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|  | **Topic** | **National Curriculum Outcomes***(Endpoints children will achieve)* | **Substantive Knowledge** *(specific facts, e.g. herbivores feed on plants linked to: Living things and habitats; Animals including humans, Plants, materials, Rocks, Forces and magnets, evolution and inheritance, electricity, light, Earth and space.* | **Disciplinary Knowledge***(Know how to … be able to… know that…because….)**Working scientifically* | **Concepts***(discovery, change, investigation, cause and consequence)* | **Vocabulary**  | **Culture***(What is wonderful and awesome in Science? How do children feel successful and show/ promote this?What enrichment?)*  |
|  |  |  | Children will know how to/be able to: | Children will know how to/be able to: | Children will appreciate: | Children will recall and verbalise: |  |
|  | Uses of Everyday Materials | * Sc2/3.1a identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses
* Sc2/3.1b compare how things move on different surfaces.

**WORKING SCIENTIFICALLY*** Sc2/3.1c find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
* Sc2/1.1 asking simple questions and recognising that they can be answered in different ways
* Sc2/1.2 observing closely, using simple equipment
* Sc2/1.3 performing simple tests
* Sc2/1.4 identifying and classifying
* Sc2/1.5 using their observations and ideas to suggest answers to questions

Sc2/1.6 gathering and recording data to help in answering questions |  | * Know that materials can have useful properties for a given job (including being waterproof, strong, hard, soft, flexible, rigid, light or heavy.)
* Know that many types of plastic are waterproof, that steel (a type of metal) is strong, that rock is hard, that cotton wool is soft, that rubber is flexible, that rock is rigid, that polystyrene (a type of plastic) is light and that iron (a type of metal) is heavy,
* Know that when objects move across a surface there is friction when they rub against each other and that sometimes this friction is larger or smaller

Know that applying forces to objects can change their shape | * Know that we can test our questions to see if they are true
* Know that objects can be identified or sorted into groups based on their observable properties
 | **conductor**, brick, paper, cardboard, friction, movement, suitability, surface, stretch, twist, waterproof, deformation, flexible, rigid**properties,** observe, test, magnifying glass, object, record, equipment |  |
| Living Things and their habitats | * Sc2/2.1a explore and compare the differences between things that are living, dead, and things that have never been alive
* Sc2/2.1b 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
* Sc2/2.1c identify and name a variety of plants and animals in their habitats, including microhabitats
* Sc2/2.1d 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.

**WORKING SCIENTIFICALLY*** Sc2/1.1 asking simple questions and recognising that they can be answered in different ways
* Sc2/1.2 observing closely, using simple equipment
* Sc2/1.3 performing simple tests
* Sc2/1.4 identifying and classifying
* Sc2/1.5 using their observations and ideas to suggest answers to questions

Sc2/1.6 gathering and recording data to help in answering questions | * **Know examples of animals and plants that are suited to their environment.**
* **Know that plants absorb energy from the Sun; that this energy is consumed by herbivorous animals; and that carnivorous animals eat other animals.**
* **Know that the arrows on a food chain show the direction that the energy travels.**
 | * **Know that living things move, grow, consume nutrients and reproduce; that dead things used to do these things, but no longer do; and that things that never lived have never done these things.**
* **Be able to explain how different habitats provide for the basic needs of different kinds of animals and plants.**

**WORKING SCIENTIFICALLY*** Know that we can ask questions about the world and that when we observe the world to answer these questions, this is science
* Know that we can use magnifying glasses to observe objects closely
* Know that we can write down numbers and words or draw pictures to record what we find
 | * Know that we can test our questions to see if they are true
 | **birth, decay, energy,** microhabitat, dead, life cycle, food chain, source, nutrients, reproduction, consumption, environment**properties,** observe, test, magnifying glass, object, record, equipment |  |
|  Animals Including Humans | * Sc2/2.3a notice that animals, including humans, have offspring which grow into adults
* Sc2/2.3b find out about and describe the basic needs of animals, including humans, for survival (water, food and air)

**WORKING SCIENTIFICALLY*** Sc2/2.3c describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
* Sc2/1.1 asking simple questions and recognising that they can be answered in different ways
* Sc2/1.2 observing closely, using simple equipment
* Sc2/1.3 performing simple tests
* Sc2/1.4 identifying and classifying
* Sc2/1.5 using their observations and ideas to suggest answers to questions

Sc2/1.6 gathering and recording data to help in answering questions | * **Know that animals, including humans, need food, water and air to survive**
* **Know the basic food groups: fruit and vegetables, carbohydrates, protein, dairy, fat and sugary foods**
* **Know that more than half of our diet should be made up of carbohydrates, fruit and vegetables**
* **Know that fats and sugary foods should be eaten rarely and in small amounts**
* **Know that people need to exercise often to help their body stay strong and fit**
* **Know that keeping clean, including washing and brushing teeth, is an important part of staying healthy**
 | **WORKING SCIENTIFICALLY*** Know that we can ask questions about the world and that when we observe the world to answer these questions, this is science
* Know that we can use magnifying glasses to observe objects closely

Know that we can write down numbers and words or draw pictures to record what we find | Know that we can test our questions to see if they are true | **reproduction,** offspring, adult, bulb, seed, survival, temperature, hygiene, exercise**birth, decay, energy,** microhabitat, dead, life cycle, food chain, source, nutrients, reproduction, consumption, environment**properties,** observe, test, magnifying glass, object, record, equipment |  |
| Plants | * Sc2/2.2a observe and describe how seeds and bulbs grow into mature plants
* Sc2/2.2b find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
 |  | * **Know that seeds and bulbs need to be buried underground in soil and that they will grow into adult plants under the right conditions (water, warmth)**
* **Know that plants that are deprived of light, food or air will not grow and will die.**
* **Know that plants and animals produced offspring that grow into adults.**

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Know that we can write down numbers and words or draw pictures to record what we find | * Know that we can test our questions to see if they are true
 | bulb, seed, survival, temperature,**properties,** observe, test, magnifying glass, object, record, equipment |  |