



Design & Technology Vertical Concepts

Investigate, Disassemble, Evaluate

Year 1

Examine and name a range of products, handle and smell them, sketch and label. Consider how the way one part moves/works affects other parts of the product. Compare two contrasting products, explain key terms and use sensory vocab to describe. Introduce levers and sliders and how they make parts move. Show examples of how mechanisms work and introduce key vocabulary. Evaluate existing products to determine which is best and why. Classify products according to colour, texture, taste, where grown, how they are eaten. Conduct local area walk/visit, sketching and discussion around different types of structures and how space is enclosed.

Year 3

Investigate free standing items – why is it important they are stable? How does this relate to their purpose? Would they work if they were not strong and stable? Consider how photo frames stand up, look at range of examples. Consider design features relating to a product's purpose. Identify component parts and label drawings. Look at objects that use air to make them work & demonstrate simple pneumatic systems with a balloon and tubing, x2 syringes. Understand the 'balanced plate' model of food groups, name the groups. Look at a range of packaged products and evaluate appearance, taste, smell, texture. Survey the most popular choice and consider reasons for choices made, display results in range of charts/tables.

Year 5

Discuss a range of products (musical instruments/ bread) – what are they made of? What is the structure (solid or hollow), does it have a box/stem/arm? What part makes the noise? Which parts need to be strong? How can the sounds be varied? Why are instruments/food stuffs so important to different cultures? Listen to the sounds they make/music from different cultures showcasing the different instruments, discuss taste, ingredients, texture. Survey product preferences in different user groups and select method of recording and displaying results that is appropriate to the task. Investigate toys with cams – which parts turn, move and how are the parts attached? Look at the decoration around the mechanism. Make models using construction kits and consider the use of a specific mechanism (cam). Understand how bread fits into the concept of a balanced diet.

Year 2

Examine a range of products – what are they made of?, how are they put together? What has been added? Who are they for? How well made are they? Draw and label, rate an example of a given product. Discuss and list different types of vehicles and their features – why do vehicles have wheels? Are they all the same size? How many? Why are vehicles different shapes? Why do some have parts that move/light up? Identify parts of vehicles – wheel, axels, chassis, body, cab. Look at images/video of component parts of a space suit. Discuss types of fabric used and their properties.

Year 4

Look at pop up books and greetings cards with pop ups and moving parts – spinners, levers, tabs, sliders. How do the parts move? What are the mechanisms and how do they work? Number of parts? How are parts joined? What is the impact made? Look at layout, size, font used for text and how pictures, colour has been used? Look at a collection of purses, wallets and belt bags. Consider the seams, seam allowance, fastenings and identify key parts – gusset, strap, hem. What sort of fabric is used? How does this relate to its purpose? How is it reinforced? Who is it used by? Discuss examples of alarm systems – when and where they are used and what for. Discuss dangers of mains electricity. Look at and take apart a range of commercially produced switches which work in different ways – slide, reed, tilt, push to make, push to break.

Year 6

Investigate a range of structures – What materials used? Why? How have they been used? What do the different parts do? Which structures are the strongest? Research structure of aqueducts – produce labelled drawings. Experiment with controllable vehicles and consider – Where does the power come from? Compare similarities and differences. How are the models constructed and component parts joined together? Draw and label diagrams from a range of angles (include example of an airboat). Collect and discuss a range of T shirts – Who are they for? How do you know? What are they made of? How have they been finished? Consider how designs deal with warmth, fit, appearance, practicality, function, cost and safety.