

# Newquay Primary Academy –Science Autumn Term 2 Sequence



## YEAR 3

**Prior knowledge...**  
Observed changes across the four seasons. Observed and described weather associated with the seasons and how day length varies.

## YEAR 4

**Prior knowledge...**  
That animals including humans do not produce their own food. The importance of a balanced and nutritious diet. That humans and some other animals have skeletons and muscles for support, protection and movement.

## YEAR 5

**Prior knowledge...**  
We have four seasons (autumn, winter, spring and summer). The Sun is a source of light but the Moon is not. Know that a shadow is caused when an object blocks light from passing through it. The properties of a sphere.

## YEAR 6

N/A  
**Prior knowledge...**

## INTENT

### Light & seeing

Pupils will understand light comes from a source.  
Pupils will understand that materials can be either opaque, translucent or transparent. They will be able to explain what each of these terms means

### Animals including humans

Pupils will understand the structure of the human digestive system.  
Pupils will understand the different types of teeth and their function.

### Forces

Pupils will understand a range of forces including gravity, air and water resistance. They will also investigate levers, gears and pulleys and work scientifically, testing water resistance and the effect of levers.

## VOCABULARY / STICKY KNOWLEDGE

### Light and shadows

Light source, dark, reflect, ray, mirror, bounce, visible, beam, sun, glare, travel, straight, opaque, shadow, block, transparent, translucent.

There must be light for us to see. Without light it is dark. We need light to see things even shiny things. Transparent materials let light through them and

### Animals including humans

Digestive system, tongue, mouth, teeth, oesophagus, stomach, small intestine, large intestine, liver, tooth, canine, incisor, molar, premolar,

Different teeth do different jobs.  
Food is broken down by the teeth and further in the stomach and intestines where nutrients go into the blood and

### Forces

Force, gravity, attraction, orbit, trajectory, resistance, friction, particles, variables. Constant, up thrust, buoyancy, displace, levers, decrease, effort, fulcrum, simple machine.  
That gravity acts to pull objects down to the centre of Earth. The Sun's gravity attracts the planets and keeps them in their orbits in the Solar System.

opaque materials don't let light through.  
Beams of light bounce off some materials (reflection).  
Shiny materials reflect light beams better than non-shiny materials.

are transported around the body.

Friction will cause an object to heat up and slow down. An object displaces the water, the more it displaces, the more buoyant it is  
Levers, pulleys and gears are all examples of simple machines. They all act to decrease the effort it takes to move an object.

## SEQUENCE OF LESSONS

### Light and shadows

Explore - Shadow shapes

1 - To recognise that they need light in order to see things and that dark is the absence of light.

2 – To notice that light is reflected from surfaces.

3 – To recognise that light from the sun can be dangerous and that there are ways to protect our eyes.

4 – To recognise that shadows are formed when the light from a light source is blocked by an opaque object.

5 – To find patterns in the way that the size of shadows changes.

6 – To recognise that shadows are formed when the light from a light source is blocked by an opaque object.

### Animals including humans

1. To identify the different types of teeth in humans and their simple functions.

2 - To describe the simple functions of the basic parts of the digestive system in humans.

Visit from a local dentist.

### Forces

1 – To learn about gravity.

2 – To investigate air resistance.

3 – To learn about floating and sinking with reference to water resistance.

4 – To investigate water resistance, keeping mass constant.

5 – To investigate up thrust, changing the shape and size of the object.

Create and be able to tell a story using shadow puppets.

**OUTCOME /  
COMPOSITE**

Light and shadows  
Pupils will practically investigate light. By the end of the topic children will have created their own shadow puppets and will be able to use them to tell a story (Cross curricular link with English and RE)

Animals including humans.  
Pupils will have created their own practical digestive systems.

Forces  
Pupils will complete a series of investigations to learn about forces within the context of space.