The Sultan's School Year 5 Medium Term Curriculum plan for Science 2018-19

Ongoing Working Scientifically Objectives				
➢ Can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. ➢ Can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. ➢ Can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. ➢ Can use test results to make predictions to set up further comparative and fair tests. ➢ Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. ➢ Can identify scientific evidence that has been used to support or refute ideas or arguments.				
Block	**Unit**	**Key Targets and Learning Objectives**	**Key Activities**	**Key vocabulary**
1	**Light**	➢ Know that shadows are formed when light travelling from a source is blocked. ➢ Know that shadows change in length and position throughout the day. ➢ Explore how opaque materials do not let light through and transparent materials let a lot of light through. ➢ Know that we see light sources because light from a source enters our eyes. ➢ Explore why a beam of light changes direction when reflected from a surface.	➢ Observe effects and changes when shining a torch on opaque objects from different distances and angles. ➢ Explain how sundials work and why people used them in the past. (Homework make a sundial). ➢ Choose appropriate materials to make an A4 stained glass window. ➢ Draw and label a sketch of an eye / explain how light enters the eye and we cannot see without light. ➢ Draw labeled diagrams to show that the moon reflects light from the sun and build a periscope. **Going Green Link:** Turn lights off to preserve energy. Homework survey household items that need light ! (Research uses of Solar energy in Oman)	Light, shadow, source, beam, sundial, cast, opaque, transparent, translucent, fuzzy, bounce, reflect, absorb, scatter, angle, periscope

2	**Space**	➢ Day and night. The sun does not move. Its apparent movement is caused by the Earth's rotation on its axis every 24 hrs. ➢ Know that the Earth takes a year to orbit the Sun. ➢ Know the seasons are caused by the Earth's tilt and its orbit around the sun. ➢ Research the lives and discoveries of scientists who explored the Solar System and Stars. ➢ Know that gravity is a pull force which keeps the planets orbiting the sun.	➢ Use a model Earth (Orange with a kebab stick through it) and sun (torch) to explain day and night. ➢ Use the model (above) marked with coloured pins in Northern Hemisphere. Observe positional changes in day and night during an orbit. ➢ Graph a set of data to show length of day changes in Northern and Southern Hemisphere. ➢ Sequence the planets and graph their speed in orbit. ➢ Explore forces by whirling a bung (representing a planet) on strings of different length. **Going Green Link:** Satellites – wifi in school use technology rather than printed worksheets. Children make PowerPoint presentations about a space explorer – linked to space timeline.	Sphere, model, horizon, axis, rotate, orbit, equator, planet, moon, constellation, solar system, astronomy, theory, gravity, universe, telescope, Asteroid, comet
3	**States of matter - Solids, Liquids and Gases**	➢ Know that matter can be solid, liquid or gas. ➢ Know that evaporation occurs when a liquid turns into a gas. ➢ Know that condensation occurs when a gas turns into a liquid and that it is the reverse of evaporation. ➢ Connect evaporation and condensation to the water cycle. ➢ Know that the boiling point of water is 100°C and freezing point is 0°C. ➢ Know that when water evaporates from a solution a solid is left behind.	➢ Test different materials to determine their state. ➢ Carry out an experiment to measure the rate of evaporation from different surface areas. ➢ Observe condensation on the classroom windows and doors and when breathing on a mirror. ➢ Build a model water cycle in a jar. ➢ Grow salt crystals. **Going Green Link:** Water conservation – Sky well – research forms of reusing or harnessing clean water from the environment.	Solid, liquid, gas, States of matter, properties, temperature, evaporate, surface area, rate, condense , reverse, water cycle, reversible, degrees, thermometer, Celsius, boiling point, melting point, freezing point, solution, solute, dissolve, solvent, saturated solution, crystal

4 + 5	**Flowering Plants**	➢ To discuss the factors that affect plant growth. ➢ To identify, label and explain the function of the different parts of a plant. ➢ To explain how plants can disperse seeds in different ways. ➢ To carry out a fair test in which only one factor changes. ➢ Draw conclusions and relate these to scientific knowledge and understanding. ➢ Present observations and measurements using tables and charts.	➢ To revise prior knowledge of what they know about plant growth. ➢ To dissect and label different flowering parts, sorting them into groups and explaining their function. ➢ To collect seeds and classify and group them according to their structure. ➢ To plant seeds in different conditions to see which will germinate. Make conclusions why seeds have/have not germinated. ➢ To carry out a germination investigation, using fair testing. ➢ To measure accurately, make observations and record their results through drawing, graphs and charts. **Going Green Link:** Children grow their own food from seedlings (chili) – eco garden. Research the packaging used in shops – prepackaged fruits and veg – is it necessary – bring your own bags for life campaign – persuasive writing.	Reproduction, life cycle, stamen, style, stigma, sepal, petal, ovary, pollen, anther, filament, germination, pollination, fertilisation, dispersal