

Discussion Problems

Step 6: Parallel and Perpendicular

National Curriculum Objectives:

Mathematics Year 3: (3G2) [Identify horizontal and vertical lines and pairs of perpendicular and parallel lines](#)

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 3 Properties of Shape](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Parallel and Perpendicular

1. Charlie is investigating perpendicular lines.



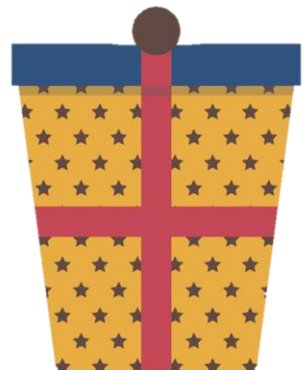
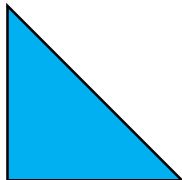
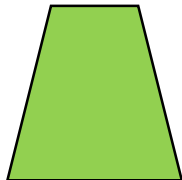
I wonder how many shapes I can create that have a maximum of 5 sets of perpendicular lines.

Using straight lines, explore how many different shapes he could create.

DP

2. A combination of the shapes below have been hidden in a box.

Altogether, the shapes in the box have an equal number of pairs of parallel lines and sets of perpendicular lines.



Investigate what combination of shapes could be in the box.

DP

Parallel and Perpendicular

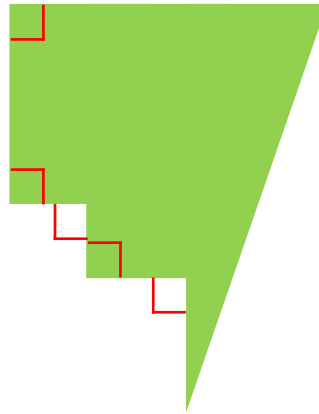
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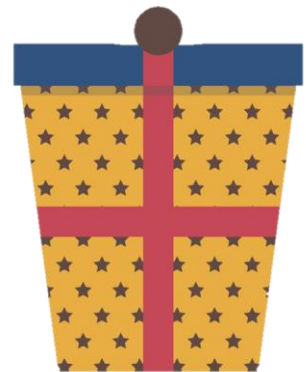
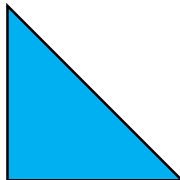
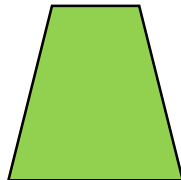
Various possible shapes, for example:



DP

2. A combination of the shapes below have been hidden in a box.

Altogether, the shapes in the box have an equal number of pairs of parallel lines and sets of perpendicular lines.



Investigate what combination of shapes could be in the box.

Various possible answers, for example: 3 right angled triangles, 1 square and 5 trapeziums would have a total of 7 pairs of parallel lines and 7 sets of perpendicular lines.

DP