

Which quadratic?

Teacher notes

Why use this resource?

This problem encourages mathematical discussion between students and will help students to appreciate why the completed square form can be useful. It will improve students' fluency in moving between the completed square and the standard form of a quadratic equation by visualising the graphical representation.

Preparation

Print and prepare the cards needed for this problem.

Possible approach

This problem is designed as a game to be played in groups of 4 working in two pairs.

Key questions

- What are the key features of a quadratic?
- Which questions gave you a lot of information?
- Did you make the most of the information you were given? Could you have avoided asking any of your questions?

Possible support

When students first look at the cards, ask them to choose one and explain which features of the equation corresponds to features of the graph. These explanations may be incomplete at first, but this exercise could be repeated after students have played the game.

Possible extension

Students could challenge each other by giving their own examples of quadratics. These could include some where the equations are not in completed square form. Students should think carefully about the advantages of the different forms of the equations.

A version of this resource has been featured on the [NRICH website](https://nrich.org/). You might like to look at some students' solutions that have been submitted there.