

Experiment with the effects of the variation of parameters on...

experiment with the effects of the variation of parameters on graphs of related functions, using digital tools, making connections between graphical and algebraic representations, and generalising emerging patterns

Learning intention

- experiment with the effects of the variation of parameters on graphs of related functions, using digital tools, making connections between graphical and algebraic...

Teach and model

- investigating transformations of the graph of $y=x$ to the graph of $y=ax+b$ by systematic variation of a and b and interpreting the effects of these transformations using digital...
- investigating transformations of the parabola $y=x^2$ in the Cartesian plane using digital tools to determine the relationship between graphical and algebraic representations of...
- experimenting with digital tools by applying transformations to the graphs of functions, such as reciprocal $y=\frac{1}{x}$, square root $y=\sqrt{x}$, cube $y=x^3$ and exponential...

Check understanding

- Explain the main idea in experiment with the effects of the variation of parameters on... using an example.
- Show the idea in a second way: with words, a model, a diagram or symbols.
- Apply the idea to a short unfamiliar situation and justify the result.

Teaching cautions

- Ask the student to explain their choice, not only state an answer.
- Check that key vocabulary is understood in a new example.
- Mix representations so the skill is transferred rather than copied.

Quick lesson sequence

- Connect to prior knowledge and introduce the key vocabulary.
- Model one clear example, then solve a second example together.
- Finish with an independent check and a short student explanation.