



## Maths Week at Work: an overview

This series of videos is aimed at making our pupils (and the wider public in general) aware of the breadth and applicability of Mathematics. Although it was initially produced for Maths Week, it can be used any time of the year, and over several weeks.

The videos are in principle aimed at S1-S4 students. However, they might be suitable for younger or older students as well. The puzzles are challenging, but do not require much background knowledge.

The series is composed of five episodes.

Each of the episodes consists of two videos. In a first video a Maths graduate will talk about how they use Maths in their job, mention some of the challenges they faced while studying Maths, and present a puzzle which is somehow related to their job. In a second video they will present a solution to their puzzle.

The main goals of the series are:

- Making students aware of applications of Maths to different sectors, and the range of careers Maths can open up
- Showing some areas of Mathematics which are not necessarily included in the curriculum
- Showing the creative and the “non-numerical” side of Mathematics
- Showing that even who is good at Maths may struggle with it
- Showing that getting stuck and learning through mistakes is an important part of the learning process
- Showing that not all Maths is already known

### How to use the series in your classroom

We would recommend that the teacher watches both the interview and the solution video themselves before showing it to the classroom. Most of the puzzles look at first quite challenging, even for adults, however the solution videos show how to break them down in simpler tasks, in the end, finding a solution appears less complicated than it seemed.

As for how to use the series in the classroom, that will obviously depend on context. Below are some recommendations, but we understand that each teacher will use their personal judgement.

We would recommend that you show no more than one episode per day.

We advise that you show the first video of the episode, then give your students some time to work on the puzzles in groups and discuss their solution, before showing the solution video.

We recognise that some of the puzzles are challenging, and we recommend that you give hints if your students are at the point of giving up. The videos themselves give hints, and on the project webpage you can find some “tips for teachers”, with possible hints to give students, should they get stuck.



We do not expect all students will be able to get to the solution, and we reckon that even getting a real understanding of the given solution is a big achievement. One of the lessons to learn from the puzzles is that often a very complicated question can be broken down into simpler steps.

We would recommend that you show the solution video to your students, since that gives some very useful insights of mathematical thinking.

We also reckon it would be useful, after watching an episode or the full series, to have a discussion with the class, based on questions such as:

- Is there a key concept you learnt? (e.g. mistakes can help me learn)
- Any surprising fact about Maths or mathematicians that you did not expect? (e.g. Maths is useful in videogame development- many areas of Maths do not involve numbers...)

We advise that you show both the introduction (beginning of the first video) and the conclusion (end of the last video), to see the change in Hannah's attitude towards Maths.