

Healey Primary School



Design and Technology Progression in Skills

EYFS

Skills progression for expressive arts and design in EYFS will follow the Early Learning Goals stated in the EYFS curriculum.

Exploring and using media and materials

Children's learning will be supported through offering opportunities to safely use and explore a variety of materials, tools and techniques experimenting with colour, design, texture, form and function.

Being Imaginative

Children will have the opportunity to use what they have learnt about media and materials in original ways, thinking about uses and purposes. They will be encouraged to represent their own ideas, thoughts and feelings.

In addition over their time in EYFS children will have the opportunity to:-

- work with materials from all four areas of D and T – food, sheet materials, construction and textiles
- take part in challenges and problem solving activities
- use construction sets and combinations of construction sets and other materials

Year 1

Developing, planning and communicating ideas

- 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 and name the tools needed to work the materials
- Select appropriate technique explaining “first, next, last”
- Explore ideas by rearranging materials
- Model ideas with kits, rearranging materials
- Select pictures to help develop ideas
- Use pictures and words to convey what they want to design and make
- Describe their models and drawings of ideas and intentions
- Use kits / reclaimed materials to develop an idea
- Use drawings to record ideas as they are developed
- Discuss their work as it progresses
- Add notes to drawings to help explanations

Evaluating

- Say what they like and do not like about items they have made and attempt to say why
- Talk about their designs as they develop and identify good and bad points
- Talk about changes made during the making process
- Discuss how closely their finished products meet their design criteria

Textiles

Design Project

-Design and make an item to keep ears warm

Skills covered

- Colour fabrics using a range of techniques e.g. fabric paints, printing, painting
- Cut out shapes which have been created by drawing round a template onto the fabric
- Join fabrics by using running stitch, glue, staples, over sewing, tape
- Decorate fabrics with buttons, beads, sequins, braids, ribbons

Sheet Materials

Design Project

- Design and make a piece of playground equipment

Skills covered

- Fold, tear and cut paper and card
- Roll paper to create tubes
- Cut along lines, straight and curved
- Curl paper
- Use hole punch
- Insert paper fasteners for card linkages
- Create hinges
- Use simple pop ups
- Investigate strengthening sheet materials
- Investigate joinings, temporary, fixed and moving

Year 2

Developing, planning and communicating ideas

- 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 and name the tools needed to work the materials
- Select appropriate technique explaining “first, next, last”
- Explore ideas by rearranging materials
- Model ideas with kits, rearranging materials
- Select pictures to help develop ideas
- Use pictures and words to convey what they want to design and make
- Describe their models and drawings of ideas and intentions
- Use kits / reclaimed materials to develop an idea
- Use drawings to record ideas as they are developed
- Discuss their work as it progresses
- Add notes to drawings to help explanations

Evaluating

- Say what they like and do not like about items they have made and attempt to say why
- Talk about their designs as they develop and identify good and bad points
- Talk about changes made during the making process
- Discuss how closely their finished products meet their design criteria

Construction

Design Project

- Design and make something to transport Santa and his presents.

Skills covered

- Make vehicles with construction kits which contain free running wheels
- Use a range of materials to make models with wheels and axles e.g. tubes, dowel, cotton reels
- Attach wheels to a chassis using an axle
- Join appropriately for different materials and situations e.g. glue, tape
- Mark out materials to be cut using a template
- Cut strip / dowel using hacksaw and bench hook
- See glue gun used by an adult
- Join materials with running stitch and over stitch

Food

Design Project

-Design and make a smoothie

Skills covered

- Develop a food vocabulary using taste, smell, texture and feel.
- Group familiar food products e.g. fruit and vegetables
- Cut, peel, grate, chop a range of ingredients
- Work safely and hygienically
- Understand the need for a variety of foods in a diet
- Measure and weigh food items, non statutory measures e.g. spoons, cups

Year 3

Developing, planning and communicating ideas

- Investigating similar products to the one to be made to give starting points for a design
- Draw/sketch products to help analyse and understand how products 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
- Record the plan by drawing (labelled sketches) or writing
- Develop more than one design or adaptation of an initial design
- Propose realistic suggestions as to how they can achieve their design ideas
- Add notes to drawings to help explanations

Evaluating

- Identify the strengths and weaknesses of their design ideas
- Decide which design idea to develop
- 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

Food

Design Project

- Design and make a healthy sandwich for a picnic.

