Ancient Architecture

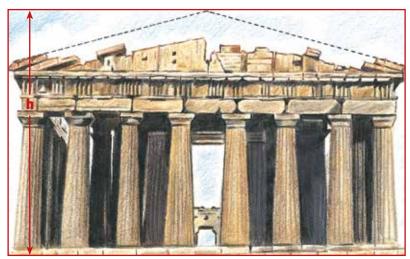**ACTIVITY**

You need: a calculator, a computer

For many centuries, the "golden rectangle" has been recognised as a shape that is particularly pleasing to the eye. The architects of ancient Greece used it in the Parthenon and other buildings.

1. Measure the length and height of this picture of the Parthenon and complete the table below:

Length	Height	Length ÷ height (as a decimal)

2. What you have just found is the "golden ratio" – approximately. The exact value of the ratio, known as φ (phi) cannot be written down, but here is a way of calculating it to as many decimal places as you wish by dividing pairs of numbers. The more times you repeat the process, the closer you get to φ :

Pattern	Approximate value of φ
1 ÷ 1	1
2 ÷ 1	2
3 ÷ 2	1.5
5 ÷ 3	1.6666
8 ÷ 5	

a. Follow the pattern in the table. Keep going for at least 12 steps.
b. Enter the values you have calculated in a computer spreadsheet and graph them.

3. Find the length-to-height ratio of an A4 sheet of paper and compare this with the golden ratio.

INVESTIGATION

Using the Internet, see what you can find out about golden rectangles and the golden ratio. There are many interesting sites on this subject.