



INVESTIGATION



Products

$$231 \times 4 = 924$$

$$24 \times 13 = 312$$

MathSphere

Products

Begin with the digits 1, 2 and 3.

Arrange them into a two digit number and a one digit number and find the product (multiply them).

Do this in different ways.

What is the highest number you can get?

Eg. $13 \times 2 = 26$
 $12 \times 3 = 36$

Can you find a higher answer?

When you have found the highest possible answer, use the first four digits 1, 2, 3 and 4.

You can arrange them in two pairs or a three and a four.

Eg. $231 \times 4 = 924$
 $24 \times 13 = 312$

When you have found the highest product, try with the first 5 digits, the first 6 and so on up to 9.

Can you see a way to calculate the largest product without having to try every combination?

Answer Guide

This is quite an easy mini investigation and good for seeing the effect place value has on a product.

Obviously, the first thing the children need to realise is that, for any particular arrangement of the digits (say, a three digit number and a four digit number), arranging the digits in reverse numerical order will give the largest product (eg: 421×7653 will give a larger answer than 241×3657).

Then it is simply a matter of deciding how to allocate the digits to each number. Have fun!