**PRIMARY SCIENCE CURRICULUM OVERVIEW 2024 – 2025**

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| **YR 1** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
|  | **Human Body****Seasonal Changes** | **Animals** | **Seasonal Changes****Materials - buildings** | **Caring for the Planet****Plants** | **Seasonal Changes****Materials - Textiles** | **Seasonal Changes****Planting****Growing and Cooking** |
| **Content** | **HUMAN BODY**• Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **SEASONAL CHANGES - Autumn**• Observe changes across the four seasons.• Observe and describe weather associated with the seasons and how day length varies. | **ANIMALS** • Identify and name a variety of common animals, including fish amphibians, reptiles, birds and mammals. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores.  • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). | **SEASONAL CHANGES - Winter** • Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies.**MATERIALS – Building and Structure**• Describe the simple physical properties of a variety of everyday materials.• Identify and name a variety of everyday materials, including wood, plastic, glass, metals, water and rock.• Distinguish between an object and the material from which it is made.• Compare and group together a variety of everyday materials on the basis of their simple physical properties. | **CARING FOR THE PLANET**• Identify and describe actions that are helpful and/or harmful for planet Earth.**PLANTS**• Identify and describe the basic structure of a variety of common flowering plants, including trees. • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. | **SEASONAL CHANGES - Spring**• Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies.**MATERIALS – Textiles**• Describe the simple physical properties of a variety of everyday materials.• Identify and name a variety of everyday materials, including wood, plastic, glass, metals, water and rock.• Distinguish between an object and the material from which it is made.• Compare and group together a variety of everyday materials on the basis of their simple physical properties. | **SEASONAL CHANGES - Summer**• Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies.**PLANTING**• Identify and describe the basic structure of a variety of common flowering plants, including trees.**GROWING AND COOKING**• Identify where crops are grown.• Name a variety of crops.• Recognise which parts of different plants can be used for food. |
| **Key new knowledge** | **HUMAN BODY**• Name body parts• Draw and label body parts• Sight• Sound• Taste• Touch• Smell**SEASONAL CHANGES**• Weather in Autumn• Clothes in Autumn• Animals and nature in Autumn | **ANIMALS**• Mammals• Birds• Fish• Amphibians• Reptiles• Compare animals• Group animals• Carnivores• Herbivores | **SEASONAL CHANGES**• Weather in Winter• Clothes in Winter• Animals and nature in Winter**MATERIALS**• Wood, plastic, glass & metal• Rocks• Objects & materials• Melt & Freeze• Float & sink• Plan materials investigation• Investigate materials | **CARING FOR THE PLANET**• Why care for the planet• How to care for the planet**PLANTS**• Plant parts• Tree parts• Wild and garden plants• Plants in my area• Deciduous trees• Evergreen trees• Trees in my area | **SEASONAL CHANGES**• Weather in Spring• Clothes in Spring• Animals and nature in Spring**MATERIALS**• Materials recap• Fabrics• Objects & materials• Does it absorb water?• Plan materials• Investigate materials | **SEASONAL CHANGES**• Weather in Summer• Clothes in Summer• Animals and nature in Summer**PLANTS**• Planting• Growing plants• Observe plants**GROWING AND COOKING**• Where food comes from• What we can grow to eat• Parts of plants we can eat |
| **Assessments** | Knowledge retrievalSpecific written tasks Explorify discussionLow stakes quiz (Kahoot, Blooket)End of topic assessmentTargeted questioningTeacher observationSelf and Peer assessmentConcept cartoons | Knowledge retrievalSpecific written tasks Explorify discussionLow stakes quiz (Kahoot, Blooket)End of topic assessmentTargeted questioningTeacher observationSelf and Peer assessmentConcept cartoons | Knowledge retrievalSpecific written tasks Explorify discussionLow stakes quiz (Kahoot, Blooket)End of topic assessmentTargeted questioningTeacher observationSelf and Peer assessmentConcept cartoons | Knowledge retrievalSpecific written tasks Explorify discussionLow stakes quiz (Kahoot, Blooket)End of topic assessmentTargeted questioningTeacher observationSelf and Peer assessmentConcept cartoons | Knowledge retrievalSpecific written tasks Explorify discussionLow stakes quiz (Kahoot, Blooket)End of topic assessmentTargeted questioningTeacher observationSelf and Peer assessmentConcept cartoons | Knowledge retrievalSpecific written tasks Explorify discussionLow stakes quiz (Kahoot, Blooket)End of topic assessmentTargeted questioningTeacher observationSelf and Peer assessmentConcept cartoons |