Skills covered

- Develop sensory vocabulary / knowledge using smell, taste, texture and feel
- Follow instructions
- Make healthy eating choices from and understanding of a balanced diet
- Join and combine a range of ingredients e.g. snack foods
- Work safely and hygienically
- Measure and weight ingredients appropriately

Sheet Materials

Design Project

- Design and make a pop up for a story book

Skills covered

- Cut slots
- Cut internal shapes
- Use lolly sticks / card to make levers and linkages
- Use linkages to make movement larger or more varied
- Use and explore complex pop ups
- Create nets

Year 4

Developing, planning and communicating ideas

- Investigating similar products to the one to be made to give starting points for a design
- Draw/sketch products to help analyse and understand how products 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
- Record the plan by drawing (labelled sketches) or writing
- Develop more than one design or adaptation of an initial design
- Propose realistic suggestions as to how they can achieve their design ideas
- Add notes to drawings to help explanations

Evaluating

- Identify the strengths and weaknesses of their design ideas
- Decide which design idea to develop
- 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

Textiles

Design Project

- Design a container to hold pencils

Skills covered

- Understand seam allowance
- Join fabrics using running stitch, over sewing, back stitch
- Explore fastenings and recreate some e.g. sew on buttons and make loops
- Prototype a product using J cloths
- Use appropriate decoration techniques e.g. appliqué (glued or simple stitches)
- Create a simple pattern
- Understand the need for patterns

Construction

Design Project

- Design and make a light

Skills covered

- Incorporate a circuit with a bulb or buzzer in to a model
- Create shell or frame structures, strengthen frames with diagonal struts
- Make structures more stable by giving them a wide base
- Prototype frame and shell structures
- Measure and mark square selection, strip and dowel accordingly to 1cm
- Use glue gun with close supervision (one to one)

Year 5

Developing, planning and communicating ideas

- Investigate products / images to collect ideas
- Sketch and model alternative ideas
- Develop one idea in depth
- Combine modelling and drawing to refine ideas
- Plan the sequence of work using a storyboard
- Record ideas using annotated diagrams
- Use model kits and drawings to help formulate design ideas
- Make prototypes
- Use found information to inform decisions
- Use a computer to model ideas
- Draw plans which can be read / followed by someone else
- Give a report using correct technical vocabulary

Evaluating

- Use the design criteria to inform their decisions about ways to proceed
- Justify their 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 the product
- Make suggestions as to how their design could be improved.

Food

Design Project

- Design and make bread for a specified purpose

Skills covered

- Prepare food products taking into account the properties of ingredients and sensory characteristics
- 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 e.g grating
- Join and combine food ingredients appropriately e.g beating, rubbing in
- Decorate appropriately
- Work safely and hygienically
- Show awareness of a healthy diet from an understanding of a balanced diet.

Structures

Design Project

- Design a vehicle

Skills covered

- Cut slots
- Cut accurately and safely to a marked line
- Joining and combining materials with temporary, fixed or moving joinings
- Use craft knife, cutting mat and safety ruler under one to one supervision if appropriate
- Choose an appropriate sheet material for the purpose.

Year 6

Developing, planning and communicating ideas

- Investigate products / images to collect ideas
- Sketch and model alternative ideas
- Develop one idea in depth
- Combine modelling and drawing to refine ideas
- Plan the sequence of work using a storyboard
- Record ideas using annotated diagrams
- Use model kits and drawings to help formulate design ideas
- Make prototypes
- Use found information to inform decisions
- Use a computer to model ideas
- Draw plans which can be read / followed by someone else
- Give a report using correct technical vocabulary

Evaluating

- Use the design criteria to inform their decisions about ways to proceed
- Justify their 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 the product
- Make suggestions as to how their design could be improved.

Construction

Design Project

- Design and make a portable light

Skills covered

- Use bradawl to mark hole positions
- Use hand drill to drill tight and loose fit holes
- Cut strip wood, dowel, square section wood accurately to 1mm
- Join materials using appropriate methods
- Incorporate motor and switch in to a model
- Control a model using an ICT control programme
- Use a cam to make an up and down mechanism
- Build frameworks using a range of materials e.g wood, card, corrugated plastic to support mechanisms
- Use glue gun with close supervision

Textiles

Design Project

- Design and make a cover to protect a mobile phone

Skills covered

- Create 3D products using pattern pieces and seam allowance
- Understand pattern layout
- Decorate textiles appropriately often before joining components
- Pin and tack fabric pieces together
- Join fabrics using over sewing, back stitch, blanket stitch or machine stitching (closer supervision)
- Combine fabrics to create more useful properties
- Make quality products