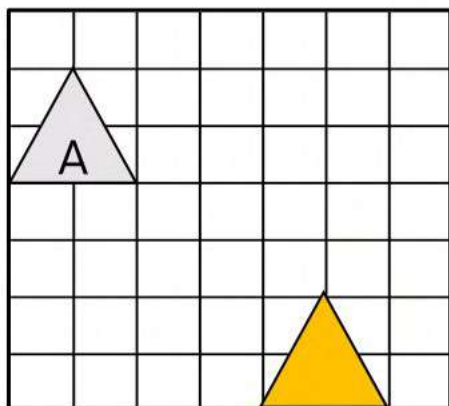
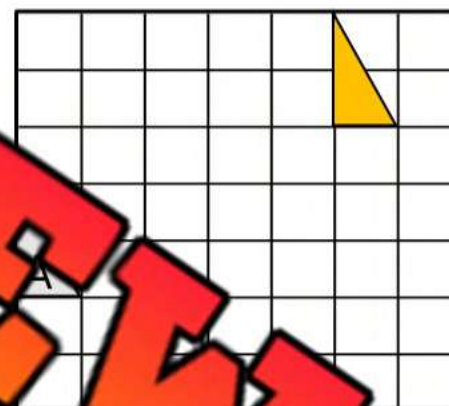
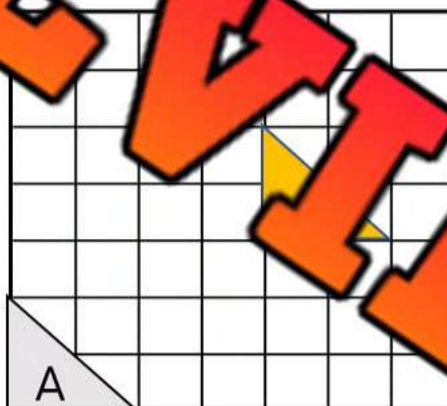
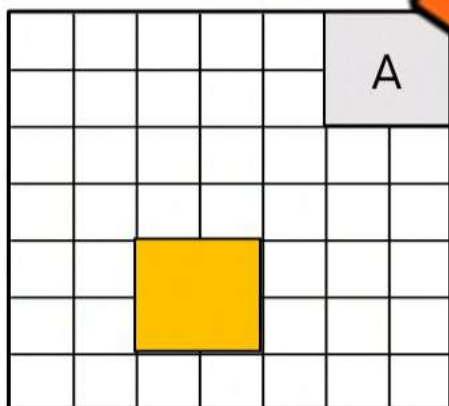
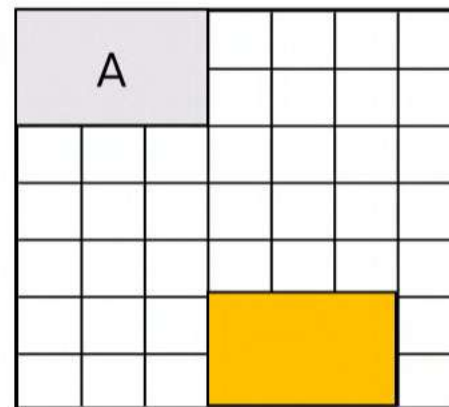
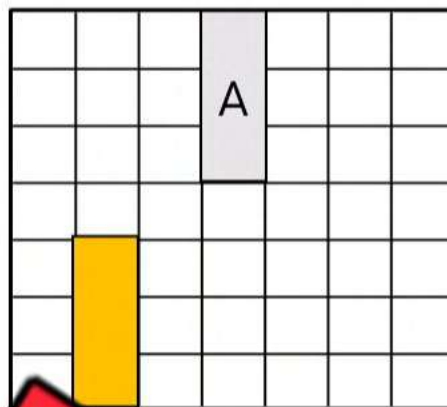
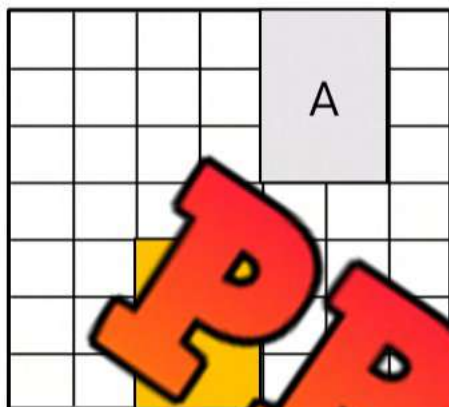
4)



Describing Translation

Instructions

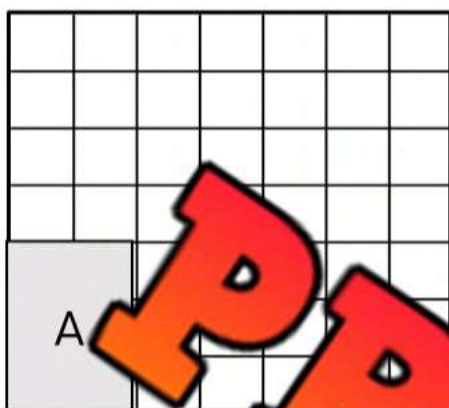
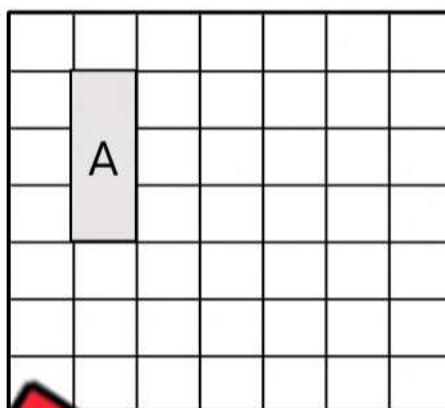
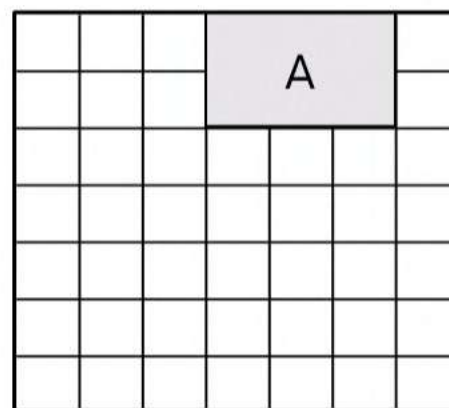
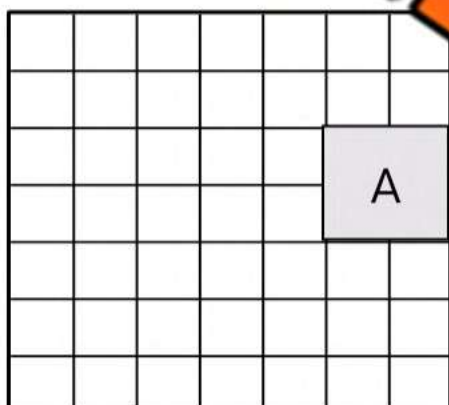
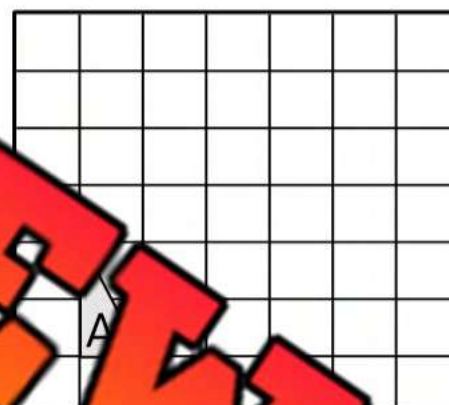
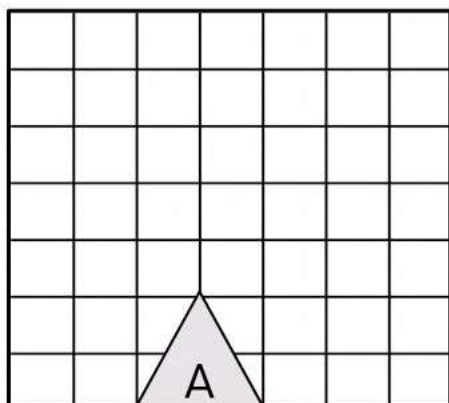
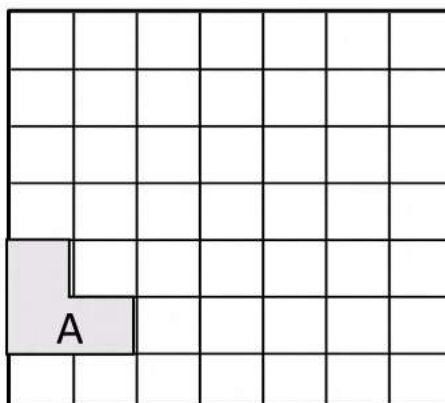
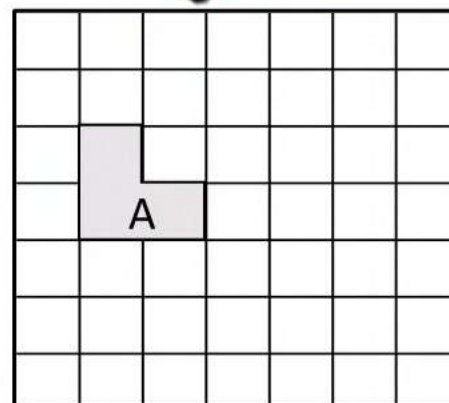
Describe the translations below using arrows. Shape A is the original object

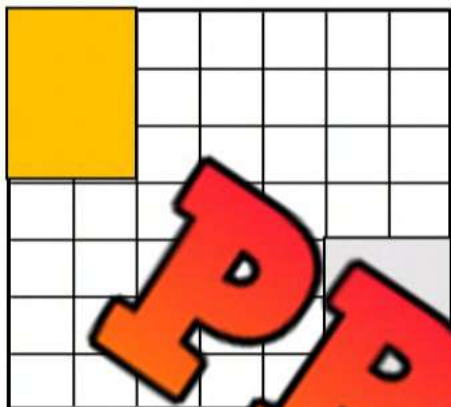


Performing Translation

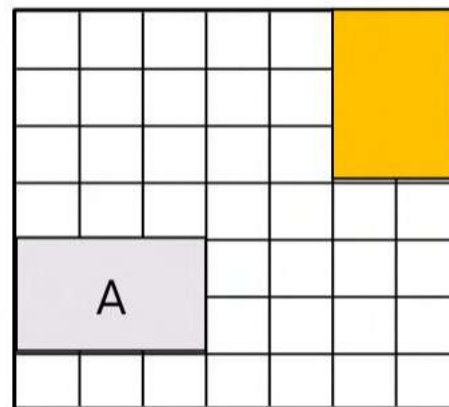
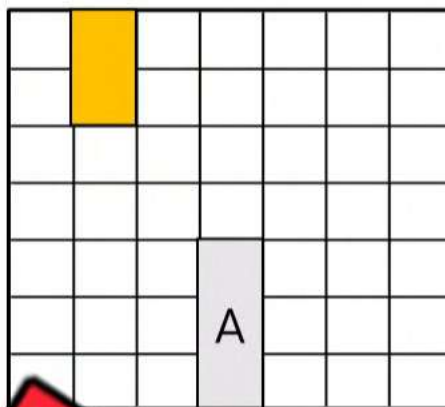
Questions