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| **YR 2** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
|  | **Surviving Animals****Humans** | **Materials****Plastic** | **Plants** | **Living Things and their Habitats** | **Plants****Growing Up** | **Wildlife****Earth and Beyond** |
| **Content** | **SURVIVING ANIMALS** • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). **HUMAN**• Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. | **MATERIALS** • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.  • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.**PLASTIC**• Identify materials that can be recycled.• Explain why it is important to recycle. | **PLANTS - light and Dark** • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. | **LIVING THINGS AND THEIR HABITATS** • Explore and compare the differences between things that are living, dead, and things that have never been alive.  • Identify that most living things live in habitats to which they are suited. • 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 habitats, including micro-habitats. • 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. • Simple food chain. | **PLANTS - Bulbs and Seeds**• Observe and describe how seeds and bulbs grow into mature plants. **GROWING UP** • Notice that animals, including humans, have offspring which grow into adults.  | **WILDLIFE**• Name some examples of wildlife in the local area.• Explore the importance of looking after wildlife.• Consider the impact of not looking after wildlife.**EARTH AND BEYOND**• Identify and name some other bodies in our solar system, i.e. planets, moons, stars, satellites, etc.• Recall some events in the space race and explain its importance in developing the world we live in.• Name some equipment used to support space exploration i.e telescope and a Mars Rover; and describe their role.• Describe the role of an astronaut and explain why they wear particular clothing. |
| **Key new knowledge** | **SURVIVING ANIMALS**• Mammals• Birds• Fish• Amphibians• Reptiles**HUMANS**• Humans• Exercise• What happens when we exercise?• Food• Healthy Eating• Keeping clean• Hygiene investigation• Teeth• Cleaning teeth | **MATERIALS**• Explore materials• Wood, paper & cardboard• Bricks & Rocks• Glass & Plastic• Metals• Fabrics• Identifying uses• Same object different material• Out and about• Comparing suitability• Explore materials - bend, squash, twist & stretch• Plan an investigation• Carry out an investigation• Exploring new materials• Recycling | **PLANTS**• Explore plants• Plant parts• Inside a seed• Plant life cycle• What do plants need?• Can plants grow without water?• Can plants grow without warmth?  | **LIVING THINGS AND THEIR HABITATS**• Habitats - local area• Polar habitats• Desert habitats• Ocean habitats• Woodland habitats• Microhabitats• Habitats and diets• Food chains• Alive, dead or never alive | **PLANTS**• Bulbs and seeds• What plans need to grow• Finding bulbs and seeds• Planting bulbs and seeds**GROWING UP**• Parent and offspring• Life cycle of humans• Life cycle of mammals• Life cycle of amphibians• Life cycle of a butterfly• Life cycle of a chicken• Patterns in different life cycles | **WILDLIFE**• Ways wildlife helps us• How humans help wildlife**EARTH AND BEYOND**• What is in space?• How space technology has helped us learn about space• The Space Race• Role of an astronaut  |
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| **YR 3** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
|  | **Skeleton****Movement****Nutrition and Diet** | **Food Waste****Rocks** | **Fossils****Soils** | **Light and Dark** | **Plants****Biodiversity** | **Forces****Magnets** |
| **Content** | **SKELETON**• Describe and explain the skeletal system of a human.• Describe the purpose of the skeleton in humans and animals.• Identify that humans and some other animals have skeletons for support, protection and movement.**MOVEMENT**• Describe and explain the muscular system of a human.• Identify that humans and some other animals have muscles for support, protection and movement.**NUTRITION AND DIET**• Identify that animals, including humans, need the right types and amount of nutrition, and they cannot make their own food; they get nutrition from what they eat.• Explain the importance of a nutritious, balanced diet. | **FOOD WASTE**• Identify ways to reduce food waste.• Explain how food waste affects the environment.**ROCKS** • Compare and group rocks based on their appearance and physical properties, giving a reason. • Describe and explain the difference between sedimentary and igneous rock. | **FOSSILS**• Describe in simple terms how fossils are formed when things that have lived are trapped within rock.