

Main Criteria: Forward Education
Secondary Criteria: National Curriculum for England
Subjects: Mathematics, Science, Technology Education
Grades: 7, 8, Key Stage 3

Forward Education

Wildfire detection with Autonomous Vehicles

National Curriculum for England
Mathematics
Grade Key Stage 3 - Adopted: 2014

PROGRAMME OF STUDY	UK.MA.Y7-9.1.	Year 7-9 – Working mathematically
STRAND		Through the mathematics content, pupils should be taught to:
STATUTORY REQUIREMENT	MA.Y7-9.1.1.	Develop fluency

STATUTORY REQUIREMENT MA.Y7-9.1.1.2. Select and use appropriate calculation strategies to solve increasingly complex problems.

STATUTORY REQUIREMENT MA.Y7-9.1.1.4. Substitute values in expressions, rearrange and simplify expressions, and solve equations.

STATUTORY REQUIREMENT MA.Y7-9.1.1.6. Develop algebraic and graphical fluency, including understanding linear and simple quadratic functions.

PROGRAMME OF STUDY	UK.MA.Y7-9.1.	Year 7-9 – Working mathematically
STRAND		Through the mathematics content, pupils should be taught to:
STATUTORY REQUIREMENT	MA.Y7-9.1.2.	Reason mathematically

STATUTORY REQUIREMENT MA.Y7-9.1.2.5. Begin to reason deductively in geometry, number and algebra, including using geometrical constructions.

PROGRAMME OF STUDY	UK.MA.Y7-9.1.	Year 7-9 – Working mathematically
STRAND		Through the mathematics content, pupils should be taught to:
STATUTORY REQUIREMENT	MA.Y7-9.1.3.	Solve problems

STATUTORY REQUIREMENT MA.Y7-9.1.3.1. Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems.

STATUTORY REQUIREMENT MA.Y7-9.1.3.2. Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics.

STATUTORY REQUIREMENT MA.Y7-9.1.3.3. Begin to model situations mathematically and express the results using a range of formal mathematical representations.

PROGRAMME OF STUDY	UK.MA.Y7-9.3.	Algebra
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STRAND		Pupils should be taught to:
STATUTORY REQUIREMENT	MA.Y7-9.3.6.	Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs.
STATUTORY REQUIREMENT	MA.Y7-9.3.9.	Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane.
STATUTORY REQUIREMENT	MA.Y7-9.3.12.	Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations.

**National Curriculum for England
Science
Grade Key Stage 3 - Adopted: 2014**

PROGRAMME OF STUDY	UK.SC.Y7-9.WS.	YEARS 7-9 - Working scientifically
STRAND	SC.Y7-9.WS.3.	Analysis and evaluation
STATUTORY REQUIREMENT		Through the content across all three disciplines, pupils should be taught to:

STATUTORY REQUIREMENT SC.Y7-9.WS.3.4. Present reasoned explanations, including explaining data in relation to predictions and hypotheses.

PROGRAMME OF STUDY	UK.SC.Y7-9.C.	YEARS 7-9 - Chemistry
STRAND	SC.Y7-9.C.8.	Earth and Atmosphere
STATUTORY REQUIREMENT		Pupils should be taught about:

STATUTORY REQUIREMENT SC.Y7-9.C.8.7. The production of carbon dioxide by human activity and the impact on climate.

PROGRAMME OF STUDY	UK.SC.Y7-9.P.	YEARS 7-9 - Physics
STRAND	SC.Y7-9.P.1.	Energy
STATUTORY REQUIREMENT	SC.Y7-9.P.1.2.	Energy changes and transfers
STATUTORY REQUIREMENT		Pupils should be taught about:

STATUTORY REQUIREMENT SC.Y7-9.P.1.2.b. Heating and thermal equilibrium: temperature difference between two objects leading to energy transfer from the hotter to the cooler one, through contact (conduction) or radiation; such transfers tending to reduce the temperature difference: use of insulators.

STATUTORY REQUIREMENT SC.Y7-9.P.1.2.c. Other processes that involve energy transfer: changing motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels.

PROGRAMME OF STUDY	UK.SC.Y7-9.P.	YEARS 7-9 - Physics
STRAND	SC.Y7-9.P.5.	Matter
STATUTORY REQUIREMENT	SC.Y7-9.P.5.3.	Energy in matter
STATUTORY REQUIREMENT		Pupils should be taught about:

STATUTORY REQUIREMENT SC.Y7-9.P.5.3.a. Changes with temperature in motion and spacing of particles.

**National Curriculum for England
Technology Education
Grade Key Stage 3 - Adopted: 2014**

PROGRAMME OF STUDY	UK.CO.	Computing
STRAND		Pupils should be taught to:

STATUTORY REQUIREMENT CO.2. Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem.

STATUTORY REQUIREMENT CO.7. Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users.

STATUTORY REQUIREMENT CO.8. Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability.