

Science Intention Map

Lower Key Stage Two



Intention Map 2023 - 2024

Placing learning at the heart of everything we do.



Forces

(Mighty Metals)



Learning Intentions

Week 1	<p>Who was William Gilbert?</p> <ul style="list-style-type: none"> Ask relevant questions and use different types of scientific enquiries to answer them. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
Week 2	<p>What is a force?</p> <ul style="list-style-type: none"> Set up a simple practice inquiry to find out what requires a push or pull force. Make systematic and careful observations.
Week 3	<p>What materials are magnetic?</p> <ul style="list-style-type: none"> Make predictions. Set up a simple practical enquiry to investigate which materials are magnetic and which are not. Record findings using simple scientific language and tables. Using straightforward scientific evidence to answer questions.
Week 4	<p>What are the properties of magnets?</p> <ul style="list-style-type: none"> Make predictions. Set up a simple practical inquiry to investigate what happens when you bring magnets together. Make systematic and careful observations. Record findings using simple scientific language, drawings and labelled diagrams. Use results to draw simple conclusions.
Week 5	<p>How do things move on different surfaces?</p> <ul style="list-style-type: none"> Make predictions. Set up a simple practical enquiry to compare how different surfaces effect how easily magnets move towards each other. Make systematic and careful observations. Record findings using simple tables. Use results to draw simple conclusions.
Week 6	<p>What do we know about magnets?</p> <ul style="list-style-type: none"> Children create knowledge organiser to show key knowledge learnt. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

The Laboratory



William Gilbert

National Curriculum

Sc3-4/1.1a Sc3-4/1.1b
 Sc3-4/1.1c Sc3-4/1.1e
 Sc3-4/1.1f Sc3-4/1.1g
 Sc3-4/1.1h Sc3-4/1.1i

Sc3/6.1a Sc3/6.1b
 Sc3/6.1c Sc3/6.1d
 Sc3/6.1e Sc3/6.1f



Knowledge Intentions

Week 1	<ul style="list-style-type: none">• Explain who William Gilbert was and say how we contributed to the studies of magnetism.
Week 2	<ul style="list-style-type: none">• Notice that some forces need contact between 2 objects.• Identify which forces require a push or pull force.
Week 3	<ul style="list-style-type: none">• A magnetic force is a non-contact force. It can act at a distance.• Observe how magnets attract some materials and not others.• Name materials that are magnetic and those that are not.
Week 4	<ul style="list-style-type: none">• Observe how magnets attract or repel each other.• Describe magnets as having 2 poles.• Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.
Week 5	<ul style="list-style-type: none">• Compare how things move on different surfaces.• Identify what surfaces allow objects to move more easily, and which ones make it more difficult.
Week 6	<ul style="list-style-type: none">• Say how things move on different surfaces.• Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance.• Identify that magnets attract or repel each other and attract some materials and not others.• Describe magnets as having 2 poles

Assessment

Investigation into what materials are magnetic.

Reference Units



Forces & Magnets (KRP)

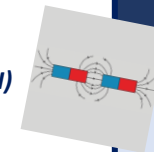
How mighty are magnets? (LTI)



Can you block magnetism? (LTI)



Why do magnets attract & repel? (LTI)



What does friction do? (LTI)





Plants

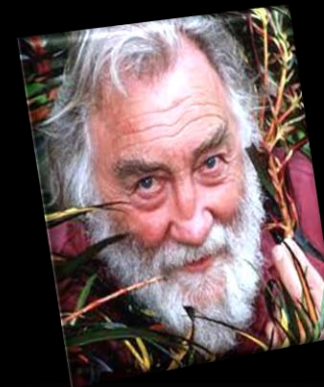
(Tribal Tales)



Learning Intentions

Week 1	<p>Who was David Bellamy?</p> <ul style="list-style-type: none"> Ask relevant questions and use different types of scientific enquiries to answer them. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
Week 2	<p>What do plants need to grow?</p> <ul style="list-style-type: none"> Create a poster to show requirements of plants to grow including examples of different plants. Use straightforward scientific evidence to answer questions.
Week 3	<p>What are the functions of different parts of the plant?</p> <ul style="list-style-type: none"> Produce a poster to show the different parts and functions of a plant. Use straightforward scientific evidence to answer questions.
Week 4	<p>How is water transported through a plant?</p> <ul style="list-style-type: none"> Set up a simple practical enquiry to investigate how water moves through a plant. Make systematic and careful observations. Record findings using simple scientific language, drawings, and labelled diagrams. Use results to draw simple conclusions.
Week 5	<p>What are the functions of different parts of the flower?</p> <ul style="list-style-type: none"> Set up a simple practical inquiry to dissect a flower and label the different parts with their functions. Make systematic and careful observations. Record findings using simple scientific language, drawings, and labelled diagrams.
Week 6	<p>What happens in the life cycle of a plant?</p> <ul style="list-style-type: none"> Produce a poster to show the stage of the plant life cycle. Use straightforward scientific evidence to answer questions.