**SOILS**• Recognise that soils are made from rocks and organic matter. | **LIGHT AND DARK** • Recognise that dark is the absence of light. • Recognise that light is needed in order to see. • Explain that light is reflected from a surface. • Explain and demonstrate how a shadow is formed when light is blocked by an opaque object. • Explore and find patterns in shadow size and the way shadows change. • Explain the danger of direct sunlight and describe how to keep protected. | **PLANTS** • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • 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. • 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.**BIODIVERSITY**• Biodiversity• Ways to increase biodiversity | **FORCES**  • Explore and describe how objects move on different surfaces.**MAGNETS** • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet. • Identify some magnetic materials. • Carry out an enquiry to observe whether objects will be magnetic and attract some materials and not others. • Observe how magnets attract or repel each other. • Describe magnets as having two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing. |
| **Key new knowledge** | **SKELETON**• Bones in the body• Function of the skeleton• Bones in animals• Animals with or without a spine• Are all skeletons the same?**MOVEMENT**• Joints• Muscles**NUTRITION AND DIET**• Food groups• Nutrient groups• Food labels• Balanced diets• Animal diets | **FOOD WASTE**• What is food waste?• How can we reduce food waste?**ROCKS**• Identify rocks• Group rocks• Types of rocks• Rock survey• Are all rocks hard?• Do all rocks sink?• What does acid rain do to rocks?• Rock porosity plan• Rock porosity investigation• Rock porosity conclusion | **FOSSILS**• What are fossils?• Explore fossils• Fossil formation• Fossil dig or printing• Mary Anning**SOIL**• Explore soils• The importance of soils• Plan and do soil investigation• Soil investigation conclusion | **LIGHT AND DARK**• Light sources• The sun• How we see• Shadows• Reflective surfaces• Opaque, translucent & transparent• Shadow investigation | **PLANTS**• Parts of a plant• Plant dissection• Plant growth investigation• Water transportation• Seeds• Reproductive parts of a plant• Pollination• Seed dispersal• Life cycle of a plant | **FORCES** • Explore forces• Friction• Friction investigation**MAGNETS**• Magnets• Magnets - attract/repel• Magnetic materials• Investigate metals |
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| **YR 4** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
|  | **Living Things** | **States of Matter** | **Sound** | **Electricity****Energy** | **Habitats****Deforestation** | **The Digestive System****Food Chains** |
| **Content** | **LIVING THINGS** • Group living things in a variety of ways. • Explore and use classification keys to group, identify and name living things in their local and wider environment. | **STATES OF MATTER** • Group materials based on their state of matter (solid, liquid, gas). • Describe and observe how some materials can change state when they are heated or cooled.• Measure or research the temperature at which materials change state in degrees Celsius (°C).• Identify evaporation and condensation in the water cycle.• Explain the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. | **SOUND** • Describe how sound is made, associating some of them with vibrations. • Explain how sound travels from a source to our ears. • Recognise the place of vibration in the ear to help us hear. • Explore the patterns between pitch of a sound and features of the object producing it. • Explore the patterns between the volume of a sound and the strength of the vibrations that produced it. • Describe what happens to a sound as it travels further away from its source. | **ELECTRICITY** • Identify and name common household appliances that require electricity to function. • Construct a series circuit. • Identify and name the components in a simple series circuit (including cells, wires, bulbs, switches and buzzers). • Predict and test whether a lamp will light within a circuit, based on whether or not the lamp is part of a complete loop with a battery. • Recognise the function of a switch in a circuit and associate this with whether or not a lamp will light. • Identify some common conductors and insulators; and associate metals with being good conductors.**ENERGY**• Describe the difference between renewable and non-renewable energy.• Identify some examples of renewable and non-renewable energy.• Explain which sources of energy are best for the planet.• Suggest ways to reduce and save energy (electricity). | **HABITATS** • Group living things in different ways. • Use classification keys to group, identify and name living things.. • Describe how changes to an environment could endanger living things.**DEFORESTATION** • Describe how changes to an environment could endanger living things. | **THE DIGESTIVE SYSTEM**• Comparing the teeth of carnivores and herbivores and suggesting reasons for differences. • Identify and describe the different types of teeth in humans. • Describe the functions of different human teeth. • Identify and name the parts of the human digestive system. • Describe the functions of the organs in the human digestive system.**FOOD CHAINS**• Construct food chains to identify producers, predators and prey. • Describe how changes to an environment could endanger living things. |
