

YEAR 8

SCIENCE



SRI KDU
International
School
SUBANG JAYA

PROGRAMME OF STUDY - TERM 2

ECOSYSTEMS

- Identify different ecosystems on the Earth, recognising the variety of habitats that exist within an ecosystem.
- Describe the impact of the bioaccumulation of toxic substances on an ecosystem.
- Describe how a new and/or invasive species can affect other organisms and an ecosystem.

STRUCTURE AND PROPERTY OF MATERIALS

- Describe the Rutherford model of the structure of an atom.
- Know that electrons have negative charge, protons have positive charge and neutrons have no charge.
- Know that the electrostatic attraction between positive and negative charge is what holds together individual atoms.
- Describe how paper chromatography can be used to separate and identify substances in a sample.

LIGHT

- Describe reflection at a plane surface and use the law of reflection.
- Describe refraction of light at the boundary between air and glass or air and water in terms of change of speed.
- Know that white light is made of many colours and this can be shown through the dispersion of white light, using a prism.
- Describe how colours of light can be added, subtracted, absorbed and reflected.

EARTH AND ITS RESOURCES

- Identify renewable resources (including wind, tidal and solar power, and bioplastics) and non-renewable resources (including fossil fuels), and describe how humans use them.
- Understand that there is evidence that the Earth's climate exists in a cycle between warm periods and ice ages, and the cycle takes place over long time periods.
- Understand that the Earth's climate can change due to atmospheric change.
- Describe the difference between climate and weather.

SCIENCE IN CONTEXT

- Discuss how scientific knowledge is developed through collective understanding and scrutiny over time.
- Describe how science is applied across societies and industries, and in research.
- Evaluate issues which involve and/or require scientific understanding.
- Describe how people develop and use scientific understanding as individuals and through collaboration, e.g. through peer-review.
- Discuss how the uses of science can have a global environmental impact.

THINKING AND WORKING SCIENTIFICALLY

Models and representations

- Describe what an analogy is and how it can be used as a model.
- Use an existing analogy for a purpose.
- Use symbols and formulae to represent scientific ideas.

Scientific enquiry: purpose and planning

- Identify whether a given hypothesis is testable.
- Describe how scientific hypotheses can be supported or contradicted by evidence from an enquiry.
- Make predictions of likely outcomes for a scientific enquiry based on scientific knowledge and understanding.
- Plan a range of investigations of different types, while considering variables appropriately, and recognise that not all investigations can be fair tests.
- Make risk assessments for practical work to identify and control risks.

Carrying out scientific enquiry

- Sort, group and classify phenomena, objects, materials and organisms through testing, observation, using secondary information, and making and using keys.
- Decide what equipment is required to carry out an investigation or experiment and use it appropriately.
- Evaluate whether measurements and observations have been repeated sufficiently to be reliable.
- Take appropriately accurate and precise measurements, explaining why accuracy and precision are important.
- Carry out practical work safely, supported by risk assessments where appropriate.
- Evaluate a range of secondary information sources for their relevance and know that some sources may be biased.
- Collect and record sufficient observations and/or measurements in an appropriate form.

Scientific enquiry: analysis, evaluation and conclusions

- Describe the accuracy of predictions, based on results, and suggest why they were or were not accurate.
- Describe trends and patterns in results, including identifying any anomalous results.
- Make conclusions by interpreting results and explain the limitations of the conclusions.
- Evaluate experiments and investigations, and suggest improvements, explaining any proposed changes.
- Present and interpret observations and measurements appropriately.