****

**Design and technology**

**Key Stages 1 and 2**

Resources to help you teach the 2014 curriculum for design and technology

**KS1 Design and technology**

When designing and making, pupils should be taught to:

|  |
| --- |
| **Design** |
| * design purposeful, functional, appealing products for themselves and other users based on design criteria
 | * [**Puppet making**](http://www.tes.co.uk/teaching-resource/Unit-2B-Puppets-Focused-practical-tasks-6074217/)

These lesson plans on puppet making help to identify design criteria.* [**Vehicles**](http://www.tes.co.uk/teaching-resource/Vehicles-6431216/)

A lesson plan and resources focussing on the design criteria of vehicles.* [**Designing musical instruments**](http://www.tes.co.uk/teaching-resource/Making-Musical-Instruments-DT-6206156/)

Help students to design their own musical instruments with this lesson plan, which includes associated booklets.* [**Mechanism design**](http://www.tes.co.uk/teaching-resource/Unit-2C-Winding-up-Design-and-make-assignment-6074221/)

This resource contains a good section focussing on design criteria and mechanisms. |
| * generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
 | * [**Using ICT in DT**](http://www.tes.co.uk/teaching-resource/Using-ICT-in-Primary-Design-and-Technology-6072366/)

A guide about how to effectively use ICT in primary design and technology.* [**Modelling ideas**](http://www.tes.co.uk/teaching-resource/Unit-1A-Moving-pictures-IDEAS-6074200/)

Help students to create moving models from drawings of mechanisms.* [**Generating and developing ideas**](http://www.tes.co.uk/teaching-resource/Designing-making-and-evaluating-Rainmakers-6170415/)

Encourage your class to come up with and develop ideas for a rainmaker.* [**Using a template**](http://www.tes.co.uk/teaching-resource/Design-A-Box-6057514/)

A simple lesson plan and activity about how to work from a template. |

|  |
| --- |
| **Make** |
| * select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
 | * [**Knife safety**](http://www.tes.co.uk/teaching-resource/Jamie-and-39-s-live-TES-cooking-lesson-Knife-safety-6425031/)

Information for students about how to use knives safely.* [**Selecting tools to use**](http://www.tes.co.uk/teaching-resource/Puppet-design-booklet-3012065/)

This booklet and activities will help students to learn how to pick the right tools for a job.* [**Different equipment used in cookery**](http://www.tes.co.uk/teaching-resource/Cooking-Key-fact-2-Different-equipment-used-6048352/)

A range of activities and flashcards that can be used to identify tools and related safety issues.* [**Making a swing, tools needed**](http://www.tes.co.uk/teaching-resource/Making-a-swing-6016535/)

A PowerPoint presentation about how to make a swing, with accompanying worksheets and teacher’s notes. |
| * select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
 | * [**Materials investigation**](http://www.tes.co.uk/teaching-resource/3-Little-Pigs-Materials-Investigation-6024511/)

Discussing different materials and how they can be used.* [**Testing materials**](http://www.tes.co.uk/teaching-resource/Testing-Materials-Activity-School-Uniform-6319430/)

A worksheet and guide to testing materials to check their suitability* [**Comparing materials**](http://www.tes.co.uk/teaching-resource/Comparing-materials-6105135/)Students use this worksheet to describe and compare materials.
* [**Food suitability**](http://www.tes.co.uk/teaching-resource/Unit-1C-Eat-more-fruit-and-vegetables-IDEAS-6074206/)

A lesson plan for explaining that fruit and vegetables can be grouped, individually named and that they may require treatment before being eaten. |

|  |
| --- |
| **Evaluate** |
| * explore and evaluate a range of existing products
 | * [**Analysing products**](http://www.tes.co.uk/teaching-resource/De-Bono-Questions-for-Product-Analysis-6314747/)

An activity to explore products using a thinking-hat method.* [**Exploring hats**](http://www.tes.co.uk/teaching-resource/Hats-6036089/)

