Thinking and Working Scientifically

Models and representations

- 3TWSm.01 Know that there are different types of models in science, including diagrams and
- physical models that we can touch.
- 3TWSm.02 Make and use physical models.
- 3TWSm.03 Draw a diagram to represent a real world situation and/or scientific idea.

Scientific enquiry: purpose and planning

- 3TWSp.01 Ask scientific questions that can be investigated.
- 3TWSp.02 Know that there are five main types of scientific enquiry (research, fair testing,
- observing over time, identifying and classifying, and pattern seeking).
- 3TWSp.03 Make a prediction describing some possible outcomes of an enquiry.
- 3TWSp.04 Identify risks and explain how to stay safe during practical work.

Carrying out scientific enquiry

- 3TWSc.01 Use observations and tests to sort, group and classify objects.
- 3TWSc.02 Choose equipment from a provided selection and use it appropriately.
- 3TWSc.03 Take measurements in standard units, describing the advantage of standard units
- over non-standard units.
- 3TWSc.04 Carry out practical work safely.
- 3TWSc.05 Use secondary information sources to research an answer to a question.
- 3TWSc.06 Collect and record observations and/or measurements in tables and diagrams.

Scientific enquiry: analysis, evaluation and conclusions

- 3TWSa.01 Identify whether results support, or do not support, a prediction.
- 3TWSa.02 Describe simple patterns in results.
- 3TWSa.03 Make a conclusion from results and relate it to the scientific question being investigated.
- 3TWSa.04 Present and interpret results using tables and bar charts.

Biology

Structure and function

- 3Bs.01 Describe the function of the major parts of flowering plants (limited to roots, leaves,
- stems and flowers).
- 3Bs.02 Identify the distinguishing features of different groups of animals, including fish, reptiles,
- mammals, birds, amphibians and insects.

- 3Bs.03 Identify some of the important organs in humans (limited to brain, heart, stomach,
- intestine and lungs) and describe their functions.

Life processes

- 3Bp.01 Describe differences between things that are living, that were once alive and that have
- never lived.
- 3Bp.02 Know that life processes common to plants and animals include nutrition, growth,
- movement and reproduction.
- 3Bp.03 Know that plants need appropriate conditions, including temperature, light and water, to
- be healthy.
- 3Bp.04 Describe and compare how the offspring of different animals grow into adults, including
- humans, birds, frogs and butterflies.

Ecosystems

- 3Be.01 Identify and describe simple food chains, where plants are producers and animals are
- consumers of plants and/or other animals.

<u>Chemistry</u>

Materials and their structure

- 3Cm.01 Know that materials can be solids, liquids or gases.
- 3Cm.02 Understand that a mixture contains two or more materials, where the materials can be
- physically separated.

Properties of materials

- 3Cp.01 Describe differences in the properties of solids and liquids.
- 3Cp.02 Understand that materials, generally, retain their properties within a mixture.
- 3Cp.03 Describe how to separate solid/solid mixtures based on the physical properties of the
- solids (processes involving dissolving are not required).
- 3Cp.04 Describe how to separate a mixture of an insoluble solid and a liquid.

Changes to materials

- 3Cc.01 Know that when a solid dissolves in a liquid the solid is still present, and this is an
- example of mixing.

<u>Physics</u>

Forces and energy

- 3Pf.01 Know that forces can be measured with a forcemeter.
- 3Pf.02 Know that gravity on Earth is a force that pulls towards the centre of the Earth.
- 3Pf.03 Know that friction is a force created between surfaces when they move against each
- other and it makes this movement harder.
- 3Pf.04 Describe how smooth and rough surfaces can generate different amounts of friction.

Light and sound

- 3Ps.01 Investigate how light can pass through some materials and is blocked by others, and use the terms transparent, translucent and opaque.
- 3Ps.02 Know that shadows are formed when light from a source is blocked by an object.
- 3Ps.03 Investigate how the size of a shadow is affected by the position of the object and the
- position of the light source.

Electricity and magnetism

- 3Pe.01 Describe magnets as having a north pole and a south pole.
- 3Pe,02 Describe how magnets interact when near each other, using the terms repel and attract.
- 3Pe.03 Investigate how some materials are magnetic but many are not.

<u>Earth and Space</u>

Planet Earth

- 3ESp.01 Know that planet Earth is the source of all the materials we use and that many useful
- materials, including oil, natural gas and metals, come from or are found in rocks.
- 3ESp.02 Know that fossils are impressions, or remains, of things that were once alive.

Earth in space

- 3ESs.01 Describe the regular change in the position and appearance of the Moon.
- 3ESs.02 Describe the relative movement of the Earth and Moon.
- 3ESs.03 Describe the Earth, Sun and Moon as approximately spherical.

<u>Science in Context</u>

- 3S1C.01 Talk about how some of the scientific knowledge and thinking now was different in the
- past.
- 3SIC.02 Talk about how science explains how objects they use, or know about, work.
- 3S1C.03 Know that everyone uses science and identify people who use science professionally.
- 3S1C.04 Talk about how science helps us understand our effect on the world around us.