

Science KS3 Assessment Framework

| | Beginning Grade 1 | Working Towards Grade 2-3 | Expected Grade 4-5 | Exceeding Grade 6-7 | Excelling Grade 8-9 |
|-------------------------------------|---|--|---|--|--|
| Climate and Earths Resources | <p>I can:</p> <p>State that global warming is the gradual increase in surface temperature of the Earth.</p> <p>State that most metals are found combined with other elements, as a compound, in ores.</p> | <p>I can:</p> <p>State that the greenhouse effect is when energy from the Sun is transferred to the thermal energy store of gases in the Earth's atmosphere.</p> <p>State the changes in levels of carbon dioxide over time.</p> <p>Name one carbon sink.</p> <p>State that scientists have evidence that global warming caused by human activity is causing changes in climate.</p> <p>Give examples of impacts of climate change.</p> <p>Name two processes used to extract metals from their compounds.</p> <p>Identify the features of a reaction that are hazardous.</p> <p>State that there is only a limited quantity of any resource on Earth, so the faster it is extracted, the sooner it will run out.</p> <p>State that recycling reduces the need to extract resources.</p> | <p>I can:</p> <p>State the names and percentages of the gases that make up the Earth's atmosphere and name two greenhouse gases.</p> <p>Outline a design for a model to explain the greenhouse effect .</p> <p>List the processes that recycle carbon naturally.</p> <p>Describe how Earth's resources are turned into useful materials or recycled.</p> <p>Justify the choice of extraction method for a metal, given data about reactivity.</p> <p>Suggest factors to take into account when deciding whether extraction of a metal is practical.</p> <p>Identify control measures for carrying out a reaction safely.</p> <p>Draw a bar chart to represent data.</p> | <p>I can:</p> <p>Design a model to explain the greenhouse effect, and use an annotated diagram to describe the model in detail.</p> <p>Interpret graphs that show trends over time.</p> <p>Describe and explain what is meant by global warming.</p> <p>Explain why the concentration of carbon dioxide in the atmosphere did not change for many years.</p> <p>Use the carbon cycle to identify carbon sinks.</p> <p>Use the carbon cycle to show how carbon is recycled</p> <p>Describe how human activities affect the carbon cycle.</p> <p>Describe how global warming can impact on climate and local weather patterns.</p> <p>Give arguments for and against the claim that human activity is causing global warming and climate change.</p> <p>Suggest ways in which waste products from industrial processes could be reduced.</p> <p>Suggest how a laboratory practical is like and unlike an industrial process to extract a metal.</p> <p>Describe how Earth's resources are turned into useful materials or recycled.</p> <p>Explain why recycling of some materials is particularly important. Explain why given data is best presented as a bar chart.</p> | <p>I can:</p> <p>Compare the relative effects of human-produced and natural global warming.</p> <p>Design and evaluate a model to explain the greenhouse effect, and use an annotated diagram to describe the model in detail.</p> <p>Interpret graphs that show trends over time, and explain their limitations.</p> <p>Explain changes in the levels of carbon dioxide using stages of the carbon cycle.</p> <p>Use equations to explain processes that exchange carbon dioxide into and out of the atmosphere.</p> <p>Compare the relative effects of human-produced and natural global warming.</p> <p>Evaluate the implications of a proposal to reduce carbon emissions.</p> <p>Evaluate claims that human activity is causing global warming or climate change.</p> <p>Use data to evaluate proposals for recycling materials.</p> <p>Suggest ways in which changes in behaviour and the use of alternative materials may limit the consumption of natural resources.</p> |