

D.T. Progression in knowledge and skills

September 2020

| Culmination of PIS | | | |
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| EYFS- ELG | Key stage 1 | | Key Stage 2 |
| <p>Physical development (40-60+) 50- Uses simple tools to effect changes to materials 51- Handles tools, objects, construction and malleable materials safely with increasing control ELG- They handle equipment and tools effectively, including pencils and writing</p> <p>Expressive arts and design (40-60+) 29- Constructs with a purpose in mind, using a variety of resources 30- Uses simple tools and techniques competently and appropriately 31- Selects appropriate resources and adapts work where necessary 32- Select tools and techniques needed to shape, assemble and join materials they are using ELG- They can safely use and explore a variety of materials, tools, techniques, experimenting with colour, design, texture, form and functions</p> | <p>Exploring and Developing Ideas Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Select from and use a range of tools and equipment to perform practical tasks. Select and use a wide range of materials and components.</p> | <p>Evaluating and developing work Explore and evaluate a wide range on existing products. Evaluate their own ideas and products against design criteria. Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms.</p> | <p>Exploring and Developing Ideas Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Generate, develop, model and communicate ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer aided design. Select from a wider range of tools and equipment. Select from a wider range of materials and components.</p> <p>Evaluating and Developing Work Investigate and analyse a range of existing products. Understand how key events and individuals in technology have helped shape the world. Apply understanding of how to make more complex structures more stable. Understand and use mechanical systems in their products. Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.</p> |
| | Year 1/ 2 | Year 3/4 | Year 5/6 |
| Developing, planning and communicating ideas | <ul style="list-style-type: none"> Follow verbal instructions. Explain what they are making and which materials they are using. Name the tools they are using. Describe what they need to do next. Select materials from a limited range that will meet the design criteria. Select appropriate techniques explaining: First... Next... Last... Select pictures to help develop ideas. Add notes to drawings to help explanations. | <ul style="list-style-type: none"> Investigate similar products to the one to be made to give starting points for a design. Draw/sketch products to help analyse how they are made. Think ahead about the order of their work and decide upon tools and materials. Plan a sequence of actions to make a product. Select appropriate techniques explaining: First... Next... Last... Record the plan by drawing (labelled sketches) or writing. | <p>Investigate products/images to collect ideas.</p> <ul style="list-style-type: none"> Sketch and model alternative ideas. Record ideas using annotated diagrams. Draw plans which can be read/ followed by someone else. |
| Food technology | <ul style="list-style-type: none"> Develop a food vocabulary using taste, smell, texture and touch. Group familiar food products e.g. fruit and vegetables. Cut and peel a range of ingredients. Work safely and hygienically Grate and chop a range of ingredients. Measure and weigh food items - non-statutory measures e.g. spoons, cups. Understand the need for a variety of foods in the diet. | <ul style="list-style-type: none"> Develop sensory vocabulary/knowledge using taste, smell, texture and touch. Follow instructions. Make healthy eating choices from an understanding of a balanced diet. Join and combine a range of ingredients. Analyse the taste, texture, smell and appearance of a range of food. Work safely and hygienically. Measure and weigh ingredients appropriately. | <ul style="list-style-type: none"> Select and prepare foods for a particular purpose. Taste a range of ingredients/food items to develop a sensory food vocabulary for use when designing. Weigh and measure using scales. Cut and shape ingredients using appropriate tools and equipment. Join and combine food ingredients appropriately. Decorate appropriately. Work safely and hygienically. Show an awareness of a healthy diet from an understanding of a balanced diet. |

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| Textiles | <ul style="list-style-type: none"> Colour fabrics using a range of techniques e.g. fabric paints, printing and painting. Join fabrics with glue. Decorate fabrics with buttons, beads, sequins, braids and ribbons. Cut out shapes which have been created by drawing around a template onto the fabric. | <ul style="list-style-type: none"> Join fabrics using running stitch, over sewing and back stitch. Use appropriate decoration techniques (glue). Create a simple pattern. Understand the need for patterns. | <ul style="list-style-type: none"> Understand simple pattern layout. Make quality products. Decorate textiles appropriately often before joining pieces together. Tack fabric pieces together. |
| Construction | <ul style="list-style-type: none"> Use a range of materials to create models with wheels and axels e.g. glue, tape, dowel and cotton reels. Attach wheels to a simple chassis using an axle. Join appropriately for different materials and situations e.g. glue and tape. Mark out materials to be cut using a template. Observe glue gun being used by an adult. | <ul style="list-style-type: none"> Make structures more stable by giving them a wide base. Create a shell or frame structure; strengthen frames with diagonal struts. Incorporate a circuit with a bulb or buzzer into a model. Observe glue gun being used by an adult. | <ul style="list-style-type: none"> Join materials using appropriate methods. Build frameworks using a range of materials to support mechanisms. E.g. wood, corrugated card and plastic. Use a glue gun with close supervision. Use a hand drill to drill tight and loose fit holes. Cut strip wood, dowel and square section wood accurately to 1cm. |
| Sheet materials | <ul style="list-style-type: none"> Fold, tear and cut paper and card. Roll paper to create tubes. Cut along lines, straight and curved. Use a hole punch. Insert paper fasteners for card linkages. Use simple pop ups. Curl paper. Investigate strengthening sheet materials. | <ul style="list-style-type: none"> Cut slots. Cut internal shapes. Use lolly sticks/card to make levers and linkages. Use and explore complex pop ups. Create nets. | <ul style="list-style-type: none"> Cut slots. Cut accurately and safely to a marked line. Join and combine materials with temporary, fixed or moving joints. Choose an appropriate sheet material for a purpose |
| Evaluating | <ul style="list-style-type: none"> Say what they like and do not like about items they have made and attempt to say why (strength and weaknesses) Talk about changes made during the marking/design process. Discuss how closely their finished products meet their design criteria. | <ul style="list-style-type: none"> Identify the strengths and weaknesses of their design ideas. Consider and explain how the finished product could be improved. Discuss how well the finished product meets the design criteria and how well it meets the needs of the user. | <ul style="list-style-type: none"> Justify decisions about materials and methods of construction. Reflect on their work using design criteria stating how well the design fits the needs of the user. Identify what does and does not work in a product. Make suggestions as to how their design could be improved. |
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