ICT Curriculum Map – Design & Technology (DT)

Legend:
- 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.

Year 2

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

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

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 with a sail attached using brackets (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 & cladding.

Skills-based Session
Creating a basic circuit to light up LEDs for use within the prototype (e.g. cardboard standee). Revisit when exploring how electrical motors can be used as an alternative to kinetic energy to power a model boat. BBC Micro:Bit also used to create a wearable step counter.

Skills-based Session
Creating levers & linkages out of craft card. To explore linear motion (input), oscillating movement (output), pivot points (point of motion).

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

Skills-based Session
Exploring how cogs and gears behave and can be used to increase torque (as part of Lego robotic challenge).

Year 5

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

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).

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

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).

Year 6

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

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.

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.

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