This activity looks at existing products and how to evaluate them.* [**Analysing and evaluating**](http://www.tes.co.uk/ResourceDetail.aspx?storyCode=6161640)

Help students to analyse existing products with this lesson plan.* [**Product analysis**](http://www.tes.co.uk/teaching-resource/Vehicles-Unit-Plan-DT-6026044/)

Students study a range of similar products in this analysis lesson. |
| * evaluate their ideas and products against design criteria
 | * [**Curriculum principles**](http://www.tes.co.uk/teaching-resource/School-Curriculum-Principles-for-D-and-amp-T-6434344/)

These examples explore curriculum principles from a pupil’s perspective and consider how to meet them.* [**Improving ideas**](http://www.tes.co.uk/teaching-resource/Moving-vehicles-6107635/)

Help students to improve their ideas to ensure that they meet the design criteria.* [**Evaluating designs**](http://www.tes.co.uk/teaching-resource/House-design-and-evaluation-sheets-3012099/)

A lesson plan and accompanying worksheets to teach students how to evaluate design ideas.* [**Making a puppet**](http://www.tes.co.uk/teaching-resource/Making-a-Puppet-6012929/)

Guide students through making a puppet and then help them to evaluate it with this complete set of resources. |

|  |
| --- |
| **Technical knowledge** |
| * build structures, exploring how they can be made stronger, stiffer and more stable
 | * [**Strong structures**](http://www.tes.co.uk/teaching-resource/Strong-Structures-6422486/)

An activity to explore how to make strong structures.* [**Sheet material structures**](http://www.tes.co.uk/teaching-resource/Unit-1B-Playgrounds-Focused-practical-tasks-6074204/)

Shapes and strength/structure using sheet materials.* [**Building a wooden structure**](http://www.tes.co.uk/teaching-resource/Building-a-wooden-structure-6172755/)

Video of constructing a wooden structure.* [**Archikids**](http://www.tes.co.uk/teaching-resource/Archikids-3007680/)

An online resource exploring architecture. |
| * explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products
 | * [**Moving toy planning**](http://www.tes.co.uk/teaching-resource/DT-making-a-moving-toy-mechanism-6424269/)

Termly planning for making a moving toy.* [**Mechanisms**](http://www.tes.co.uk/teaching-resource/New-framework-Literacy-non-fiction-Instructions-3010586/)

Lesson plans focussing on describing and labelling mechanisms.* [**Push/pull PowerPoint**](http://www.tes.co.uk/teaching-resource/Push-and-Pull-Powerpoint-presention-3004633/)

A PowerPoint presentation discussing movement.* [**Moving pictures**](http://www.tes.co.uk/teaching-resource/Unit-1A-Moving-pictures-Focused-practical-tasks-6074201/)

This lesson plan covers making moving pictures using slide and lever mechanisms. |

**KS2 Design and technology**

When designing and making, pupils should be taught to:

|  |
| --- |
| **Design** |
| * use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
 | * [**Developing ideas**](http://www.tes.co.uk/teaching-resource/Alien-Head-Dresses-6341099/)

A lesson plan with research to help students develop ideas.* [**Decision aid**](http://www.tes.co.uk/teaching-resource/Decision-Aid-6010424/)

This resource helps pupils to make decisions about their design/product.* [**Design criteria workbook**](http://www.tes.co.uk/teaching-resource/Photograph-Frames-Work-booklet-Unit-3D-Design-and-amp-Technology-3004074/)

Designing a photo frame workbook, focussing on developing a design.* [**Programme of study**](http://www.tes.co.uk/teaching-resource/Annotated-D-and-amp-T-Programme-of-Study-6434346/)How to interpret the new programme of study.
 |
| * generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
 | * [**Treasure box**](http://www.tes.co.uk/teaching-resource/How-will-you-store-your-favourite-things-CADCAM-v-6036048/)

Design and make a small treasure box using CAD.* [**Using nets**](http://www.tes.co.uk/teaching-resource/Packaging-Using-Nets-6158092/)