The Laboratory



David Bellamy

National Curriculum

Sc3-4/1.1a Sc3-4/1.1b
 Sc3-4/1.1c Sc3-4/1.1e
 Sc3-4/1.1f Sc3-4/1.1g
 Sc3-4/1.1i

Sc3/2.1a Sc3/2.1b
 Sc3/2.1c Sc3/2.1d



Knowledge Intentions

Week 1	<ul style="list-style-type: none">Explain who David Bellamy was and say how he contributed to the studies of botany.
Week 2	<ul style="list-style-type: none">Explain the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.Be able to give examples of different plants with varying requirements e.g. Sunflower, Cacti, Orchids, Venus fly traps.
Week 3	<ul style="list-style-type: none">Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.
Week 4	<ul style="list-style-type: none">Explain the way in which water is transported within plants.
Week 5	<ul style="list-style-type: none">Identify and describe the functions of different parts of the flower.
Week 6	<ul style="list-style-type: none">Sequence the life cycle of a plant.Explain the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

Assessment

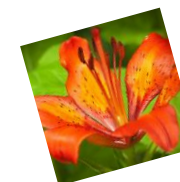
Draw and label the stages of the plant life cycle.

Reference Units



Plant, Nutrition & Reproduction (KRP)

Why are trees tall? (LTI)



What are flowers for? (LTI)



Rocks (Tremors)



Learning Intentions

The Laboratory



Florence Bascom

Week 1	<p>Who was Florence Bascom?</p> <ul style="list-style-type: none"> Ask relevant questions and use different types of scientific enquiries to answer them. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
Week 2	<p>What are the different types of rocks and what are their uses?</p> <ul style="list-style-type: none"> Create a poster which shows some different rocks and their uses. Study different rocks and identify them around the school. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
Week 3	<p>How can we compare and sort rocks?</p> <ul style="list-style-type: none"> Set up a simple enquiry to sort rocks based on their appearance. Gather, record, classify and present data in a variety of ways to help in answering question. Identify differences, similarities or changes related to simple scientific ideas.
Week 4	<p>What are the properties of different rocks?</p> <ul style="list-style-type: none"> Set up a simple enquiry to investigate the properties of rocks and group them based on their properties. Gather, record, classify and present data in a variety of ways to help in answering question. Identify differences, similarities or changes related to simple scientific ideas.
Week 5	<p>What is soil and why is it important?</p> <ul style="list-style-type: none"> Explore what soil is made from and the importance of soil. Draw and label a diagram to show what soil is made from.
Week 6	<p>What are fossils?</p> <ul style="list-style-type: none"> Conduct research using books and the internet to find out about fossils. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

National Curriculum

Sc3-4/1.1a Sc3-4/1.1b
 Sc3-4/1.1d Sc3-4/1.1e
 Sc3-4/1.1f Sc3-4/1.1h

Sc3/4.1a Sc3/4.1b Sc3/4.1c



Knowledge Intentions

Week 1	<ul style="list-style-type: none">Explain who Florence Bascom was and say how she contributed to the study of rocks.
Week 2	<ul style="list-style-type: none">Name different types of rocks and explain some of the uses of rocks.
Week 3	<ul style="list-style-type: none">Compare and group together different kinds of rocks on the basis of their appearance.
Week 4	<ul style="list-style-type: none">Compare and group together different kinds of rocks on the basis of their simple physical properties.
Week 5	<ul style="list-style-type: none">Recognise that soils are made from rocks and organic matter.
Week 6	<ul style="list-style-type: none">Describe in simple terms, how fossils are formed when things that have lived are trapped within rock.

Assessment

Sort rocks on their appearance and properties.

