ICT Curriculum Map – Design & Technology (DT)

Food & Nutrition
Mechanisms
Structures
Textiles
Electronics
Design

EYFS

Creating biscuits, focusing on mixing and measuring dough using spoons. Mixing and spooning out.

Exploring materials linked to the 3 Little Pigs. Using building blocks to create structures (e.g. Fort, House).

Exploring fabrics & materials and attach to create a dolly peg puppets (attaching fabrics in different ways). Joining different materials.

Year 1

Exploring joining techniques (tabs & brackets) to create a strong standing or rolling toy. Joining techniques (brackets & tabs).

Using sliders to create a moving picture (simple lever mechanism). Levers.

Fruit Salads
Chopping ingredients and considering how they work together to create a salad or fruit salad.

Year 2

Creating free standing structure (e.g. towers or bridges), exploring how to strengthen using layering and shapes.

Skills-based Session
Using card strips/levers to create a pop-up mechanism (e.g. Valentine cards, Christmas cards).

Creating a wheeled vehicle using a working axel that can be pulled or pushed (considering the positioning & size of materials and their properties, related to strength).

Using a running stitch to create a 2D item (e.g. bookmark).

Year 3

Using nets & templates to create a prototype (e.g. Elf house, picture frame, lunch box). Strengthening using cladding (& introducing rendering) building on the use of tabs & brackets.

Creating a crane using a pulley (building on lifting by combining materials to share weight). Pulleys.

Skills-based Session
CAD – Creating simple 3D models following a plan (e.g. Forest School Vehicles).

Year 4

Shaping plastic to create a self-propelled wind-up mechanism (e.g. Paddle boat or rubber-band car), comparing the use of push/pull with self-propelled mechanisms (e.g. wind up, balloon).

Creating a healthier option "fake away" pizza building on chopping ingredients to shape using the bridge & claw technique. Combining ingredients & considering layout).

Using weaving to create a strong material that follows a pattern/design.

Skills-based Session
Blending & pureeing ingredients to create Mexican Salsa and Guacamole. Exploring the use of herbs and spices to effect flavour.

Skills-based Session
CAD – Creating virtual mosaics. Comparing designing by hand with designing using ICT.

Combining materials to create a kite that is fit for purpose including the application of appropriate strengthening techniques – including rendering.

Skills-based Session
Creating a basic circuit to light up LEDs for use within the prototype (e.g. cardboard standee).

Year 5

Measuring & shaping wire to create a buzz wire game. Compare strengthening flat & free-standing objects.

Using a blanket stitch & appliqué to create a 3D piece (e.g. Christmas decoration). Blanket stitch and applique.

Creating an electrical circuit with a switch and attach to the wire frame created for the buzz wire game. Insert a buzzer (swap with LED from last year).

Creating a basic cam toy (building of shaping and joining card to create movement – lift rather than slide).

Skills-based Session
Using market research to design and create a prototype toothbrush that will appeal to KS1.

Skills-based Session
Using an exploded diagram to show the key parts of a writing pen.

Year 6

Creating pumpkin soup consolidating chopping ingredients finely to facilitate blending & boiling.

Revisit wind-up mechanisms and reapplying to create a "flying" object (e.g. butterfly, autumn leaf) using wire. Compare the similarities & differences between the two mechanisms (plastic vs. wire).

Cutting, joining & strengthening to create a wooden structure (e.g. bug hotel). Selecting materials that are fit for purpose & considering sustainability

Skills-based Session
Circuits – Recreate circuits to light up an LED. Alter the circuit layout, changing the positioning of components. Program the LEDs to flash to send a message (e.g. warning mechanism, Morse Code).

Skills-based Session
CAD – Creating detailed 3D models (e.g. Viking Long ship, Virtual Ziggurats) following their own design brief.

Skills-based Session
Using an exploded diagram to show the key parts of a wind up mechanism, including standard units of measurement.