



West Tyne Church Schools Federation

Science Long Term Plan



Reception

Skills:
Plan
Fair test
Predict
Measure and observe
Evaluate results

Bread making—
how does yeast
work?

Exploring Au-
tumn—why do
leaves change
colour & fall of
the trees?

Bean growing—
what do plants
need to grow?

Experiment—the
effect of liquids
on a solid.

Experiment—
which material is
the strongest?

Melting and
freezing.

Why does it get
hotter in sum-
mer?

The earth, sun,
moon and
planets.

Light, dark,
shadow.

Why are dino-
saurs extinct?

What is a palae-
ontologist?
What is a fossil?

Spring
time—changes,
events.

Growing and
caring for
plants.

Minibeasts and
their habitats.

Why do
ladybirds have
spots?

The life of a
bee.

Our world under
the sea.

How can we help
to look after our
world?

Year 1 /
2
Cycle B
Cycle A

Everyday Materials

distinguish between an
object and the material
from which it is made

identify and name a variety
of everyday materials, in-
cluding wood, plastic, glass,
metal, water, and rock

describe the simple physi-
cal properties of a variety
of everyday materials

compare and group togeth-
er a variety of everyday
materials on the basis of
their physical properties

identify and compare the
suitability of a variety of
everyday materials for
particular uses

find out how the shapes of
solid objects made from
some materials can be
changed by squashing,
bending, twisting and
stretching

Working Scientifically

Ask simple questions
and recognise that
they can be answered
in different ways

observing closely, using
simple equipment

Perform simple tests
identifying and classify

using their observa-
tions and ideas to sug-
gest answers to ques-
tions

gathering and record-
ing data to help in an-
swering questions

Animals Inc. Humans

identify and name a variety of
common animals

identify and name a variety of
common animals that are carni-
vores, herbivores and omni-
vores

Describe and compare the
structure of a variety of com-
mon animals

identify, name, draw and label
the basic parts of the human
body and associated senses

notice that animals, including
humans, have offspring which
grow into adults

find out about and describe
the basic needs of animals,
including humans, for survival

describe the importance for
humans of exercise, eating
healthily and hygiene

Plants

Identify and name a vari-
ety of common wild and
garden plants, including
deciduous and evergreen
trees

Observe and describe
how seeds and bulbs grow
into mature plants.

find out and describe
how plants need water,
light and a suitable tem-
perature to grow and
stay healthy

identify and describe the
basic structure of a vari-
ety of common flowering
plants, including trees.

Habitats

explore and compare
the differences be-
tween things that are
living, dead, and things
that have never been
alive

identify that most liv-
ing things live in habi-
tats to which they are
suited and describe
how different habitats
provide for the basic
needs of different
kinds of animals and
plants, and how they
depend on each other

identify and name a
variety of plants and
animals in their habi-
tats, including micro-
habitats

describe how animals
obtain their food from
plants and other ani-
mals, using the idea of
a simple food chain, and
identify and name dif-
ferent sources of food

Seasonal Changes

(Runs throughout the
year

Weather Cycle B,
Environment cycle A)

observe changes across
the 4 seasons

observe and describe
weather associated with
the seasons and how day
length varies



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Year 3/4 Cycle A

Rocks

compare and group together different kinds of rocks on the basis of their appearance and simple physical properties

describe in simple terms how fossils are formed when things that have lived are trapped within rock

recognise that soils are made from rocks and organic matter

Working Scientifically

asking relevant questions

setting up simple practical enquiries

Record findings using simple scientific language, drawings, keys, bar charts.

Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

Forces/ Magnets

compare how things move on different surfaces

notice that some forces need contact between 2 objects, but magnetic forces act at a distance

observe how magnets attract or repel each other

compare and group together a variety of materials

describe magnets as having 2 poles

predict whether 2 magnets will attract or repel

Animals Inc. Humans

identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Describe the functions of the digestive system in humans.

Identify the different types of teeth in human and their simple functions.

