

# SCIENCE KS4

## How do we assess in Science at KS4?

**Day-to-day lessons:** Teachers will give verbal (*verbal feedback* stamp used in students book) and written feedback to students.

**Regular testing:** Students will be tested after every topic, with formative feedback and time in a subsequent lesson to help them to improve. More substantial graded tests are used at the end of each half and full unit (3-4 topics) using genuine exam questions.

**Formal exams:** These take place in December for Year 11 with further mocks in the run up to exams and the summer term for Year 10 and cover all the work completed to that point.

**Progress data:** Each term teachers will award a grade that represents a student's current performance in Science

## How do we encourage students to engage with feedback?

We give time in lessons for regular use of the 'response' pen e.g. corrections/improvements to class tasks and homework. Students respond to the *Next Steps* written by their teachers in their exercise books.

Unit and half-unit tests marked by the teacher and reviewed in lessons using formal review sheets where the students reflect on their successes and next steps with regard to both their content knowledge and exam technique (see example). These sheets often include progress questions designed to support the students as they tackle their next steps.

Mock: Unit 1 Target Grade: A CB Mock (Jan 2014) Grade:

Date: 11.12.14

Topic	Marks available	Total of marks for each question				
		Describe	Explain	Interpret	Apply	Evaluate
1. Burning coal and impact on environment	6	6				
2. Ethanol and cracking hydrocarbons with distillate from oil (COPIC)	6	7				X
3. Interpreting data on unsaturated fats	9	7				X
4. Copper extraction and electrolysis	9	6				X
5. Heating limestone	8	6				X
6. Conditions (rate) and composition of the atmosphere	10	6				X
7. Cracking, alkenes and polymers	8	5				X
Total marks for : 1-7						

Exam Technique Reviewer

I can plan my time well in the test taking care of the arrangement of the questions.	😊	😊	😊
I read the questions carefully so I know exactly what they are looking for in the answer. I underline the command words: Describe, Explain, Compare and Evaluate.	😊	😊	😊
I check my answers for silly mistakes.	😊	😊	😊
I am confident, not vague and use key scientific words in my answers.	😊	😊	😊
I check the number of marks awarded to make sure I have included sufficient different points.	😊	😊	😊
The answers are detailed enough.	😊	😊	😊
I re-read my answers to longer questions to check they make sense and answer the question set without waffling.	😊	😊	😊

Successes / Next Steps

	Progress	Success	Next Step
1. I can describe the 4 products released when burning fossil fuels and the environmental impact of each.	A	😊	
2. I can evaluate the two methods of producing ethanol.	B	😊	
3. I can evaluate both methods of producing copper.	C	😊	
4. I can explain how electrolysis is used to test for unsaturation.	D	😊	
5. I can explain how electrolysis is used to extract copper.	E	😊	
6. I can explain what happens in electrolysis.	F	😊	
7. I can evaluate an investigation.	G	😊	
8. I can explain why concentrated HCl reacts.	H	😊	
9. I can describe the composition of the atmosphere.	I	😊	
10. I can describe the fossil distribution.	J	😊	
11. I can describe cracking and polymerisation.	K	😊	

Complete at least 3 progress questions to achieve your Next Steps:

- Describe the 4 products released when burning fossil fuels and the environmental impact of each.
- Evaluate the two methods of producing ethanol.
- Evaluate both methods of producing copper.
- Describe a method for using bromine water to test the level of unsaturation of different oils.
- Compare cracking, pyrolysis and use of scrap iron as ways of extracting copper.
- Describe what happens at each electrode when a molten zinc chloride is electrolysed. Describe what happens if zinc chloride solution is electrolysed.
- Look at the atmosphere composition a 150 of the Core Science text book. Explain why all the greenhouse gases are orange post may not be extracted.
- Explain why continental drift occurs (5 points maximum).
- Describe the main gases in the early atmosphere and how and why these have changed today. *Production, Control, Distribution of the CO<sub>2</sub> source from the 19th, 20th, 21st century. Progress 1 for monitoring the planet's climate.*
- Describe the factors of distribution of fossil fuels.
- Produce a flow chart to show how polymers are made from a monomer, starting with long chain alkenes.

One thing to remember for next time...

*\* Did not read question 6 properly*

## Rewarding effort and progress in Science

Teachers use **gold stars** in lessons for an instant reward. Students collect the gold stars to earn a **Science superstar pencil!** With continued effort and progress a student will earn a **Science badge**, to be awarded in assembly. We also use the BFL grade system when taking registers to recognise exceptional efforts in particular lessons.

## How is feedback monitored?

The Science Department undertakes annual formal lesson observations and weekly informal 'learning walks'. We also sample students' work and teachers' marking each term. Best practice is shared and encouraged throughout the department.