


Concept: Perimeter and Area of Polygons

Name:

COMPUTER COMPONENT

Instructions:

In  follow the **Content Menu** path:

Measurement and Geometry > Perimeter and Area of Polygons



Work through all Sub Lessons of the following Lessons **in order**:

- *In This Topic*
- *Polygons ... What are they?*
- *Classify Polygons with Venn Diagrams*
- *Walk Around A Polygon*
- *Introduction to Area*
- *Areas of Polygons*
- *Fractions of a Square*
- *Tangrams and Area*
- *Relationships- Area & Perimeter*
- *Given Area and Perimeter- Create a shape*
- *Problem Section*



As you work through the computer exercises, you will be prompted to make notes in your notebook/math journal.

SUMMARY

1. *Fill in the blanks.*

A **polygon** is a **closed** shape.

It lies in a **plane** which means it is **flat**.

It is made up of **straight** lines.

plane


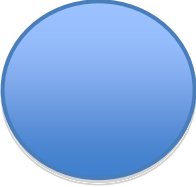
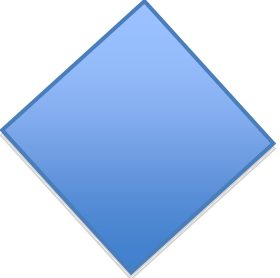
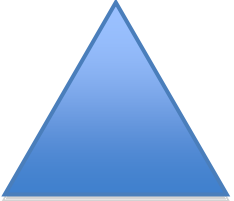
straight

flat

closed

polygon

2. Use your previous knowledge to classify the following polygons.

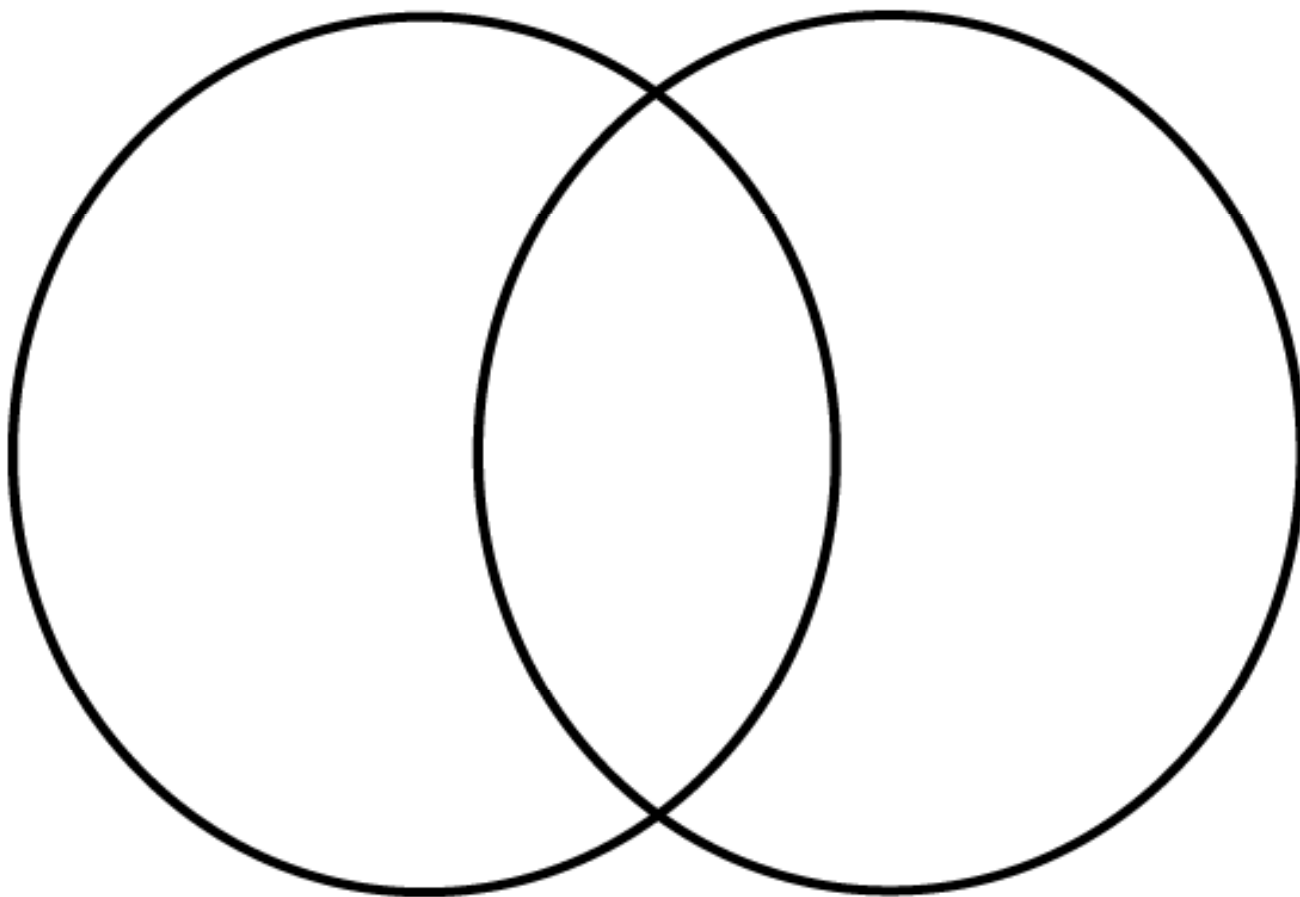
Shape Sample	Name	# of Sides	Regular or Irregular
	Parallelogram	4	Irregular
	Circle	N/A	Not a polygon!
	Square	4	Regular
	Triangle	3	Regular (Equilateral)