Draw the new shape after reading the 3 steps

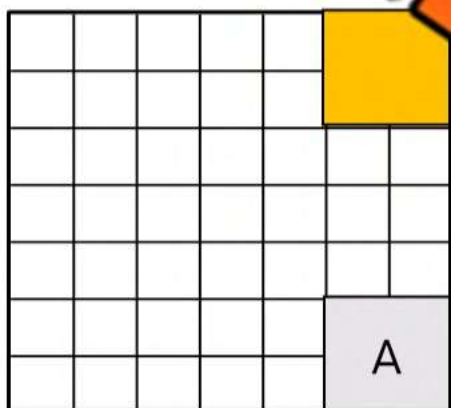
1) $3 \uparrow, 4 \rightarrow,$  $4 \rightarrow, 1 \downarrow$ 3) $3 \downarrow, 2 \leftarrow, 2 \downarrow$ 4) $3 \downarrow, 4 \leftarrow, 1 \uparrow$ 5) $2 \downarrow, 4 \rightarrow, 3 \uparrow$ 6) $2 \uparrow, 1 \downarrow$ 7) $4 \uparrow, 2 \rightarrow, 3 \leftarrow$ 8) $4 \uparrow, 4 \rightarrow, 5 \downarrow$ 9) $3 \downarrow, 3 \rightarrow, 2 \uparrow$

Translation or Not?**Instructions**Is the transformation a translation or not? Write yes or no.

1) _____



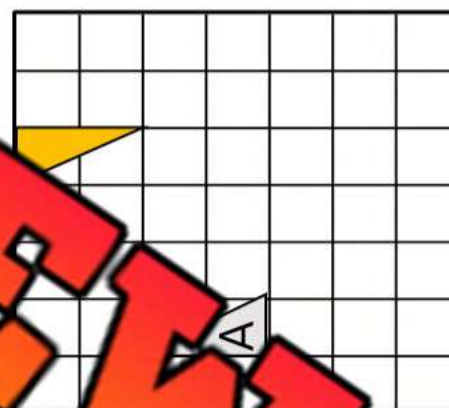
3) _____



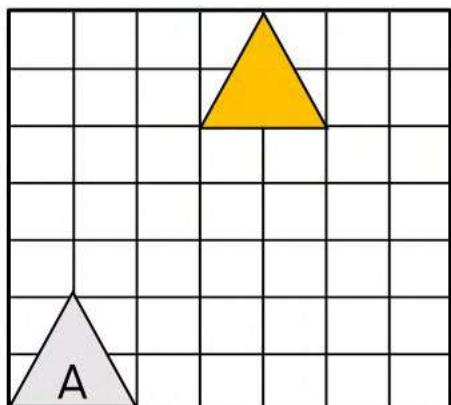
4) _____



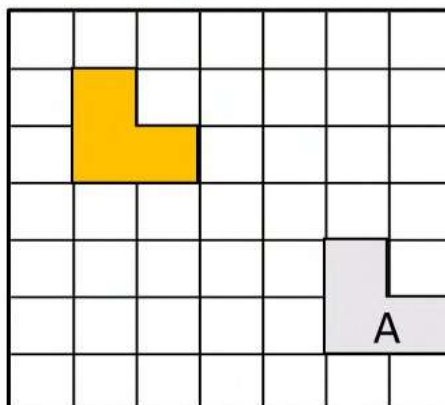
5) _____



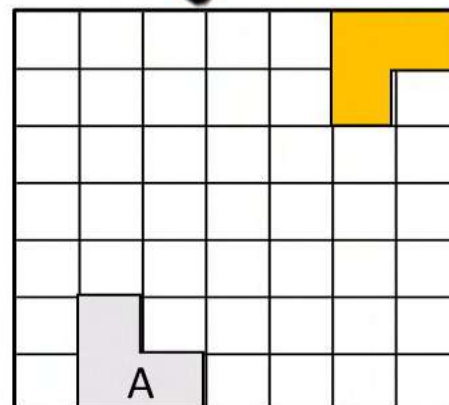
6) _____



7) _____

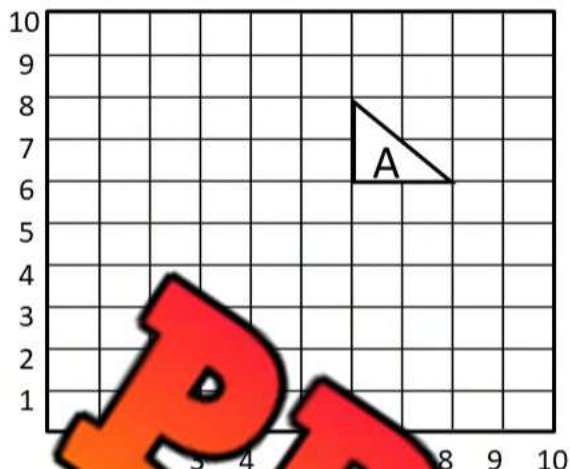


8) _____

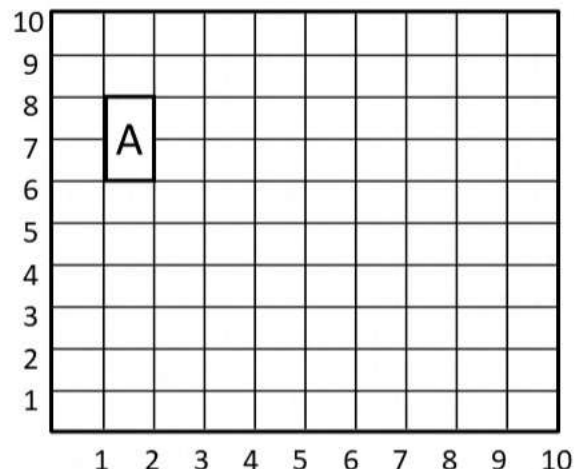


9) _____

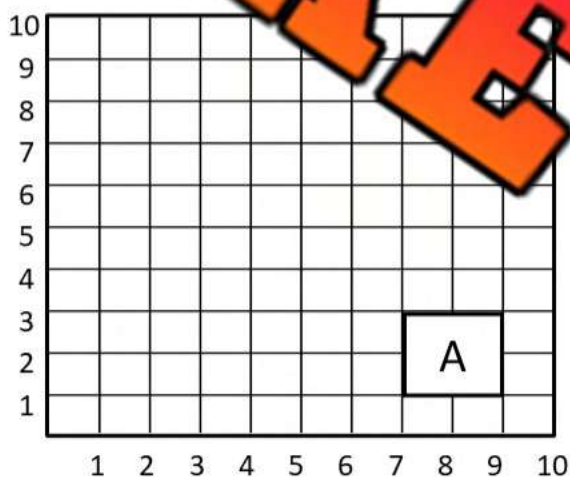
Translating Shapes – Cartesian Plane



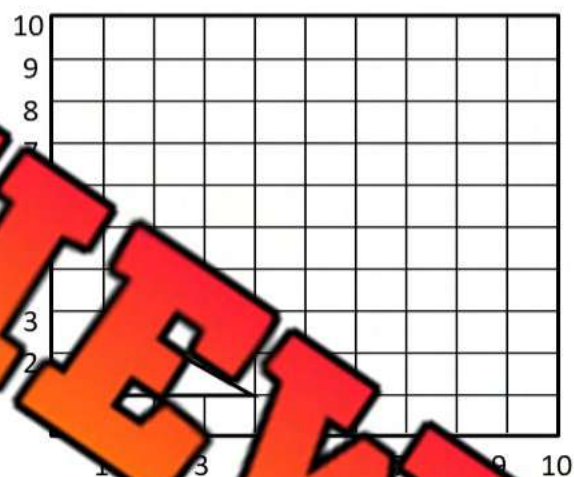
1) Left 6



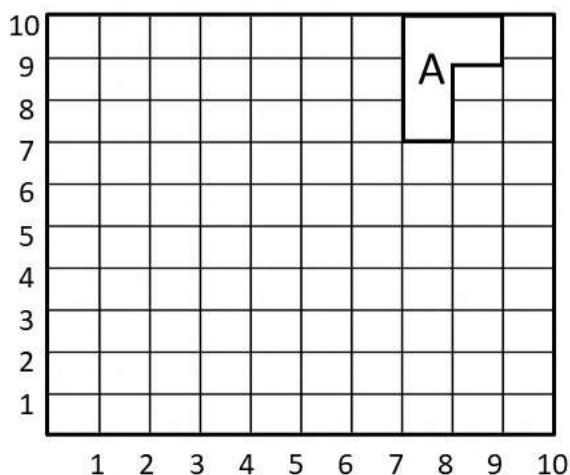
2) Right 5, down 4



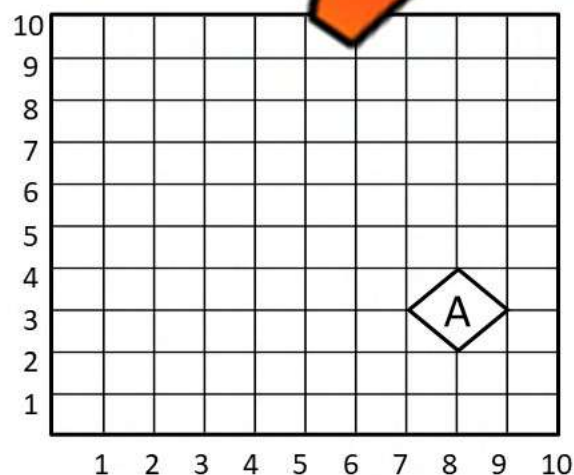
3) Left 6, up 2



4)



