



Woodkirk Academy

## Science



### How we identify UA in Science

A secondary school student is considered to be Upper Ability (**UA**) if the average level he/she achieved in his/her Key Stage 2 English and Mathematics SATs is Level 5 or above. Year 7 students who completed the new Key Stage 2 exams in 2016 have been identified using an equivalent measure.

### How we identify MAA in Science

Starting point: Average grade for assessments completed – Top 10 % of Year group is highlighted as possibly More Academically Able (**MAA**).

Then class teachers of students in this list discuss whether these students:

- Ask questions that demonstrate broader thinking/thinking ahead;
- Apply knowledge readily;
- Read around the subject to successfully extend understanding;
- Assimilate information rapidly;
- Grasp the key concepts quickly;
- Make intra and inter-curricular links readily.

Teachers can also nominate students who have just missed the top 10 % criteria, but who consistently show some of the characteristics above.

### Skills

MAA and UA students are being stretched by giving them the support and stimuli they require to develop the following higher order skills:

- Assimilation of new key concepts and making links with other key concepts
- Application of knowledge to unfamiliar contexts
- Analysis of data and explanation of trends using scientific knowledge
- Evaluation of experimental methodology, evidence and data

- Evaluation of own knowledge and work independently to rectify weaknesses
- Evaluation of statements and of the ethical, social, economic or environmental consequences of Science and Technology.
- Formulation of a hypothesis, making a prediction and designing an investigation to produce valid data.
- Solving key calculations and equations and manipulating and displaying data in an appropriate form

## Strategies for Success

During Science lessons, your son/daughter is stretched and challenged as much as possible, with an emphasis on creative and lateral thinking, linking concepts, taking a leadership role and improving his/her depth of understanding. Among many other teaching strategies MAA and UA will develop the above skills through:

- Planning, carrying out and analysing investigations
- Reciprocal teaching
- Trying work from higher years
- Answering challenging, open questions
- Setting their own challenging, open questions for others and evaluating their answers.
- Planning and leading debates.



## Challenges for UA in Science and how to overcome these

Challenge	Overcome
Learning and revising a lot of extra content for Triple Science	Use revision guide, flashcards and after school support to revise content proactively throughout the course.
Writing sufficient details in extended writing pieces to enable student to access higher mark band.	See exemplar material of what a 9/A* looks like.
Developing application and evaluation skills	Underline key words and new contexts then brainstorm what you know about each to find a link. Practice using exam questions available on Moodle or from your teacher.

## How can Parents help?

Students will continue to develop these higher order skills beyond the classroom below are some activities that have been shown to accelerate progress:

- Discuss their Science work and Science lessons with them including their targets and progress against them.
- Discuss and debate contemporary Science and Technology issues from the news.
- Watch relevant TV documentaries together.

- Further reading – there are many great Popular Science writers, your local library or bookshop will have a dedicated section.
- Visit local museums and nature reserves – many are free.
- Encourage them in scientific observations outside of school such as Astronomy and Ecology.
- Encourage your son/daughter to join Woodkirk’s Science Club or STEM Club.
- Encourage them in planning and engaging in pro-active revision for tests and early on in exam years.