Does everything make sense here? *Explain*

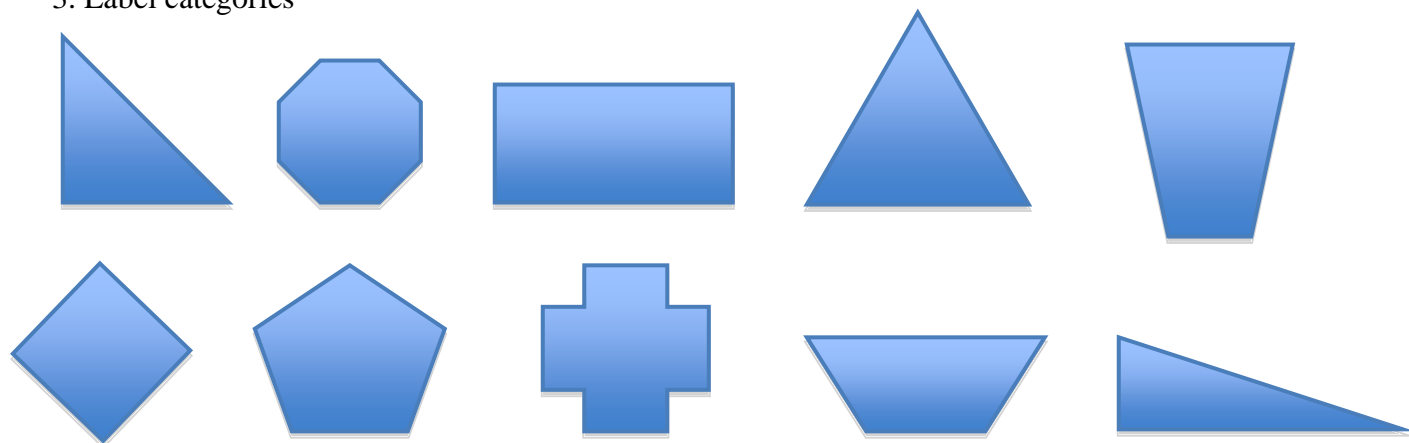
A circle does not qualify as a polygon, as it does not have sides and is not comprised of straight lines.