Get your pupils to study the process of packaging, use 3D shapes from nets, develop their own ideas and design a cereal packet.* [**Beast design**](http://www.tes.co.uk/teaching-resource/DT-How-will-my-beast-open-its-mouth-6154305/)

The design process through ideas, development and modelling.* [**Designing and making**](http://www.tes.co.uk/teaching-resource/Photo-Frames-6072763/)What to consider when designing and making.
 |

|  |
| --- |
| **Make** |
| * select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
 | * [**Puppet making**](http://www.tes.co.uk/teaching-resource/Puppet-making-6389967/)

Designing and making a puppet using tools.* [**Making catapults**](http://www.tes.co.uk/teaching-resource/Design-and-amp-Make-Catapults-6055861/)

Design and create a working model of a Roman catapult.* [**Making a musical instrument**](http://www.tes.co.uk/teaching-resource/Making-musical-instruments-clacker-6127140/)

This PowerPoint presentation shows the design stages and making of a clacker.* [**Design and make**](http://www.tes.co.uk/teaching-resource/Unit-4B-Storybooks-Design-and-make-assignment-6074247/)Modelling ideas and how to improve making methods.
 |
| * select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
 | * [**Selecting suitable materials**](http://www.tes.co.uk/teaching-resource/Beat-the-Flood-pupil-activity-sheets-6356718/)

A lesson on how to select materials based on their function/use.* [**Money containers**](http://www.tes.co.uk/teaching-resource/Year-4-Money-Containers-6406782/)

A project looking at suitability of material (fabric) used.* [**Building a shelter**](http://www.tes.co.uk/teaching-resource/Building-a-shelter-6376467/)

Get your pupils to explore the advantages/disadvantages of using materials.* [**Comparing breads**](http://www.tes.co.uk/teaching-resource/Unit-5B-Bread-IDEAs-6074261/)Investigate and evaluate bread according to its characteristics.
 |

|  |
| --- |
| **Evaluate** |
| * investigate and analyse a range of existing products
 | * [**Evaluation tool**](http://www.tes.co.uk/teaching-resource/Eco-design-web-6193200/)

A simple evaluation tool for helping pupils to analyse existing products.* [**Park analysis**](http://www.tes.co.uk/teaching-resource/The-Park-6302107/)

An engaging PowerPoint presentation and worksheet for analysing theme park ideas.* [**Assessment levels**](http://www.tes.co.uk/resourcedetail.aspx?storycode=6094328)

These handy assessment levels would make an excellent Assessment for Learning wall poster, or a reference sheet to put in exercise books.* [**Lights investigation**](http://www.tes.co.uk/teaching-resource/DT-lights-6154318/)

This pupil booklet leads students through the design process, starting with initial investigation. |
| * evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
 | * [**Self/peer assessment**](http://www.tes.co.uk/resourcedetail.aspx?storycode=6386602)

A set of versatile peer-/self-assessment level sheets and a PowerPoint presentation to go with it.* [**Peer assessment**](http://www.tes.co.uk/teaching-resource/Peer-Assessment-final-product-or-model-6014699/)

This peer-assessment task will help students to highlight areas to improve.* [**Practical evaluation and success criteria**](http://www.tes.co.uk/teaching-resource/Practical-Evaluation-and-Success-Criteria-6390244/)

These evaluation PowerPoint presentations include demonstrations and success criteria.* [**Evaluation sheet**](http://www.tes.co.uk/teaching-resource/Evaluation-sheet-6096859/)A simple sheet that encourages children to evaluate their work.
 |
| * understand how key events and individuals in design and technology have helped shape the world
 | * [**Present and future technology**](http://www.tes.co.uk/teaching-resource/Present-and-amp-Future-Technology-6057394/)

A lesson in which pupils discuss present and future technologies.* [**Dyson design process**](http://www.tes.co.uk/teaching-resource/James-Dyson-Foundation-The-Design-Process-6312265/)

