Design and Technology

Year 3 Key Concepts

Design	**Design and Technology Key Concepts**	**Forest School Link**
	I generate realistic ideas, focused on the needs of the user.	Children observe a need, think about who it's for, and design something realistic using natural resources.
	I can indicate the design features of my products that will appeal to intended users.	children think about who will use their design, explain why their chosen features are helpful, and make it appealing in a natural, creative way.
	I am beginning to develop my own design criteria and use these to inform my ideas	Children see real problems and needs (weather, comfort, wildlife, safety etc.). They set their own expectations. The outdoor environment naturally limits and inspires their design criteria (they use what's available).
	I share and clarify ideas through Discussion.	Children explaining their thinking. They learn to listen to others' ideas and improve their own designs. Discussions happen naturally as part of teamwork, building resilience and social skills.
	I can describe the purpose of my products and explain how particular parts work.	Children link design to function in real situations. They justify their choices (not just "I made it," but "I made it this way because…"). They gain confidence in explaining mechanisms and features.
	I can use computer-aided design to develop and communicate my ideas.	Not applicable to Forest School.
	I model my ideas using prototypes and pattern pieces.	Children experiment, adjust, and learning through the process of constructing their project. Children will test and adapt their ideas as they create, whilst developing their resilience, perseverance and problem-solving,
	I can use annotated sketches and cross-sectional drawings to develop and communicate my ideas.	Not applicable to Forest School.
Make	**Design and Technology Key Concepts**	**Forest School Link**
	I select tools and equipment suitable for the task.	Children choose specific tools to complete a chosen task for example peelers, hammers, saws, crowbar as well as resources such as tarps and ropes to help them create what they envisage. They know why they picked them and that they are the best tool for the job in hand.

	I can order the main stages of making.	Children know the importance of sequence and safety e.g. Frame before roof, tying before hanging etc. They rely on their own steps rather than relying on an adult.
	I can measure, mark out, cut and shape materials and components with some accuracy.	Children learn that accuracy makes structures safer and stronger e.g., a shelter won't fall down if sticks are cut and fitted securely. They learn that careful preparation saves time rather than fixing mistakes later. This encourages problem-solving
	I can use a wider range of materials and components than KS1, including mechanical components.	Not applicable to Forest School – all children have access to all tools and materials/resources regardless of age – it is more about ability and what support some children may need in order to achieve.
	I can explain my choice of tools and equipment in relation to the skills and techniques I will be Using.	Children connect tools with the purpose it is used for. Children develop their critical thinking: "Why this tool, not that one?". Children practise safety awareness, understanding that tools are chosen for control, precision, or strength.
	I can assemble, join and combine materials and components with some accuracy.	Children assemble, join and combine components/materials for a purpose for example ropes and sticks/logs/planks of wood to create a den. Leaf litter to cover the roof to make it waterproof, but also for decoration. A log and a plank of wood to create a see-saw making sure it is equal on both sides for accuracy.
	I can apply a range of finishing techniques, including those from art and design, with some Accuracy.	Children improve/decorate their creations, for example arranging leaves etc for decoration. Children can also add artistic touches, like painted stones, weaved materials, decorated sticks/mobiles etc to decorate their structures.
Evaluate	**Design and Technology Key Concepts**	**Forest School Link**
	I can identify the strengths and areas for development in my ideas and products. I use my design criteria to evaluate my completed products. I can identify the strengths and areas for development in my ideas and products.	Children reflect on their designs and how they can improve them. Children are encouraged to self-assess, building their resilience: mistakes are part of learning. Children will connect their ideas and see how their choices have affected their design. Within this, children develop their problem-solving skills, deciding how to improve the designs next time.
	I refer to the design criteria as I design and make.	Not applicable to Forest School.

	I can investigate and analyse how well products have been designed and made.	Forest School encourages critical thinking about both design and construction. Children develop the ability to make the link between planning, materials, and the final outcome. Children Develop problem-solving skills, identifying improvements for next time. Children will learn from their peers by analysing and learning from each other's designs.
	I can investigate and analyse what methods of construction have been used.	children create products using natural materials—like shelters, bug hotels, bird feeders, or woodland crafts. Investigating the methods of construction helps them understand how things are built, why certain techniques work, and how to improve their own designs**.**
	I can investigate and analyse how well products work and how well they achieve their purpose.	Children test functionality in real conditions (wind, rain, uneven ground). Children develop critical thinking, asking "What worked well?" and "What could be improved?" They see immediate cause and effect between design choices and performance. They learn to value purpose and sustainability, e.g. using natural or recycled resources effectively.
	I know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	Children experience real-world contexts to see how products change lives. Den building etc. links history of design and invention with hands-on, outdoor exploration. Children valuate not only their own creations but also the impact of past innovations (Stone Age, Iron Age etc.) on how we live and survive outdoors.
Technical Knowledge	**Design and Technology Key Concepts**	**Forest School Link**
	I know that materials have both functional properties and aesthetic qualities.	Children compare natural and man-made materials, evaluating how they work and how they look/feel — gaining a deeper appreciation for design in both nature and human-made products.
	I know how to make strong, stiff, shell structures.	Children experiment safely with real materials. They experience how shape and structure make something strong, not just the material itself. They see how humans and nature both use shell structures for protection and shelter. They develop problem-solving: "How can I make this stronger? How can I stop it collapsing?"
	I know how mechanical systems such as cams or pulleys or gears create movement. I know about the movement of simple mechanisms such as levers and sliders.	Children see mechanics in action with real materials. Forest School allows for scale and play (big pulleys, giant levers). Children connect design and engineering to nature and survival (e.g., lifting, shelter building, moving heavy logs). Children build on their problem-solving and teamwork: "How can we make this move more easily?"

	I know the correct technical vocabulary for the projects they are undertaking.	Names of tools, names of materials, methods of joining materials, ways to reinforce a structure to make it stronger, safer, stable etc. Examples of some terms that may be used: **Shelter / Den Building -** *structure, frame, base, join, support, strengthen, shell, waterproof, stability*. **Whittling / Tool Use -** *handle, blade, carve, whittle, smooth, notch, join, shaft*. **Fire and Cooking -** *kindling, tinder, fuel, flame, ember, heat source, safety, insulation*. **Mechanisms Outdoors -** Vocabulary: *lever, fulcrum, pulley, slider, gear, movement, mechanism*. **Nature and Materials -** Vocabulary: *flexible, rigid, rough, smooth, waterproof, absorbent, strong, weak, aesthetic*.
Cooking and Nutrition	**Design and Technology Key Concepts** I know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. I know that seasons may affect the food available. I can demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.	**Forest School Link** Children connect classroom knowledge about food origins and seasonal implications to growing food to real-life experiences. Children are encouraged to respect nature and sustainable choices (local, seasonal, low-waste). Children can make global links: “We can grow apples here in the UK, but bananas need hotter climates.” Children cook on an open fire on occasion. They learn about the safety of being around a fire and how to respect it. Children learn we must have clean hands to handle food, clean equipment and utensils and knowing that food needs to cool down before consuming it.