

# Whole-School Design & Technology Progression Map | EYFS to Year 6

## Skills • Knowledge • Vocabulary

### Part 1: Progression of Skills

The Design-Make-Evaluate process becomes increasingly purposeful, accurate, independent and critical as pupils move through school.

#### 1. Designing Skills

| Aspect                               | EYFS                                                                                   | Y1/2                                                                                          | Y3/4                                                                                                                                                      | Y5/6                                                                                                                                                        |
|--------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Generate ideas</b>                | Explore materials freely and develop own ideas about how to use them and what to make. | Generate ideas from own experiences and simple design criteria; explain what they could make. | Generate realistic ideas and design criteria through discussion, focusing on user and purpose.                                                            | Generate innovative ideas through research; use surveys, interviews, questionnaires and web-based resources where appropriate.                              |
| <b>Communicate ideas</b>             | Use talk, drawing, construction and model-making to represent ideas.                   | Communicate ideas through talking, drawings and mock-ups.                                     | Use annotated sketches and prototypes; use cross-sectional/exploded diagrams where appropriate; shell-structure planning includes CAD as a possible tool. | Communicate through discussion, annotated drawings/sketches, prototypes, exploded drawings/different views, circuit representations and ICT as appropriate. |
| <b>Design for user &amp; purpose</b> | Choose what to make and materials to use; begin to explain creations and processes.    | Use simple design criteria; identify the intended user and purpose.                           | Gather information about needs/wants and develop criteria for products that are fit for purpose and particular users/groups.                              | Develop a design brief/specification linked to user and purpose; take account of constraints such as time, resources and cost.                              |
| <b>Plan &amp; refine</b>             | Return to ideas, choose materials and refine creations through provision.              | Plan by suggesting what to do next; evaluate ideas as they develop.                           | Order the main stages of making; refine ideas against design criteria.                                                                                    | Produce detailed resource lists and step-by-step plans; make design decisions and refine against the specification.                                         |

#### 2. Making Skills

| Aspect                              | EYFS                                                                                                               | Y1/2                                                                                         | Y3/4                                                                                                        | Y5/6                                                                                                 |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Select tools &amp; equipment</b> | Use scissors, glue, tape and construction resources with increasing control; select an appropriate joining method. | Select and use tools/equipment for cutting, shaping, joining and finishing; explain choices. | Select and use tools/equipment with some accuracy to measure, mark out, cut, score, shape, join and finish. | Competently select and use a range of tools/equipment accurately; assemble securely and finish well. |

| Aspect                             | EYFS                                                                                                                            | Y1/2                                                                                          | Y3/4                                                                                                                                                         | Y5/6                                                                                                                                                                                   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Select materials/components</b> | Explore materials of different shapes/textures and decide which to use.                                                         | Select new/reclaimed materials and components according to characteristics.                   | Select materials/components according to functional properties and aesthetic qualities; include electrical components where relevant.                        | Select materials/components/ingredients to meet functional needs and the design specification.                                                                                         |
| <b>Construct &amp; join</b>        | Join materials with glue, scissors and tape; construct enclosures, towers, houses and vehicles; explore making models stronger. | Cut, fold, join and fix; construct stable freestanding structures and simple moving products. | Measure, mark out, cut, score, shape and assemble with some accuracy; make shell structures, lever/linkage systems and electrical products.                  | Accurately construct and reinforce frameworks; assemble mechanical/electrical systems; prepare and cook food using appropriate equipment.                                              |
| <b>Food preparation</b>            | Develop independence with tools and healthy choices through everyday provision.                                                 | Use utensils and follow instructions; consider hygiene and safety when preparing food.        | Prepare/combine ingredients hygienically; use techniques including bridge/claw, grating, peeling, chopping, slicing, mixing, spreading, kneading and baking. | Measure, cut, shape and combine ingredients; use techniques such as fold, knead, stir, pour, mix, rub in, whisk, beat, roll out, shape, sprinkle and crumble; use heat sources safely. |

### 3. Evaluating Skills

| Aspect                               | EYFS                                                                | Y1/2                                                                                       | Y3/4                                                                                                                         | Y5/6                                                                                                                                                                      |
|--------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Investigate existing products</b> | Explore how familiar things work and talk about materials/models.   | Explore and evaluate existing products, structures, mechanisms and foods.                  | Investigate and analyse existing products, including materials, components, mechanisms and techniques used.                  | Research and critically evaluate products; investigate relevant manufacturing/engineering companies, key events/individuals or chefs where specified in units.            |
| <b>Test &amp; evaluate own work</b>  | Share creations and explain the process; revisit and improve ideas. | Evaluate ideas throughout and finished products against design criteria, user and purpose. | Test and evaluate products against design criteria, intended user and purpose; identify strengths and areas for improvement. | Compare final products with the original design specification; test with intended users; critically evaluate quality, manufacture, functionality and fitness for purpose. |
| <b>Use feedback</b>                  | Talk about what worked and what could change.                       | Discuss how well a product works and make simple changes.                                  | Consider the views of others when improving work.                                                                            | Consider users' and others' views to identify and make improvements.                                                                                                      |

