**Year 4 Platinum Badge** - Complete both tasks and hand this back to your class teacher.

Task 1

# Multiplication Squares

In the $2 \times 2$ multiplication square below, the boxes at the end of each row and the foot of each column give the result of multiplying the two numbers in that row or column.

| | | |
|---|---|---|
| 7 | 5 | 35 |
| 3 | 4 | 12 |
| 21 | 20 | |

The $3 \times 3$ multiplication square below works in the same way. The boxes at the end of each row and the foot of each column give the result of multiplying the three numbers in that row or column.

| | | | |
|---|---|---|---|
| | | | 15 |
| | | | 108 |
| | | | 224 |
| 144 | 8 | 315 | |

The numbers $1 - 9$ may be used once and once only.

Can you work out the arrangement of the digits in the square so that the given products are correct?

Task 2

# Take Three Numbers

**Age 7 to 11** ★

Choose any two odd numbers and one even number, such as $3, 5$ and $2$.

How would you like to represent these numbers?

Try adding them together and draw/make the representation of their sum.

What do you notice about the answer?

Look closely at your model.

Would it work in exactly the same way if you used different numbers but still two odds and one even?

Can you use your example to prove what will happen every time you add two odd numbers and one even number?

See if you can explain this to someone else. Are they convinced by your argument?

Once you can convince someone else, see if you can find a way to show the argument on paper. You might draw something or take a photo of things you have used to prove that your result is always true from your example.