Science key knowledge years



REMEMBER?

Healthy Body

- What is Exercise? Exercise is any activity that requires physical effort from your body, helping to keep you fit and healthy!
- **Body Changes:** When you exercise, your heart rate and breathing rate increase, and your body temperature rises. These changes help your body perform better!
- Daily Exercise: It's important for children your age to get at least 60 minutes of physical exercise each day. Regular exercise is key to maintaining a healthy body!
- Healthy Eating: Some foods are healthy (like fruits, vegetables, and certain carbohydrates like rice), while others (like sweets and fried foods) are unhealthy. Some foods, like dairy, are okay in small amounts!
- Hygiene and Germs: Being hygienic means taking care of your body and keeping it clean. The correct term for germs is bacteria, which can grow and spread. Washing your hands with soap and water can kill bacteria, helping to prevent diseases!

Materials

- 1. Everyday Materials: I can name a variety of common materials like wood, metal, cloth, stone, plastic, and foam. Each material has its own unique uses!
- Material Properties: These materials have different properties, such as being rough or smooth, hard or soft, flexible or rigid, light or heavy, opaque or transparent, and waterproof or absorbent.
- Changing Shapes: Some materials can change shape through processes like squashing, bending, twisting, and stretching, allowing them to be used in various ways.
- 4. Waterproof vs. Absorbent: Absorbent materials "suck in" and hold water (like blue paper towels and cotton fabric), while waterproof materials repel water (like bubble wrap, tin foil, and plastic sheeting). Waterproof materials are great for items like umbrellas and raincoats!
- 5. Best Waterproof Material: Among tarpaulin, bubble wrap, and cardboard, tarpaulin is the best choice for making a waterproof structure due to its durable and water-resistant properties.

Living Things

- Living Characteristics: Living things share specific characteristics known as MRS GREN: Movement, Respiration, Sensitivity, Growth, Reproduction, Excretion, and Nutrition. These traits help define life!
- Dead vs. Non-Living: Dead things, like bones or paper, were once alive but are no longer. In contrast, non-living things have never been alive, such as man-made materials like plastic or metal.
- 3. Habitats Matter: Most living things thrive in habitats, which are their natural environments, like oceans, rainforests, deserts, and woodlands. Each habitat has unique features that support the life within it!
- 4. Adaptations for Survival: Animals and plants have special adaptations to help them survive in their habitats. For instance, polar bears have thick fur for cold climates, while camels have wide feet to navigate sandy deserts.
- 5. Food Chains: Animals get their nutrition by eating plants (herbivores) or other animals that eat plants (carnivores). The food chain starts with producers (plants), followed by primary consumers (herbivores), and ends with top consumers (carnivores or omnivores).

Plants and Animals

- 1. Germination Essentials: Seeds and bulbs need water, oxygen, and the right temperature to germinate. These conditions are key to kickstarting their growth!
- 2. **Stored Energy:** Most seeds and bulbs don't require light to germinate because they have a food reserve within them, allowing them to sprout underground.
- 3. Plant Growth Stages: A seed germinates into a seedling, which eventually grows into an adult plant. This transformation is vital for the plant's life cycle!
- 4. Understanding Life Cycles: A life cycle represents the different stages of life for living things, from birth to maturity. For example, humans go through stages like baby, toddler, child, teenager, adult, and elder.
- Animal Life Cycles: Different animals have unique life cycles. For instance, a butterfly's life cycle includes stages of egg, caterpillar (larvae), pupa, and adult, while a frog's life cycle involves frogspawn, tadpoles, froglets, and adult frogs.



Rocks

- 1. Rock Variety: Not all rocks look the same! They come in different types and appearances, reflecting their unique formation processes.
- 2. Types of Rocks: The three main types of rocks are sedimentary, metamorphic, and igneous. Each type has its own origin story and characteristics!
- Sedimentary Formation: Sedimentary rocks, like sandstone and chalk, are formed from layers of minerals, small plant pieces, and organic matter that are pressed together over time.
- 4. Metamorphic Changes: Metamorphic rocks, such as slate and marble, are created when existing rocks are transformed by heat and pressure. They undergo significant changes!
- Fossil Formation: Fossils are the remains or impressions of prehistoric plants or animals embedded in rock, formed when these organisms die, get buried, and are covered by layers of rock and mud over time.