**There are no answers to check whether you are right, but you can email your answers if you like**

**Four Integers**

1. Using four different integers and the x symbol make the highest possible result.

All the integers have to be used.

For example: 3, 7, 5, 1 gives 157 x 3 = 471 or 37 x 51 =1887.

2. Now chose four other integers and make the largest result using only multiplication.

3. What conclusions can you make?

4. What predictions can you make about 5, 6, … digits?

**1, 2, 3, 4**

Using the digits 1, 2, 3 and 4 and +, - , x and ÷ symbols make the numbers from 1 to 30.

Each of the numbers has to be used every time, for example 1 + 2 + 3 + 4 = 10.

**Creepy Crawlies**

Ross collects lizards, beetles and worms. He has more worms than lizards and beetles together. Altogether in the collection there are twelve heads and twenty-six legs. How many lizards does Ross have?

(Thinking Mathematically, John Mason with Leone Burton & Kaye Stacey p. 48)

**Zios and Zepts**

On the planet Vuv there are two sorts of creatures. The Zios have 3 legs and the Zepts have 7 legs.

The great planetary explorer Nico, who first discovered the planet, saw a crowd of Zios and Zepts. He managed to see that there was more than one of each kind of creature before they saw him. Suddenly they all rolled over onto their backs and put their legs in the air.

He counted 52 legs. How many Zios and how many Zepts were there?

**Consecutive Numbers**

Which numbers from 1 – 30 can be written as the sum of 2 consecutive numbers?

What do you notice about these numbers?

What two consecutive whole numbers add together to make 101, 4323 or 54 307? How do you know?

Extend to the sums of 3, 4, 5… consecutive numbers