Reference Units



Rocks, Relics & Rumbles (KRP)

What is sand? (LTI)



What is soil? (LTI)





Sound

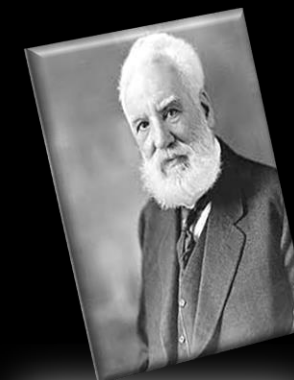
(Gods & Mortals)



Learning Intentions

Week 1	<p>Who was Alexander Graham Bell?</p> <ul style="list-style-type: none"> Ask relevant questions and use different types of scientific enquiries to answer them. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
Week 2	<p>How is sound produced?</p> <ul style="list-style-type: none"> Set up a simple enquiry to investigate how different objects produce different sounds. Ask relevant questions using different types of scientific enquiries to answer them. Gather, record and presenting data in a variety of ways to help in answering questions.
Week 3	<p>How do we hear sound?</p> <ul style="list-style-type: none"> Create a poster to show how sound is transmitted. Use straightforward scientific evidence to answer questions.
Week 4	<p>What effects volume?</p> <ul style="list-style-type: none"> Set up a simple enquiry to investigate what causes the volume of a sound to change. Make predictions. Record findings using simple scientific language, drawings, labelled diagrams, and tables. Use results to draw simple conclusions. Identify changes related to simple scientific ideas and processes.
Week 5	<p>What effects the pitch of a sound?</p> <ul style="list-style-type: none"> Set up a simple enquiry to investigate what causes sounds to have different pitches. Make predictions. Record findings using simple scientific language, drawings, labelled diagrams, and tables. Use results to draw simple conclusions. Identify changes related to simple scientific ideas and processes.
Week 6	<p>What do we know about sound?</p> <ul style="list-style-type: none"> Create a knowledge organiser to show what we have learnt about sound. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

The Laboratory



**Alexander
Graham Bell**

National Curriculum

Sc3-4/1.1a Sc3-4/1.1b
 Sc3-4/1.1d Sc3-4/1.1e
 Sc3-3/1.1f Sc3-4/1.1g
 Sc3-4/1.1h Sc3-4/1.1i

Sc4/5.1a Sc4/5.1b Sc4/5.1c
 Sc4/5.1d Sc4/5.1e



Knowledge Intentions

Week 1	<ul style="list-style-type: none">• Explain who Alexander Graham Bell was and his inventions.
Week 2	<ul style="list-style-type: none">• Identify how sounds are made, associating some of them with something vibrating.• Explain how different objects produce different sounds.
Week 3	<ul style="list-style-type: none">• Recognise that vibrations from sounds travel through a medium to the ear.
Week 4	<ul style="list-style-type: none">• Find patterns between the volume of a sound and the strength of the vibrations that produced it.
Week 5	<ul style="list-style-type: none">• Find patterns between the pitch of a sound and features of the object that produced it
Week 6	<ul style="list-style-type: none">• Explain how sounds are made, associating some of them with something vibrating.• Describe how vibrations from sounds travel through a medium to the ear.• Explain the pattern between pitch of a sound and the objects that produced it.• Explain the pattern between the volume of the sound and the strength of the vibrations that produce it.

Assessment

Explain how sound waves travel to the ear by making an instrument that cause vibrations to happen.

Reference Units

Sound (KRP)



Can we block sound? (LTI)



How can we change sound? (LTI)



How far can sound travel? (LTI)





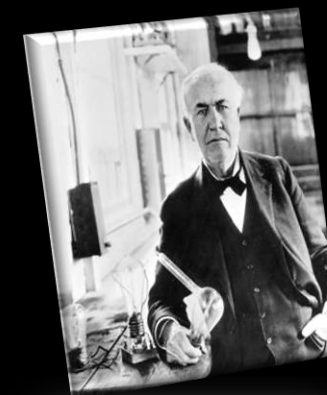
Light (Flow)



Learning Intentions

Week 1	<p>Who was Thomas Edison?</p> <ul style="list-style-type: none"> Ask relevant questions and use different types of scientific enquiries to answer them. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
Week 2	<p>How can we stay safe around light?</p> <ul style="list-style-type: none"> Explore how we can stay safe around light and create a poster to inform others. Use straightforward scientific evidence to answer questions.
Week 3	<p>What produces light?</p> <ul style="list-style-type: none"> Set up a simple enquiry to investigate what objects produce light and which ones don't. Gather, record, classify and present data in a variety of ways to help in answering questions. Identify the differences, similarities or changes related to simple scientific ideas and processes.
Week 4	<p>How can we see?</p> <ul style="list-style-type: none"> Set up a simple enquiry to investigate how different objects reflect different amount of light. Make systematic and careful observations. Record findings using simple scientific language, drawings, and labelled diagrams.
Week 5	<p>How are shadows formed?</p> <ul style="list-style-type: none"> Set up a simple enquiry to investigate how objects produce different shadows. Make predictions. Make systematic and careful observations. Record findings using simple scientific language, drawings, and labelled diagrams. Use results to draw simple conclusions.
Week 6	<p>How to shadows change size?</p> <ul style="list-style-type: none"> Set up a simple enquiry to investigate what causes shadows to be different sizes. Make predictions. Make systematic and careful observations. Record findings using simple scientific language, drawings, and labelled diagrams. Use results to draw simple conclusions. Identifying differences, similarities or changes related to simple scientific ideas and processes.

