

COMPLETING THE SQUARE : TEACHER INSTRUCTIONS

Objective

- To write quadratic expressions in completed square form: $a(x + b)^2 + c$

Task Link

- parkermaths.com/y1compsquare

Commentary

Although completing the square is covered at GCSE, many students start the A level course with only a basic grasp of the method. Many students initially struggle in cases where $a \neq 1$.

However, the basics of the topic are very procedural in nature and can easily be grasped by the majority of students independently through a flipped learning activity.

Understanding can be checked using Dr Frost Maths (DFM) key skills.

Setting this task for independent study means that you get to spend more time on challenging content in lesson instead of practising procedures.

Following this task, a brief practice activity in lesson time is recommended, although generally most students will be competent and should be able to very quickly progress to exploring other aspects of this topic (e.g. graphical representations).

Task Instructions

Part 1: Notes and Examples

Provide students with a copy of printed notes sheet (Completing the Square).

- Direct students to the 'task link' at the top of the sheet.

The task contains a sequence of four example-problem pairs. For each example, students should complete the following four-step process:

- Watch the example, adding any annotations the student finds useful.
- Attempt the paired problem.
- Check the solutions against the video.
- If the student has an incorrect answer, they should watch the remaining part of the video to correct their solution.

Part 2: DFM Key Skills

Note: The task below requires students to have a [Dr Frost Maths](#) account. Tutorials are available on the Dr Frost Maths site using the '?Get Help' buttons.

DFM key skills allow repeated practice of fine-grained skills using randomly generated questions. Upon entering an answer, students are provided with a detailed model solution. As the questions are randomly generated, students can continue practising until fluency is achieved.

Set the following [key skill](#):

- Complete the square for quadratics of the form $ax^2 + bx + c$.

This skill contains 4 question type variations, so a success criterion of **5 out of the last 7 correct** provides an opportunity for students to practise each skill.

I recommend using the 'flexible questions' option with the following settings:

Warn when Wrong:	Yes	?
Prevent Reattempts:	Yes	?
Require Working:	No	?
Require Videos:	No	?
Time Limit:	None	
Set:	Immediately	
Interleave Skills:	N/A	?
Hide skill name:	No	?
Completion:	Achieve a certain accuracy	
	5	out of the last 7 questions correct on each chosen skill.

The progress of students can be checked in the DFM 'progress by class' interface.

Students can ask questions and feedback can also be provided on a question by question basis.

Extra Notes

Further information on flipped learning can be found in my [guide to flipped learning](#).

If have any questions or you try the task and have suggestions for improvement, please get in touch:

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