Long-term Plan for [Science]

2016-2017

Subject Leader: [J.OPPONG]

[Title of unit and length in weeks] [Main focus] [WS - Assessment focus] [Other assessment focus] [Cultural link to the world of work]

YR [6]	First half of term			Second half of term	
Autumn	WS Working scientifically	Biology–Heart and Lungs		Physics - **Changing circuits**	Physics- **Electricity**
	Planning different types of scientific enquiries to answer questions, including recognizing and controlling variables where necessary Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and graphs Using test results to make predictions to set up further comparative and fair tests Identifying scientific evidence that has been used to support or refute ideas or arguments	Pupils study the circulatory system, learning about the basic components that make up blood, how the heart works and how blood circulates round the body. They learn about the lungs and the process of breathing and investigate the effect of exercise on the heart and breathing rates. They learn about the effects of smoking and alcohol. WS: record data, present findings with tables & line graphs reporting and presenting 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		Pupils build on their learning from Year 4 to learn more about circuits, including how to use recognised symbols to represent circuits. They investigate how to change the amount of electricity flowing round a circuit, looking at how different components affect the flow of electricity and at the difference that the length and thickness of wires can make. They learn about series and parallel circuits and they use their knowledge of electricity to build games that use electric circuits. WS -Take measurements & draw conclusions plan & carry out investigation, accuracy, repeat measurements	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Recognized and use symbols when representing a simple circuit in a diagram. End of topic test Year 6 science day and science show external scientist

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Spring	Biology -Living things and their habitats-- **Classification**	Biology- Living things and their habitats-Microbes		Physics – Light	Physics – Light
	Pupils build on their knowledge of classification from previous years and look at the classification of invertebrates and microorganisms in more detail. Playing games to help them learn about microorganisms and classes of invertebrates. Give reasons for classifying plants and animals based on specific characteristics. WS- find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification. WS-Poster and presentation using Scientific terms	They study yeast, observing its growth, using it to make bread. WS- ▪ with help create a key ▪ with help investigate yeast growth ▪ design fair investigation ▪ estimate gas volumes produced by yeast End of topic test		Pupils build on their work on light in Year 3 to make more detailed investigations of shadows. They use their conclusions from this work to create shadow puppets and use special effects in their puppet shows. . explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes WS-deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. They might investigate the relationship between light sources, objects and shadows by using shadow puppets. WS- planning and carrying out a fair test -making observations and measurements	Recognize that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye They study reflectivity, build a periscope and investigate the effectiveness of sunglasses, learning about the dangers of UV light ▪ investigate shadows control variables repeat measurements report &present findings from enquiries including conclusions WS-Recognizing when to repeat measurements - presenting results in line graphs -Identifying patterns in data End of topic test

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Summer	Biology- Keeping Healthy	Biology- Evolution		Biology, Chemistry, Physics	Biology- Field Studies
	Pupils learn and recognized the impact of diet, exercise, drugs and lifestyle on the way their bodies function. They describe the ways in which nutrients and water are transported within animals, including humans WS- repeating measurements - representing data in bar charts and graphs, and interpreting these -using results to draw conclusions. End of topic test	Pupils learn about the life and work of Charles Darwin and what is meant by the terms evolution and survival of the fittest. They learn how animals and plants are adapted to their environment. WS-Make sound scientific arguments based on known facts not on assumptions. They investigate camouflage and find out how humans evolved. . They carry out a simple experiment to model evolution and selective breeding WS-Research into the various theories End of topic test Science Trip		Revision of all ks2 science End of key stage 2 science test	Pupils use sampling techniques to support their studies of living things, using quadrats, sweep nets and other common field studies methods of finding out about animal and plant populations across the year. They compare populations in different areas and discuss the effectiveness of the different techniques they have used. WS-Use sampling techniques with minimal help WS-Estimate degree of trust in results Use results to estimate decay times

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