



Age 11+ Level ★★
Worksheet 1

1. Jam and Egg Sandwich

Each different letter in the multiplication on the right stands for a different digit.

Identical letters stand for the same digit.

Work out the value which each letter represents.

$$\begin{array}{r} \text{E G G} \\ \times \quad \text{E} \\ \hline \text{J A M} \end{array}$$

2. So Many Sums

In this addition, each letter stands for a different digit, with *S* standing for 3.

$$\begin{array}{r} \text{S O} \\ + \text{M A N Y} \\ \hline \text{S U M S} \end{array}$$

What is the value of $Y \times O$?

3. Rolling Along the Trail

A pair of dice is thrown and the score is obtained by finding the **product** of the two numbers when they land.

In five throws of both dice:

the second score is 5 more than the first;
 the third score is 6 less than the second;
 the fourth score is 11 more than the third;
 the fifth score is 8 less than the fourth.

What was the score for each of these five throws?

4. Kangaroo Subtraction

In this subtraction, each of the letters *K*, *A*, *N*, *G*, *R* and *O* represents a different digit.

$$\begin{array}{r} \text{K A N} \\ - \text{G A R} \\ \hline \text{O O} \end{array}$$

What is the largest possible value of the number 'KAN'?

5. Operational Decision

Which symbol (+, -, ÷ or ×) should replace \oplus to make the following equation true?

$$1 \times 2 \times (3 \oplus 4 + 5) \times (6 \times 7 + 8 + 9) = 2006$$

These problems are adapted from UKMT (ukmt.org.uk) and WMC (competition.ac) problems.