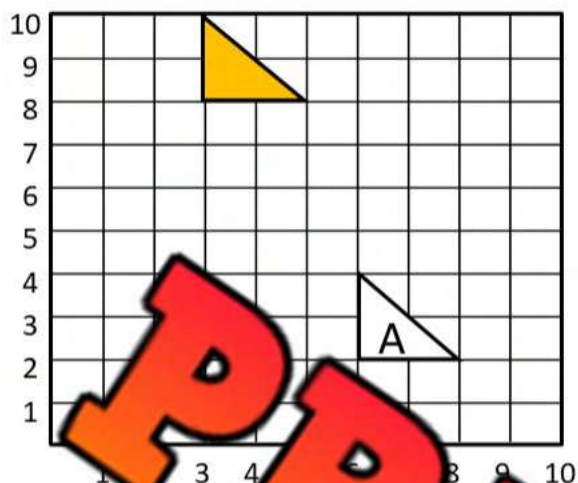
5) Left 3, down 6



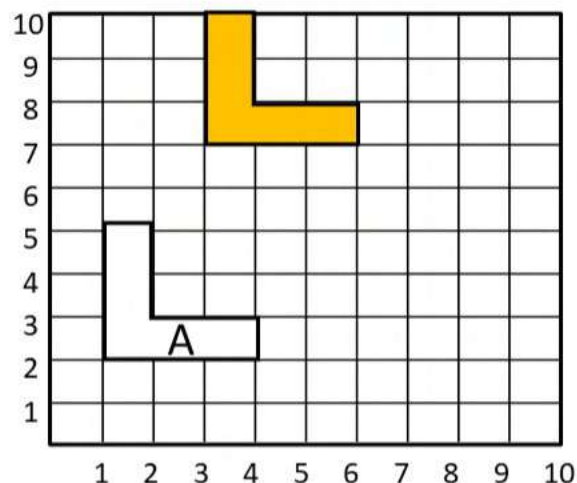
6) Left 2, up 4

Describing Translations – Cartesian Plane

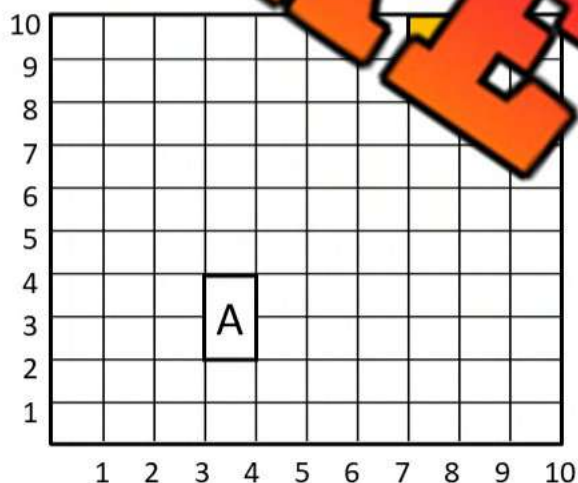
Instructions: Describe the translations below. Shape A is the original shape.



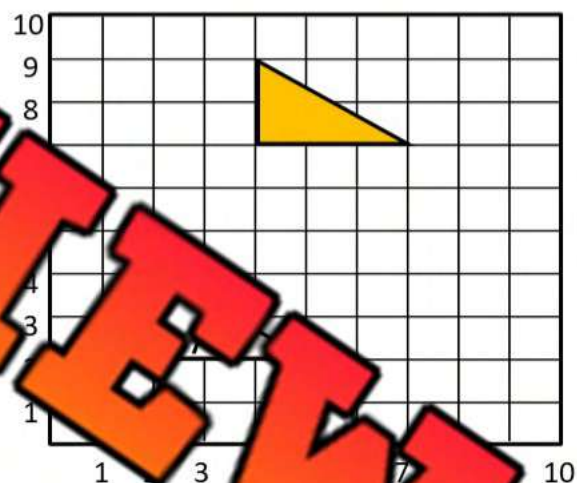
1) _____



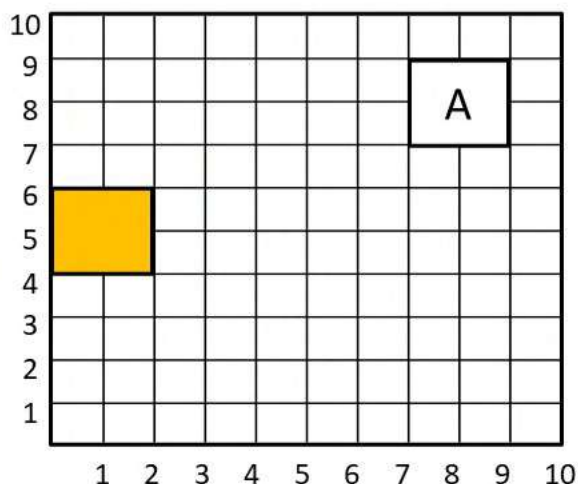
2) _____



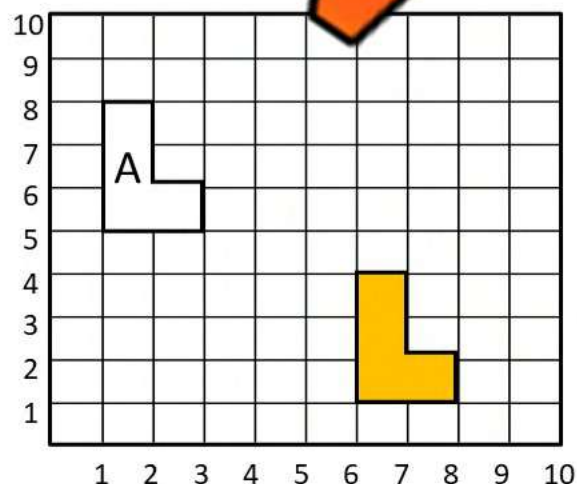
3) _____



4) _____



5) _____



6) _____

Math Activity: Translation Relay Race

Objective

What are we learning about?

To help students understand and describe translations on a Cartesian plane through a fun and engaging relay race activity.

Materials

What you will need for the activity.

- Graph paper
- Ruler
- Colored pencils or markers
- Pencils and erasers
- Translation task cards



Instructions

How you will complete the activity

1. Explain Translations: Start by explaining translations on the Cartesian plane involve moving shapes without rotating or resizing them.
2. Distribute Materials: Provide each team with a large sheet of graph paper and a set of translation task cards.
3. Form Teams: Divide the class into small teams, each standing up behind a desk with their graph paper and task cards.
4. Translation Task: The first student in each team picks a translation task card and then strategically draws a shape on the grid, ensuring it can fit after the translation.
5. Perform Translation: The student then moves the shape according to the instructions on the task card and draws the new position on the grid.
6. Pass to Next Student: The student then goes to the end of the line, and the next student steps up.
7. Repeat Process: The next student repeats the process: drawing the shape at its new position, selecting a new translation task card, and performing the translation.
8. Continue Relay: Continue the relay until all team members have had a turn or all task cards are used.
9. Verification and Discussion: The teacher verifies the translations, and the class discusses the different translations and observations.

Task Cards

Cut out the cards below

Card 1:Move 2 units $\rightarrow$ and 1 unit $\uparrow$ **Card 6:**Move 2 units $\leftarrow$ and 3 units $\uparrow$ **Card 7:**Move 1 unit $\rightarrow$ and 4 units $\downarrow$ **Card 3:**Move 1 unit $\rightarrow$ and 3 units $\uparrow$ **Card 8:**Move 3 units $\leftarrow$ and 2 units $\uparrow$ **Card 4:**Move 4 units $\rightarrow$ and 2 units $\uparrow$ **Card 9:**Move 2 units $\rightarrow$ and 2 units $\downarrow$ **Card 5:**Move 1 unit $\leftarrow$ and 2 units $\downarrow$ **Card 10:**Move 1 unit $\leftarrow$ and 3 units $\uparrow$

Task Cards

Cut out the task cards below

Card 11:Move 4 units $\rightarrow$ and 1 unit $\downarrow$ **Card 16:**Move 2 units $\leftarrow$ and 2 units $\uparrow$ **Card 17:**Move 2 units $\rightarrow$ and 3 units $\downarrow$ **Card 13:**Move 3 units $\rightarrow$ and 2 units $\downarrow$ **Card 18:**Move 5 units $\rightarrow$ and 2 units $\downarrow$ **Card 14:**Move 3 units $\leftarrow$ and 5 units $\uparrow$ **Card 19:**Move 5 units $\rightarrow$ and 4 units $\downarrow$ **Card 15:**Move 4 units $\rightarrow$ and 3 units $\uparrow$ **Card 20:**Move 5 units $\leftarrow$ and 1 unit $\uparrow$

Name: _____

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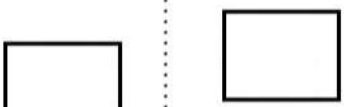
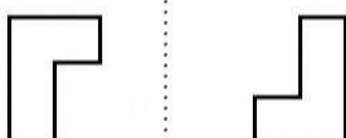
Curriculum Connection
SS5.7

Grid Paper

1 x 1 cm grid paper

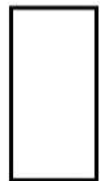
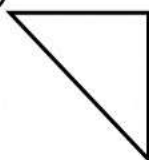
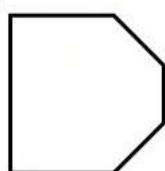
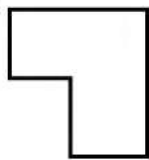
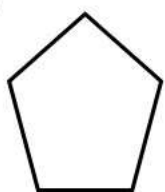
PREVIEW

Reflection or Not?**Part 1**Is the transformation a reflection? Yes or no?

1)  	2)  	3) 
4)  	5)  	6) 
7)  	8)  	9) 

Part 2

Draw the shape across the reflection line

1) 	2) 	3) 
4) 	5) 	6) 
7) 	8) 	9) 

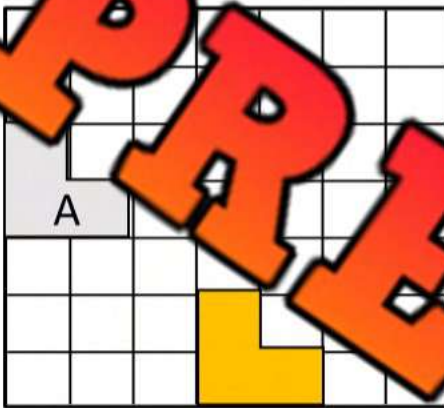
Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

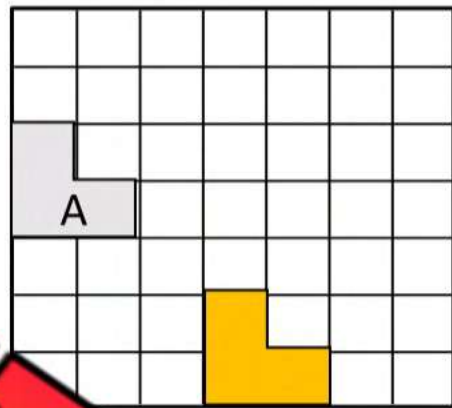
Name: _____

Describe the translation below. Shape A is the original object.



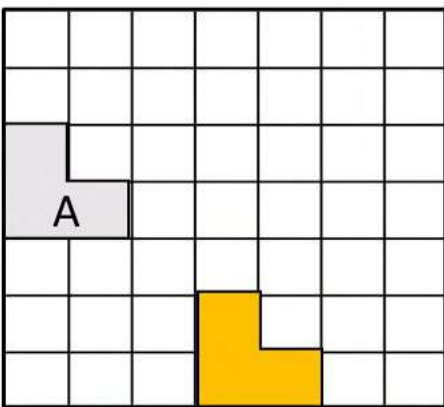
Name: _____

Describe the translation below. Shape A is the original object.



