

# Newquay Primary Academy –Science Spring Term 1 Sequence



## YEAR 3

Prior knowledge...

Plants

Seeds and bulbs grow into mature plants. Plants need light, water and warmth to grow and stay health

## YEAR 4

Prior knowledge...

Electricity

May have some understanding that objects need electricity to work. May understand that a switch will turn something on or off.

## YEAR 5

N/A

Prior knowledge...

## YEAR 6

Prior knowledge...

Animals including humans

Describe the changes as humans develop to old age

## INTENT

Plants

Pupils will investigate and identify the parts of a flowering plant. They will be able to explain the function of different parts and will investigate and identify the conditions required for successful growth.

Electricity

Pupils will be able to construct a simple circuit and explain how it works. They will also be able to explain that a switch will open and close a circuit. Pupils will be able to explain the difference between a conductor and an insulator.

Animals including humans

Pupils will be able to label the internal organs of the human body and explain their function. They will be able to explain how the human heart works and the impact of exercise. Pupils will be able to explain how muscles work.

## VOCABULARY / STICKY KNOWLEDGE

Electricity

Pupils will be able to construct a simple circuit and explain how it works. They will also be able to explain that a switch will open and close a circuit. Pupils will be able to explain the difference between a conductor and an insulator.

Electricity - electricity, electric current, appliances, mains, crocodile clips, wires, bulb, battery cell, battery holder, motor, buzzer, switch, conductor, electrical insulator, component.

A complete circuit is needed for electricity to flow and devices to work. Some materials allow electricity to flow easily and these are called conductors. Materials that don't allow electricity to flow easily are

Animals including humans - Oxygenated, Deoxygenated, Valve, Exercise, Respiration Circulatory system, heart, lungs, blood vessels, blood, artery, vein, pulmonary, alveoli, capillary, digestive, transport, gas exchange, villi, nutrients, water, oxygen, alcohol, drugs, tobacco. The heart pumps blood around the body.

called insulators.

Oxygen is breathed into the lungs where it is absorbed by the blood. Muscles need oxygen to release energy from food to do work. (Oxygen is taken into the blood in the lungs; the heart pumps the blood through blood vessels to the muscles; the muscles take oxygen and nutrients from the blood.)

## SEQUENCE OF LESSONS

### Plants

<https://explorify.uk/en/activities/zoom-in-zoom-out/pink-and-white>

1. Identify and describe the different parts of flowering plants: roots, stem, leaves & flower.
2. Investigate the requirements of plants for growth – light, air, water, nutrients and how water is transported within plants.
3. Explore that part that flowers play in the life cycle of a flowering plant.
4. To explore the part that seed dispersal plays in the life cycle of a flowering plant.

### Electricity

Power stick – using human electricity to create a class circuit. How many children will fit in the circuit?

1. To construct a simple circuit.
2. To identify whether or not a lamp will light in a simple series circuit based on whether or not the lamp is part of a complete loop with a battery.
3. To explain the difference between an insulator and a conductor.
4. To recognize that a switch opens and closes a circuit.

### Animals including humans

Operation ouch BBC iPlayer - Operation Ouch! - Series 3: 2. We Heart the Heart!

1. To explain the function of internal organs.
2. To explain the structure and function of the human heart.
3. To explain the impact of exercise on the human heart.
4. To explain how muscles work.

**OUTCOME /  
COMPOSITE**

Plants

Pupils will practically investigate plants, planting fruits such as strawberries to then share with parents in an end of topic picnic.

Electricity

Pupils will design and make their own working torch (linked to English & DT)

Animals including

humans

Pupils will practically investigate the circulatory system and the effects of exercise, including dissecting a heart. By the end of the topic, children will create a 'Healthy heart' guide to be shared with either a health team or NPA. (Cross curricular link with English & PE)