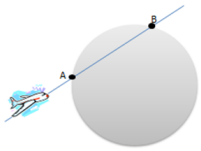
The Ash Cloud

Topics: Algebra & Functions

Students apply their knowledge of geometry, coordinate geometry and algebra to solve this contextualised problem..

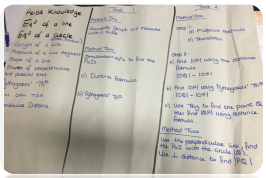
Year Group: 5th Year
Level: Leaving Certificate Ordinary

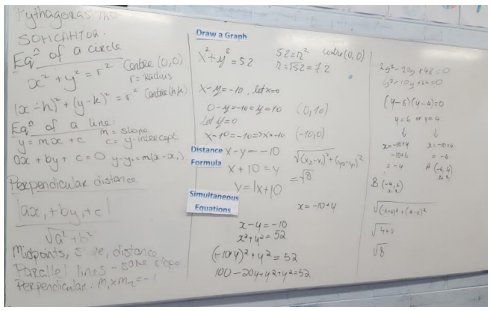
Posing the Problem

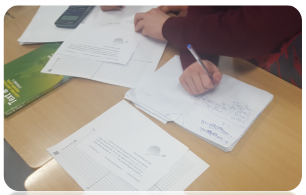


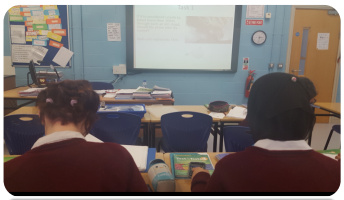
A plane is travelling along the line $x - y = 10$, ahead lies a large cloud of ash from a volcanic eruption that can be represented by the circle $x^2 + y^2 = 52$ (units in km). If it is unsafe to fly more than 1 km should the plane alter its course?

Presenting the Students' Work









Prior Knowledge & Posing the Task
10 minutes

Students working on the problems
30 minutes

Presentation of Solutions & Ceardaíocht
35 minutes

Summing up & Reflection
5 minutes

Reflecting on the Lesson

Students took a long time to understand the first task. We recommend that more time be spent explaining this task so that students understand what they are being asked to do. Many students were reluctant to draw a graph to help them solve the problem. Most students were able to find the point of intersection of a circle and line. There was a lot of dialogue during the lesson - students enjoyed discussing the merits of various approaches to solving the problem.

It is very beneficial for students to experience this type of lesson regularly. They benefit from greater time spent on a topic and often learn more from each other and the variety of approaches they take.

Developed by Lorcan Traynor (Assumption SS), Aoife O'Connell (Adamstown CC), Sarah Murrau (St. Kevin's College) and Megan Bateman (Coláiste de hÍde) with thanks to Philip Brady MDT.

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

Maths Counts 2017
Engaging teachers in Lesson Study
Maynooth University, 3rd-4th March 2017