Stage 1 Essential Mathematics

Assessment Type 1: Skills and Applications Tasks

Using Weapons of Maths Construction!

You will need:

* A laptop or computer to access the site <http://www.mathopenref.com/constructions.html>
* A pencil
* A ruler
* A compass
* Lots of patience

Open the link above and follow the instructions carefully to construct the objects named in this booklet.

Make sure you leave all construction marks so you can demonstrate your construction techniques.

Check the performance standards before you start.

Task Specific Assessment Design Criteria:

CT2: Application of mathematical skills and techniques to find solutions to practical problems in context.

RC3: Use of appropriate mathematical notation, representations, and terminology.

Perpendicular means at $90^{o}$. This makes a square corner like in a square or a rectangle.

|  |  |
| --- | --- |
| Perpendicular bisector of a line segment | Perpendicular from a line through a point |
| Perpendicular from an end point of a ray | Perpendicular from a line at a point |

Parallel lines never intersect or cross over. They are exactly the same distance from each other all along the lines.

Use one of the three methods available to construct a line that is parallel to the line PQ below:

Constructing Angles:

Demonstrate how you construct each of the angles named below. Remember to leave all construction marks in place.

|  |  |
| --- | --- |
| $$30^{o}$$ | $$45^{o}$$ |
| $$60^{o}$$ | $$75^{o}$$ |

Construct the following triangles:

|  |  |
| --- | --- |
| Copy this triangle | An isosceles triangle with base 5cm and two sides 4cm each  |
| An equilateral triangle with all sides 5 cm long | A right angled triangle with a base of 6cm and a hypotenuse of 9cm |

OK, now these are a bit harder. See if you can construct the following shapes:

|  |  |
| --- | --- |
| A square  | A square inside this circle |
| A hexagon | A pentagon inside this circle |

Extension opportunities:

|  |  |
| --- | --- |
| Divide a line segment into 5 equal parts | Construct a circle that goes through these three points |
| A 30 60 90 triangle with hypotenuse PQ | Find the centre of this circle |