| **Key new knowledge** | **LIVING THINGS AND THEIR HABITATS**• Group animals• Animal classification• Vertebrates and Invertebrates• Group vertebrates• Classification keys - animals• Group plants• Classification keys - plants• Local habitat survey• Endangered animals | **STATES OF MATTER**• Explore states of matter• States of matter• Solid, liquid and gases• Changing state• Melting chocolate• Plan - melting icy water• Investigate - melting icy water• The water cycle• Plan evaporation• Investigate evaporation• Evaluate evaporation | **SOUND**• Vibrations• The ear• Investigate sounds• Explore volume• Explore pitch• Plan volume• Investigate volume• Evaluate volume• String telephone• Soundproofing | **ELECTRICITY**• Common electrical appliances• Simple circuits• Electrical components• Conductors and insulators• Investigate materials for electrical conductivity**ENERGY**• What is energy?• Renewable and non-renewable energy• Ways to save electricity | **HABITATS**• What is a habitat?• Classification key - animals• Classification key - plants• Human impact on habitats**DEFORESTATION**• What is deforestation?• Impacts of deforestation | **DIGESTIVE SYSTEM**• Types of teeth• Human teeth• Layers of teeth• Tooth decay investigation• The digestive system• Digestive organs• Digestive system model**FOOD CHAINS**• What is a food chain?• Drawing food chains• Dependence of species in food chains |
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| **YR 5** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
|  | **Forces** | **Earth & Space** | **Materials** | **Animals including Humans****Lifecycles** | **Reversible and Irreversible Changes****Plastic Pollution** | **Reproduction** |
| **Content** | **FORCES** • Explain that unsupported objects fall towards the earth because of the gravity acting between the Earth and the falling object. • 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. | **EARTH & SPACE** • Describe the movement of the Earth, and other planets, relative to the sun in the solar system. • Describe the movement of the Moon relative to the Earth. • Describe the Sun, Earth and Moon as approximately spherical bodies. • Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky.**GLOBAL WARMING**• Identify and name some examples of fossil fuels.• Describe how human activities have contributed to global warming.• Explain how greenhouse gases are released into the Earth’s atmosphere.• Describe in simple terms the ‘Greenhouse Effect’. | **MATERIALS** • Compare and group together everyday material on the basis of their properties, (including hardness, solubility, transparency, thermal and electrical conductivity, and response to magnets).• Give reasons for the particular uses of everyday materials, including metals, wood and plastic. | **ANIMALS INCLUDING HUMANS** • Describe the changes as humans develop to old age.**LIFECYCLES**• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. | **REVERSIBLE AND IRREVERSIBLE** **CHANGES** • Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated. • Demonstrate that dissolving, mixing and change of state are reversible changes. • 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.**PLASTIC POLLUTION** • Explore how the properties of plastics make them useful materials. • Describe how plastic has helped the way humans live. • Explain how plastic pollution impacts Planet Earth. | **REPRODUCTION**• Describe the life process of reproduction in some plants and animals. |
| **Key new knowledge** | **FORCES**• Forces• Balanced and unbalanced forces• Explore gravity• Sir Isaac Newton• Friction• Investigate friction (shoes)• Air resistance• Investigate air resistance (parachutes)• Water resistance• Investigate water resistance (shapes)• Levers, pulleys & gears• Investigate levers | **EARTH & SPACE**• The solar system• The planets• Motion of Earth and planets• Planets model• Solar system ideas over time• Seasons• Night and day• Time zones around the world• The moon• Modelling Moon phases**GLOBAL WARMING**• Global warming• The impact of global warming | **MATERIALS**• Sort materials• Test materials - magnetism• Test materials - thermal conductivity• Test materials - electrical conductivity• Test materials - density• Plan heat experiment• Investigate heat experiment• Evaluate heat experiment• Spencer Silver | **ANIMALS INCLUDING HUMANS**• Human life cycle• Babies and children• Adolescence• Puberty• Adults• Elderly• Gestation period in mammals• Gestation period vs lifespan**LIFECYCLES**• Mammal life cycle• Amphibian life cycle• Insect life cycle• Bird life cycle | **REVERSIBLE AND IRREVERSIBLE CHANGES**• Dissolving• Filtering and sieving• Solutions• Evaporating• Reversible changes• Irreversible changes**PLASTIC POLLUTION**• What is plastic pollution?• The impact of plastic pollution | **REPRODUCTION**• Sexual reproduction in mammals• Reproductive organs in plants• Pollination• Asexual reproduction• Cloning plants investigation |