## Part 2: Progression of Knowledge

### 4. Structures

| Area                             | EYFS                                                                                                                        | Y1/2                                                                                                                                  | Y3/4                                                                                                                                      | Y5/6                                                                                                                   |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Knowledge progression</b>     | Explore construction materials and kits; make enclosures, towers, houses and vehicles; explore how to make models stronger. | Know how freestanding structures can be made stronger, stiffer and more stable; recognise structures in the school/local environment. | Know how shell structures are formed and how materials, components and techniques contribute to strength; apply strengthening/stiffening. | Know how to strengthen, stiffen and reinforce 3-D frame structures; understand triangulation, tension and compression. |
| <b>Typical Thornhill context</b> | Construction/workshop provision.                                                                                            | Freestanding structures - e.g. castle/building.                                                                                       | Shell structures.                                                                                                                         | Frame structures - e.g. shelters, bug hotels/bird feeders and other frameworks.                                        |

### 5. Mechanisms & Mechanical Systems

| Area                             | EYFS                                                                                      | Y1/2                                                                                                                                                         | Y3/4                                                                                                    | Y5/6                                                                                                                                                                       |
|----------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Knowledge progression</b>     | Explore movement through construction and vehicles; notice that actions make things move. | Explore and use sliders/levers and wheels/axles; understand that different mechanisms produce different movement; distinguish fixed and freely moving axles. | Understand and use levers and linkages; build on earlier sliders/levers and cutting/joining experience. | Understand that mechanical/electrical systems have an input, process and output; understand how gears and pulleys can speed up, slow down or change direction of movement. |
| <b>Typical Thornhill context</b> | Vehicles and moving construction in provision.                                            | Sliders & levers; wheels & axles.                                                                                                                            | Levers & linkages.                                                                                      | Mechanical systems - pulleys or gears.                                                                                                                                     |

### 6. Electrical Systems & Control

| Area                         | EYFS                                                                                                                 | Y1/2                                                                            | Y3/4                                                                                                                       | Y5/6                                                                                                                                                                                          |
|------------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Knowledge progression</b> | Explore simple cause and effect through familiar switches/battery-operated resources where encountered in provision. | No discrete electrical-system unit is evidenced in the supplied Y1/2 D&T plans. | Understand and use series circuits incorporating switches, bulbs and buzzers; apply computing to program/control products. | Understand and use electrical systems; use more complex switches/components; apply computing to program, monitor and control products, including automatic responses to environmental change. |

| Area                      | EYFS                   | Y1/2 | Y3/4                          | Y5/6                                                      |
|---------------------------|------------------------|------|-------------------------------|-----------------------------------------------------------|
| Typical Thornhill context | Exploratory provision. | —    | Simple circuits and switches. | More complex switches / programmable electrical products. |

## 7. Food & Nutrition

| Area                         | EYFS                                                                                                          | Y1/2                                                                                                          | Y3/4                                                                                                                                                                 | Y5/6                                                                                                                                                                                                                           |
|------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge progression        | Make healthy choices about food and drink; develop independence with eating and simple food-related routines. | Consider healthy and balanced food choices; choose appropriate foods for a purpose; know how to use utensils. | Know about a healthy and varied diet; know ingredients can be fresh/processed and grown, reared or caught; understand hygiene and a range of preparation techniques. | Understand nutrition, dietary needs, food sources and seasonality; know how to use utensils/equipment including heat sources to prepare and cook food; consider cultural preferences and locally sourced/seasonal ingredients. |
| Sensory/evaluation knowledge | Talk about preferences and choices.                                                                           | Taste and describe foods; evaluate outcomes.                                                                  | Use sensory vocabulary for taste, smell, texture and appearance; record sensory evaluations.                                                                         | Carry out and record sensory evaluations; use evidence and others' views to improve a product.                                                                                                                                 |
| Typical Thornhill context    | Healthy choices within EYFS routines/provision.                                                               | Picnic foods / food skewer / biscuit activities in supplied plan.                                             | Healthy and varied diet - healthy lunch item.                                                                                                                        | Celebrating cultures and seasonality - savoury food/meal contexts in supplied plan.                                                                                                                                            |

### Part 3: EYFS Curriculum Foundations for D&T

D&T is not taught as a separate National Curriculum subject in EYFS. The supplied Thornhill EYFS planning provides clear foundations, especially through Expressive Arts and Design, Physical Development and everyday health/food provision.