The Laboratory



Thomas Edison

National Curriculum

Sc3-4/1.1a Sc3-4/1.1b
Sc3-4/1.1c Sc3-4/1.1d
Sc3-4/1.1e Sc3-3/1.1f
Sc3-4/1.1g Sc3-4/1.1h
Sc3-4/1.1i

Sc3/5.1a Sc3/5.1b
Sc3/5.1c Sc3/5.1d



Knowledge Intentions

Week 1	<i>Explain who Thomas Edison was and his invention of the light bulb.</i>
Week 2	<i>Explain how light from the sun can be dangerous and that there are ways to protect their eyes.</i>
Week 3	<i>Recognise that they need light in order to see things and that dark is the absence of light. Name some objects that produce light, and those that don't.</i>
Week 4	<i>Notice that light is reflected from surfaces allowing us to see objects. Recognise that they need light in order to see things.</i>
Week 5	<i>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</i>
Week 6	<i>Explain patterns in the way that the size of shadows change.</i>

Reference Units

Investigation into which materials are the best reflectors of light.

Reference Units



Light & Shadows? (KRP)

Why do shadows change? (LTI)



Why do cat's eyes glow at night? (LTI)



Animals Including Humans

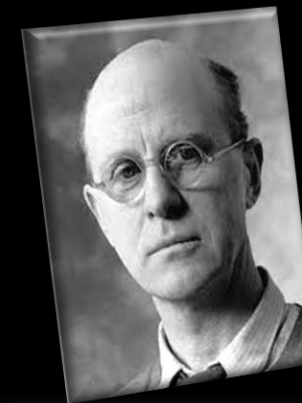
(Predators)



Learning Intentions

Week 1	<p>Who was Charles Elton?</p> <ul style="list-style-type: none"> Ask relevant questions and use different types of scientific enquiries to answer them. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
Week 2	<p>Where do animals get their nutrition?</p> <ul style="list-style-type: none"> Explore how animals get the nutrients they need from different food. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use straightforward scientific evidence to answer questions.
Week 3	<p>What is a food chain?</p> <ul style="list-style-type: none"> Record and classify by sorting animals into which are prey, predators and producers. Draw a selection of food chains from different animals.
Week 4	<p>How do humans get the right nutrition?</p> <ul style="list-style-type: none"> Explore what makes a balanced diet and produce a healthy food plate for a human. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion. Use straightforward scientific evidence to answer questions or to support their findings
Week 5	<p>Why do some animals have skeletons?</p> <ul style="list-style-type: none"> Use straightforward scientific evidence to answer the question. Classify animals into groups whether they have a skeleton or not.
Week 6	<p>Why do we have muscles?</p> <ul style="list-style-type: none"> Set up a simple enquiry to investigate why muscles are important. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion.

The Laboratory



Charles Elton

National Curriculum

Sc3-4/1.1a Sc3-4/1.1b

Sc3-4/1.1d Sc3-4/1.1e
Sc3-3/1.1f Sc3-4/1.1i

Sc3/3.1a Sc3/3.1b Sc4/3.1c



Knowledge Intentions

Week 1	<ul style="list-style-type: none">Explain who Charles Elton was and explain his contribution to the study of animal ecology.
Week 2	<ul style="list-style-type: none">Identify that animals, including humans cannot make their own food; they get nutrition from what they eat.Explain what an omnivore, carnivore and herbivore is.
Week 3	<ul style="list-style-type: none">Understand what a food chain shows.Construct and interpret a variety of food chains, identifying producers, predators and prey.
Week 4	<ul style="list-style-type: none">Identify that animals, including humans, need the right types and amount of nutrition and explain how they can get this.Explain that humans need a healthy balanced diet and give examples of what this may look like.
Week 5	<ul style="list-style-type: none">Identify that humans and some other animals have skeletons for support, protection and movement.
Week 6	<ul style="list-style-type: none">Identify that humans and some other animals have muscles for support, protection, and movement.

Assessment

Design and draw a balanced, healthy meal with a drink.

Reference Units



Animal Nutrition & Skeletal System? (KRP)

What are our joints for? (LTI)



Cook Well, Eat Well? (KRP)