Absolutely!

Teacher notes

Why use this resource?

The equation of the modulus or absolute value function can seem daunting, but it can be hard to connect descriptions such as "it's the number part" to the equation and to the graph. Starting with the features of the graph offers a way to approach this function and make links with its equation.

A number of questions about various features of the function are suggested and these can be used to support classroom discussion. These questions prompt thinking about how to define the modulus function as a piecewise linear function, transformations of the graph and applications of the function.

Possible approach

Show the graph of the function and ask the students to "Say what you see". This can then be opened up to asking students what questions they have about the graph.

Key questions

- What do you think are the most obvious features?
- How would you describe this graph to someone who couldn't see it?

Possible support

Students may not be confident in sharing their observations, so using a "think, pair, share" approach could help to facilitate this.

Possible extension

The question "How could I move the 'corner'?" offers an opportunity for students to start to thinking about functions such as $|x-1|$ or $|2x-1|$, exploring transformations and reflecting on what are the essential features of the graph of the modulus function and its equation. They could also start to think about composing the modulus function with other functions they know about. The graphs in Function squares could provide some examples and students could think about the effect of order, by comparing $f(|x|)$ and $|f(x)|$.

If students haven't already encountered piecewise functions they could move on to Piece it together.

A version of this resource has been featured on the NRICH website. You might like to look at some students' solutions that have been submitted there.