List of Scouts Activities

Workshops and Presentations

Science Murder Mystery

Description of activity: The pupils will work through a booklet of problems, mainly consisting of mathematics problems and a simple chemistry experiment. If the events are held at the school, we often include staff names as the suspects.

Level: Primary school (P5-7), suitable for one class at a time.

Length: 1 hour.

Content: A booklet containing all the problems that pupils will work through with a small experiment at the end. The activity requires paper and a pen/pencil for each pupil, which we kindly ask the school to provide. **Note**: this activity is typically done in small groups as pupils may struggle to complete the problems themselves.

Scratch Coding

Description of activity: The pupils will learn the basics of coding by working through interactive problems in Scratch. They will use the worksheets provided, and the knowledge learned therein, to create their own animation.

Level: Primary school (P6-7), suitable for one class at a time.

Length: Three 1 hour sessions.

Content: Worksheets containing the tutorials and instructions. **Note**: this activity requires the pupils to have access to computers and the internet. It is best done with the pupils in pairs.

Infectious Disease Modelling

Description of activity: This talk will give an introduction to the concept of mathematical modelling and its use in tackling infectious disease spread.

Level: Secondary school (all levels), suitable for one class at a time.

Length: 1 hour (can fit into one period).

Content: A presentation discussing mathematical modelling and infectious diseases, along with a practical activity. **Note**: the practical activity will involve the pupils using ping pong balls to model an infection spreading and so this activity is best suited with one class due to the limited resources. The presentation requires the use of a PowerPoint presentation and so must be run in a classroom or hall which includes a Smartboard/projector.

Cryptography

Description of activity: This talk will give an introduction to cryptography, its history and applications in today's world.

Level: Secondary school (all levels), does not have a size capacity.

Length: 1 hour (can fit into one period).

Content: A presentation discussing cryptography, along with an activity. The activity requires paper and a pen/pencil for each pupil, which we kindly ask the school to provide. **Note**: the presentation requires the use of a PowerPoint presentation and so must be run in a classroom or hall which includes a Smartboard/projector.

Network Theory

Description of activity: This talk will give an introduction to Network Theory, the mathematical topic of connections, its history and applications in today's world.

Level: Secondary school (all levels), does not have a size capacity.

Length: 1 hour (can fit into one period).

Content: A presentation discussing Network Theory, along with several small activities. The activities requires paper and a pen/pencil for each pupil, which we kindly ask the school to provide. **Note**: the presentation requires the use of a PowerPoint presentation and so must be best run in a classroom or hall which includes a Smartboard/projector.

A Look Into Research

Description of activity: This talk will introduce pupils to the world of research by presenting the work of a current PhD student. Their research is on using mathematical models to better understand how cancer cells move.

Level: Primary school (P5-7) and Secondary school (all levels), does not have a size capacity.

Length: 1 hour (can fit into one period for Secondary schools).

Content: A presentation on what is involved in research, specifically following the research of a current PhD student. **Note**: this activity was created to give pupils a look into mathematical research and therefore does not contain any activities. However, it is designed to include time for questions and discussions. The presentation requires the use of a PowerPoint presentation and so must be best run in a classroom or hall which includes a Smartboard/projector.

Maths in Real Life – Higher Maths

Description of activity: This talk will give pupils an idea of the applications of Higher Maths in real life. We only offer Higher Maths at the moment but we hope to extend this activity to other levels.

Level: Secondary school (Higher/Advanced Higher), does not have a size capacity.

Length: 1 hour (can fit into one period).

Content: A presentation discussing the applications of Higher Maths to real life problems. **Note**: this activity was created to show pupils the applications of Higher Maths in real life and therefore does not contain any activities. The presentation requires the use of a PowerPoint presentation and so must be best run in a classroom or hall which includes a Smartboard/projector.

Other Activities and Talks

Stall activities

We have a number of small activities and puzzles that we use at events where we are required to run a stall. These include the Towers of Hanoi and magic squares. Normally we will ask the pupils to work through these activities while we talk with them about mathematics and the university.

Career Day talks

We are happy to participate in Career Day events. This would be either to influence pupils to go to university or to become researchers. For these events, we typically run a shortened version of the workshops above.

Talks with senior pupils

We have had requests in the past for us to come out to schools and give a talk to senior pupils about university life. For this activity, we normally bring undergraduate students who give a 5–10 minute presentation on what subjects they studied at school, what they study at university, why they chose to study that subject, what university is really like, etc. We would be happy to answer questions that the pupils have about university as well. **Note**: this depends on the availability of the undergraduate students and so will not always be available.

If you would like to arrange an activity or have any questions, then please email: science-scouts@strath.ac.uk.