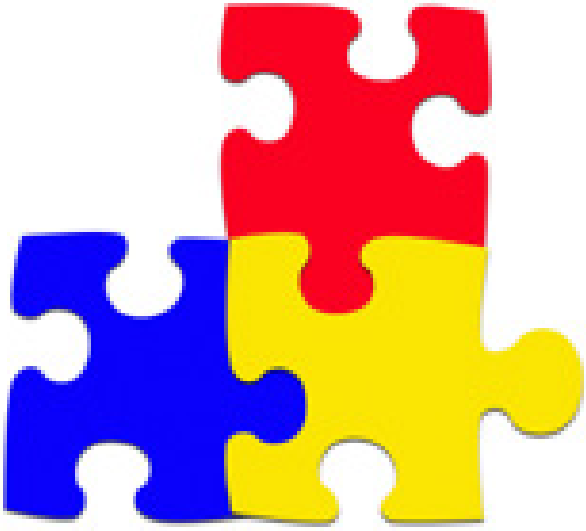




LEARNING LADDERS

SCIENCE

ST WINEFRIDE'S CATHOLIC  
PRIMARY SCHOOL



NAME

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CLASS

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SCIENCE LADDER

WORKING SCIENTIFICALLY

I can gather and record data to help answer questions using simple words, pictures or tables.

Rung 10

COMPLETE

COMPLETE

COMPLETE

I observe closely, using simple equipment and non standard units. I can identify and classify. I can perform a simple test.

Rung 9

COMPLETE

COMPLETE

COMPLETE

I decide with help, what to find out, observe or measure.

Rung 8

COMPLETE

COMPLETE

COMPLETE

I can ask simple questions and recognise these questions can be answered in different ways.

Rung 7

COMPLETE

COMPLETE

COMPLETE

I can talk about what I did.

Rung 6

COMPLETE

COMPLETE

COMPLETE

I can talk about what happened and/or what I saw.

Rung 5

COMPLETE

COMPLETE

COMPLETE

With help I can gather and record data to help me answer my question.

Rung 4

COMPLETE

COMPLETE

COMPLETE

With help I use simple equipment and non standard units to find things out. I observe using my senses.

Rung 3

COMPLETE

COMPLETE

COMPLETE

I can make suggestions about how to do things when we plan a simple test.

Rung 2

COMPLETE

COMPLETE

COMPLETE

With help and encouragement I can ask simple questions that begin with why, what, if, how or when.

Rung 1

COMPLETE

COMPLETE

COMPLETE

## WORKING SCIENTIFICALLY

I can talk about what went wrong and have ideas about what else I would like to find out.

Rung 20

COMPLETE

COMPLETE

COMPLETE

I can use my results when I talk about what happened (drawing conclusions).

Rung 19

COMPLETE

COMPLETE

COMPLETE

With help I can present my data.

Rung 18

COMPLETE

COMPLETE

COMPLETE

I gather data recording findings in pre-prepared tables, or by words and drawings.

Rung 17

COMPLETE

COMPLETE

COMPLETE

With help I can use information sources provided to find things out.

Rung 16

COMPLETE

COMPLETE

COMPLETE

I am beginning to make systematic and careful observations. I sometimes use standard units.

Rung 15

COMPLETE

COMPLETE

COMPLETE

I can set up a simple practical enquiry, beginning to understand how to make a fair test. I make suggestions about observations and measurements.

Rung 14

COMPLETE

COMPLETE

COMPLETE

I can ask questions and I recognise that there are different types of enquiry.

Rung 13

COMPLETE

COMPLETE

COMPLETE

I talk about how I found out what I found out.

Rung 12

COMPLETE

COMPLETE

COMPLETE

I can use my observations and ideas to suggest answers to my questions.

Rung 11

COMPLETE

COMPLETE

COMPLETE

## WORKING SCIENTIFICALLY

I decide on what observations and measurements to make and the equipment needed to make observations and measurements.

Rung 30

COMPLETE

COMPLETE

COMPLETE

I recognise which type of enquiry is best to answer a question.

Rung 29

COMPLETE

COMPLETE

COMPLETE

I suggest improvements to the way I carried out the enquiry. I suggest further questions to investigate.