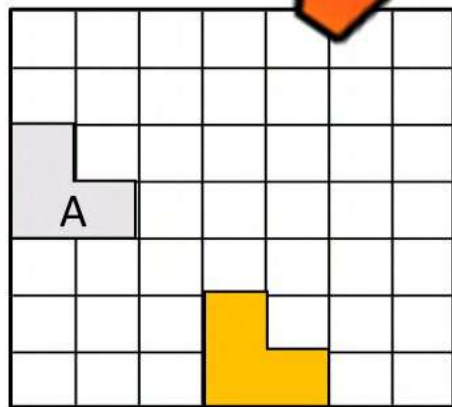
Name: _____

Describe the translation below. Shape A is the original object.



Name: _____

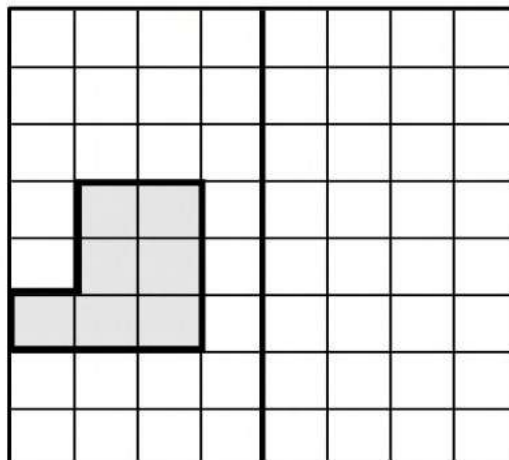
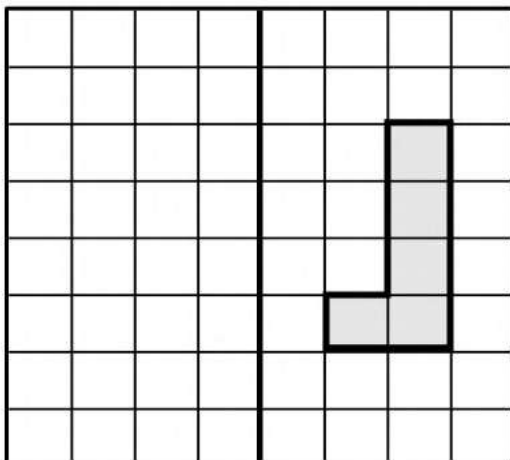
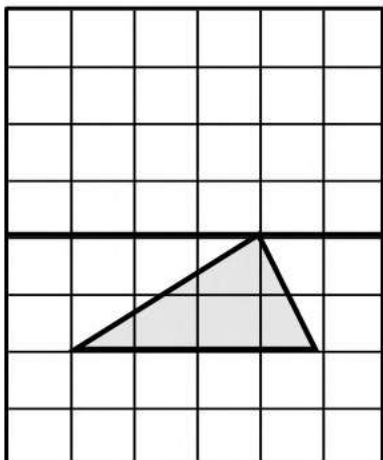
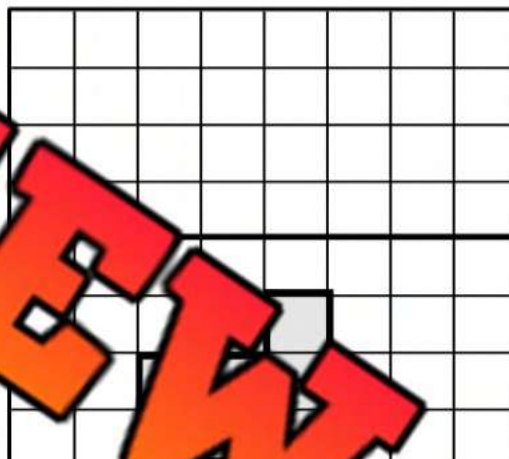
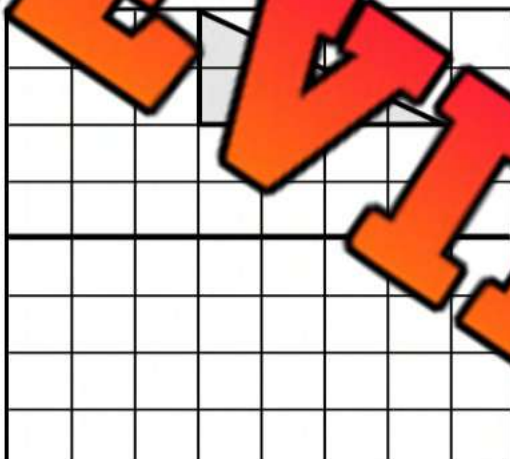
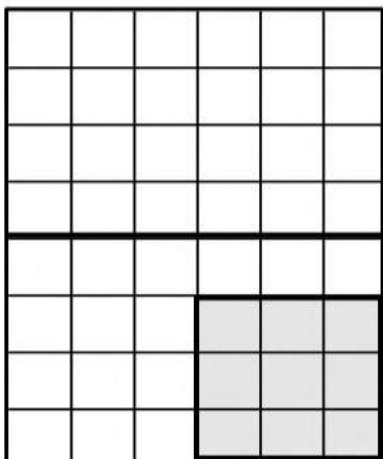
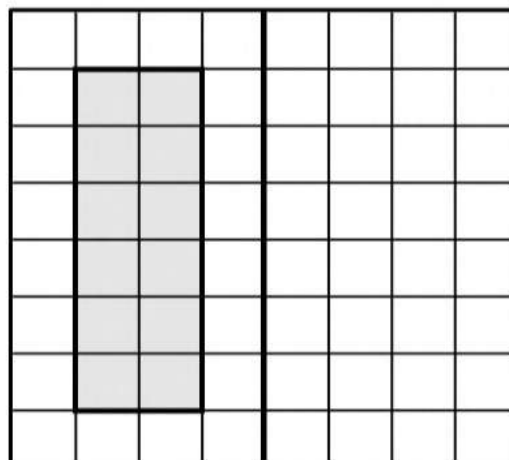
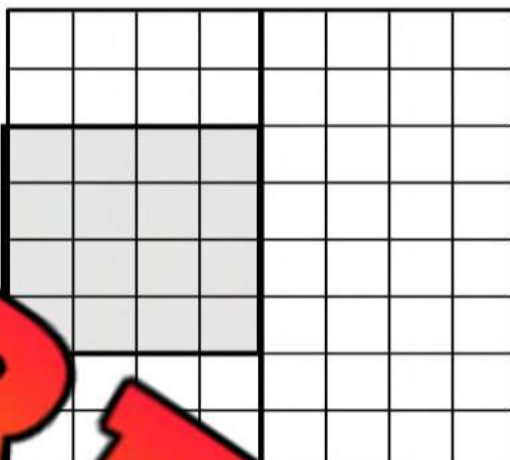
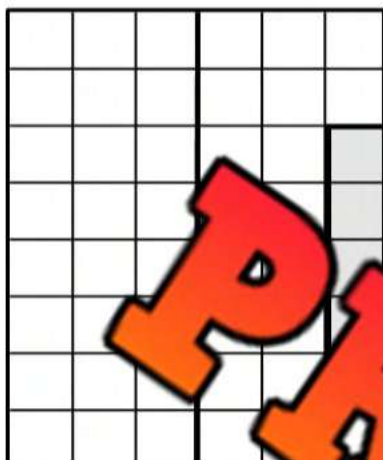
Describe the translation below. Shape A is the original object.



Drawing Reflections

Instructions

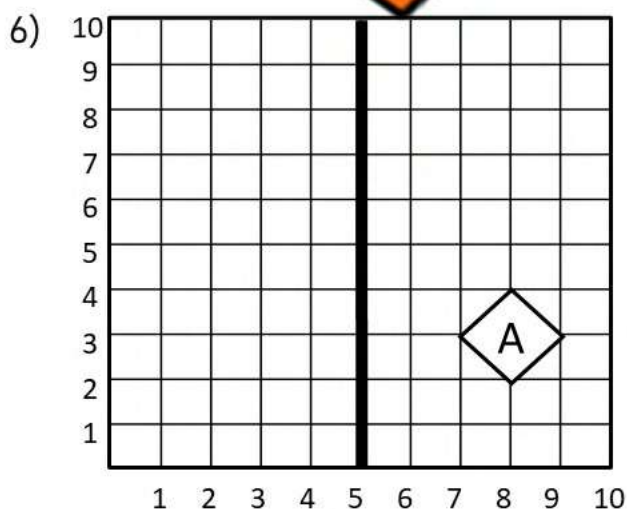
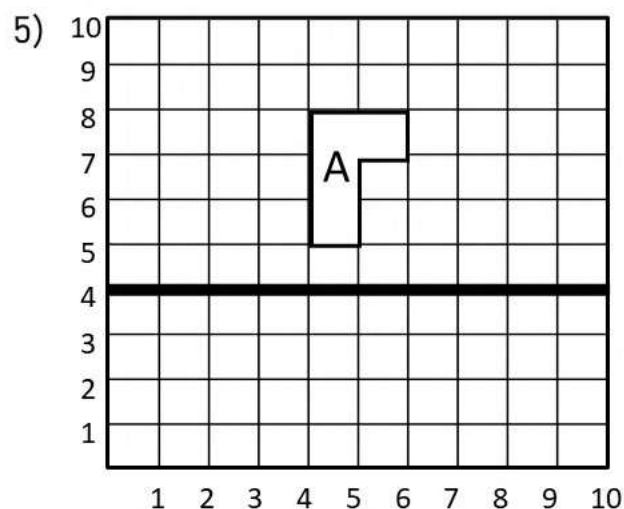
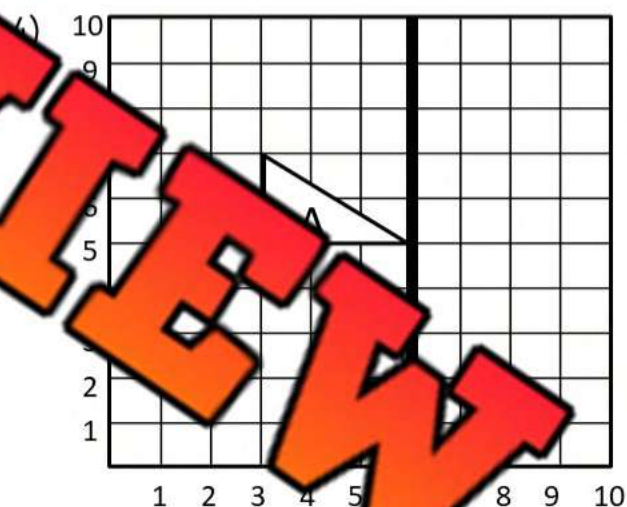
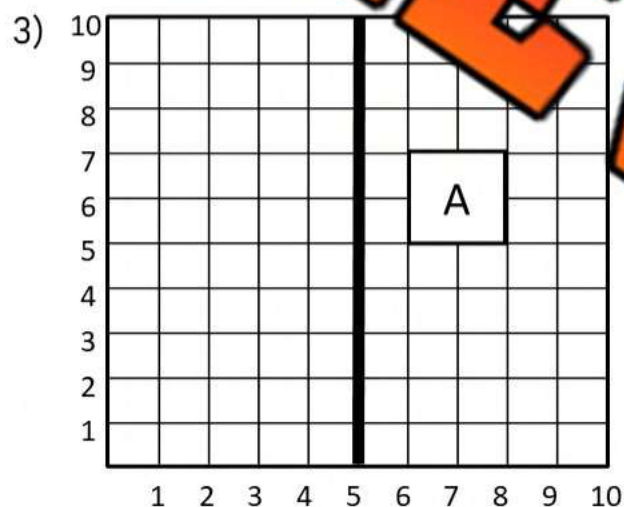
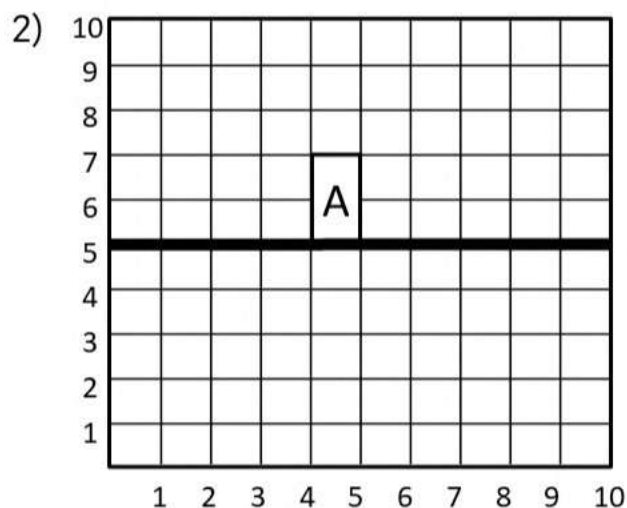
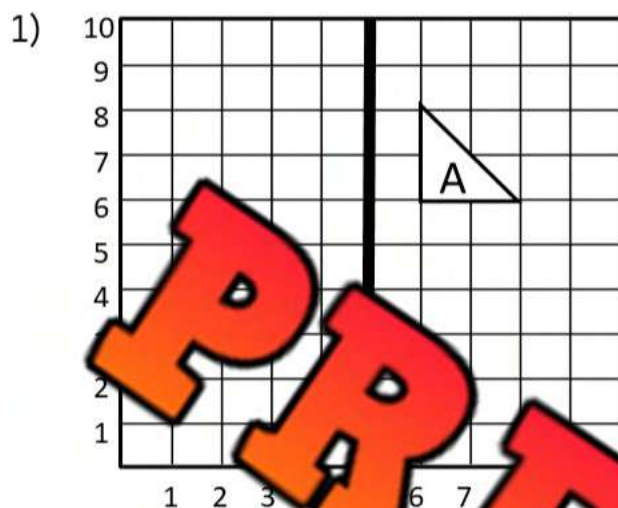
Reflect the shapes across the mirror line



