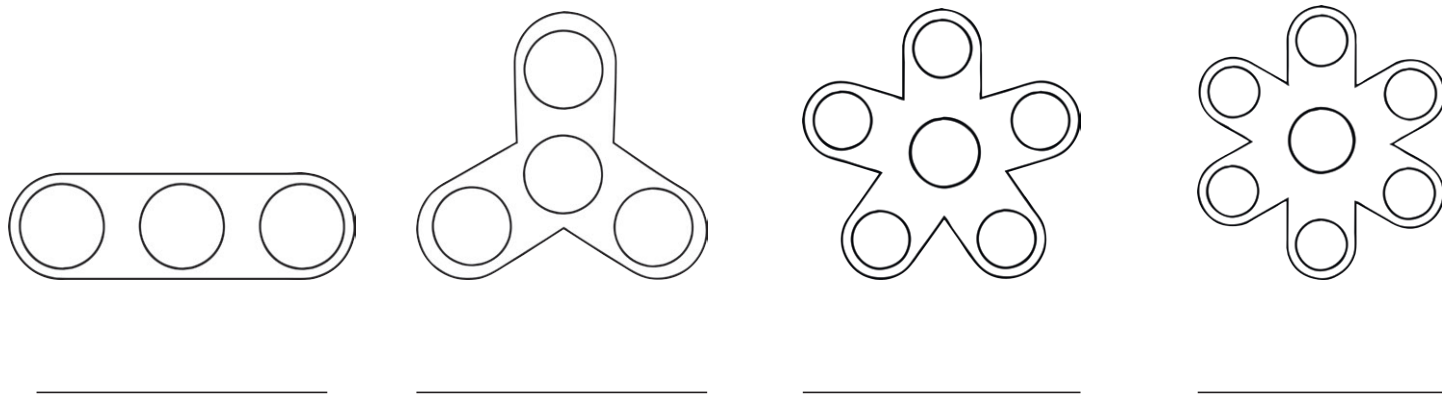


Fidget Spinners Rotational Symmetry Investigation

During one full rotation, the number of times a shape looks exactly as it did in its starting position, gives you its order of rotational symmetry. For example, a square has rotational symmetry of order 4.

Section 1

Now look at each of the fidget spinners below and decide if they have rotational symmetry. If so, next to each image write how many orders of rotational symmetry each fidget spinner has.



Section 2

Next, work out the following:

The 2-branch fidget spinner turns _____° to make each order of rotational symmetry.

The 3-branch fidget spinner turns _____° to make each order of rotational symmetry.

The 5-branch fidget spinner turns _____° to make each order of rotational symmetry.

The 6-branch fidget spinner turns _____° to make each order of rotational symmetry.

Section 3

If a fidget spinner has:

• 36° rotational symmetry, how many orders of rotational symmetry does it have?

• 45° rotational symmetry, how many orders of rotational symmetry does it have?

Fidget Spinners Rotational Symmetry Investigation

Extension task:

Using a protractor, draw each of the angles from Section 2 below. Label each one with the number of degrees. Can you also give each angle its correct name?