Rung 28

COMPLETE

COMPLETE

COMPLETE

I communicate what I have found out using straightforward scientific ideas and I report my findings using oral and written explanations and displays.

Rung 27

COMPLETE

COMPLETE

COMPLETE

I use my results to draw simple conclusions and I make predictions for new values.

Rung 26

COMPLETE

COMPLETE

COMPLETE

I present my data in a variety of ways eg venn diagrams, bar charts, and keys.

Rung 25

COMPLETE

COMPLETE

COMPLETE

I gather, record (tables, drawings and labelled diagrams) and classify data in a variety of ways to help me answer questions.

Rung 24

COMPLETE

COMPLETE

COMPLETE

I can use a range of equipment (including thermometers and dataloggers). I can make systematic observations and accurate standard measurements.

Rung 23

COMPLETE

COMPLETE

COMPLETE

I can set up a simple practical enquiry, comparative or fair test.

Rung 22

COMPLETE

COMPLETE

COMPLETE

I can ask relevant questions and use different types of scientific enquiries to answer them.

Rung 21

COMPLETE

COMPLETE

COMPLETE

SCIENCE LADDER

WORKING SCIENTIFICALLY

I use relevant information sources to find things out.

Rung 40    COMPLETE    COMPLETE    COMPLETE

I take measurements using a range of equipment with accuracy and precision. I take repeated readings when appropriate.

Rung 39    COMPLETE    COMPLETE    COMPLETE

I can plan different types of scientific enquiries to answer questions. I recognise and control variables where necessary.

Rung 38    COMPLETE    COMPLETE    COMPLETE

I recognise which type of enquiry is best to answer the question.

Rung 37    COMPLETE    COMPLETE    COMPLETE

I use what I have found out to suggest improvements to my work giving reasons.

Rung 36    COMPLETE    COMPLETE    COMPLETE

I look at my results and decide if any observations or measurements are unsuitable.

Rung 35    COMPLETE    COMPLETE    COMPLETE

I begin to use basic scientific evidence to support or refute the ideas or arguments for my conclusion.

Rung 34    COMPLETE    COMPLETE    COMPLETE

I record and present the results in a range of formats e.g. line graphs, keys and frequency charts.

Rung 33    COMPLETE    COMPLETE    COMPLETE

I identify possible risks to myself and others.

Rung 32    COMPLETE    COMPLETE    COMPLETE

I use information sources provided to find things out.

Rung 31    COMPLETE    COMPLETE    COMPLETE

## WORKING SCIENTIFICALLY

I use my results to make predictions to set up further enquiries e.g comparative and fair tests.

Rung 45

COMPLETE

COMPLETE

COMPLETE

I identify scientific evidence to support or refute the ideas or arguments for my conclusion.

Rung 44

COMPLETE

COMPLETE

COMPLETE

From my results I draw valid conclusions ( consistent with the evidence) including causal relationships.

Rung 43

COMPLETE

COMPLETE

COMPLETE

I present the data and results in a suitable format e.g. line graph, scatter graph or classification key.

Rung 42

COMPLETE

COMPLETE

COMPLETE

I record data and results of increasing complexity using e.g. scientific labelled diagrams and tables.

Rung 41

COMPLETE

COMPLETE

COMPLETE



## ANIMALS, INCLUDING HUMANS

I can construct and interpret a variety of food chains, identifying producers, predators and prey.

Rung 10

COMPLETE

COMPLETE

COMPLETE

I can 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.

Rung 9

COMPLETE

COMPLETE

COMPLETE

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

Rung 8

COMPLETE

COMPLETE

COMPLETE

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

Rung 7

COMPLETE

COMPLETE

COMPLETE

I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air).

Rung 6

COMPLETE

COMPLETE

COMPLETE

I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

Rung 5

COMPLETE

COMPLETE

COMPLETE

I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.

Rung 4

COMPLETE

COMPLETE

COMPLETE

I can identify and name a variety of common animals that are carnivores, herbivores and omnivores.

Rung 3

COMPLETE

COMPLETE

COMPLETE

I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).

Rung 2

COMPLETE

COMPLETE

COMPLETE

I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Rung 1

COMPLETE

COMPLETE

COMPLETE

## ANIMALS, INCLUDING HUMANS

I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.

