



Transformation Trickery

Topic: Geometry & Coordinate Geometry

This problem challenges students to be able to explain their thinking around transformation geometry.

Year Group: 2nd Year
Level: Higher

Presenting the Problem

I started with the line $y = x + 2$. After performing the four transformations listed below and ended up with the line $y = x - 7$. Can you figure out the order in which I performed the transformations?

Reflection in the horizontal axis

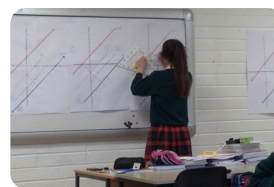
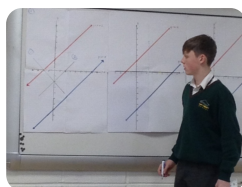
Reflection in the vertical axis

Translate down by three units

Translate right by two units

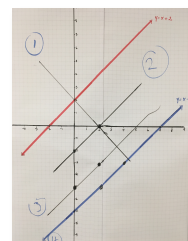
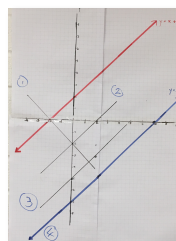
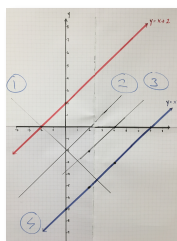
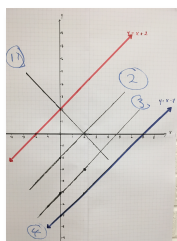
The Board Plan

Prior Knowledge
• Translations
• Reflections in x and y axes.



I started with the line $y = x + 2$.
I performed the four transformations below and ended up with $y = x - 7$.
Can you figure out the order in which I performed the transformations?

Translate right by 2 units
Reflect in the vertical axis
Reflect in the horizontal axis
Translate down by 3 units



Prior Knowledge & Posing the Task
5 minutes



Students working on the problem
15 minutes



Presentation of Solutions & Ceardaíocht
25 minutes

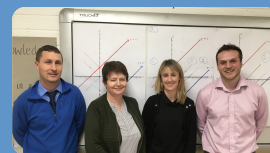


Summing up & Reflection
5 minutes

Reflecting on the Learning



Several students found multiple solutions but no individual student found all six. Students displayed a high level of understanding and mathematical fluency. Students approached the task mainly using the method of structured trial and error. Approximately half of the students rubbed out workings that did not lead to a correct solution. Students were comfortable coming to the board to explain their workings/approaches and were pleased to share their thought processes. Student feedback also provides evidence that problem solving type questions and teaching through problem solving adds significant value to students' mathematical skill set.



Developed Lesson Proposal developed by George Sunderland, Fidelma Dalton and Muireann McCarthy, Gorey CS, with thanks to Rory McCarthy, Shane Flanagan MDT and the students from Gorey CS, Co. Wexford.

To download this lesson plan visit www.projectmaths.ie/mc2017