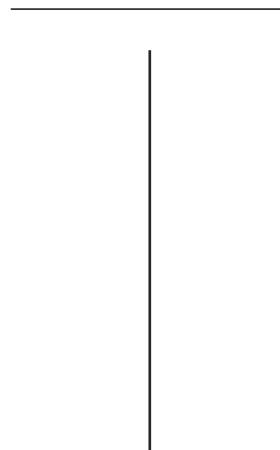
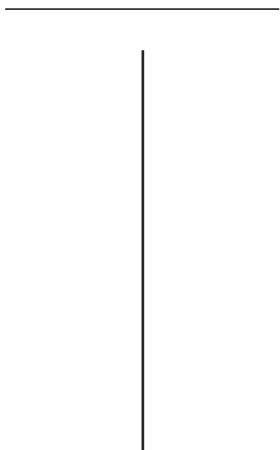
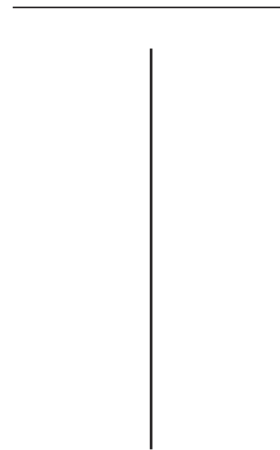
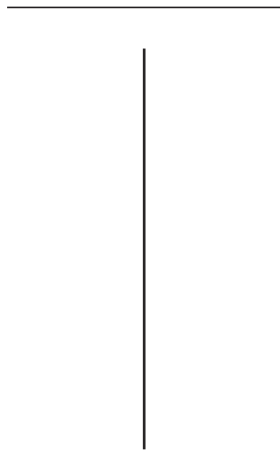
acute angle

