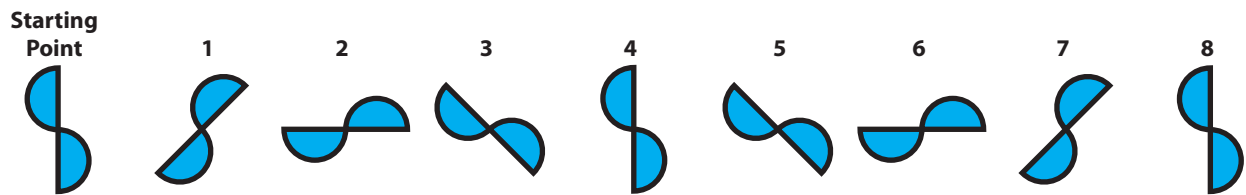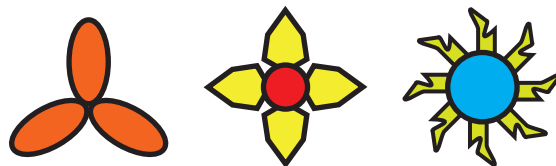# Rotational Symmetry

When we say that an object has **rotational symmetry**, it means that it will appear unchanged at least once as we rotate it around a center point before it returns to its starting shape.

Take a look at the shape at the Starting Point below. When we rotate it 45° (1), it looks different than the shape at the Starting Point, so it hasn't qualified for Rotational Symmetry yet.

We rotate it another 45° (2), and it still looks different. It is still different when we rotate it another 45° (3), but, when we rotate it 180° (4), it looks exactly the way it did at the Starting Point, which means that this shape has rotational symmetry.

| Starting Point	1	2	3	4	5	6	7	8

An object's **rotational symmetry order** is the number of times a match is made as the object is rotated 360°. If it matches twice, as in the example above, (in steps 4 and 8), we say it has a rotational symmetry of Order 2. In the examples below, the objects have rotational symmetry in Orders 3, 4 and 8.

On the next page you will find a group of objects. See if you can figure out which ones have rotational symmetry. To make it a little easier, you can cut the objects out and place them against this guide:
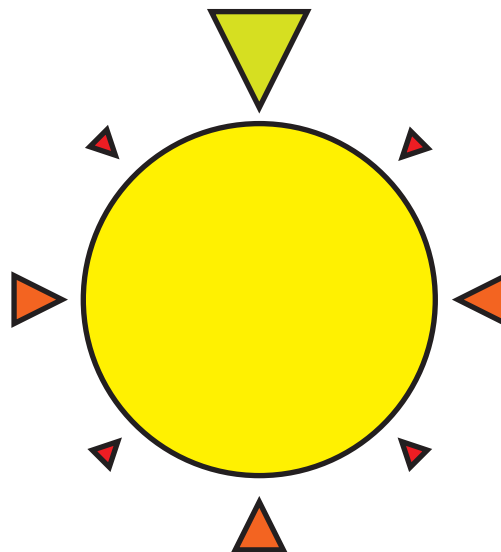
Which of these objects display rotational symmetry?
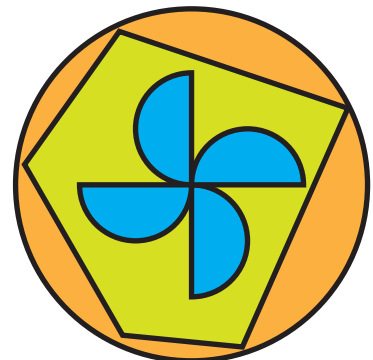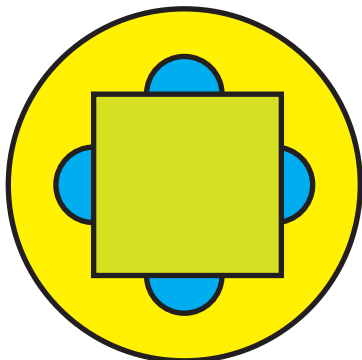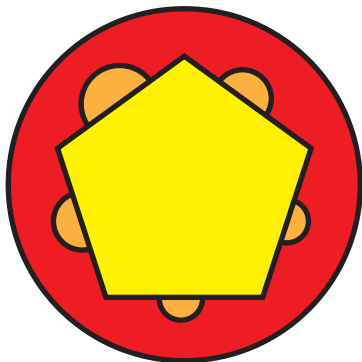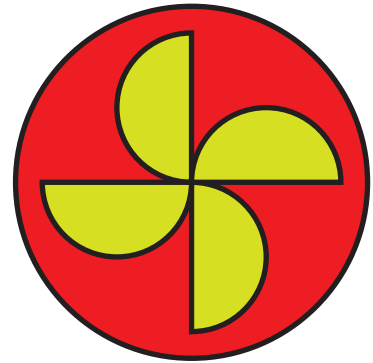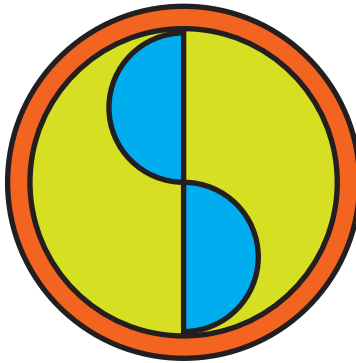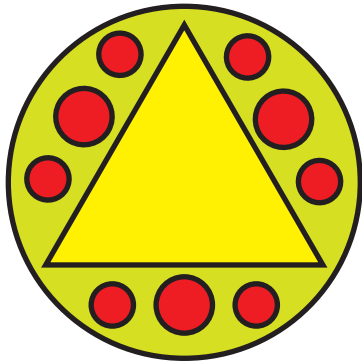
Try making your own objects with rotational symmetry!