St. Catherine's RC Primary School Science Objectives

Year 1 Scientist			
Working scientifically (Y1 and Y2)	**Biology**	**Chemistry**	**Physics**
• I ask simple scientific questions • I use simple equipment to make observations • I carry out simple tests • I identify and classify things • I suggest what I have found out • I use simple data to answer questions	**Plants:** • I name a variety of common wild and garden plants • I name the petals, stem, leaf and root of a plant • I name the roots, trunk, branches and leaves of a tree **Animals, including humans:** • I name a variety of animals including fish, amphibians, reptiles, birds and mammals • I classify and name animals by what they eat (carnivore, herbivore and omnivore) • I sort animals into categories (including fish, amphibians, reptiles, birds and mammals) • I sort living and non-living things • I name the parts of the human body that I can see • I link the correct part of the human body to each sense	**Everyday materials:** • I distinguish between an object and the material it is made from • I explain the materials that an object is made from • I name wood, plastic, glass, metal, water and rock • I describe the properties of everyday materials • I group objects based on the materials they are made from	**Seasonal changes:** • I observe and comment on changes in the season • I name the seasons and suggest the type of weather in each season

St. Catherine's RC Primary School Science Objectives

Year 2 Scientist			
Working scientifically (Y1 and Y2)	**Biology**	**Chemistry**	**Physics**
• I ask simple scientific questions • I use simple equipment to make observations • I carry out simple tests • I identify and classify things • I suggest what I have found out I use simple data to answer questions	**Living things and their habitats:** • I identify things that are living, dead and never lived • I describe how a specific habitat provides for the basic needs of things living there (plants and animals) • I ide+ntify and name plants and animals in a range of habitats • I match living things to their habitat • I describe how animals find their food • I name some different sources of food for animals • I explain a simple food chain Plants: • I describe how seeds and bulbs grow into plants • I describe what plants need in order to grow and stay healthy (water, light & suitable temperature) Animals, including humans: • I explain the basic stages in a life cycle for animals, including humans • I describe what animals and humans need to survive • I describe why exercise, a balanced diet and good hygiene are important for humans	**Uses of everyday materials:** • I identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard • I suggest why a material might or might not be used for a specific job • I explore how shapes can be changed by squashing, bending, twisting and stretching	No content.

St. Catherine's RC Primary School Science Objectives

Year 3 Scientist			
Working scientifically (Y3 and Y4)	**Biology**	**Chemistry**	**Physics**
• I ask relevant scientific questions • I use observations and knowledge to answer scientific questions • I set up a simple enquiry to explore a scientific question • I set up a test to compare two things • I set up a fair test and explain why it is fair • I make careful and accurate observations, including the use of standard units • I use equipment, including thermometers and data loggers to make measurements • I gather, record, classify and present data in different ways to answer scientific questions • I use diagrams, keys, bar charts and tables, using scientific language • I use findings to report in different ways, including oral and written explanations and presentations. • I draw conclusions and suggest improvements • I make a prediction with a reason • I identify differences, similarities and changes related to an enquiry	**Plants:** • I describe the function of different parts of flowering plants and trees • I explore and describe the needs of different plants for survival • I explore and describe how water is transported within plants • I describe the plant life cycle, especially the importance of flowers **Animals, including humans:** • I explain the importance of a nutritious, balanced diet • I explain how nutrients, water and oxygen are transported within animals and humans • I describe and explain the skeletal system of a human • I describe and explain the muscular system of a human • I describe the purpose of skeleton in humans and animals.	**Rocks:** • I compare and group rocks based on their appearance and physical properties, giving a reason • I describe how fossils are formed • I describe how soil is made • I describe and explain the difference between sedimentary and igneous rock	**Light:** • I describe what dark is (the absence of light) • I explain that light is needed in order to see • I explain that light is reflected from a surface • I explain and demonstrate how a shadow is formed • I can explore shadow size and explain • I explain the danger of direct sunlight and describe how to keep protected **Forces and magnets:** • I explore and describe how objects move on different surfaces • I explain how some forces require contact and some do not, giving examples • I explore and explain how objects attract and repel in relation to objects and other magnets • I predict whether objects will be magnetic and carry out an enquiry to test this out • I predict whether magnets will attract or repel and give a reason

