Ashtree Primary School and Nursery Medium Term Plan for Science

Year 1/2 Spring Term – Materials Unit – Uses of everyday materials

Prior Learning – Y1

Step 1 - name some common materials
Step 2 - distinguish between an object and the material from which it is made
Step 3 - name some common objects around the school and home
Step 4 - identify some naturally occurring materials
Step 5 - identify some man-made materials
Step 6 - make observations of common objects and the different materials they are made of, communicate these observations using descriptive words (e.g. *bendy, rough, hard)*
Step 7 - identify some properties of materials
Step 8 - compare and group together a variety of everyday materials on the basis of their simple physical properties.

Prior Skills – Y1

with support, uses their observations and ideas to suggest answers to questions, observes closely (including changes over time), **using simple equipment,** uses simple observable features to compare 2 objects, materials or living things

Key Vocabulary –

Brick, cardboard, transparent, waterproof, insulate, keep warm, hard, rigid, strong, flexible, squash, stretch, twist, bend

Key Knowledge

Step 1 - identify uses of some common materials
give a reason why a material is suitable for its job
Step 2 - recognise that some materials will have more than one property which increases its suitability for its purpose (e.g. glass is transparent, rigid and weatherproof)
Step 3 - suggest several reasons why a material may or may not be suitable for a particular purpose
explain why one material may be more suitable for a purpose than another by discussing properties
Step 4 - identify materials that can be easily changed with force
identify materials that cannot be easily changed with force
Step 5 - describe pushes and pulls needed to change a material as big or small
Step 6 - describe changes in shapes because of the action of

Key Skills

Step 1 - uses simple observable features to compare up to 3 objects, materials, or living things
Step 2 - talks about their findings with increasing confidence, using everyday terms, text scaffolds or simple scientific language
Step 3 - talks about their findings with increasing confidence, using everyday terms, text scaffolds or simple scientific language
Step 4 - talks about their findings with increasing confidence, using everyday terms, text scaffolds or simple scientific language
Step 5 - **observes closely** (including changes over time), **using equipment, uses their observations and ideas to suggest answers to questions**
Step 6 - with help, records their findings in a range of ways, e.g. tables, diagrams, pictograms, sorting circles, bar charts and templates

Curriculum Enhancements

- **Have a variety of different objects made from different materials available for the children to look at and investigate.**
- **Look at the work of Charles MacIntosh and how he modified materials.**

Possible Misconceptions

Some children may think:

- only fabrics are materials
- only building materials are materials
- only writing materials are materials
- the word rock describes an object rather than a material
- solid is another word for hard.

Suggested Activities

S1 – Look at different objects and identify what they are made of. Discuss why it is made of that material.

S2 – Recap on the properties of materials – e.g. transparent, waterproof, rigid, strong, flexible – and sort materials into the properties. Notice the materials that have two or more of the properties. Discuss reasons why.

S3 – Discuss reasons why objects are not made from certain materials because of their properties e.g. cardboard is not a suitable material for a drinking cup, because it is not waterproof.

S4 – Ask the children to observe what happens when you push, pull, twist or bend a material such as paper. Could you do this to all materials? Which materials can be changed by applying a force and which ones cannot?

S5 – Demonstrate twisting paper and cardboard. Which needed a big twist and which needed a small twist. Identify whether a big or small force is needed to change a material.

S6 – Children to use different forces to change the shape of materials and to describe how the shape has changed (is it smaller, broken, folded, twisted etc.)

Future Knowledge

In year 3 the children will be learning – Materials – Rocks and Soils

Step 1 - understand that there are rocks under the Earths' surface

Step 2 - observe the characteristics of a variety of rocks
name and describe the characteristics of several rocks – sedimentary, igneous and metamorphic rock
classify rocks from the evidence of investigations

Step 3 - explain that different types of rock react differently to physical forces (e.g. water, rubbing)
explain that rocks are used for different purposes dependent on their physical properties – permeable, impermeable, crumbly

Step 4 - identify fossils in rocks
explain why we do not see the soft parts of animals in fossils

Step 5 - recognise that soil is a mixture of different materials and living things
recognise that soil contains dead plants and animals

Step 6 - recognise that there is rock under all surfaces and that soils come from rocks