

L.O: I am learning to distinguish between regular and irregular polygons

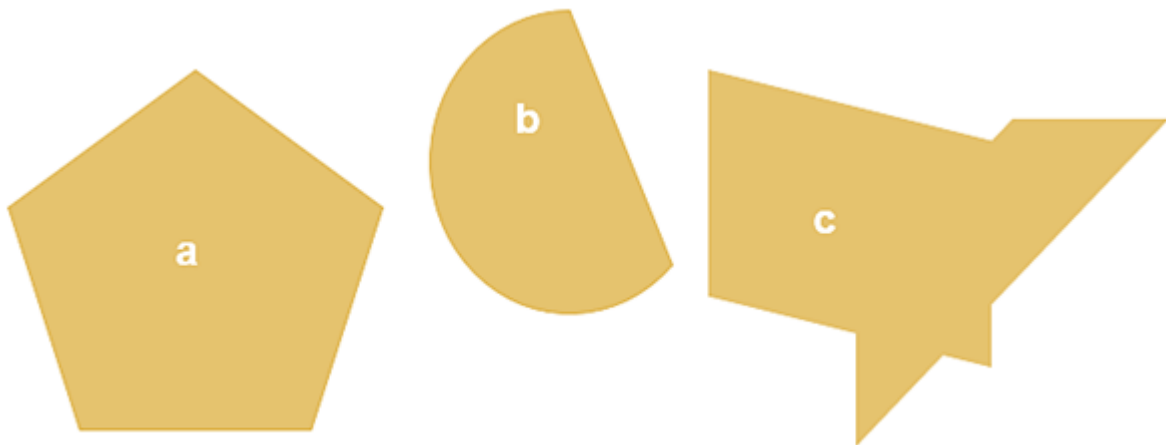
Today you will learn what “regular” and “irregular” means in terms of polygons. Based on these properties you will then be able to calculate the sizes of missing angles and sides in a variety of polygons.

Answer the questions on the separate worksheet that comes with this assignment. Turn the completed work in so that the teacher can mark and comment on your work.

What is a Polygon?

A **polygon** is any 2-dimensional shape formed with straight lines. Triangles, quadrilaterals, pentagons, and hexagons are all examples of **polygons**. The name tells you how many sides the shape has. For example, a triangle has three sides, and a quadrilateral has four sides. A polygon **MUST** have at least **three straight sides** and **angles** and always have a **closed boundary** (all lines meet at a vertex).

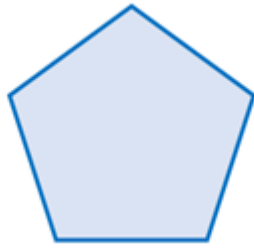
Which of these shapes below are polygons?



Shape **A** and **C** are polygons. Shape **B** is not a polygon because it has a curved edge.

- Shape A and C are different. One is a **regular polygon** and one is an **irregular polygon**, can you recognise which is which and explain why?

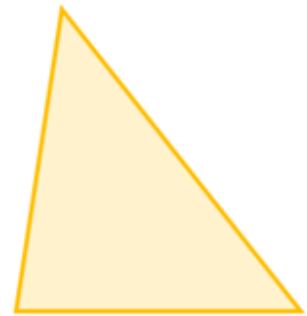
Regular Polygons



A regular polygon has equal sides and equal angles, like the shapes above.

- The square has 4 equal sides and 4 equal angles. It is a regular polygon.
- The pentagon has 5 equal sides and 5 equal angles. It is a regular polygon.
- The triangle has 3 equal sides and 3 equal angles. It is a regular polygon.
- Therefore, **Shape A** is a **regular polygon** because it has 5 equal sides and 5 equal angles.

Irregular Polygons



An irregular polygon **does not** have all sides of equal length or internal angles that are all equal.

- The parallelogram has opposite sides that are equal, but all sides and angles are not equal, so it is an irregular polygon.
- The hexagon has six sides of different lengths and angles of different sizes. It is an irregular polygon.
- The scalene triangle has no equal angles or sides. It is an irregular polygon.

Use the link to watch the video below, which will help you use your knowledge of polygons to find missing angles and lengths.



<https://www.youtube.com/watch?v=TzjC4QKd5s>

Now go to the worksheet for today's tasks and pick your challenge!