Reflecting Shapes – Cartesian Plane

Instructions

Reflect the shapes across the mirror line



Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

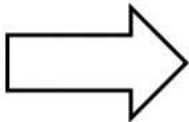
Name: _____

Draw the shape across the reflection line.

1)



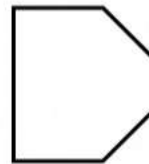
2)



Name: _____

Draw the shape across the reflection line.

1)



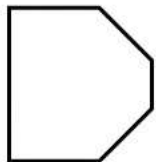
2)



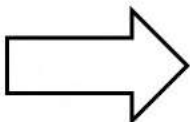
Name: _____

Draw the shape across the reflection line.

1)



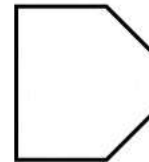
2)



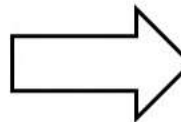
Name: _____

Draw the shape across the reflection line.

1)



2)



Clockwise and Counterclockwise Rotations

Rotations can either be clockwise or counterclockwise.

A **clockwise** rotation moves the same way the minute, second, and hour hands move on a clock.

A **counterclockwise** rotation moves the opposite way of a clockwise turn.

We can rotate things a lot or a little. Check out the three turns below.

360°
rotation



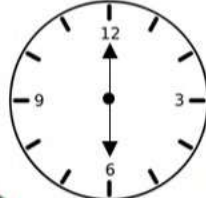
Clockwise
90° rotation

180°
rotation

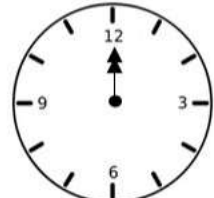
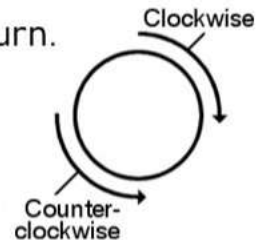


Counterclockwise
90° rotation

90°
rotation



Clockwise/Counterclockwise
90° rotation

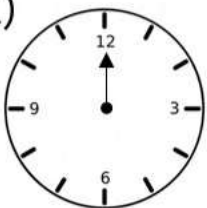


Clockwise/Counterclockwise
360° rotation

Part 1

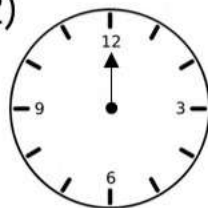
Draw how the arrow turned on the clock

1)



Clockwise
90° rotation

2)



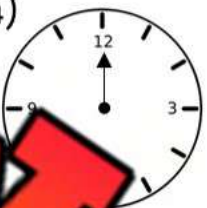
Counterclockwise
360° rotation

3)



Counterclockwise
90° rotation

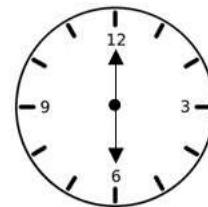
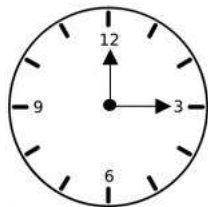
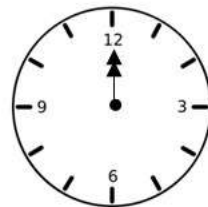
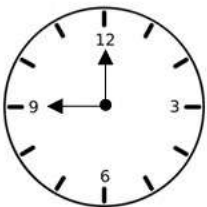
4)



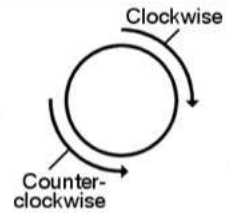
Clockwise
180° rotation

Part 2

Describe how the arrow turned on the clock



Clockwise and Counterclockwise Rotations



Instruction

Draw the controller after it has been rotated

1)



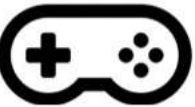
Clockwise 180° rotation

2)



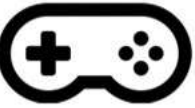
Counterclockwise 90° rotation

3)



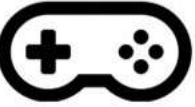
Clockwise 90° rotation

4)



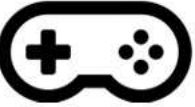
Counterclockwise 360° rotation

5)



Clockwise 360° rotation

6)

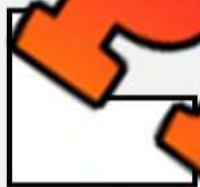
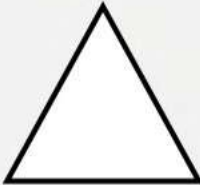
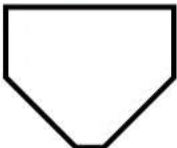
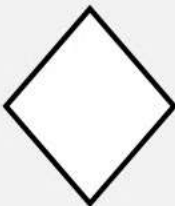
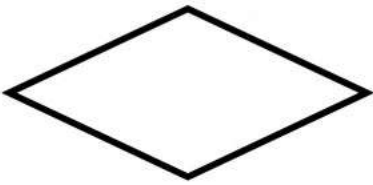
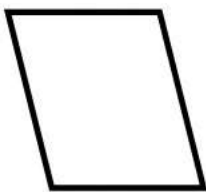


Counterclockwise 180° rotation

Rotations

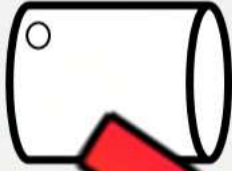
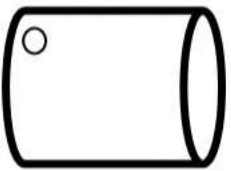
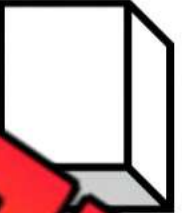
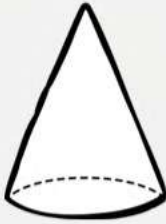
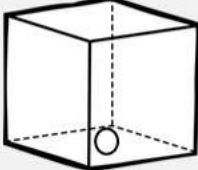
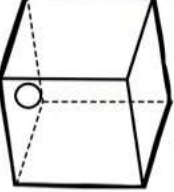
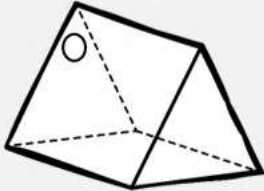
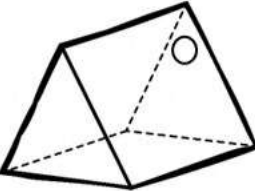
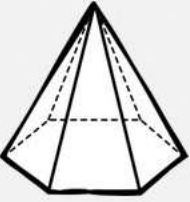
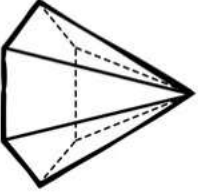
Instructions

Has the shape been rotated? Yes or No?

1)			Yes	No
2)			Yes	No
3)			Yes	No
4)			Yes	No
5)			Yes	No
6)			Yes	No

Rotations – 3D Objects**Instructions**

Has the shape been rotated? Yes or No?

