



mathMETics Information Pack

Introduction:

Welcome to mathMETics, the project which demonstrates the role of mathematics in weather observation and forecasting in a variety of enjoyable and informative ways. The lesson plans and activities are designed to be delivered in mathematics lessons during National Science and Engineering Week 2014 to students in years 9 and 12. There are a number of options available to tailor the activities to your requirements:

- **Option 1: Years 9 and 12 working together – Including Observations:** This is the recommended option, requiring observation equipment and collaboration between years 9 and 12.
- **Option 2a: Year 9 working independently – Including Observations:** This option will work as a stand-alone for year 9 students, requiring observation equipment.
- **Option 2b: Year 12 working independently – Including/Without Observations:** This option will work as a stand-alone for year 12 students, requiring observation equipment.

The required observation equipment will be a thermometer, compass and calculator. An anemometer for measuring wind speed is recommended but not essential. Full information for each option is provided below, including links to the required sections of the project website available at www.mathmetics.org/aHome/

Option 1: Years 9 and 12 working together – Including Observations (recommended)

For this option each school will need to designate a member of staff as a project coordinator, the role of this person will be:

- To create an online Met Office WOW account and a new observation site for the school by following the instructions at www.mathmetics.org/bObservations/
- To organise student volunteers to collect weather observations for the school site:
 - It is recommended that observations are taken once on each weekday (Monday to Friday) during student's lunchtimes.
 - We would encourage planning to use 5 small groups (one for each day) of year 9 students, each with one or two a year 12 students or a teacher acting as a supervisor.
 - This supervisor will be responsible for entering the observations into WOW and consequently the login details should be shared with this person.
- To obtain (from chemistry/geography/other school departments) the required observation equipment:
 - A thermometer, compass and calculator will be essential for the daily weather observations.
 - An anemometer is recommended for wind speed observations but not essential.
- To download and distribute the teaching resources (lesson plans, worksheets and solutions in .pdf format) to each teacher participating in the project, these are available at www.mathmetics.org/dResources/

Option 2a: Year 9 working independently – Including Observations

For this option a member of staff for year 9 should be designated as a project coordinator, the role of this person will be:

- To create an online Met Office WOW account and a new observation site for the school by following the instructions at www.mathmetics.org/bObservations/
- To organise student volunteers to collect weather observations for the school site:
 - It is recommended that observations are taken once on each weekday (Monday to Friday) during student's lunchtimes.
 - We would encourage planning to use 5 small groups (one for each day) of year 9 students, each with a teacher acting as a supervisor.
 - This supervisor will be responsible for entering the observations into WOW and consequently the login details should be shared with this person.
- To obtain (from chemistry/geography/other school departments) the required observation equipment:
 - A thermometer, compass and calculator will be essential for the daily weather observations.
 - An anemometer is recommended for wind speed observations but not essential.
- To download and distribute the teaching resources (lesson plans, worksheets and solutions in .pdf format) to each teacher participating in the project, these are available at www.mathmetics.org/dResources/

Option 2b: Year 12 working independently – Including/Without Observations

For this option a member of staff for year 12 should be designated as a project coordinator. This coordinator will decide whether students are to collect weather observations or not. If students do not collect observations, the modified lesson 3

(www.mathmetics.org/dResources/) should be used in place of the standard lesson 3. If students collect observations then the role of the coordinator will be:

- To create an online Met Office WOW account and a new observation site for the school by following the instructions at www.mathmetics.org/bObservations/
- To organise student volunteers to collect weather observations for the school site:
 - It is recommended that observations are taken once on each weekday (Monday to Friday) during student's lunchtimes.
 - We would encourage planning to use 5 small groups (one for each day) of year 9 students, each with a teacher acting as a supervisor.
 - This supervisor will be responsible for entering the observations into WOW and consequently the login details should be shared with this person.
- To obtain (from chemistry/geography/other school departments) the required observation equipment:
 - A thermometer, compass and calculator will be essential for the daily weather observations.
 - An anemometer is recommended for wind speed observations but not essential.

In both of these cases the coordinator will also need to download and distribute the teaching resources (lesson plans, worksheets and solutions in .pdf format) to each teacher participating in the project, these are available at www.mathmetics.org/dResources/