OFF COMPUTER EXERCISES

1. Use the Venn Diagram to ‘sort and classify’ the shapes below. (*Responses will vary*)

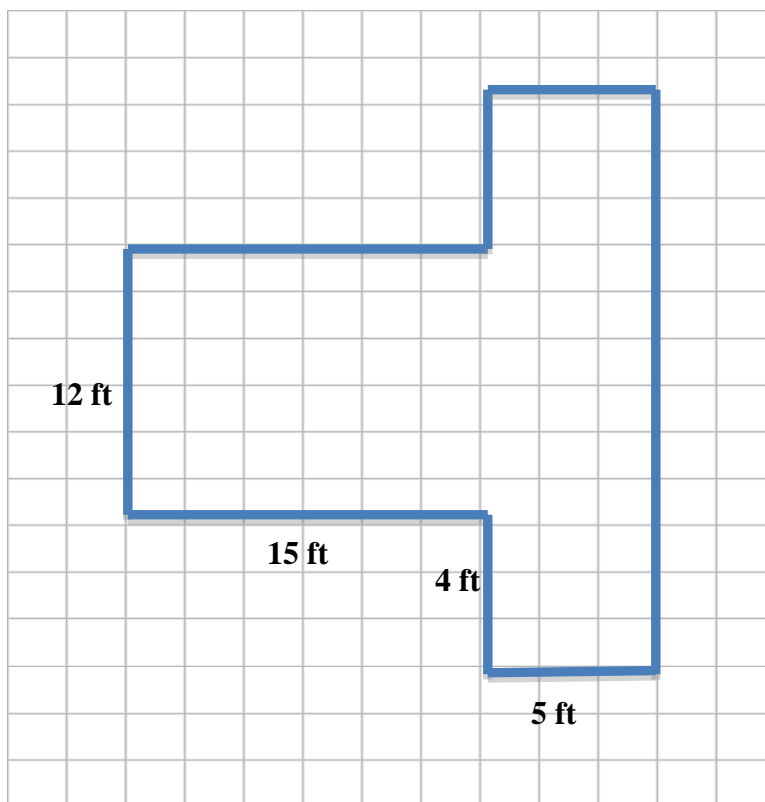

Instructions:

1. Cut out the shapes and dry-fit/sort them in to possible categories.
2. Glue them into categories and be prepared to explain your reasoning.
3. Label categories



The distance around an object is called the **perimeter**.

2. Find the amount of fencing material that is required for this backyard.



Show your calculations here.

$$12 + 15 + 15 + 4 + 4 + 5 + 5 + 20 = 80 \text{ ft}$$

or

$$12 + 30 + 8 + 10 + 20 = 80 \text{ ft}$$

The perimeter is 80 ft.

The amount of surface is called *area*.

3. Area or Perimeter- Use a ruler to draw a straight line connecting the shape with the correct area or perimeter.

9 ft. 5' 3'

14 sq. ft. 9' 3'

24 ft. 4'

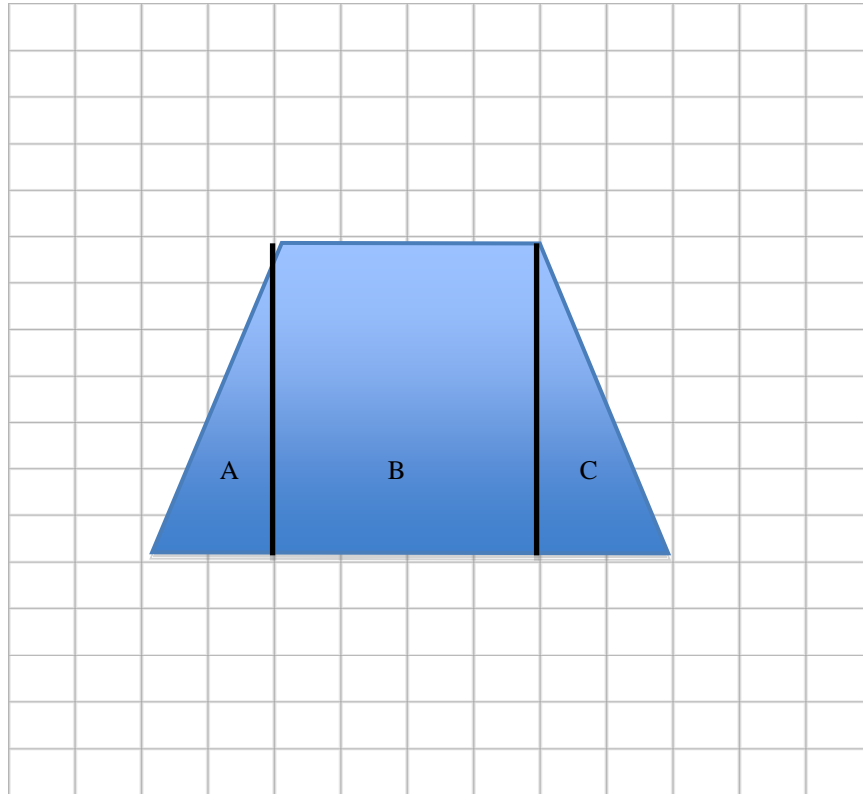
15 sq. ft. 7' 2'

16 sq. ft. 3'

4. A ‘trapezoid’ is a quadrilateral with 1 pair of parallel sides.

Find the area of this trapezoid

Hint: Divide the trapezoid in to shapes that you already know how to find the area of.