Rung 16

COMPLETE

COMPLETE

COMPLETE

I can recognise the impact of diet, exercise, drugs and lifestyle on the way my body functions.

Rung 15

COMPLETE

COMPLETE

COMPLETE

I can describe the ways in which nutrients and water are transported within animals, including humans.

Rung 14

COMPLETE

COMPLETE

COMPLETE

I can describe the changes as humans develop to old age.

Rung 13

COMPLETE

COMPLETE

COMPLETE

I can describe the simple functions of the basic parts of the digestive system in humans.

Rung 12

COMPLETE

COMPLETE

COMPLETE

I can identify the different types of teeth in humans and their simple functions.

Rung 11

COMPLETE

COMPLETE

COMPLETE

EARTH AND SPACE

I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system.

Rung 4    COMPLETE    COMPLETE    COMPLETE

I can describe the movement of the Moon relative to the Earth.

Rung 3    COMPLETE    COMPLETE    COMPLETE

I can describe the Sun, Earth and Moon as approximately spherical bodies.

Rung 2    COMPLETE    COMPLETE    COMPLETE

I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Rung 1    COMPLETE    COMPLETE    COMPLETE

## ELECTRICITY

I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.

Rung 8

COMPLETE

COMPLETE

COMPLETE

I can compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.

Rung 7

COMPLETE

COMPLETE

COMPLETE

I can use recognised symbols when representing a simple circuit in a diagram.

Rung 6

COMPLETE

COMPLETE

COMPLETE

I can identify common appliances that run on electricity.

Rung 5

COMPLETE

COMPLETE

COMPLETE

I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.

Rung 4

COMPLETE

COMPLETE

COMPLETE

I can 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.

Rung 3

COMPLETE

COMPLETE

COMPLETE

I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.

Rung 2

COMPLETE

COMPLETE

COMPLETE

I can recognise some common conductors and insulators, and associate metals with being good conductors.

Rung 1

COMPLETE

COMPLETE

COMPLETE

EVOLUTION AND INHERITANCE

I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.

Rung 3

COMPLETE

COMPLETE

COMPLETE

I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.

Rung 2

COMPLETE

COMPLETE

COMPLETE

I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Rung 1

COMPLETE

COMPLETE

COMPLETE

## FORCES AND MAGNETS

I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.

Rung 9	COMPLETE	COMPLETE	COMPLETE	
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I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces.

Rung 8	COMPLETE	COMPLETE	COMPLETE	
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I can recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

Rung 7	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

I can compare how things move on different surfaces.

Rung 6	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

I notice that some forces need contact between two objects, but magnetic forces can act at a distance.

Rung 5	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

I can observe how magnets attract or repel each other and attract some materials and not others.

Rung 4	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

I can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.

Rung 3	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

I can describe magnets as having two poles.

Rung 2	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

I can predict whether two magnets will attract or repel each other, depending on which poles are facing.

Rung 1	COMPLETE	COMPLETE	COMPLETE	
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## LIGHT

I can recognise that light appears to travel in straight lines.

Rung 9    COMPLETE    COMPLETE    COMPLETE

I can use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.

Rung 8    COMPLETE    COMPLETE    COMPLETE

I can explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.

Rung 7    COMPLETE    COMPLETE    COMPLETE

I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Rung 6    COMPLETE    COMPLETE    COMPLETE

I can recognise that I need light in order to see things and that dark is the absence of light.

Rung 5    COMPLETE    COMPLETE    COMPLETE

I can notice that light is reflected from surfaces.

Rung 4    COMPLETE    COMPLETE    COMPLETE

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

Rung 3    COMPLETE    COMPLETE    COMPLETE

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

Rung 2    COMPLETE    COMPLETE    COMPLETE

I can find patterns in the way that the size of shadows change.

Rung 1    COMPLETE    COMPLETE    COMPLETE

## LIVING THINGS AND THEIR HABITATS

I can give reasons for classifying plants and animals based on specific characteristics.

Rung 10

COMPLETE

COMPLETE

COMPLETE

I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.

Rung 9

COMPLETE

COMPLETE

COMPLETE

I can describe the life process of reproduction in some plants and animals.

