Mathematics

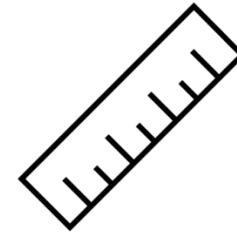# Exploring expressions containing two variables

## Independent Task

Ms Bridgett

# Try this

A pen costs 40p.

A ruler costs 20p.

Binh has **£2 exactly** to spend on maths equipment.

She could buy **4 pens** and **2 rulers**. What other combinations could she buy?

What if she doesn't have to spend exactly £2?

# Connect

A ruler costs 20p and pen costs 40p.
We have two variables: the number of pens bought and the number of rulers bought.

Let **p** equal the **number of pens** bought.

Let **r** equal the **number of rulers** bought.

What is the total cost when **p=1** and **r=1**?

What is the total cost when **p=2** and **r=2**?

# Independent task

|  | **p** | | | |
|---|---|---|---|---|
|  | 1 | 2 | 3 | 4 |
| **r** 1 | 60 | | | |
| 2 | | 120 | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

Fill in the table (in pence) to show the cost of different numbers of items.

What patterns do you notice?

Can you explain why these patterns happen?

# Explore

In the previous example, **p** was equal to **the number of pens** bought and **r** was equal to **the number of rulers** bought.

Now Binh buys 30 pens and 20 rulers.

Let **p** equal **the cost of a pen** and let **r** equal **the cost of a ruler.**

She spends less than £1.

What could the cost of the pen (p) and the cost of the ruler (r) have been?

How many different solutions are there?