1)			Yes	No
2)			Yes	No
3)			Yes	No
4)			Yes	No
5)			Yes	No
6)			Yes	No

Name: _____

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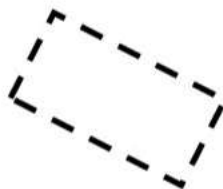
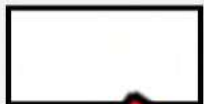
Curriculum Connection
SS5.7

Rotations

Instructions

Draw two rotations of the shapes below

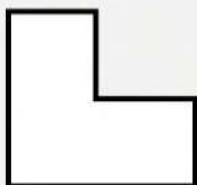
1)



2)



3)



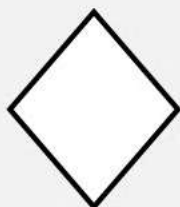
4)



5)

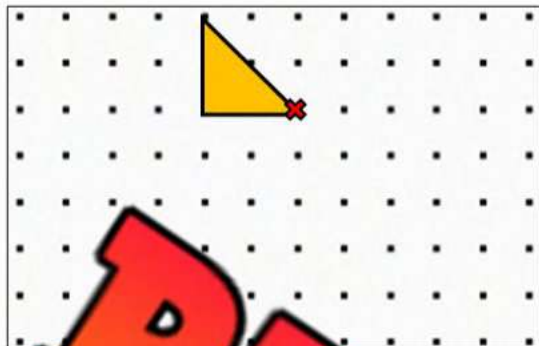


6)

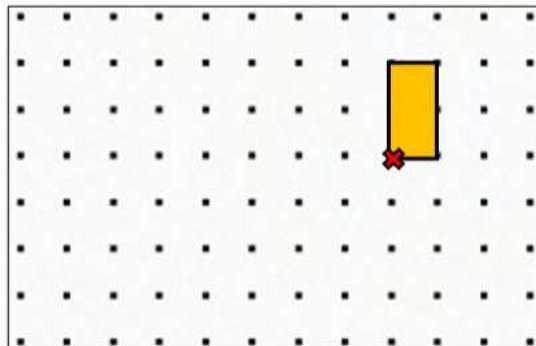


PREVIEW

Drawing Rotations

InstructionsRotate the shapes around the point marked 

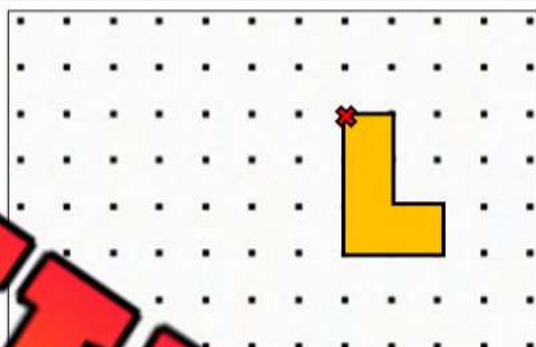
1) 90° clockwise rotation



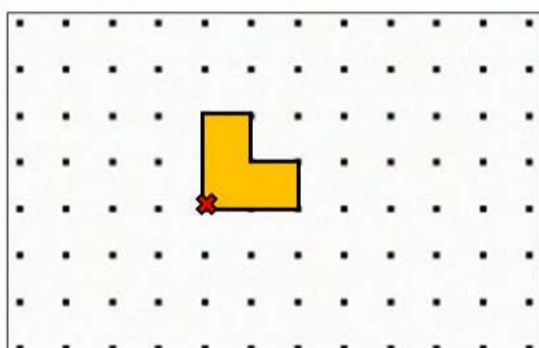
2) 180° clockwise rotation



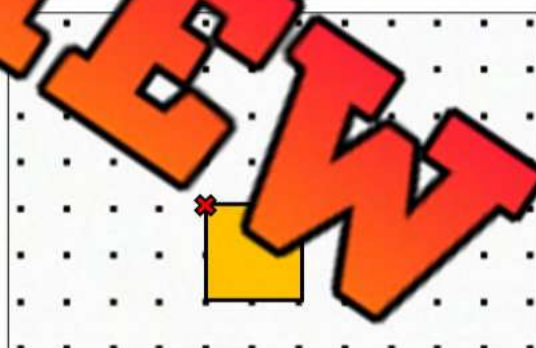
3) 90° counter-clockwise rotation



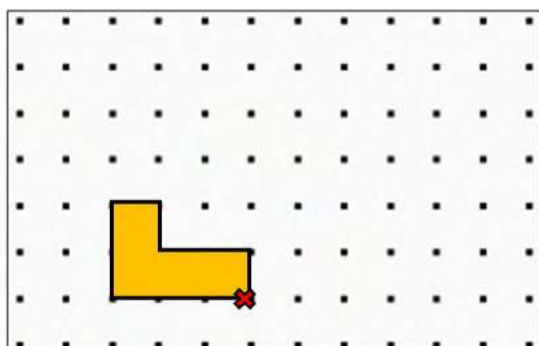
4) 360° clockwise rotation



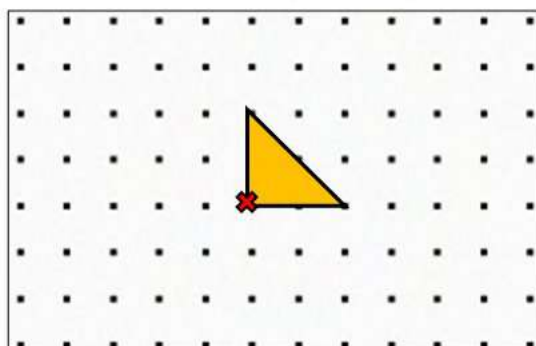
5) 90° counter-clockwise rotation



6) 180° counter-clockwise rotation



7) 90° clockwise rotation

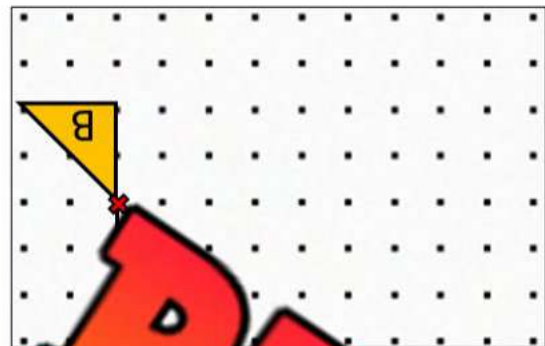


8) 180° counter-clockwise rotation

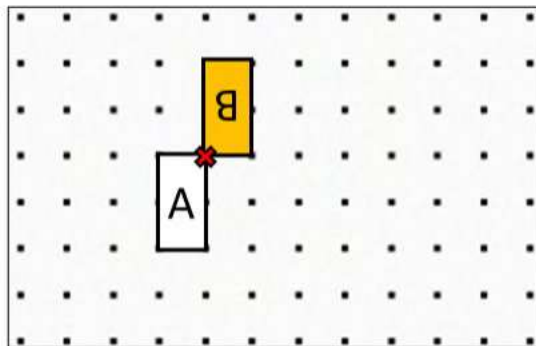
Describing Rotations

Instructions

Describe the rotations. Shape A is the original shape.