| EYFS curriculum / planning link                    | Evidence in Thornhill planning                                                                                                                | D&T foundation                                             |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| EAD - Creating with Materials (3-4 years)          | Explore different materials freely; develop own ideas; decide which materials to use.                                                         | Generating ideas; selecting materials; purposeful making.  |
| EAD - Creating with Materials / workshop provision | Join materials using glue, scissors and tape; select the most appropriate joining method; choose shapes/textures for features and decoration. | Joining, tool use, material choice and finishing.          |
| EAD - Creating with Materials (Reception)          | Explore, use and refine a variety of effects; return to and build on previous learning, refining ideas.                                       | Testing, refining and improving ideas.                     |
| Construction provision                             | Explore how to make models stronger; make enclosures, towers, houses and vehicles; add features using construction kits.                      | Structures, stability, strengthening and construction.     |
| Physical Development                               | Develop control using one-handed tools and equipment, including scissors.                                                                     | Safe, controlled practical tool use.                       |
| Health / food routines                             | Make healthy choices about food and drink and develop independence.                                                                           | Early cooking-and-nutrition knowledge and healthy choices. |
| Communication through making                       | Share creations and explain the process used.                                                                                                 | Evaluation, explanation and reflection on making.          |

EYFS → KS1 bridge: explore and choose → develop an idea → select materials/tools → join/build → test and improve → explain what was made → Design, Make and Evaluate.

#### Part 4: Progressive Vocabulary

Vocabulary below is drawn from, or closely organised around, terminology in the supplied Thornhill plans. Earlier vocabulary should continue to be revisited as later technical language is introduced.

#### 8. Design, Make & Evaluate Vocabulary

| Area         | EYFS                                                            | Y1/2                                                                                      | Y3/4                                                                                                             | Y5/6                                                                                                                                   |
|--------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Core process | idea, make, choose, material, tool, join, build, strong, change | design, make, evaluate, user, purpose, ideas, design criteria, product, function, mock-up | planning, design criteria, purpose, user, annotated sketch, prototype, functional, aesthetic, sensory evaluation | design brief, design specification, innovative, research, constraints, prototype, functionality, design decisions, fitness for purpose |

#### 9. Structures Vocabulary

| Area       | EYFS                                            | Y1/2                                                                                                             | Y3/4                                                                                                                        | Y5/6                                                                                                                                                              |
|------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Structures | build, model, tower, house, strong, join, shape | cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, edge, surface, stable, freestanding | shell structure, measure, mark out, score, shape, assemble, strengthen, stiffen, functional properties, aesthetic qualities | frame structure, strengthen, stiffen, reinforce, triangulation, stability, compression, tension, strut, tie, diagonal, horizontal, vertical, temporary, permanent |

#### 10. Mechanisms / Mechanical Systems Vocabulary

| Area       | EYFS                    | Y1/2                                                                                                | Y3/4                                                    | Y5/6                                                                             |
|------------|-------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------|
| Mechanisms | move, push, pull, wheel | mechanism, lever, slider, pivot, slot, guide/bridge, wheel, axle, axle holder, fixed, freely moving | mechanism, lever, linkage, pivot, slot, guide, movement | mechanical system, input, process, output, gear, pulley, speed, direction, motor |

#### 11. Electrical Systems Vocabulary

| Area       | EYFS                     | Y1/2                                                                           | Y3/4                                                                                                             | Y5/6                                                                                                                           |
|------------|--------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Electrical | switch, on, off, battery | No discrete electrical vocabulary strand evidenced in supplied Y1/2 D&T plans. | electrical system, series circuit, switch, bulb, buzzer, electrical component, battery-powered, program, control | series circuit, parallel circuit, switch, component, input device, output device, system, monitor, control, program, flowchart |

## 12. Food & Nutrition Vocabulary

| Area        | EYFS                         | Y1/2                                                      | Y3/4                                                                                                                                                                                          | Y5/6                                                                                                                                                                                                                                                                                                         |
|-------------|------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Food</b> | food, healthy, choose, taste | healthy, balanced, food, hygiene, utensil, taste, texture | texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, healthy/varied diet | ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, gluten, dairy, allergy, intolerance, savoury, source, seasonality, combine, fold, knead, stir, pour, mix, whisk, beat, roll out, shape, crumble |

## 13. At-a-Glance Progression: What Gets Harder?

| EYFS                                                                                                           | Y1/2                                                                                                                               | Y3/4                                                                                                                                                          | Y5/6                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Explore, choose, join, build and talk about creations. Develop control and notice how to make models stronger. | Design for a simple user/purpose; make with selected tools/materials; use simple mechanisms/structures; evaluate against criteria. | Design more realistically; annotate/model ideas; work with greater accuracy; apply shell structures, linkages, circuits and food knowledge; test and improve. | Research users; work to specifications and constraints; plan accurately; apply frame, mechanical and programmable systems; cook with greater technical knowledge; critically evaluate. |