

# Knowledge, Skills and Understanding breakdown for Design and Technology

## Year 1

### Developing, planning and communicating ideas

- Can they think of some ideas of their own?
- Can they explain what they want to do?
- Can they use pictures and words to plan?

### Working with tools, equipment, materials and components to make quality products

- Can they explain what they are making?
- Which tools are they using?

### Evaluating processes and products

- Can they describe how something works?
- Can they talk about their own work and things that other people have done?

## Breadth of study

### Cooking and nutrition

- Can they cut food safely?
- Can they describe the texture of foods?
- Do they wash their hands and make sure that surfaces are clean?
- Can they think of interesting ways of decorating food they have made, e.g. cakes?

### Textiles

- Can they describe how different textiles feel?
- Can they make a product from textile by gluing?

### Mechanisms

- Can they make a product which moves?
- Can they cut materials using scissors?
- Can they describe the materials using different words?
- Can they say why they have chosen moving parts?

### Use of materials

- Can they make a structure/model using different materials?
- Is their work tidy?
- Can they make their model stronger if it needs to be?

### Construction

- Can they talk with others about how they want to construct their product?
- Can they select appropriate resources and tools for their building projects?
- Can they make simple plans before making objects, e.g. drawings, arranging pieces of construction before building?

# Knowledge, Skills and Understanding breakdown for Design and Technology

## Year 2

| Developing, planning and communicating ideas  | Working with tools, equipment, materials and components to make quality products  | Evaluating processes and products   |
|---|---|---|
| <ul style="list-style-type: none"> <li>•Can they think of ideas and plan what to do next?</li> <li>•Can they choose the best tools and materials? Can they give a reason why these are best?</li> <li>•Can they describe their design by using pictures, diagrams, models and words?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they join things (materials/ components) together in different ways?</li> </ul> | <ul style="list-style-type: none"> <li>•What went well with their work?</li> <li>•If they did it again, what would they want to improve?</li> </ul> |

## Breadth of study

| Cooking and nutrition   | Textiles   | Mechanisms  | Use of materials   | Construction   |
|---|--|---|--|--|
| <ul style="list-style-type: none"> <li>•Can they describe the properties of the ingredients they are using?</li> <li>•Can they explain what it means to be hygienic?</li> <li>•Are they hygienic in the kitchen?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they measure textiles?</li> <li>•Can they join textiles together to make something?</li> <li>•Can they cut textiles?</li> <li>•Can they explain why they chose a certain textile?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they join materials together as part of a moving product?</li> <li>•Can they add some kind of design to their product?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they measure materials to use in a model or structure?</li> <li>•Can they join material in different ways?</li> <li>•Can they use joining, folding or rolling to make materials stronger?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they make sensible choices as to which material to use for their constructions?</li> <li>•Can they develop their own ideas from initial starting points?</li> <li>•Can they incorporate some type of movement into models?</li> <li>•Can they consider how to improve their construction?</li> </ul> |

# Knowledge, Skills and Understanding breakdown for Design and Technology

## Year 3

| Developing, planning and communicating ideas  | Working with tools, equipment, materials and components to make quality products                | Evaluating processes and products  |
|---|---|--|
| <ul style="list-style-type: none"> <li>•Can they show that their design meets a range of requirements?</li> <li>•Can they put together a step-by-step plan which shows the order and also what equipment and tools they need?</li> <li>•Can they describe their design using an accurately labelled sketch and words?</li> <li>•How realistic is their plan?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they use equipment and tools accurately?</li> </ul> | <ul style="list-style-type: none"> <li>•What did they change which made their design even better?</li> </ul> |

## Breadth of study

| Cooking and nutrition   | Textiles   | Electrical and mechanical components   | Stiff and flexible sheet materials   | Mouldable materials  |
|---|--|--|--|--|
| <ul style="list-style-type: none"> <li>•Can they choose the right ingredients for a product?</li> <li>•Can they use equipment safely?</li> <li>•Can they make sure that their product looks attractive?</li> <li>•Can they describe how their combined ingredients come together?</li> <li>•Can they set out to grow plants such as cress and herbs from seed with the intention of using them for their food product?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they join textiles of different types in different ways?</li> <li>•Can they choose textiles both for their appearance and also qualities?</li> </ul> | <ul style="list-style-type: none"> <li>•Do they select the most appropriate tools and techniques to use for a given task?</li> <li>•Can they make a product which uses both electrical and mechanical components?</li> <li>•Can they use a simple circuit?</li> <li>•Can they use a number of components?</li> </ul> | <ul style="list-style-type: none"> <li>•Do they use the most appropriate materials?</li> <li>•Can they work accurately to make cuts and holes?</li> <li>•Can they join materials?</li> </ul> | <ul style="list-style-type: none"> <li>•Do they select the most appropriate materials?</li> <li>•Can they use a range of techniques to shape and mould?</li> <li>•Do they use finishing techniques?</li> </ul> |

# Knowledge, Skills and Understanding breakdown for Design and Technology

## Year 4

| Developing, planning and communicating ideas  | Working with tools, equipment, materials and components to make quality products  | Evaluating processes and products   |
|---|---|---|
| <ul style="list-style-type: none"> <li>•Can they come up with at least one idea about how to create their product?</li> <li>•Do they take account of the ideas of others when designing?</li> <li>•Can they produce a plan and explain it to others?</li> <li>•Can they suggest some improvements and say what was good and not so good about their original design?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they tell if their finished product is going to be good quality?</li> <li>•Are they conscience of the need to produce something that will be liked by others?</li> <li>•Can they show a good level of expertise when using a range of tools and equipment?</li> </ul> | <ul style="list-style-type: none"> <li>•Have they thought of how they will check if their design is successful?</li> <li>•Can they begin to explain how they can improve their original design?</li> <li>•Can they evaluate their product, thinking of both appearance and the way it works?</li> </ul> |

