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| **KS1** | **Year R** | **Year 1** | **Year 2** |
| **Developing, planning and communicating ideas**  | Explore different materials freely, to develop their ideas about how to use them and what to make.Develop their own ideas and then decide which materials to use to express them.  | Think of some ideas of their ownExplain what they want to doUse pictures and words to plan**Challenge:** Come up with a range of possible solutions to a problem | Think of ideas and plan what to do nextChoose the best tools and materials Give a reason why these are bestDescribe their design by using pictures, diagrams, models and words**Challenge:** Explain why they disregarded some tools/materials |
| **Working with tools, equipment, materials & components to make quality products**  | Join different materials and explore different textures. | Explain what they are makingExplain which tools are they using**Challenge:** Name tools and their uses | Join things (materials/ components) together in different ways**Challenge:** Use a variety of appropriate joins successfully |
| **Evaluating processes and products** | Describe how something worksTalk about their own work and things that other people have done | Describe how something worksTalk about their own work and things that other people have done**Challenge:**  Suggest an alternative design/process to improve their work | Explain what went well with their workIf they did it again, explain what would they want to improve**Challenge:** How did they adapt their design as they worked? |
| **Cooking and nutrition** | Cut food safelyDescribe the texture of foodsWash their hands and make sure that surfaces are clean | Cut food safelyDescribe the texture of foodsWash their hands and make sure that surfaces are cleanThink of interesting ways of decorating food they have made, eg, cakes | Explain what it means to be hygienicBe hygienic in the kitchenKnow where food comes from |
| **Textiles** | Describe how different textiles feel |  Describe how different textiles feel Make a product from textile by gluing | Measure textile Join textiles together to make something cut textilesExplain why they chose a certain textile |
| **Mechanisms** | Cut materials using scissors |  Make a product which moves Cut materials using scissors Describe the materials using different words Say why they have chosen moving parts |  Join materials together as part of a moving product Add some kind of design to their product |
| **Use of materials** | Make simple models which expresses their ideas using different materials. |  Make a structure/model using different materials Work tidily Make their model stronger if it needs to be |  Measure materials to use in a model or structure Join material in different ways Use joining, folding or rolling to make it stronger |
| **Construction** | Make imaginative and complex ‘small worlds’ with blocks and construction kits, such as a city with different buildings and a park. |  Talk with others about how they want to construct their product Select appropriate resources and tools for their building projects Make simple plans before making objects, e.g. drawings, arranging  pieces of construction before building |  Make sensible choices as to which material to use for their  constructions Develop their own ideas from initial starting points Incorporate some type of movement into models Consider how to improve their construction |

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| **LKS2** | **Year 3** | **Year 4** |
| **Developing, planning and communicating ideas**  | Show that the design meets a range of requirementsPut together a step-by-step plan which shows the order and also what equipment and tools are neededDescribe their design using an accurately labelled sketch and wordsBe realistic with their plan**Challenge**: Prioritise their design requirements | How to check if their design is successfulBegin to explain how they can improve their original designEvaluate their product, thinking of both appearance and the way it works Consider how they could have made their idea better **Challenge**: Suggest alternative designs and evaluate them |
| **Working with tools, equipment, materials & components to make quality products**  | Use equipment and tools accurately**Challenge**: Measure accurately and avoid wasting materials | Tell if their finished product is going to be good qualityBe aware of the need to produce something that will be liked by others Show a good level of expertise when using a range of tools and equipment Work at their product even though their original idea might not have worked **Challenge**: Evaluate their design from another person’s point of view |
| **Evaluating processes and products** | Explain what was changed which made the design even better **Challenge**: Suggest further changes to improve appearance | How to check if their design is successfulBegin to explain how they can improve their original designEvaluate their product, thinking of both appearance and the way it works Consider how they could have made their idea better**Challenge**: Check and adapt their work as they go along |
| **Cooking and nutrition** | Choose the right ingredients for a productUse equipment safelyMake sure that the product looks attractiveDescribe how combined ingredients come togetherSet out to grow plants such as cress and herbs from seed with the intention of using them for the food product | Be hygienic and safePresent their product in an interesting way |
| **Textiles** | Join textiles of different types in different waysChoose textiles both for their appearance and also qualities | Consider what the user would want when choosing textilesHow to make their product strongDevise a templateExplain how to join things in a different way |
| **Electrical and Mechanical Components** | Select the most appropriate tools and techniques to use Make a product which uses both electrical and mechanical componentsUse a simple circuit | Add things to their circuitsAlter their product after checking itBe confident about trying out new and different ideas |
| **Stiff and flexible sheet materials** | Do they use the most appropriate materialsWork accurately to make cuts and holesJoin materials | Measure carefully to ensure there are no mistakesMake their product strong |
| **Mouldable materials** | Select the most appropriate materialsUse a range of techniques to shape and mouldUse finishing techniques | Use a range of advanced techniques to shape and mouldUse finishing techniques, showing an awareness of audience |
| **UKS2** | **Year 5** | **Year 6** |
| **Developing, planning and communicating ideas**  | Come up with a range of ideas after collecting informationTake a user’s view into account when designingProduce a detailed step-by-step planSuggest some alternative plans and say what the good points and drawbacks are about each**Challenge**: Draw their plan to scale | Use a range of information to inform their designUse market research to inform plansWork within constraintsFollow and refine their plan if necessary Justify their plan to someone elseConsider culture and society in their designs**Challenge**: Present/advertise/promote their idea to ‘sell’ it to a company/buyer |
| **Working with tools, equipment, materials and components to make quality products**  | Explain why their finished product is going to be of good qualityExplain how their product will appeal to the audience Use a range of tools and equipment expertly Persevere through different stages of the making process **Challenge**: Predict the risks involved in using different tools | Use tools and materials preciselyChange the way they are working if needed**Challenge**: Train others to use tools and materials precisely |
| **Evaluating processes and products** | Check that their design is the best it can beCheck whether anything could be improvedEvaluate appearance and function against the original criteria**Challenge**: Identify the successes and if it is fit for purpose | Test and evaluate their final product Ensure their product is fit for purposeIdentify what would improve their productEvaluate if different resources would have improved their product Evaluate if more or different information would make it even betterCheck their product meet all design criteria Consider the use of the product when selecting materials**Challenge**: Research and compare similar products on the market and identify how theirs compare |
| **Cooking and nutrition** | Describe what they do to be both hygienic and safePresent their product well | Explain how their product should be stored with reasonsSet out to grow their own products with a view to making a salad, taking account of time required to grow different foods |
| **Textiles** | Think what the user would want when choosing textilesMake their product attractive and strongMake up a prototype firstUse a range of joining techniques | Consider about how their product could be soldWhat would improve their product even more |
| **Electrical and Mechanical Components** | Incorporate a switch into their productRefine their product after testing itIncorporate hydraulics and pneumatics | Use different kinds of circuit in their product Identify ways in which adding a circuit would improve their product |
| **Stiff and flexible sheet materials** | Accurate measurements to ensure that everything is preciseEnsure their product is strong and fit for purpose | Justify why they selected specific materialsEnsure their work is precise and accurateHide joints so as to improve the look of their product  |
| **Mouldable materials** | Be motivated to refine and further improve their product using mouldable materials | Refine and further improve their product using mouldable materialsJustify why the chosen material was the best for the taskJustify design in relation to the audience |