What relation are you?

Teacher notes

Why use this resource?

This resource can be used to introduce the concepts of relations and functions. Students are asked to consider, and draw, diagrams to represent non-mathematical situations that introduce relations such as one-to-one and one-to-many before deciding which of these are functions. Having concrete examples to refer students back to may also be useful when dealing the mathematical definitions of functions.

Possible approaches

There is an example situation that can be discussed as a class before asking the students to do the same with the other situations given. The diagrams may arise naturally as students discuss each situation, otherwise the example can be used to show two ways the situation could be interpreted as a mapping diagram. There is a worksheet that you may wish to give to students so they can draw the diagram with the correct situation.

Key questions

The initial questions ask students to consider if there is an answer, if there are multiple answers, and if the same answer can appear twice. There may be variation in the answers given depending on how the students interpret the question, and this variation could lead to a rich discussion about the different diagrams that could be drawn.

When they have diagrams for each situation students can be asked:

- What do you notice?
- Are there similarities/differences between the situations?
- Can any of them be grouped together because they have certain features?

To extend the discussion and start developing the idea of inverse functions, you could ask students about what happens if the inputs and outputs are swapped around.

- What could the question be?
- Does it produce the same diagram?
- Is it a function?

Possible support

We provide some possible diagrams that students may want to use as starting points to help them draw appropriate diagrams for each situation.