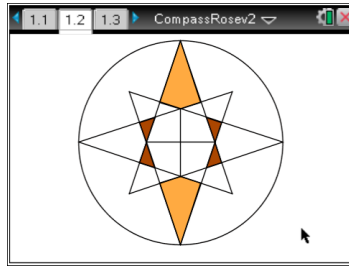


Crop Circles Student Notes

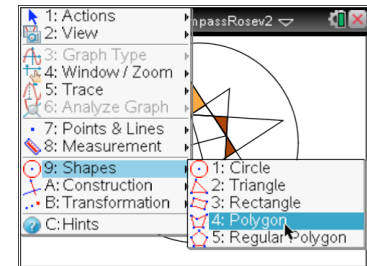
1. Compass Rose

Transfer the file **Compass Rose.tns** to your handheld. You will see this image and there are questions about the shape on page 1.2.



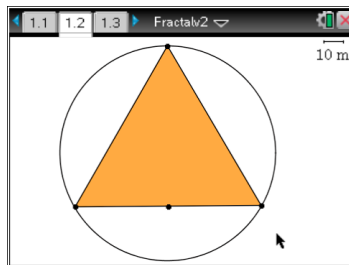
You can draw in any lines of symmetry, by pressing **menu** and choosing 7: Points & Lines 4: Line. Click on any two points that lie on your proposed line of symmetry.

You may find it helps to highlight different shapes. Press **menu** and then choose 9: Shapes 4: Polygon. Click on each vertex of your chosen shape in turn to pick out a particular polygon.

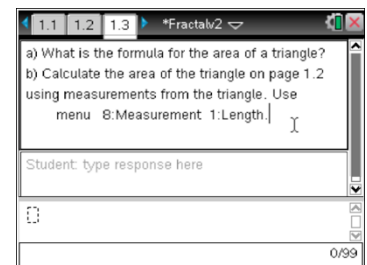
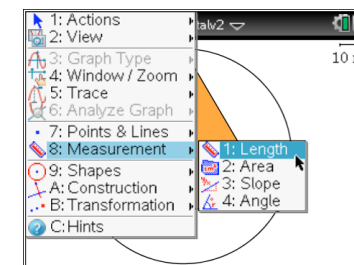


2. Fractal progression

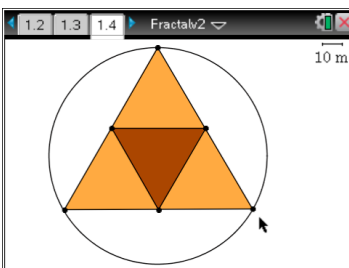
Transfer the file **Fractal.tns** to your handheld. You will be looking at how an equilateral triangle is divided up according to a fractal rule.



First estimate some lengths and the area of the triangle. Use **menu** 8: Measurement 1: Length. Point to the lengths that you need. Page 1.2 has a calculator section as well as space for your answers.

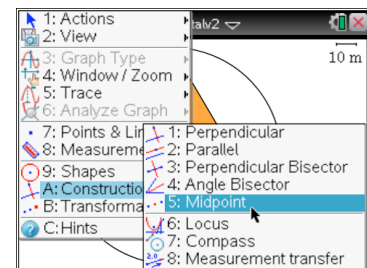


On page 1.4, the triangle has been divided up. The orange shaded area represents the area of standing corn and the brown is flattened. What fraction of the crop is flattened? Answer the questions on Page 1.5.

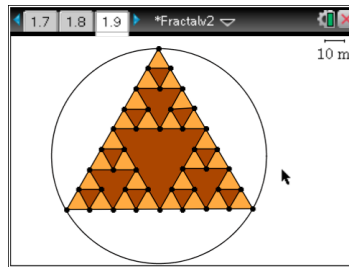


This pattern is continued on pages 1.6 and 1.7. You can complete the diagram on Page 1.9.

Use **menu** and then choose A: Construction 5: Midpoint to divide the lines before drawing the triangles. To shade the triangle use **ctrl menu** and choose the colour.



Your construction should look like this – you could even take it another step.....

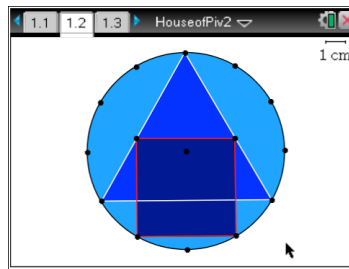


EXTENSION ACTIVITY

3. The House of Pi

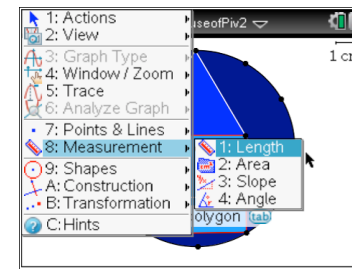
Transfer the file **HouseofPi.tns** to your handheld.

This shape is constructed on a regular 12-sided shape inscribed in a circle. It consists of a circle, a square and an equilateral triangle.



What is the ratio of the area of the circle to the area of the square? Think about the lengths of the radius and the sides.

Check by measuring.



Now think about the ratio of the area of the top triangle to the whole triangle.

Take any measurements that you need, but if you know a little bit about trigonometry you could calculate the necessary lengths.