HAWLEY PRIMARY SCHOOL

DESIGN and TECHNOLOGY - PROGRESSION OF SKILLS

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an **iterative** process of designing. ("***Iterative***" means they revise/improve their ideas as they build).

DESIGN - Developing, Planning and Communicating Ideas

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

- Use their knowledge of existing products and their own experience to help generate their ideas.
- Design products that are functional, appealing and purposeful - aimed at an intended user.
- Explain how their products will look and work through talking and simple annotated drawings.
- Work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.
- Select materials and tools from a limited range that will meet the design criteria and explain their choices.
- Follow verbal instructions.
- Describe what they need to do next.
- Discuss their work as it progresses.

- Investigate similar products to the one to be made to give starting points for a design.
- Develop more than one design or adaptation of an initial design.
- Think ahead about the order of their work and decide upon tools and materials.
- Use computer-aided design to develop and communicate their ideas.
- Plan and test ideas using templates and mock-ups.
- Work in a range of relevant contexts, for example, the home, school, culture, history and the wider environment.

- Draw and label products to help analyse and understand how products are made.
- Sketch and model alternative ideas
- Develop one idea in depth
- Record ideas using annotated diagrams
- Use models, kits and drawings to help formulate design ideas
- Make prototypes
- When planning, start to explain their choice of materials and components including function and aesthetics.
- Work in a range of relevant contexts, for example, the home, school, leisure, culture, enterprise, industry, history and the wider environment.

FOOD

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
▯ Develop a food vocabulary using taste, smell, texture and feel ▯ Group familiar food products e.g. fruit and vegetables ▯ Cut, peel, grate, chop a range of ingredients ▯ Work safely and hygienically ▯ Understand the need for a variety of foods in a diet ▯ Measure and weigh food items inc. using non-statutory measures e.g. spoons ▯ Follow verbal instructions		▯ Analyse the taste, texture, smell and appearance of a range of foods ▯ Follow typed instructions ▯ Make healthy cooking choices demonstrating an understanding of a balanced diet ▯ Join and combine a range of ingredients e.g. snack foods; adding to an existing menu ▯ Measure and weigh ingredients appropriately with support		▯ Select and prepare foods for a particular purpose ▯ Taste a range of ingredients, food items to develop a sensory food vocabulary for use when designing. ▯ Weigh and measure independently using scales ▯ Cut and shape ingredients using appropriate tools and equipment e.g. grating ▯ Decorate appropriately	

TEXTILES

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
▯ Colour fabrics using a range of techniques e.g. fabric paints, printing, painting ▯ Cut out shapes which have been created by drawing round a template onto the fabric ▯ Join fabrics by using running stitch, glue, staples ▯ Decorate fabrics e.g. shapes cut from sticky back fabric or glue on decoration		▯ Understand seam allowance ▯ Join fabrics using running stitch ▯ Sew on buttons ▯ Use appropriate decoration techniques		▯ Create 3D products ▯ Understand the need for patterns ▯ Pin and tack fabric pieces together ▯ Join fabrics using by running stitch or over sewing or back stitch ▯ Combine fabrics to create more useful properties	

CONSTRUCTION

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
▯ Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels ▯ Attach wheels to a chassis using an axle ▯ Join appropriately for different materials and situations e.g. glue, tape ▯ Mark out materials to be cut using a template ▯ Cut strip wood/dowel using hacksaw and bench hook		▯ Incorporate a circuit with a bulb or buzzer into a model ▯ Create shell or frame structures, strengthen frames with diagonal struts ▯ Make structures more stable by giving them a wide base ▯ Prototype frame and shell structures ▯ Measure and mark square selection, strip and dowel		▯ Use hand drill to drill tight and loose fit holes ▯ Cut strip wood, dowel, square section wood accurately to 1mm ▯ Join materials using appropriate methods ▯ Incorporate motor and a switch into a model ▯ Control a model using an ICT control programme ▯ Use a cam to make an up and down mechanism. ▯ Build frameworks using a range of materials ▯ Use glue gun with close supervision	

SHEET MATERIALS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
⍰ Fold, tear and cut paper and card ⍰ Cut along lines, straight and curved ⍰ Curl paper ⍰ Use hole punch ⍰ Insert paper fasteners for card linkages ⍰ Use simple pop ups ⍰ Investigate strengthening sheet materials ⍰ Investigate joinings temporary, fixed and moving		⍰ Cut slots and internal shapes ⍰ Use lolly sticks/card to make levers and linkages ⍰ Use and explore pop-ups ⍰ Create nets ⍰ Roll paper to create tubes		⍰ Cut accurately and safely to a marked line ⍰ Join and combing materials with temporary, fixed or moving joinings ⍰ Use craft knife, cutting mat and safety ruler under one to one supervision if appropriate ⍰ Choose an appropriate sheet material for the purpose	

EVALUATING

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
⍰ Talk about their designs as they develop and identify good and bad points. ⍰ Talk about changes made during the making process. ⍰ Discuss how closely their finished products meet their design criteria.		⍰ Explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose. ⍰ Identify the strengths and weaknesses of their design ideas. Decide which design idea to develop. ⍰ Consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product. ⍰ Discuss how well the finished product meets the design criteria and how well it meets the needs the needs of the user.		⍰ Use the design criteria to inform their decisions about ways to proceed. ⍰ Justify their decisions about materials and methods of construction. ⍰ Reflect on their work using design criteria stating how well the design fits the needs of the user. ⍰ Identify what does and does not work in the product. ⍰ Make suggestions as how their design could be improved. ⍰ Evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.	