States of Matter

compare and group materials together, (solids, liquids or gases)

observe some materials change state when they are heated or cooled, and measure / research the temperature at which this happens in degrees Celsius

identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

Electricity

Identify common appliances that run electricity.

Construct a simple series electrical circuit, identifying and naming its basic parts.

Identify whether or not a lamp will light in a simple series.

Recognise that a switch opens and closes a circuit

Recognise some common conductors and insulators.

Year 3/4 Cycle B

Plants

identify and describe functions of different parts of flowering plants:

explore the requirements of plants for life and growth and how they vary from plant to plant

investigate the way in which water is transported within plants

explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

Working Scientifically

Make systematic observations, taking accurate measurements using a range of equipment.

Gathering, recording, classifying and presenting data in a variety of ways.

Report on findings in different ways.

Identifying differences, similarities or change within processes.

Use evidence to answer questions.

Light

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

notice that light is reflected from surfaces

recognise that light from the sun can be dangerous and that there are ways to protect their eyes

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

find patterns in the way that the size of shadows change

Sound

identify how sounds are made (vibration)

recognise that vibrations from sounds travel through a medium

find patterns between pitch of a sound and features of the object that produced it

find patterns between the volume of a sound and the strength of the vibrations that produced it

recognise that sounds get fainter as distance increases

Animals Inc. Humans

identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.

Construct and interpret a variety of food chains, identifying producers, predators, and prey.

Living things and their habitats

Recognise that living things can be grouped in a variety of ways.

Explore and use classification keys to help group a variety of living things.

Recognise that environments can change and that this can pose dangers to living things.



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Year 5/6 Cycle B

Forces

Explain that unsupported objects fall towards the Earth.

Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.

Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

Working Scientifically

Record data and results of complexity using scientific diagrams and labels.

Report and present findings from enquiries, including conclusions and relationships.

Identify scientific evidence that has been used to support or refute ideas or arguments.

Electricity

Associate the brightness of a lamp or the volume of a buzzer with the number of voltage of cells in the circuit.

Compare and give reasons for variations in how components function.

Use recognised symbols when representing a simple circuit in a diagram.

Animals Inc Humans

Describe the changes as humans develop to old age.

Identify and name parts of the human circulatory system and describe the functions of heart, blood and blood vessels.

Describe the ways in which nutrients and water are transported within animals.

Light

Recognise that light appears to travel in straight lines.

Explain that we see things because light travels from light sources.

Explain that objects are seen because they give out or reflect light into our eyes.

Explain why shadows have the same shape as the objects that cast them.

Living things and their habitats

Describe the differences in life cycles of a mammal, an amphibian, an insect and a bird.

Describe how living things are classified into broad groups by their characteristics.

Give reasons for classifying animals based on characteristics.

Year 5/6 Cycle A

Living things and their habitats

how living things are classified into broad groups including micro organisms, and plants

Brief– classification of plants

Describe the life process of reproduction in some plants.

Working Scientifically

Plan different types of enquiries to answer questions, including controlling variables.

Take measurements, using a range of equipment with accuracy and precision.

Using test results to make predictions to set up further comparative fair tests.

Earth and Space

Describe the movement of the Earth and other planets.

Describe the movement of the Moon relative to the Earth,

Describe the Sun, Earth and Moon as approximately spherical bodies.

Use Earth's rotation to explain the apparent movement of the sun.

Properties and changes of materials

Compare and group materials based on their properties Give reasons for particular uses of materials.

Know that some materials will dissolve in liquid.

Decide how mixtures might be separated.

Demonstrate that dissolving and mixing are reversible changes. Explain some changes form new materials.

Animals Inc Humans

Describe the changes as humans develop to old age.

Recognise the impact of diet, exercise, drugs and life-style on the way their bodies function.

Evolution and Inheritance

Recognise that living things have changed over time and fossils provide information.

Recognise that living things produce offspring.

Identify how animals and plants are adapted to suit their environment.