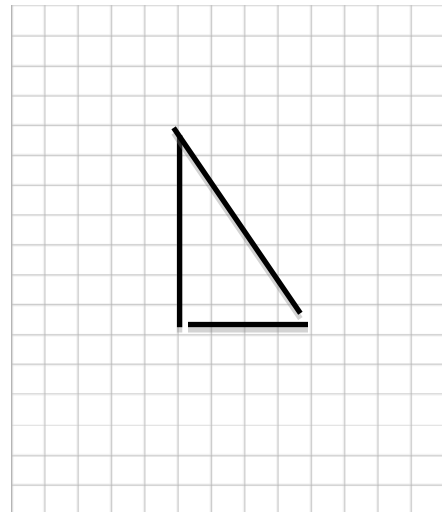
Show your calculations here.

One of a variety of ways of approaching this shape...

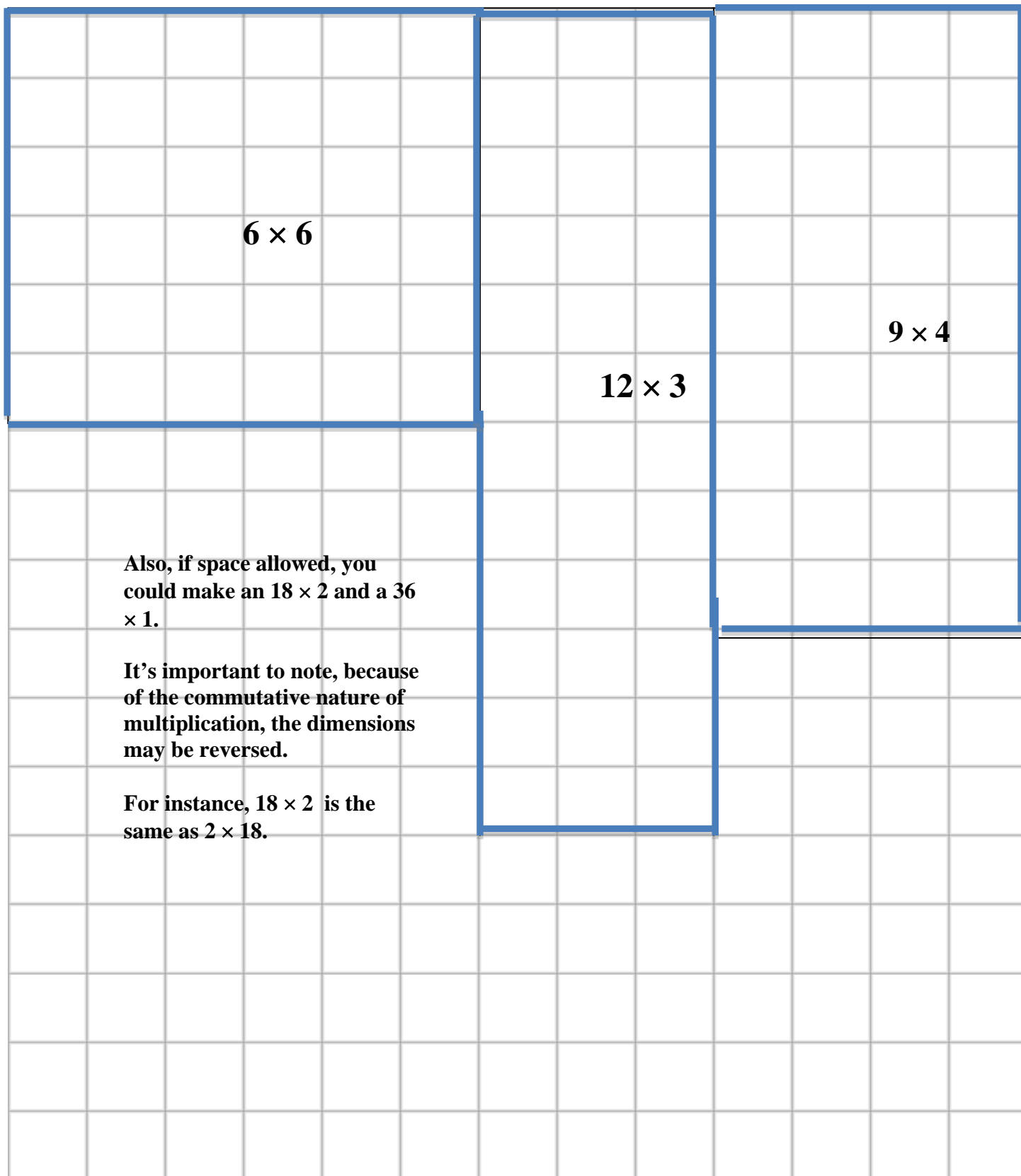
$$A = b \times h \div 2 \quad B = l \times w \quad C = b \times h \div 2$$