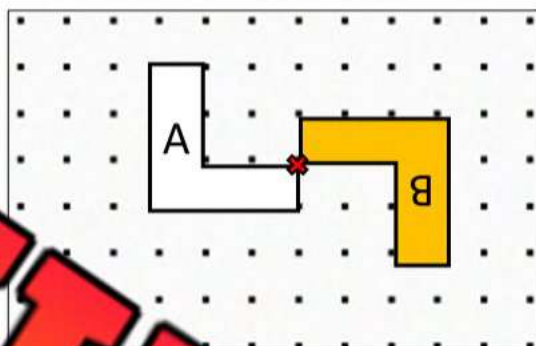
1) _____



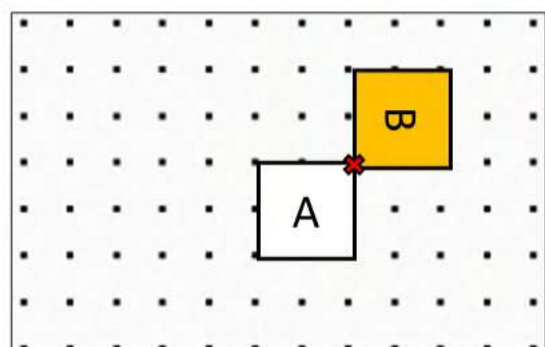
2) _____



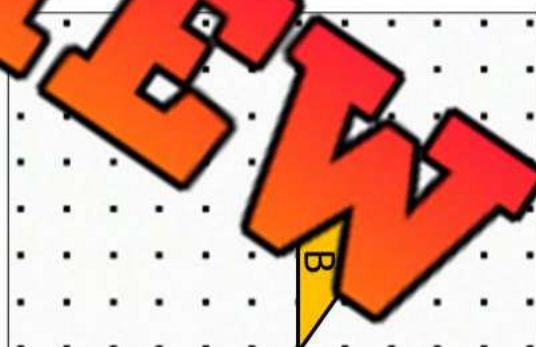
3) _____



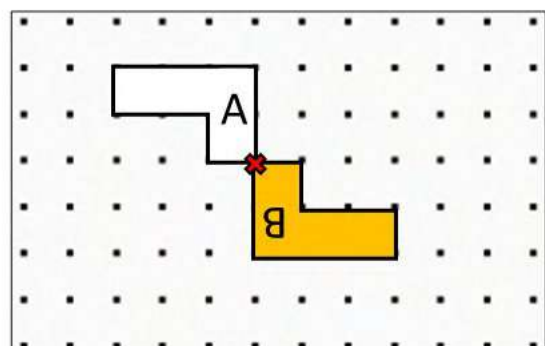
4) _____



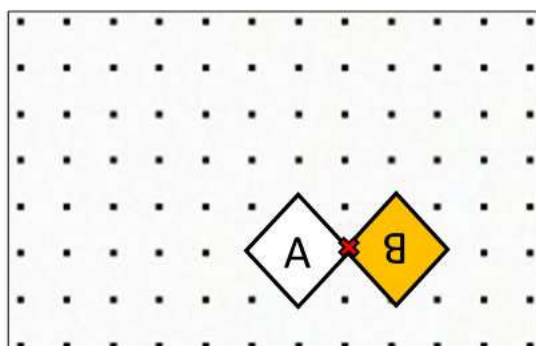
5) _____



6) _____

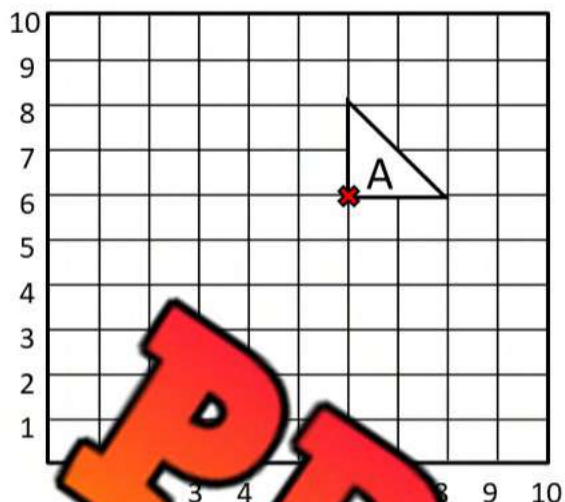


7) _____

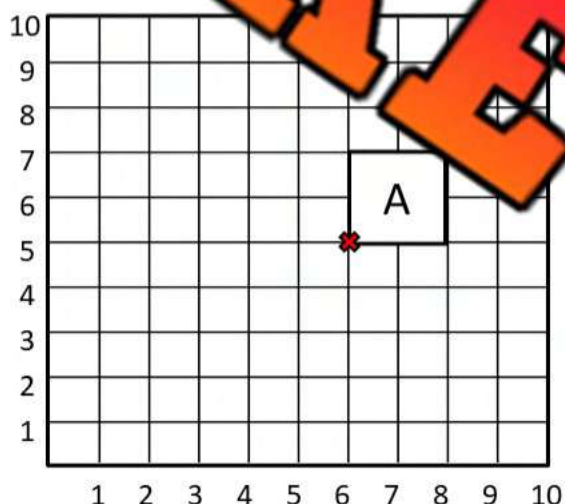


8) _____

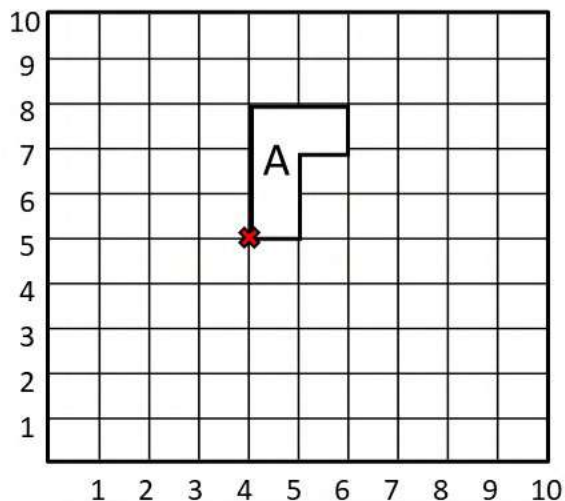
Rotating Shapes - Cartesian Plane



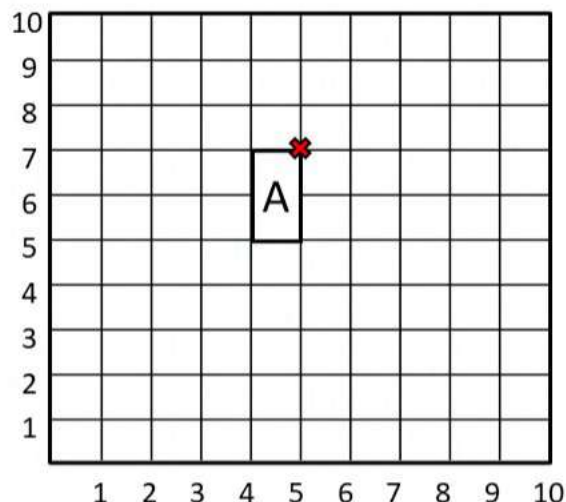
1) 90° clockwise rotation



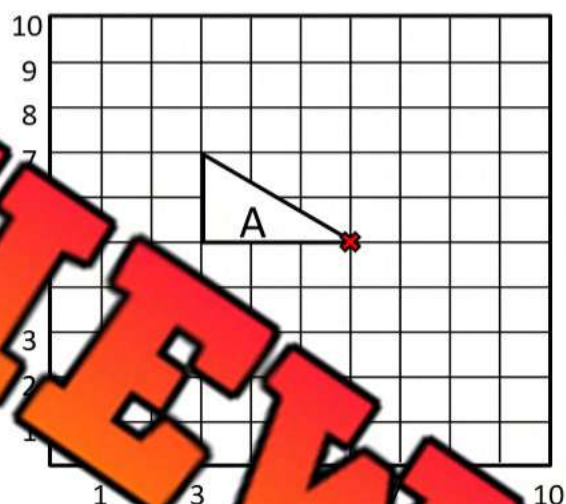
3) 90° clock-wise rotation



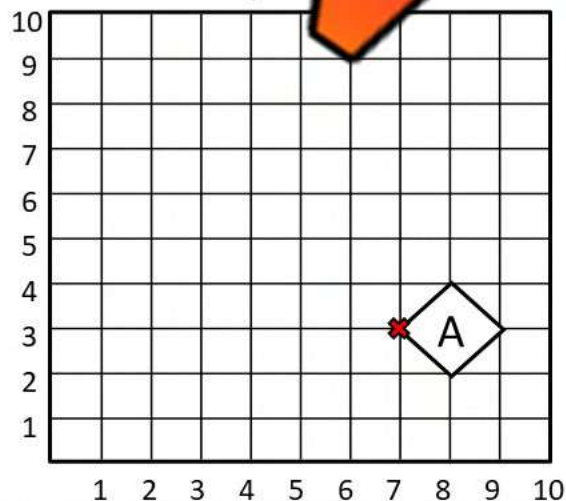
5) 180° rotation



2) 90° counter-clockwise rotation



4) 90° counter-clockwise rotation



6) 90° counter-clockwise rotation

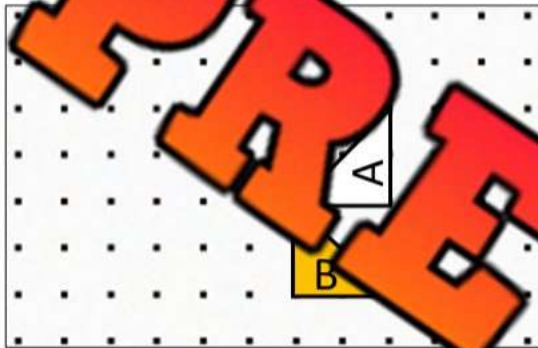
Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

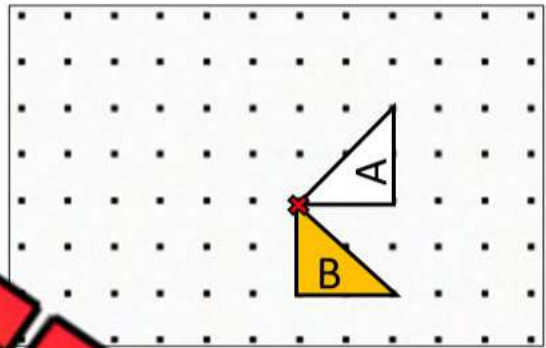
Name: _____

Describe the rotations. Shape A is the original shape.



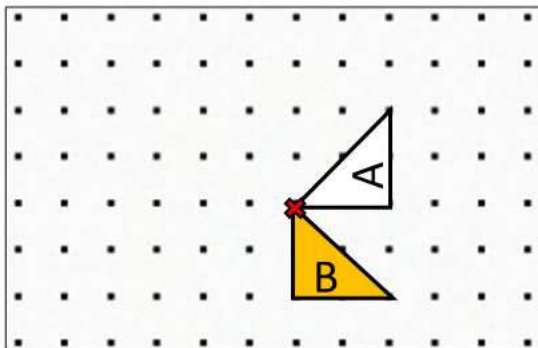
Name: _____

Describe the rotations. Shape A is the original shape.



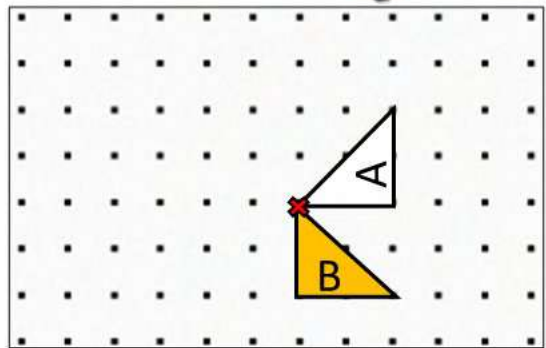
Name: _____

Describe the rotations. Shape A is the original shape.



Name: _____

Describe the rotations. Shape A is the original shape.

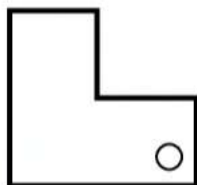


Transformation

Instructions

Is the transformation a translation, reflection or rotation?

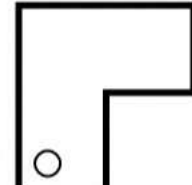
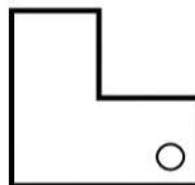
1)



Translation

Rotation

2)

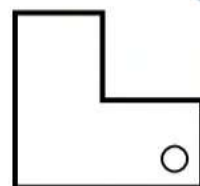


Translation

Reflection

Rotation

3)

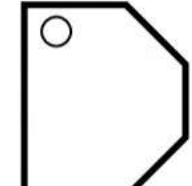


Translation

Reflection

Rotation

4)

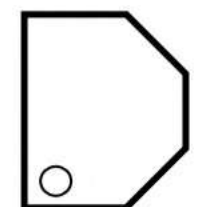
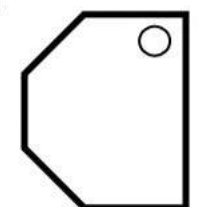


Translation

Reflection

Rotation

5)



Translation

Reflection

Rotation

6)

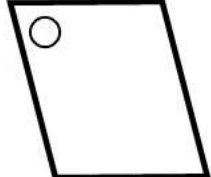
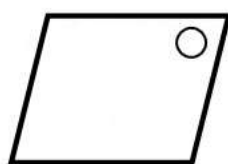


Translation

Reflection

Rotation

7)

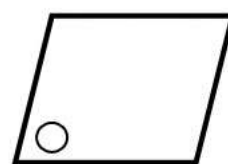
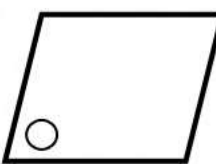


Translation

Reflection

Rotation

8)



Translation

Reflection

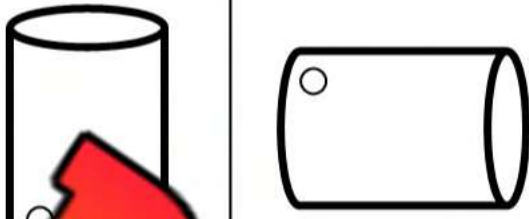
Rotation

Transformations of 3D Objects

Instructions

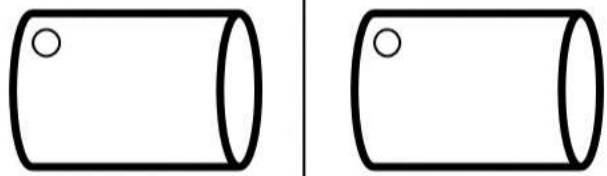
Is the transformation a translation, reflection or rotation?