Rung 8

COMPLETE

COMPLETE

COMPLETE

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

Rung 7

COMPLETE

COMPLETE

COMPLETE

I can explore and use classification keys to help group, identify and name a variety of living things in my local and wider environment.

Rung 6

COMPLETE

COMPLETE

COMPLETE

I can recognise that environments can change and that this can sometimes pose dangers to living things.

Rung 5

COMPLETE

COMPLETE

COMPLETE

I can explore and compare the differences between things that are living, dead, and things that have never been alive.

Rung 4

COMPLETE

COMPLETE

COMPLETE

I can identify that most living things live in habitats 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.

Rung 3

COMPLETE

COMPLETE

COMPLETE

I can identify and name a variety of plants and animals in their habitats, including microhabitats.

Rung 2

COMPLETE

COMPLETE

COMPLETE

I can describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Rung 1

COMPLETE

COMPLETE

COMPLETE



LIVING THINGS AND THEIR HABITATS

I can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.

Rung 11

COMPLETE

COMPLETE

COMPLETE

## PLANTS

I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.

Rung 8

COMPLETE

COMPLETE

COMPLETE

I can explore 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.

Rung 7

COMPLETE

COMPLETE

COMPLETE

I can investigate the way in which water is transported within plants.

Rung 6

COMPLETE

COMPLETE

COMPLETE

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

Rung 5

COMPLETE

COMPLETE

COMPLETE

I can observe and describe how seeds and bulbs grow into mature plants.

Rung 4

COMPLETE

COMPLETE

COMPLETE

I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Rung 3

COMPLETE

COMPLETE

COMPLETE

I can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.

Rung 2

COMPLETE

COMPLETE

COMPLETE

I can identify and describe the basic structure of a variety of common flowering plants, including trees.

Rung 1

COMPLETE

COMPLETE

COMPLETE

ROCKS

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

Rung 3

COMPLETE

COMPLETE

COMPLETE

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

Rung 2

COMPLETE

COMPLETE

COMPLETE

I can recognise that soils are made from rocks and organic matter.

Rung 1

COMPLETE

COMPLETE

COMPLETE

SEASONAL CHANGES

I can observe changes across the four seasons.

Rung 2

COMPLETE

COMPLETE

COMPLETE

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

Rung 1

COMPLETE

COMPLETE

COMPLETE

SOUND

I can identify how sounds are made, associating some of them with something vibrating.

Rung 5	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

I can recognise that vibrations from sounds travel through a medium to the ear.

Rung 4	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

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

Rung 3	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

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

Rung 2	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

I can recognise that sounds get fainter as the distance from the sound source increases.

Rung 1	COMPLETE	COMPLETE	COMPLETE	
--------	----------	----------	----------	--

## STATES OF MATTER + PROPERTIES AND CHANGES OF MATERIALS

I can compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.

Rung 9

COMPLETE

COMPLETE

COMPLETE

I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.

Rung 8

COMPLETE

COMPLETE

COMPLETE

I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.

Rung 7

COMPLETE

COMPLETE

COMPLETE

I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.

Rung 6

COMPLETE

COMPLETE

COMPLETE

I can demonstrate that dissolving, mixing and changes of state are reversible changes.

Rung 5

COMPLETE

COMPLETE

COMPLETE

I can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Rung 4

COMPLETE

COMPLETE

COMPLETE

I can compare and group materials together, according to whether they are solids, liquids or gases.

Rung 3

COMPLETE

COMPLETE

COMPLETE

I can observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).

Rung 2

COMPLETE

COMPLETE

COMPLETE

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

Rung 1

COMPLETE

COMPLETE

COMPLETE

## USE OF EVERY DAY MATERIALS

I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.

Rung 6

COMPLETE

COMPLETE

COMPLETE

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

Rung 5

COMPLETE

COMPLETE

COMPLETE

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

Rung 4

COMPLETE

COMPLETE

COMPLETE

I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.

Rung 3

COMPLETE

COMPLETE

COMPLETE

I can describe the simple physical properties of a variety of everyday materials.

Rung 2

COMPLETE

COMPLETE

COMPLETE

I can compare and group together a variety of everyday materials on the basis of their simple physical properties.

Rung 1

COMPLETE

COMPLETE

COMPLETE













LEARNING LADDERS

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