

SIMULTANEOUS EQUATIONS: TEACHER INSTRUCTIONS

Objectives

- To solve simultaneous equations in two variables, including one linear and one non-linear equation.
- To understand the relationship between the algebraic solutions of simultaneous equations and the points of intersection on the corresponding graphs.

Task Link

- parkermaths.com/y1sim

Commentary

Students are generally confident with linear simultaneous equations, although some at the lower end may need some practice.

Formal practice on solving linear simultaneous equations using a calculator is recommended as otherwise students often do not develop fluency (particularly if the equations need rearranging) and consequently rarely use their calculator, thus wasting time.

The videos cover solving linear simultaneous equations using a Casio CG-50, but there is also a link to video instructions for the Casio Classwiz FX-991EX.

A larger proportion of students struggle with the examples containing non-linear equations, so watching these videos before attempting the Dr Frost Maths task should be emphasised.

Task Instructions

Part 1: Notes and Examples

Provide students with a copy of printed notes sheet (Simultaneous Equations).

- 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 skills](#):

- Solve non-linear simultaneous equations.
- Solve simultaneous linear equations requiring rearrangement.

Note: Currently, to set these skills you need to choose them from the 'Complete list' (because one is a KS5 skill and the other is KS4). At some point, a more challenging KS5 version of the non-linear equations will be added to the key skills database.

I use a success criteria of **3 out of the last 4 correct**.

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:	Yes	?
Completion:	Achieve a certain accuracy	
	3	out of the last 4 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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