These videos on the design process and becoming an engineer focus on the Dyson brand.* [**Visual arts**](http://www.tes.co.uk/teaching-resource/KS2-Lesson-plan-Visual-arts-6020164/)

Pupils create a visual arts dictionary and research famous artists/designers in this engaging lesson.* [**Famous inventors**](http://www.tes.co.uk/teaching-resource/Famous-Inventors-6312985/)This PowerPoint presentation will introduce students to some famous inventors.
 |

|  |
| --- |
| **Technical knowledge** |
| * apply their understanding of how to strengthen, stiffen and reinforce more complex structures
 | * [**Shelters**](http://www.tes.co.uk/teaching-resource/Unit-6A-Shelters-Focused-practical-tasks-6074271/)

A lesson to consider how structures can fail and to explore ideas of how to strengthen them.* [**Bridges**](http://www.tes.co.uk/teaching-resource/Bridges-pack-6194337/)

This resource pack looks at bridge types and how to increase their strength.* [**Structures workbook**](http://www.tes.co.uk/teaching-resource/YEAR-6-STRUCTURES-WORK-BOOKLET-6011843/)

A workbook that takes a look at more complex structures and how they are strengthened* [**Structure tests**](http://www.tes.co.uk/teaching-resource/Beat-the-Flood-Materials-and-structures-tests-6356694/)These tasks will help children to test the strength and suitability of materials.
 |
| * understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
 | * [**Video on gears**](http://www.tes.co.uk/teaching-resource/What-and-39-s-a-gear-to-do-6271031/)

A short video to explain how gears work.* [**Gears and mechanisms**](http://www.tes.co.uk/teaching-resource/Gears-and-amp-Mechanisms-6016599/)

These web pages look through at gears and mechanisms in detail.* [**Fairground pulleys**](http://www.tes.co.uk/teaching-resource/DT-Fairgrounds-plan-ppt-and-worksheets-6154303/)

A workbook and connected PowerPoint presentation for looking at fairground rides and how they work.* [**Moving toys workbook**](http://www.tes.co.uk/teaching-resource/MOVING-TOYS-WORK-BOOKLET-3007855/)Help students to explore cams and moving toys with this workbook.
 |
| * understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
 | * [**Electronic chooser chart**](http://www.tes.co.uk/teaching-resource/Electronics-Chooser-Chart-6071936/)

Fill in the blanks chart to help pupils’ understanding of electronic components.* [**Introduction to electronics**](http://www.tes.co.uk/teaching-resource/Introduction-to-Electronics-6019035/)

This lesson plan and guide provide a good introduction to electronics.* [**Buggy circuit**](http://www.tes.co.uk/teaching-resource/How-fast-should-your-buggy-be-6036058/)

Students can design and make a controllable buggy with the help of these resources.* [**Electronic billboard**](http://www.tes.co.uk/teaching-resource/What-message-will-your-billboard-send-6036073/)

A unit for creating an electronic billboard. |
| * apply their understanding of computing to program, monitor and control their products.
 | * [**Lighting it up – Ideas**](http://www.tes.co.uk/teaching-resource/Unit-4E-Lighting-it-up-IDEAs-6074254/)

A whole term of lesson plans on how lights can be controlled.* [**Building circuits**](http://www.tes.co.uk/teaching-resource/Building-circuits-6018699/)This unit on building circuits teaches students to use a computer to control their products.
* [**Control and modelling**](http://www.tes.co.uk/teaching-resource/ICT-Control-and-Modelling-6260317/)

A set of lesson plans and activities about using control.* [**Sensors**](http://www.tes.co.uk/teaching-resource/Sensors-6329663/)An engaging starter activity that introduces pupils to sensors and their applications in today's world.
 |

**KS1 Cooking and nutrition**

Pupils should be taught to:

|  |  |
| --- | --- |
| * use the basic principles of a healthy and varied diet to prepare dishes
 | * [**Investigating food**](http://www.tes.co.uk/teaching-resource/Investigating-food-workbook-6062498/)