1)



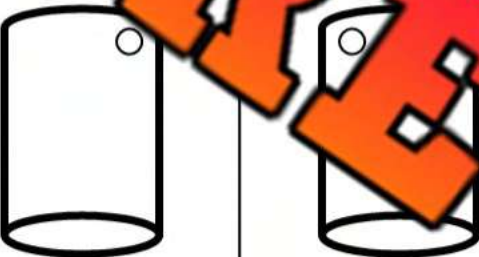
Translation Reflection Rotation

2)



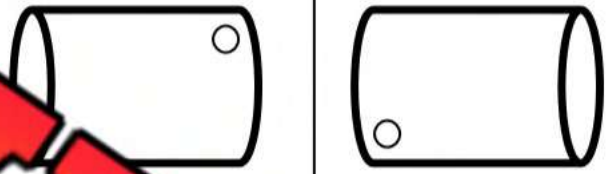
Translation Reflection Rotation

3)



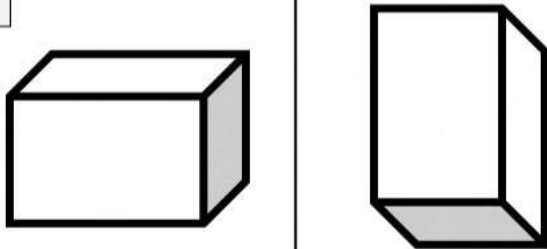
Translation Reflection Rotation

4)



Translation Reflection Rotation

5)



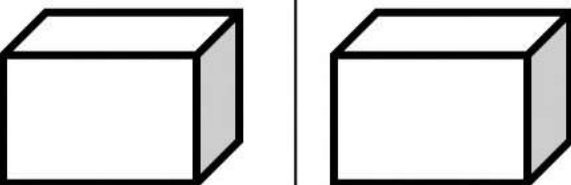
Translation Reflection Rotation

6)



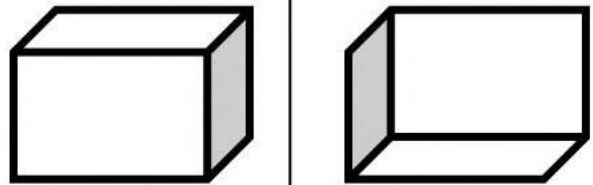
Translation Reflection Rotation

7)



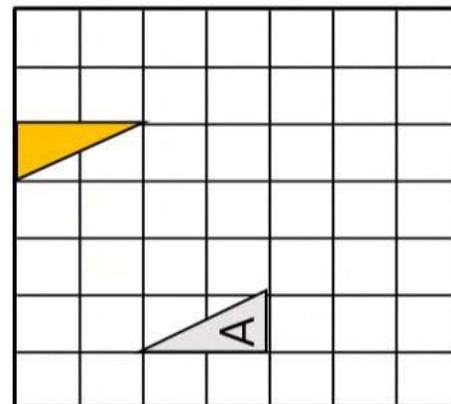
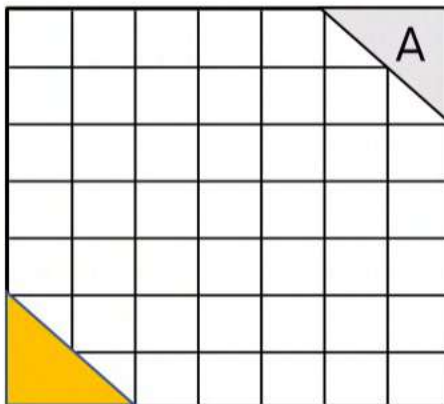
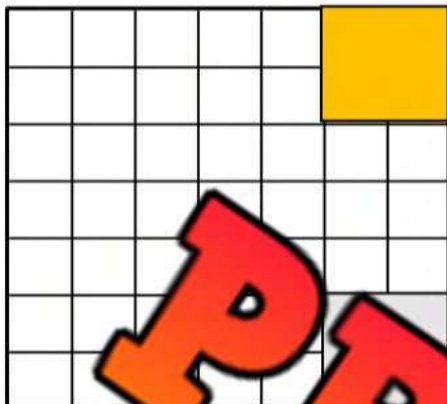
Translation Reflection Rotation

8)

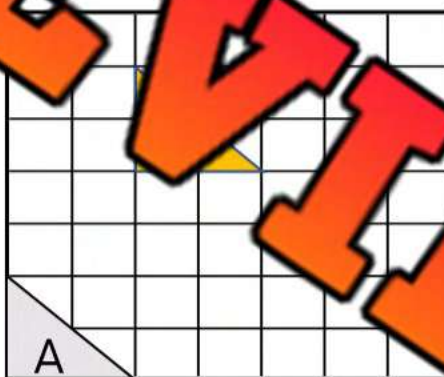
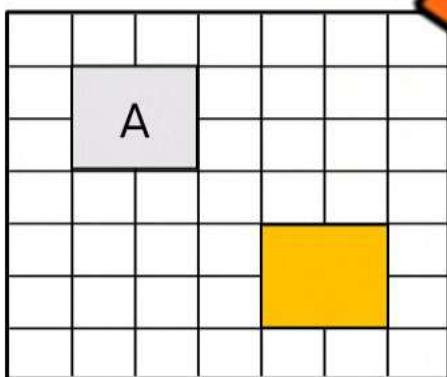


Translation Reflection Rotation

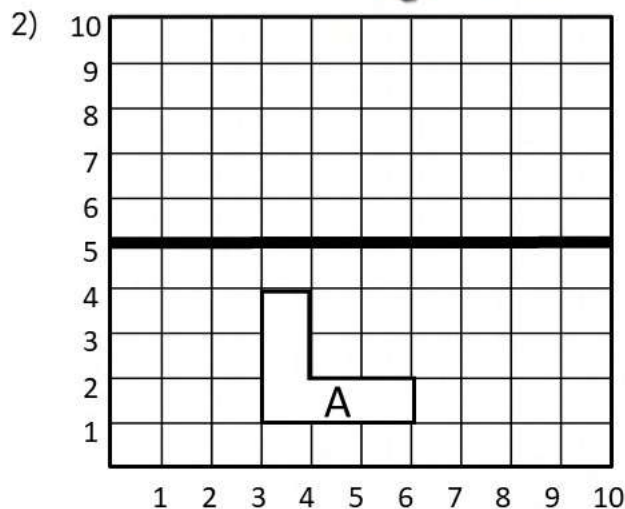
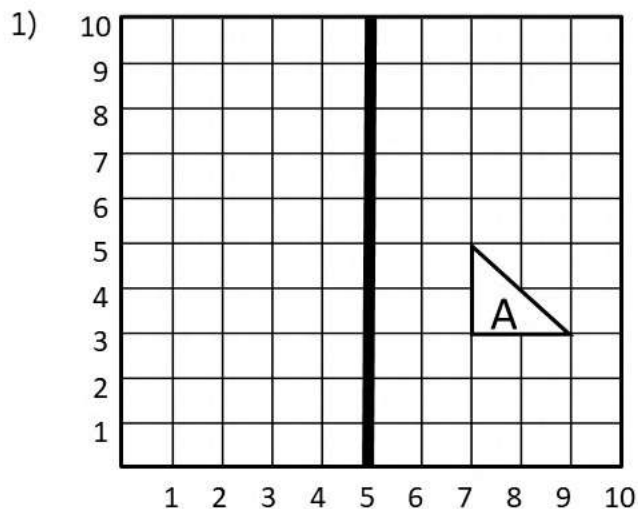
Unit Quiz - Transformations

Part 1Is the transformation a translation or not? Write yes or no.**Part 2**

Describe the transformation using arrows. Shape A is the original object

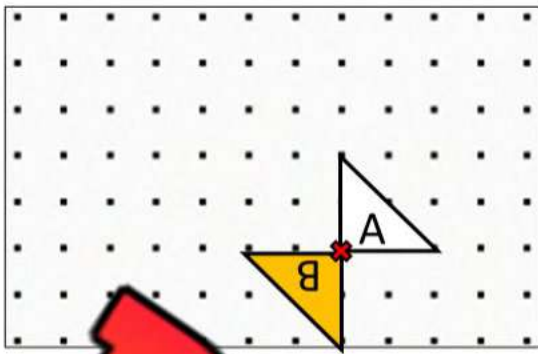
**Part 3**

Reflect the shapes across the mirror line

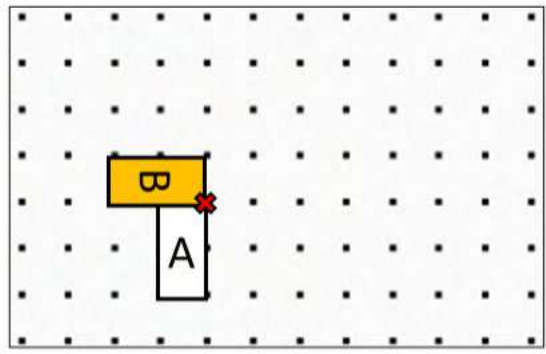


Part 4

Describe the rotations. Shape A is the original shape



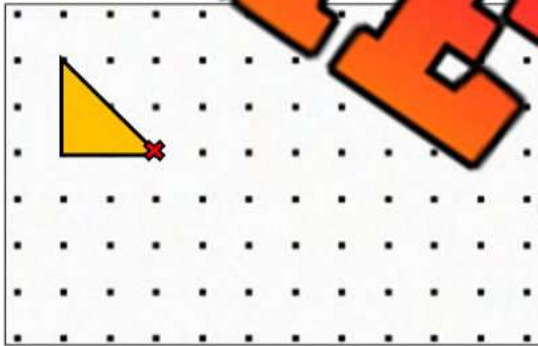
1) _____



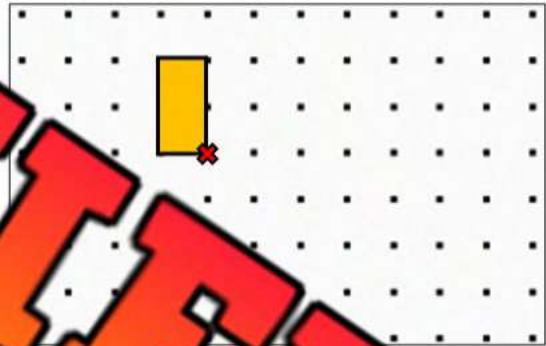
2) _____

Part 5

Rotate the shapes around the point marked ✕



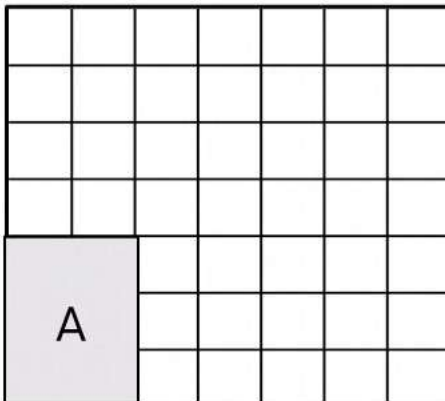
1) 90° counter-clockwise rotation



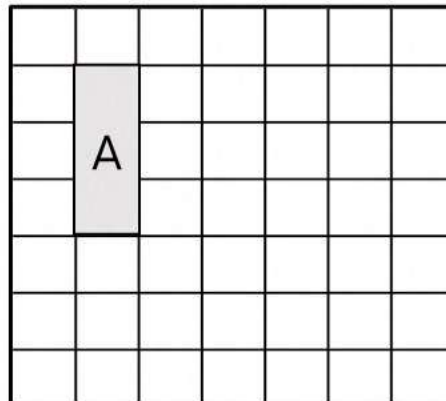
2) 180° clockwise rotation

Part 6

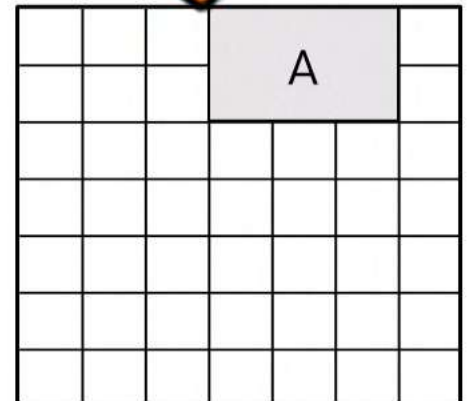
Draw the new shape after reading the 3 steps



3 ↑, 4 → 1 ↓



2 ↓, 4 → 1 ↓



3 ↓, 2 ←, 2 ↓