EWELL GROVE PRIMARY AND NURSERY SCHOOL

SCIENCE – SPRING 2A

Materials		Everyday materials (2a and 2b)		Rocks	States of matter	Properties and changes of materials	Evolution and inheritance
To talk about similarities and differences in relation to materials. To answer how and why questions. To develop vocabulary when describing materials.		To distinguish between an object and the material from which it is made	To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	To group together different kinds of rocks on the basis of their appearance and simple physical properties.	To compare and group materials	To compare and group everyday materials on the basis of their properties	To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Can explore a range of everyday materials using their senses.	Can investigate a range of everyday materials through sensory play. Can describe materials as solids or liquids.	Can use appropriate vocabulary to describe properties e.g. hard, soft, stretchy, stiff, shiny dull, rough, smooth, bendy, not bendy, absorbent, not absorbent, opaque, transparent, waterproof and not waterproof.	Can name the properties of materials given.	Can sort according to the texture and colour.	Can compare and group materials together, according to whether they are solids, liquids or gases.	Can make simple comparisons of materials based on their hardness, solubility, transparency, conductivity and response to magnets.	Can describe how living things have changed over time (relate to how fossils have been formed by the trapping of living things within rock).
Can select from interesting resources that inspire exploration such as texture.	Can describe the properties of everyday materials using appropriate vocabulary, e.g. hard, soft, bendy, stiff…	Can sort objects according to their properties, starting with one criteria, i.e. bendy/not bendy.	Can identify key properties needed for specific products, i.e. elastic band needs to be stretchy.	Can sort according to buoyancy and mass.	Can describe the states of matter (solids hold their shape, liquids form a pool not a pile, gases escape from an unsealed container)	Can compare and group materials based on their hardness, solubility, transparency, conductivity and response to magnets.	Can explain that fossils provide information about living things that inhabited the Earth millions of years ago.

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Can investigate a range of everyday materials through sensory play.	Can explore a range of materials that share the same properties but are different in appearance and use.	Can sort objects according to more than one criterion.	Can identify the multiple use of different materials e.g. metal used for coins, cans, cars and table legs.	Can name different rock types and link to their formation i.e. igneous, metamorphic and sedimentary rocks.	Can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including filtering.	Can use scientific language to describe and compare differences in the properties of a wide range of materials.	Can give examples of how scientists use evidence from fossils to understand living things that inhabited the earth millions of years ago.

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Materials		Everyday materials		Rocks	States of matter	Properties and changes of materials	Evolution and inheritance
To talk about similarities and differences in relation to materials. To answer how and why questions. To develop vocabulary when describing materials.		To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.	To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	To describe in simple terms how fossils are formed when things that have lived are trapped within rocks.	To notice the changes in materials due to temperature.	To know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.	To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Can collect a variety of different materials from their class/school.	Can name a range of everyday materials	Can identify and name materials from samples given.	Can explore differing techniques for altering the appearance/structure re of a material, e.g. using plasticene, clay, paper.	Can name 3 different fossil types.	Can observe that some materials change state when they are heated or cooled.	Can explore making solutions.	Can notice that some characteristics are passed down from parents to their offspring.
Can sort materials into those they like the feel of and appearance of.	Can sort materials according to texture.	Can identify objects around the school and home that are made from specified materials.	Can explore which objects can be altered using the specified techniques.	Can match fossil created to the animal within the rock.	Can observe the temperature at which the changes take place.	Can identify the difference between a solution and a suspension.	Can discuss what happens when two different breeds of dogs are crossed.
Can name a range of everyday materials	Can identify and name materials from samples given.	Can draw and label materials used within different objects, e.g. a bicycle.	Can relate the ability to alter the shape of an object to the material it is made out of and the property of the material, i.e. which material is the most appropriate for making a specified object such as a cup.	Can use a flow diagram to show how a fossil is made over time.	Can observe changes over a period of time e.g. a puddle in the playground, washing on a line. Take note of temperature in degrees Celsius when this occurs.	Can use knowledge of solids, liquids and gasses to decide how mixtures might be separated, including the use of sieving, filtering and evaporating.	Can understand that inherited characteristics passed on from one generation to the next are contained within genetic information.

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SCIENCE – SPRING 2A

		Everyday materials		Rocks	States of matter	Properties and changes of materials	Evolution and inheritance
		To describe the physical properties of a variety of everyday materials. To compare and group together a variety of everyday materials on the basis of their physical properties.		To recognise that soils are made from rocks and organic matter.	To explore evaporation and condensation.	To give reasons based on evidence from comparative and fair tests, for the particular uses of everyday materials including metals, wood and plastic.	To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		Can name the materials used in an object and describe the property of the material using vocabulary previously taught.		Can wet and filter soil to isolate components.	Can explore evaporation and condensation.	Can demonstrate that dissolving, mixing and changes of state are reversible changes.	Can explore how variation in offspring over time can make animals more or less able to survive in particular environments.
		Can compare the uses of a variety of everyday materials for particular purposes.		Can make the link between specific rock types and types of soil.	Can identify the part played by evaporation and condensation in the water cycle.	Can explain that some changes result in the formation of new materials and this sort of change is not usually reversible.	Can identify how animals and plants are adapted to suit their environment and that adaptation may lead to evolution.
		Can make connections between different materials by comparing the properties of the materials, e.g. brick, wood and glass can share the same property of being opaque.		Can name and recognise the different soil types in the local area.	Can associate rate of evaporation with temperature. (causal relationship) Can use scientific vocabulary to describe the water cycle.	Can explore changes made due to burning and the action of acid on bicarbonate of soda.	Can use examples such as Darwin's finches to describe how animals evolve to survive in their environment.

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Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Can talk about things that have been observed and experienced. Can talk about why things happen and how things work. Can use a developing vocabulary to describe textures and materials. Can record findings through photographs and drawing.		Can perform simple tests to explore questions, for example: 'What is the best material for an umbrella? … for lining a dog basket? … for curtains? ….for a bookshelf? …for a gymnast's leotard?	Can compare the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits) Can find out about people who have developed useful new materials e.g. John Dunlop, Charles Macintosh and John McAdam.	Can describe the rocks used in different buildings and gravestones. Can explore how they have changed over time. Can use a hand lens or microscope to identify components within rocks to classify according to the presence of crystals or grains.	Can explore the effect of temperature on substances such as chocolate, butter, cream Can observe and record the effect of temperature on washing drying Can ask relevant questions and suggest a scientific enquiry that could be used to find an answer. Can make systematic and careful observations and take measurements using standard units and a range of equipment such as thermometers and data loggers.	Can use knowledge about magnetism and electricity to broaden understanding of materials and their properties. Can carry out tests to answer questions. Can observe and compare changes made to materials through different processes, burning, baking, Can explore how chemical changes impact on our lives, e.g. cooking and the creative use of new materials. Can find out about how chemists have created new materials e.g. Spencer Silver (glue for sticky notes) or Ruth Benerito (invented wrinkle free cotton). Can identify scientific evidence that has been used to support or disprove ideas or arguments.	Can observe and raise questions about local animals and how they have adapted to their environment. Can explore the work of palaeontologists such as Mary Anning. Can explore the work of Charles Darwin and Alfred Wallace and how their ideas of evolution developed. Can evaluate data showing an awareness of potential sources of error or suggesting further questions that could arise from results.