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| **YR 6** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
|  | **Living Things and their Habitats** | **Electricity** | **Light** | **Circulatory System****Diet, Drugs & Lifestyle** | **Variation****Adaptations****Evolution & Inheritance** | **Fossils****Working Scientifically** |
| **Content** | **LIVING THINGS & THEIR HABITATS** • Classify living things into broad groups according to observable characteristics and based on similarities & differences. • Describe how living things have been classified according to common characteristics, including microorganisms, plants and animals. • Give reasons for classifying plants and animals in a specific way. | **ELECTRICITY**• Draw circuit diagrams using recognised symbols.• Compare and give reasons for why components work and do not work in a circuit, including the brightness of bulbs and the on/off position of switches. • Explain how the number and voltage of cells in a circuit links to the brightness of a lamp.**RENEWABLE ENERGY**• Recognise the main differences between renewable and non-renewable energy sources.• Identify the advantages and disadvantages between some renewable energy sources (solar and wind). | **LIGHT**• Explain that we see things because light travels from light sources to our eyes. • Recognise that light appears to travel in straight lines.• Use the idea that light travels in straight lines to explain why shadows have the same shape as the object that casts them. • Explain how simple optical instruments work to support the idea that light appears to travel in straight lines. (periscope) | **CIRCULATORY SYSTEM** • Identify and name the main parts of the human circulatory system. • Describe the function of the heart, blood vessels and blood.• Describe the ways in which nutrients and water are transported in animals, including humans.**DIET DRUGS AND LIFESTYLE**• Discuss the impact of diet, exercise, drugs and lifestyle on health. | **VARIATION** • Explain about reproduction and offspring.• Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.**ADAPTATIONS**• Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. • Explain how animals and plants are adapted to suit their environment.**EVOLUTION & INHERITANCE** • Describe how the earth and living things have changed over time. • Explain evolution. • Link adaptation over time to evolution. | **FOSSILS**• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.  • Explain how fossils can be used to find out about the past.**WORKING SCIENTIFICALLY** • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.  • Evaluate risks.  • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.  • Apply mathematical concepts and calculate results. • Use test results to make predictions to set up further comparative and fair tests.  • Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. • Identify scientific evidence that has been used to support or refute ideas or arguments. |
| **Key new knowledge** | **LIVING THINGS & THEIR HABITATS**• Conditions for life• Group organisms• Classify animals• Classification keys• Classify plants• Microorganisms• Helpful or harmful microorganisms• Microorganism investigation• Classify microorganisms• Carl Linnaeus• The Linnaeus system• Field study | **ELECTRICITY**• It’s electrifying• History of electricity• Construct circuit using symbols• Complete and incomplete circuits• Variation in circuits (buzzers)• Variation in circuits (bulbs/lamps)• Plan voltage experiment • Investigate voltage experiment• Evaluate voltage experiment**ENERGY**• Renewable energy• Using renewable energy | **LIGHT**• How we see• Light and straight lines• Make a periscope• Forming shadows• Plan shadow experiment• Investigate shadow experiment• Evaluate shadow experiment• Refraction• Explore light• Spectacular spectrum• Light pollution• Ways to reduce light pollution | **CIRCULATORY SYSTEM**• Circulatory system - organs• Blood• The Heart• Oxygenated & deoxygenated blood• Heart dissection**DIET, DRUGS & LIFESTYLE**• Diet• Drugs• Tobacco• Heart rate investigation | **VARIATION**• Variation• Inheritance and characteristics**ADAPTATIONS**• Animal adaptations• Plant adaptations• Evolution• Charles Darwin• Natural selection• Darwin’s finches | **FOSSILS**• Fossils • Fossil formation• Mary Anning**WORKING SCIENTIFICALLY**• Ask scientific questions• Identify variables• Make predictions• Hazard symbols• Evaluate risk• Plan scientific investigations• Use equipment accurately• Design a results table• Calculate a mean average• Classify data• Present data as a chart or graph• Identify patterns• Draw conclusions• Evaluate data• Suggest improvements |
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