Discussion Problems
Step 1: Position in the First Quadrant

National Curriculum Objectives:

Mathematics Year 5: (5P2) Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed

About this resource:

This resource has been designed for pupils who understand the concepts within this step. It provides pupils with more opportunities to enhance their reasoning and problem solving skills through more challenging problems. Pupils can work in pairs or small groups to discuss with each other about how best to tackle the problem, as there is often more than one answer or more than one way to work through the problem.

There may be various answers for each problem. Where this is the case, we have provided one example answer to guide discussion.

We recommend self or peer marking using the answer page provided to promote discussion and self-correction.

More Year 5 Position and Direction resources.

Did you like this resource? Don't forget to review it on our website.

Position in the First Quadrant

1. Ethan is playing a game. He starts at the coordinates (0, 0) and must reach (14, 18). He must make seven different movements and is only allowed to travel vertically and horizontally on the grid lines.
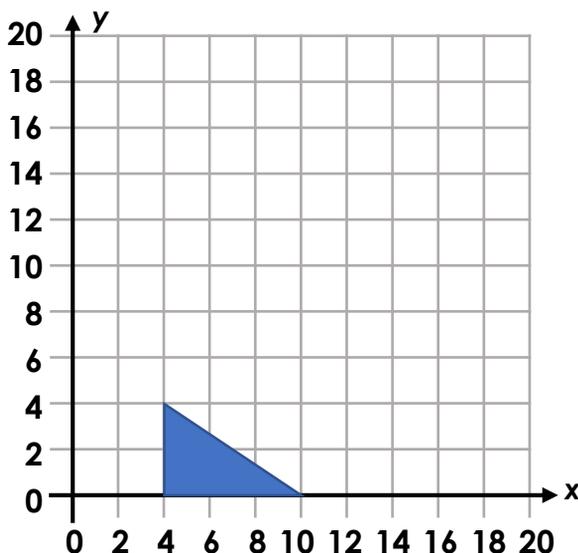
Explore the different routes that would work.

DP
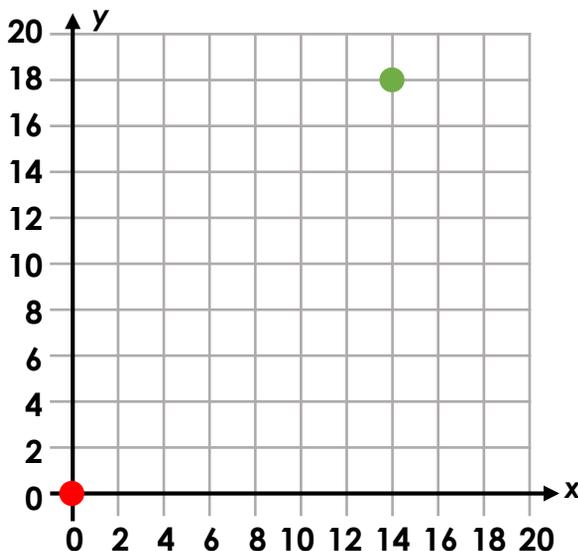
2. Create a quadrilateral that shares a coordinate with the triangle on the grid below. The shapes cannot overlap.

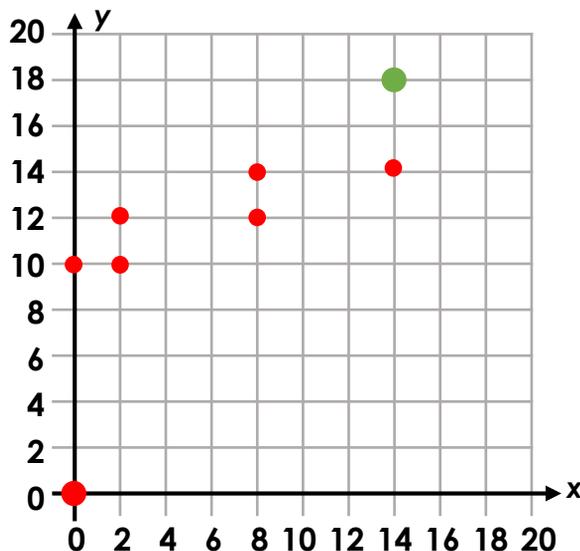**Once complete, repeat the step so that another triangle shares one of the coordinates of the quadrilateral.**

Investigate how many times you could repeat this process before you run out of space on the grid.

DP

classroomsecrets.co.uk

Position in the First Quadrant

---

1. Ethan is playing a game. He starts at the coordinates (0, 0) and must reach (14, 18). He must make seven different movements and is only allowed to travel vertically and horizontally on the grid lines.

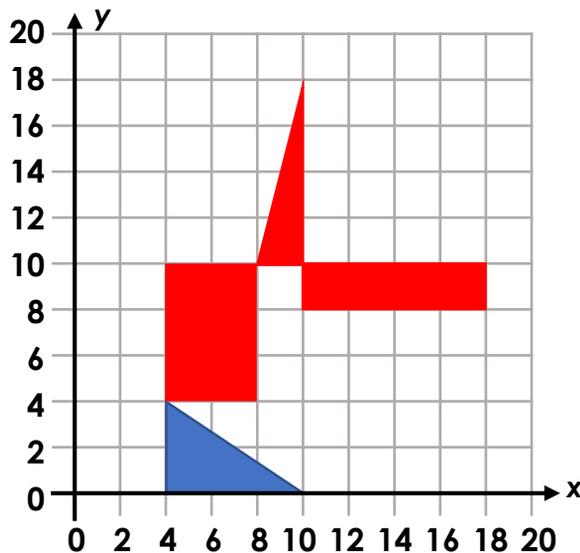**Explore the different routes that would work.**

Various possible answers including: (0, 10), (2, 10), (2, 12), (8, 12), (8, 14), (14, 14), (14, 18)

DP

---

2. Create a quadrilateral that shares a coordinate with the triangle on the grid below. The shapes cannot overlap.

Once complete, repeat the step so that another triangle shares one of the coordinates of the quadrilateral.

Investigate how many times you could repeat this process before you run out of space on the grid.
Various possible answers including: (4, 4), (8, 4), (8, 10), (4, 10)

DP

---

classroomsecrets.co.uk