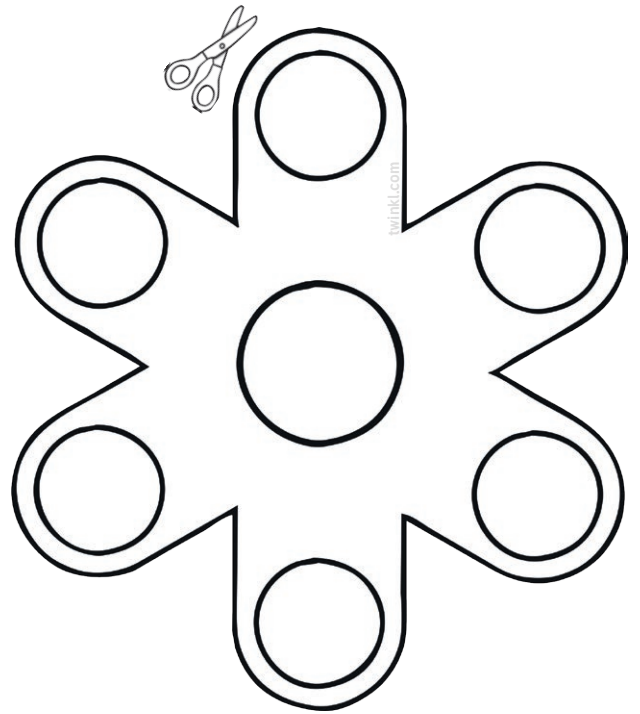
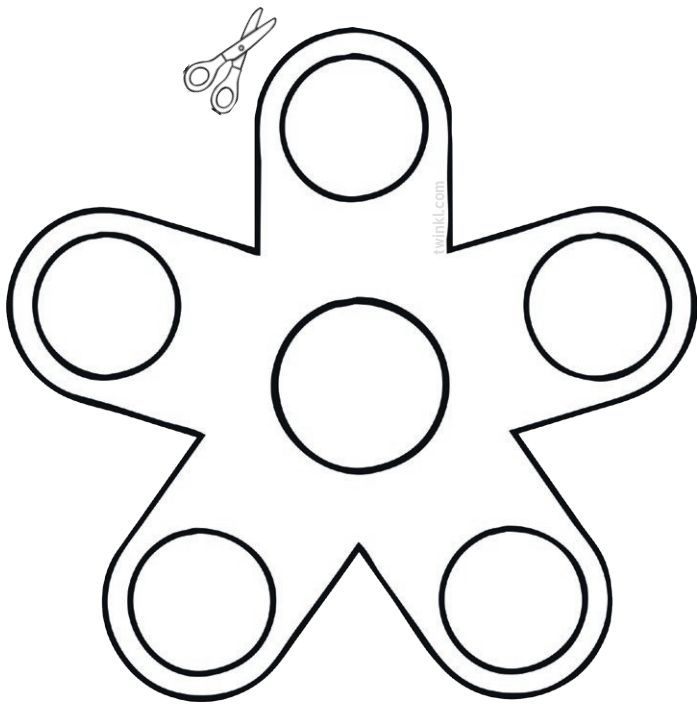
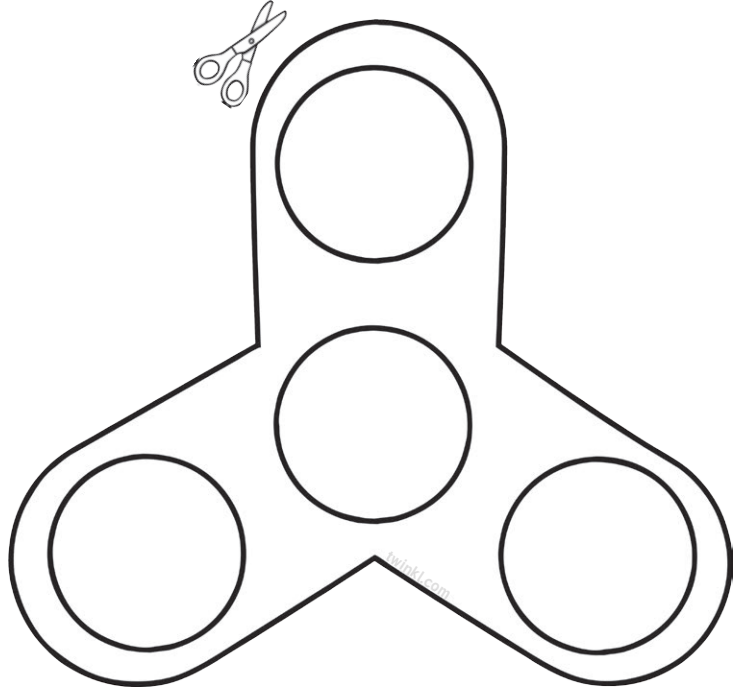
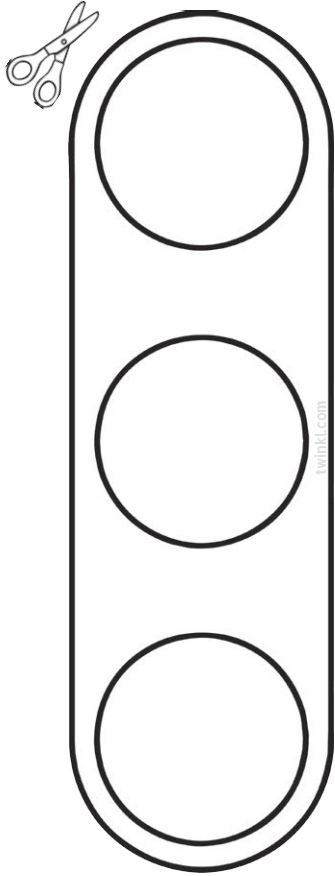
right angle

obtuse angle

reflex angle

straight line





Fidget Spinners Rotational Symmetry Investigation

Answers

Section 1

- Fidget Spinner with 2 branches
rotational symmetry of order 2
- Fidget Spinner with 3 branches
rotational symmetry of order 3
- Fidget Spinner with 5 branches
rotational symmetry of order 5
- Fidget Spinner with 6 branches
rotational symmetry of order 6

Section 2

- The 2-branch fidget spinner turns **180°** to make each order of rotational symmetry.
- The 3-branch fidget spinner turns **120°** to make each order of rotational symmetry.
- The 5-branch fidget spinner turns **72°** to make each order of rotational symmetry.
- The 6-branch fidget spinner turns **60°** to make each order of rotational symmetry.

Section 3

If a fidget spinner has:

- 36° rotational symmetry, how many orders of rotational symmetry does it have?

10

- 45° rotational symmetry, how many orders of rotational symmetry does it have?

8