## Breadth of study

| Cooking and nutrition  | Textiles  | Electrical and mechanical components  | Stiff and flexible sheet materials  | Mouldable materials   |
|--|---|---|---|---|
| <ul style="list-style-type: none"> <li>•Do they know what to do to be hygienic and safe?</li> <li>•Have they thought what they can do to present their product in an interesting way?</li> </ul> | <ul style="list-style-type: none"> <li>•Do they think what the user would want when choosing textiles?</li> <li>•Have they thought about how to make their product strong?</li> <li>•Can they devise a template?</li> <li>•Can they explain how to join things in a different way?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they add things to their circuits?</li> <li>•How have they altered their product after checking it?</li> <li>•Are they confident about trying out new and different ideas?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they measure carefully so as to make sure they have not made mistakes?</li> <li>•How have they attempted to make their product strong?</li> </ul> | <ul style="list-style-type: none"> <li>•Do they take time to consider how they could have made their idea better?</li> <li>•Do they work at their product even though their original idea might not have worked?</li> </ul> |

# Knowledge, Skills and Understanding breakdown for Design and Technology

## Year 5

| Developing, planning and communicating ideas   | Working with tools, equipment, materials and components to make quality products   | Evaluating processes and products  |
|--|--|--|
| <ul style="list-style-type: none"> <li>•Can they come up with a range of ideas after they have collected information?</li> <li>•Do they take a user's view into account when designing?</li> <li>•Can they produce a detailed step-by-step plan?</li> <li>•Can they suggest some alternative plans and say what the good points and drawbacks are about each?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they explain why their finished product is going to be of good quality?</li> <li>•Can they explain how their product will appeal to the audience?</li> <li>•Can they use a range of tools and equipment expertly?</li> </ul> | <ul style="list-style-type: none"> <li>•Do they keep checking that their design is the best it can be?</li> <li>•Do they check whether anything could be improved?</li> <li>•Can they evaluate appearance and function against the original criteria?</li> </ul> |

## Breadth of study

| Cooking and nutrition   | Textiles  | Electrical and mechanical components   | Stiff and flexible sheet materials  | Mouldable materials   |
|---|---|--|---|---|
| <ul style="list-style-type: none"> <li>•Can they describe what they do to be both hygienic and safe?</li> <li>•How have they presented their product well?</li> </ul> | <ul style="list-style-type: none"> <li>•Do they think what the user would want when choosing textiles?</li> <li>•How have they made their product attractive and strong?</li> <li>•Can they make up a prototype first?</li> <li>•Can they use a range of joining techniques?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they incorporate a switch into their product?</li> <li>•Can they refine their product after testing it?</li> <li>•Can they incorporate hydraulics and pneumatics?</li> </ul> | <ul style="list-style-type: none"> <li>•Are their measurements accurate enough to ensure that everything is precise?</li> <li>•How have they ensured that their product is strong and fit for purpose?</li> </ul> | <ul style="list-style-type: none"> <li>•Are they motivated enough to refine and improve their product?</li> <li>•Do they persevere through different stages of the making process?</li> </ul> |

# Knowledge, Skills and Understanding breakdown for Design and Technology

## Year 6

| Developing, planning and communicating ideas   | Working with tools, equipment, materials and components to make quality products  | Evaluating processes and products   |
|--|---|---|
| <ul style="list-style-type: none"> <li>•Can they use a range of information to inform their design?</li> <li>•Can they use market research to inform plans?</li> <li>•Can they work within constraints?</li> <li>•Can they follow and refine their plan if necessary?</li> <li>•Can they justify their plan to someone else?</li> <li>•Do they consider culture and society in their designs?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they use tools and materials precisely?</li> <li>•Do they change the way they are working if needed?</li> </ul> | <ul style="list-style-type: none"> <li>•How well do they test and evaluate their final product?</li> <li>•Is it fit for purpose?</li> <li>•What would improve it?</li> <li>•Would different resources have improved their product?</li> <li>•Would they need more or different information to make it even better?</li> </ul> |

## Breadth of study

| Cooking and nutrition  | Textiles   | Electrical and mechanical components  | Stiff and flexible sheet materials   | Mouldable materials  |
|--|--|---|--|--|
| <ul style="list-style-type: none"> <li>•Can they explain how their product should be stored with reasons?</li> <li>•Can they set out to grow their own products with a view to making a salad, taking account of time required to grow different foods?</li> </ul> | <ul style="list-style-type: none"> <li>•Have they thought about how their product could be sold?</li> <li>•Have they given considered thought about what would improve their product even more?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they use different kinds of circuits in their product?</li> <li>•Can they think of ways in which adding a circuit would improve their product?</li> </ul> | <ul style="list-style-type: none"> <li>•Can they justify why they selected specific materials?</li> <li>•Can they work within a budget?</li> <li>•How have they ensured that their work is precise and accurate?</li> <li>•Can they hide joints so as to improve the look of their product?</li> </ul> | <ul style="list-style-type: none"> <li>•Did they consider the use of the product when selecting materials?</li> <li>•Does their product meet all design criteria?</li> </ul> |