

**The Sultan’s School Year 4 Medium Term Curriculum plan for Science 2019-20**

**Ongoing Working Scientifically Objectives**

- Can ask relevant questions and using different types of scientific enquiries to answer them.
- Can set up simple practical enquiries, comparative and fair tests.
- Can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
- Can gather, record, classify and present data in a variety of ways to help in answering questions.
- Can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.
- Can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- Can identify differences, similarities or changes related to simple scientific ideas and processes.
- Can use straightforward scientific evidence to answer questions or to support their findings.

Block	Unit	Key Targets and Learning Objectives	Key Activities	Key vocabulary
1	On the Move	<ul style="list-style-type: none"> <li>➤ Explain the functions of a skeleton.</li> <li>➤ Locate and name bones in human body.</li> <li>➤ Explain changes in human body.</li> <li>➤ Explain how human skeletons differ from animals.</li> <li>➤ Describe and understand joint and muscles movement.</li> <li>➤ Record observations using tables and bar graphs.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Create skeletons: skeleton art – label and describe.</li> <li>➤ Discuss fair testing and using bar graphs to record results.</li> <li>➤ Carry out fair tests to discover how bones grow as we grow older.</li> <li>➤ Relate muscle groups to different activities.</li> <li>➤ Explore muscle movement and joints.</li> <li>➤ Research how animal skeletons are suited to their environment.</li> </ul>	Skeleton (names of bones), muscles, joints, bones, contract, relax, organs, support, protect, movement, pulse, animals, body
			<p><b>Going Green Link:</b> Students can study dietary habits of humans and animals and how eating a plant based diet can strengthen bones and enhance development of the</p>	<p><b>Integration of technology:</b> Using apps to explore the human body: -Anatomy4Kids -Science for Kids -Systems of the Human Body</p>

			<p>skeleton. Students will look at plants and growing more trees in our environment.</p>	
2	Sound	<ul style="list-style-type: none"> <li>➤ Know that sounds are made when objects vibrate.</li> <li>➤ How to measure sound.</li> <li>➤ Explore how the pitch of a sound can be changed.</li> <li>➤ Explore how sounds are made when objects, materials or air vibrate.</li> <li>➤ Plan an investigation.</li> <li>➤ Make accurate observations and measurements.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Exploring different sounds.</li> <li>➤ Investigate how sound can travel through air, water and solid.</li> <li>➤ Experiment with sound vibration and making phones from string and cups.</li> <li>➤ Making musical instruments.</li> <li>➤ Explore how we can change pitch and loudness of different musical instruments.</li> <li>➤ Look at the ear and how to keep the ear safe.</li> </ul>	<p>Sounds, vibration, vibrate, volume, decibel, soundproof, transmission, muffle ,pitch</p>
			<p><b>Going Green Link:</b> Discuss noise pollution in different environments. Why is noise a pollution? Is there a difference in noise levels in rural, urban and suburban areas?</p>	<p><b>Integration of technology:</b> Using data loggers- logging decibels as the distance away increases.</p>
3	Life in Habitats	<ul style="list-style-type: none"> <li>➤ List the characteristics of living things.</li> <li>➤ Explain why organisms live in particular habitats.</li> <li>➤ Identify organisms within a habitat.</li> <li>➤ Use an identification key.</li> <li>➤ Put forward own ideas.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Classifying animals.</li> <li>➤ Researching varied habitats.</li> <li>➤ Exploring how animals adapt to their different environment.</li> <li>➤ Exploring identification keys.</li> <li>➤ Look into different food chains.</li> <li>➤ Trip to Al Ansab to investigate species of animals in their habitats.</li> </ul>	<p>Organism, mammal, reptile, insects, bird, fish, amphibian, classification key, habitat, adaptation, marine, food chains, producer, consumer, predator, prey, life cycle, nutrition</p>

			<p><b>Going Green Link:</b> Study different animals' habitats and the effects of pollution- plastic in the oceans, deforestation of rainforest, etc. Students will consider actions that could be taken and ways that we can help.</p>	<p><b>Integration of technology:</b> Exploring Habitats, using the National Geographic's kids- Habitats app.</p>		
4	Circuits and Conductors	<ul style="list-style-type: none"> <li>➤ Construct electrical circuits to make devices work.</li> <li>➤ Recognise components in a circuit diagram from symbols.</li> <li>➤ Describe electrical conductors and insulators.</li> <li>➤ Make a series of relevant observations.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Construct a simple electrical circuit.</li> <li>➤ Match images of circuits to symbols.</li> <li>➤ Draw circuits, using symbols.</li> <li>➤ Investigate changes in a circuit, with alterations to a component.</li> <li>➤ Investigate which materials allow electricity to run through them.</li> <li>➤ Highlight the dangerous of using electrical components.</li> </ul>	<p><b>Going Green Link:</b> Study the use of energy efficient devices and why it is better to use energy efficient devices compared to others. Discuss alternative measures to power our homes: wind turbines, solar panels, etc.</p>	<p><b>Integration of technology:</b> Simple Circuits App – simulates how to create various circuits, including different components</p>	<p>Battery, bulb, circuit, electrical conductor, electrical insulator, mains electricity, leads, motor, switch, positive terminal, negative terminal, electrical components</p>

5	<b>Separating Solids and Liquids</b>	<ul style="list-style-type: none"> <li>➤ Explain differences between solids and liquids.</li> <li>➤ Separate solids from liquids by sieving and filtering.</li> <li>➤ Make predictions.</li> <li>➤ Draw conclusions and provide explanations.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Investigate properties of solids and liquids .</li> <li>➤ Investigate which solids dissolve and which do not.</li> <li>➤ Explain how some liquids have properties similar to a solid.</li> <li>➤ Use different object to separate solids.</li> </ul> <div style="background-color: #00b050; color: white; padding: 5px;"> <p><b>Going Green Link:</b> Discuss oil spills in the oceans and the effect on marine life. How can we separate the oil from the sea water? Discuss specific oil spills.</p> </div> <div style="background-color: #ffff00; padding: 5px;"> <p><b>Integration of technology:</b> -Using an app which simulates how matter changes within states, especially in relation to heating &amp; cooling.</p> </div>	Solids, liquids, dissolve, separate, sieve, filter, vapour, melted, heating, freezing, cooling, evaporate, condensation
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