This workbook will help students to understand food and healthy eating.* [**Healthy eating activity**](http://www.tes.co.uk/teaching-resource/Healthy-eating-activities-6169826/)

Worksheets that explore how to eat a healthy diet.* [**Preparing fruit and veg**](http://www.tes.co.uk/teaching-resource/Eat-More-Fruit-and-Veg-6055918/)

These planning and resources materials cover the preparation of different foods.* [**Planning to cook**](http://www.tes.co.uk/teaching-resource/Cooking-Key-fact-5-Planning-to-cook-6048397/)A selection of primary cooking resources from the British Nutrition Foundation.
 |
| * understand where food comes from
 | * [**Food comes from plants or animals**](http://www.tes.co.uk/teaching-resource/Key-fact-1-all-foods-come-from-plants-or-animals-6048798/)

These plans and resources look at how all food is from plant or animal origin.* [**Wheat to seed**](http://www.tes.co.uk/teaching-resource/Where-does-bread-come-from-Wheat-seed-to-table-6204821/)Help students to explore where bread comes from and the processes it undergoes.
* [**Different ingredients for cooking**](http://www.tes.co.uk/teaching-resource/Cooking-Key-fact-1-Different-ingredients-for-cooking-6048350/)

A set of resources looking at different ingredients.* [**Where does our food come from**](http://www.tes.co.uk/teaching-resource/Where-does-our-food-come-from-6044483/)A resource for sorting food depending on its origin.
 |

**KS2 Cooking and nutrition**

Pupils should be taught to:

|  |  |
| --- | --- |
| * understand and apply the principles of a healthy and varied diet
 | * [**Balanced diet**](http://www.tes.co.uk/teaching-resource/Healthy-eating-Key-fact-2-Balanced-diet-6048805/)

A set of plans and resources on a balanced diet.* [**Healthy eating**](http://www.tes.co.uk/teaching-resource/Healthy-eating-healthy-living-LESSON-PLAN-6169066/)

This activity on food groups and nutrition with help students to eat more healthily.* [**The Eat Well plate**](http://www.tes.co.uk/teaching-resource/Healthy-Eating-Week-The-Eatwell-Plate-and-Tips-6333123/)

Introduce students to the Eat Well plate to get a good balance in your diet.* [**Teachers guide to healthy eating**](http://www.tes.co.uk/teaching-resource/Teachers-guide-to-healthy-eating-6048349/)These resources will act as a guide to teaching about healthy eating.
 |
| * prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
 | * [**Food skills**](http://www.tes.co.uk/teaching-resource/Cooking-Key-fact-4-Food-skills-6048812/)

A range of resources on various food-preparation skills.* [**Bread recipe cards**](http://www.tes.co.uk/teaching-resource/Cook-Club-Bread-Recipe-Cards-6159593/)Step-by-step recipe cards for making bread.
* [**Fishcakes**](http://www.tes.co.uk/teaching-resource/Fantastic-fish-cakes-6312941/)

A simple recipe for making fishcakes.* [**Eggs factor**](http://www.tes.co.uk/teaching-resource/Eggs-Factor-6010806/)This resource lists different ways that eggs can be used in cooking.
 |

|  |  |
| --- | --- |
| * understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed
 | * [**Farm to fork**](http://www.tes.co.uk/teaching-resource/Food-and-farming-Key-fact-3-Food-is-changed-from-farm-to-fork-6048800/)Planning documents, worksheets and activities to explain to pupils how food is grown and processed.
* [**Why farming matters**](http://www.tes.co.uk/teaching-resource/Why-Farming-Matters-Primary-activity-booklet-6427423/)

These activities explore the role of farming in food production.* [**Food and farming**](http://www.tes.co.uk/teaching-resource/Food-and-farming-Key-fact-2-Food-is-processed-6048818/)

A range of resources on how food can be processed.* [**Food is farmed or grown**](http://www.tes.co.uk/teaching-resource/Food-and-farming-Key-fact-2-Food-is-farmed-or-grown-6048799/)

Resources to teach about how food is farmed or grown. |