RET Science - KS3 Stage Ladder

Students will be taught to:

- foster a love of science and scientific enquiry and challenge students to think about the world around them in a new light.
- understand 10 big scientific ideas and how these underpin scientific knowledge and understanding.
- see the connections between these ideas and understand how they relate to scientific enquiry.

RUSSELL EDUCATION TRUST

Stage		Scientific knowledge and understanding	Working scientifically
Y9++	7	• Students at this level have remembered and understood the majority of the content and concepts explored in the curriculum. They can apply their understanding to new situations and make predictions. They can write detailed and comprehensive explanations. They can form links between other areas of the curriculum.	• Students are consistently able to: Form scientific questions of their own, plan valid and workable scientific investigations, obtain accurate data and record this in a table, plot a line graph and draw a line of best fit and identify patterns in data. They can explain what the results of their investigations are showing and evaluate the findings.
Y9+	6	• Students at this level have remembered and understood the majority of the content and concepts explored in the curriculum. They can explain ideas using key vocabulary and can make predictions about what they expect to happen in scientific investigations. They use scientific understanding to support predictions.	• Students are asking scientific questions and, without guidance, can plan and carry out investigations safely with a good understanding of what makes results valid. They can analyse tables and line graphs and explain what the results of their investigations are showing.
Avg EOY9	5	• Students at this level have remembered and understood in detail most of key concepts in the curriculum. They can explain most ideas using key vocabulary and can make simple predictions about what they expect to happen in scientific investigations. They can write simple explanations.	• Students are beginning to ask scientific questions and, without guidance, can plan and carry out investigations safely with some understanding of what makes results valid. They can analyse tables and line graphs and explain what the results of their investigations are showing. They are beginning to think about asking scientific questions of their own.
Avg EOY8	4	• Students at this level have remembered and understood most of key content in the curriculum. They can explain most ideas using key vocabulary and can make simple predictions about what they expect to happen in scientific investigations. Their explanations are not always complete. They can define key words.	• Students are beginning to ask scientific questions and, with guidance, can plan and carry out investigations safely but do not always understand whether results are valid. They can analyse tables and line graphs and explain what the results of their investigations are showing. They can choose the correct way to display results. They are starting to explain what the results of their investigations are showing.
Avg EOY7	3	• Students at this level have remembered and understood some of key content in the curriculum. They can explain some ideas using key vocabulary and can make simple predictions about what they expect to happen in scientific investigations. Their explanations are not always complete.	• Students can carry out a scientific investigation safely when given a method and are beginning to plan their own investigations. They can collect results carefully in a table and use this to plot bar/line graphs when given some help with the scale. They are beginning to think about asking scientific questions of their own. They are starting to explain simply what the results of their investigations are showing.
Avg EOY6	2	• Students are starting to remember some of the key content explored in the curriculum. They can describe some of the scientific ideas such as the structure of cells and the difference between elements and compounds but are not yet able to use their understanding to explain their observations.	• Students can carry out a scientific investigation safely when given a method but are not yet planning their own investigations. They can collect results carefully in a table and use this to plot bar/line graphs when given some help with the scale. They are beginning to think about asking scientific questions of their own. They can identify simple trends and patterns in data.
	1	• Students are beginning to grasp some of the key content explored in the curriculum. They can describe when prompted some of the scientific ideas such as the structure of cells and the difference between elements and compounds but are not yet able to use their understanding to explain their observations.	• Students can carry out a scientific investigation with the support of the class teacher. They can collect results carefully in a table and attempt to use this to plot bar/line graphs when given some help with the scale.