$$= 2 \times 4 \div 2 \quad = 4 \times 4 \quad = 2 \times 4 \div 2 \quad \longrightarrow \quad 4 + 16 + 4 = 24 \text{ sq. units}$$

5. Draw a right triangle with an area of 12 sq. units.



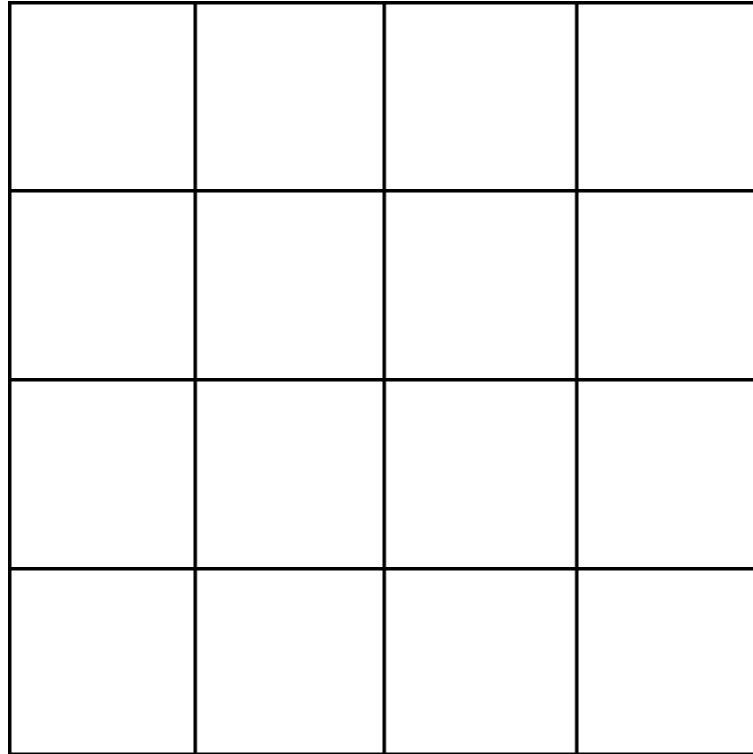
6. How many different rectangles can you make with an area of 36 sq. units?



7. Terrific Tangrams

Instructions:

- Follow lines, precisely as possible, to cut out all 7 shapes in the tangram.
- Keep all shapes together, as they will all be needed for the following activities



Each square on the grid is 1 square inch. *The grid will act as an excellent measuring tool as you organize and arrange tangram pieces on the grid to find the area of each piece in square inches.*

Find the area of each tangram piece.

- (a) Parallelogram= _____ sq. in.
- (b) Small triangle= _____ sq. in.
- (c) Large triangle= _____ sq. in.
- (d) Medium triangle= _____ sq. in.
- (e) Square= _____ sq. in.
- (f) The whole tangram puzzle _____ sq. in.

(g) Use four tangram pieces to make a rectangle with an area of 6 square inches. *Sketch your solution here.*

(h) Use five tangram pieces to make a trapezoid with an area of 12 square inches. *Sketch your solution here.*

