Year 5 / 6
Problem Solving Challenge 1

<u>Name of Challenge:</u> Four 4's
<u>Materials Needed:</u> paper, something to write with
<u>Extension Prompt:</u> Are there any patterns that you notice?
<u>Enabling Prompt:</u> Use the four operations in a variety of ways. Are brackets useful in some situations?
<u>Challenge:</u> I have been told that it is possible to make all the numbers between 1 and 100 by suing four 4's and any operation. For example: 4 ? 4 + 4 - 4 = 1 Make as many of the numbers between 1 and 100 as you can in this way to see if it is possible.

Year 5 / 6

Problem Solving Challenge 2

Name of Challenge: Puzzling Tangrams

Materials Needed: Tangrams

Extension Prompt: Is there more than one way to make the shapes?

Enabling Prompt: Will rotating and flipping tangram pieces help to make shapes?

Challenge: A seven-piece tangram is a square made up of 5 triangles of various sizes, a square and a parallelogram. Tangram pieces can be used to make new shapes. Investigate how to make a square, triangle, a rectangle, a trapezium, and a parallelogram using all seven tangram pieces for each shape. Draw them below.

Try to make seven squares of any size using first 1 tangram piece, then 2 pieces, then 3, 4, 6 and 7 pieces. Is it possible? Draw your shapes below.

Year 5 / 6
Problem Solving Challenge 3

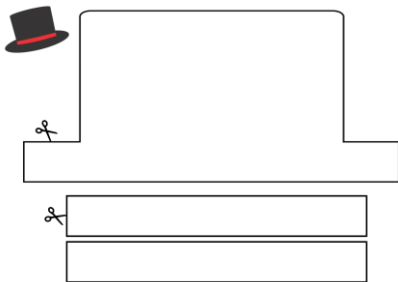| |
|---|
| <u>Name of Challenge: Make that hat!</u> |
| <u>Materials Needed: Firm Paper or Card - coloured is nice but not necessary</u> |
| <u>Extension Prompt: Make a net for another type of hat</u> |
| <u>Enabling Prompt: Make a simple cube or rectangular prism</u> |
| <u>Challenge:</u> You have been asked by a magician to act as his assistant during performances. Before you can start, you have to make a hat that fits you, is sturdy and is large enough to be used for performing magic tricks. Draw your design to fit you. Include all relevant measurements.

Here's an example but try and be more creative:

Draw a net of your design on a flexible card then cut it out and join it together to make your hat. |