St. Catherine's RC Primary School Science Objectives

Year 4 Scientist			
Working scientifically (Y3 and Y4)	**Biology**	**Chemistry**	**Physics**
• I ask relevant scientific questions • I use observations and knowledge to answer scientific questions • I set up a simple enquiry to explore a scientific question • I set up a test to compare two things • I set up a fair test and explain why it is fair • I make careful and accurate observations, including the use of standard units • I use equipment, including thermometers and data loggers to make measurements • I gather, record, classify and present data in different ways to answer scientific questions • I use diagrams, keys, bar charts and tables, using scientific language • I use findings to report in different ways, including oral and written explanations and presentations. • I draw conclusions and suggest improvements • I make a prediction with a reason • I identify differences, similarities and changes related to an enquiry	**Living things and their habitats:** • I group living things in different ways • I use classification keys to group, identify and name living things • I create classification keys to group, identify and name living things (for others to use) • I describe how changes to an environment could endanger living things **Animals, including humans:** • I identify and name the parts of the human digestive system • I describe the functions of the organs in the human digestive system • I identify and describe the different types of teeth in humans • I describe the functions of different human teeth • I use food chains to identify producers, predators and prey • I construct food chains to identify producers, predators and prey	**States of matter:** • I group materials based on their state of matter (solid, liquid, gas) • I describe how some materials can change state • I explore how materials change state • I measure the temperature at which materials change state • I describe the water cycle • I explain the part played by evaporation and condensation in the water cycle	**Sound:** • I describe how sound is made • I explain how sound travels from a source to our ears • I know how sounds are made, associating some of them with vibrating • I explore the correlation between pitch and the object producing a sound • I explore the correlation between the volume of a sound and the strength of the vibrations that produced it • I describe what happens to a sound as it travels away from its source **Electricity:** • I identify and name appliances that require electricity to function • I construct a series circuit • I identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers) • I draw a circuit diagram • I predict and test whether a lamp will light within a circuit • I describe the function of a switch in a circuit • I describe the difference between a conductor and an insulator, giving examples of each

St. Catherine's RC Primary School Science Objectives

Year 5 Scientist			
Working scientifically (Y5 and Y6)	**Biology**	**Chemistry**	**Physics**
• I plan different types of scientific enquiry • I control variables in an enquiry • I measure accurately and precisely using a range of equipment • I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • I use the outcome of test results to make predictions and set up further comparative and fair tests • I report findings from enquiries in a range of ways • I explain a conclusion from an enquiry • I explain causal relationships in an enquiry • I relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory • I read, spell and pronounce scientific vocabulary accurately	**Living things and their habitats:** • I describe the life cycle of different living things e.g. mammal, amphibian, insect bird • I describe the differences between different life cycles • I describe the process of reproduction in plants • I describe the process of reproduction in animals **Animals, including humans:** • I create a timeline to indicate stages of growth in humans	**Properties and changes of materials:** • I compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity [electrical and thermal], and response to magnets) • I describe how a material dissolves to form a solution, explaining the process of dissolving • I describe and show how to recover a substance from a solution • I describe how some materials can be separated • I demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating) • I know and can demonstrate that some changes are reversible and some are not • I explain how some changes result in the formation of a new material and that this is usually irreversible • I discuss reversible and irreversible changes • I give evidenced reasons why materials should be used for specific purposes	**Earth and space:** • I describe and explain the movement of the Earth and other planets relative to the sun • I describe and explain the movement of the Moon relative t the Earth • I explain and demonstrate how night and day are created • I describe the Sun, Earth and Moon (using the term spherical) **Forces:** • I explain what gravity is and its impact on our lives • I identify and explain the effect of air resistance • I identify and explain the effect of water resistance • I identify and explain the effect of friction • I explain how levers, pulleys and gears allow a smaller force to have a greater effect

St. Catherine's RC Primary School Science Objectives

Year 6 Scientist			
Working scientifically (Y5 and Y6)	**Biology**	**Chemistry**	**Physics**
• I plan different types of scientific enquiry • I control variables in an enquiry • I measure accurately and precisely using a range of equipment • I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • I use the outcome of test results to make predictions and set up further comparative and fair tests • I report findings from enquiries in a range of ways • I explain a conclusion from an enquiry • I explain causal relationships in an enquiry • I relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory • I read, spell and pronounce scientific vocabulary accurately	**Living things and their habitats:** • I classify living things into broad groups according to observable characteristics and based on similarities and differences • I describe how living things have been classified • I give reasons for classifying plants and animals in a specific way **Animals, including humans:** • I identify and name the main parts of the human circulatory system • I describe the function of the heart, blood vessels and blood • I discuss the impact of diet, exercise, drugs and lifestyle on health • I describe the ways in which nutrients and water are transported in animals, including humans **Evolution and Inheritance:** • I describe how the Earth and living things have changed over time • I explain how fossils can be used to find out about the past • I explain about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents) • I explain how animals and plants are adapted to suit their environment • I explain evolution	No content	**Light:** • I explain how light travels • I explain and demonstrate how we see objects • I explain why shadows have the same shape as the object that casts them • I explain how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, magnifying glass, etc **Electricity:** • I explain how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer • I compare and give reasons for why components work and do not work in a circuit • I draw circuit diagrams using correct symbols

St. Catherine's RC Primary School Science Objectives