The Magic Hexagon

What are you trying to do?
◆ Construct a regular hexagon using a pencil and a compass
◆ Construct an optical illusion

What do you need?
◆ Paper, a compass, a pencil, a ruler and an eraser
◆ Coloured pencils or felt pens.

What do you do?

◆ Draw a circle with a 6 cm radius.
◆ Use the same radius measurement to mark off six points around the circumference with your compass.
◆ Join these 6 points to form a regular hexagon.
◆ Join the 3 pairs of opposite points with straight lines.
   This reveals 6 triangles inside your hexagon, made from the 12 line segments.
◆ Find the midpoint of each line segment with your compass or ruler.
◆ Join the points on the inside lines to the points on the nearest edges of the hexagon.
◆ Rub out the first part of each inside line and the original circle (as shown) to reveal twelve identical diamond shapes.
◆ Colour these 12 diamonds to reveal your optical illusion of three alternating cubes.

Variation?
◆ Explore different ways to colour your optical illusion.