

Subject Identification Criteria for More Able Pupils (MAPs)

Science

More able pupils (MAPs) in Science may display a selection of the following characteristics:

- Is inquisitive about how things work and why things happen
- Asks probing and thoughtful questions about the world
- Enjoys logical reasoning
- Pursues an interest in a specialist area or a niche of specific science that stimulates their curiosity
- Recognises patterns and relationships in scientific data
- Can hypothesise/predict based on data and draw conclusions
- Decides quickly how to investigate fairly and manipulate variables
- Enjoys researching new knowledge and applying scientific theories, ideas and models when explaining a range of phenomena
- Recognises and process reliable, valid and accurate data; can explain why data is unreliable, invalid or inaccurate
- Has robust observational skills
- Enjoys discussing and debating information or ideas with their teacher
- Thinks flexibly and adapt problem-solving approaches
- Strives for maximum accuracy when recording measurements
- Uses advanced and extensive vocabulary, including the use of appropriate language from other areas of the curriculum, e.g. mathematics
- Puts forward objective arguments, using combinations of evidence and creative ideas, and question other people's conclusions
- Reads widely on science or science fiction
- Has scientific or nature-based hobbies / Is a member of scientific clubs and societies
- Is able to sustain their interest and concentration and go beyond an obvious answer with greater depth
- Is able to evaluate findings and think critically

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Activities that MAPs should do:

- Visit sites of scientific interest, e.g. museums, famous scientific locations.
- Pursue science events in and out of school (e.g. scientific lectures) .
- Read suitable non-school oriented science literature (e.g. journals, magazines, bookshop science material).
- Find opportunities for independent learning and curiosity using websites such as:
 - [PhET: Free online physics, chemistry, biology, earth science and math simulations](#)
 - [The Science Playground – a list of interesting links](#)
 - [Zperiod: Interactive Periodic Table \(118 Elements, 3D Atom Models\)](#)
- Communicate with teachers about their interests.
- Attend related after-school activities, e.g. STEM club, Q club.
- Watch documentaries that promote and enrich scientific understanding.

How can parents support MAPs:

- Support the child in visiting places of scientific interest.
- Read scientific material with them, and question and encourage them to explain their thinking openly.
- Engage in debates/discussions - linked to matters of science, including ethics, conservation and moral issues that have a scientific link .
- Model curiosity.
- Ask for justification to support theories, conclusions, arguments and points of view.
- Encourage pupils to conduct research around topics of interest.
- Encourage full answers to challenging questions.