# Uplands DT Curriculum

Our DT curriculum follows a two-year rolling programme.  It fully covers the National Curriculum and has some additional units which we have created to enhance the topics being studied that term.

Our DT curriculum has our five Big Ideas weaved throughout (diversity, the environment, similarities and differences, relationships and changes).

Our DT curriculum makes links to prior learning and is sequenced from reception to year 6.

We have planned an end of unit outcome for each of our DT units and picked the key learning points that will enable our children to reach that end point.  The key learning is the information we want our children to retain from that unit.

# Merlins DT Key Learning Points and End of Unit Outcomes

Year A and B

| | Autumn Term | Spring Term | Summer Term |
|---|---|---|---|
| **Links** | **Previous learning:** Development matters: Talk about the differences between materials and changes they notice.<br>**Future learning**: Cooking<br>**Big Ideas**: Changes | **Previous learning:** Development matters: Develop their own ideas and then decide which materials to use to express them.<br>**Future learning**: Designing in Owls<br>**Big Ideas**: Changes/Similarities and differences | **Previous learning:** Development matters: Explore different materials freely, to develop their ideas about how to use them and what to make.<br>**Future learning**: Clay in Owls<br>**Big Ideas**: Changes |
| **Merlins** | **All About Me!**<br>**Expressive arts and design**<br>To design and make pizza.<br>• A pizza base is also a type of bread.<br>• Pizzas have a selection of toppings.<br>***End of unit outcome: To choose from a range of toppings and make a pizza.*** | **Brum Brum, Beep Beep!**<br>**Expressive arts and design**<br>To design a vehicle.<br>• A design is a plan or drawing of something you are going to make.<br>• The design should show what it will look like when it is finished.<br>***End of unit outcome: To create a design for a vehicle.*** | **Animals**<br>**Expressive arts and design**<br>To make a clay model of a Mini-beast.<br>• Clay can be squeezed or rolled to make different shapes.<br>• Air-drying clay can be left out to dry so it becomes strong and hard.<br>***End of unit outcome: To create a clay model.*** |
| **Vocab** | Apron, chop, cut, mix, equipment, fork, knife, spoon, bowl, taste (senses) | Chassis, sellotape, glue stick, masking tape, ruler, straws, join | Squeeze, roll, clay |

# Owls DT Key Learning Points and End of Unit Outcomes Year A

| | Autumn Term | Spring Term | Summer Term |
|---|---|---|---|
| **Links** | **Previous Learning:** Designing cars in Merlins<br>**Future learning**: Designing in Kestrels<br>**Big Ideas**: Changes/Similarities and differences | **Previous Learning:** Cooking in Merlins<br>**Future learning**: Cooking in Kestrels<br>**Big Ideas**: Changes/Environment | **Previous Learning:** Cooking in Merlins<br>**Future learning**: Cooking in Kestrels<br>**Big Ideas**: Changes/Diversity |
| **Owls** | **Fire Fire!**<br>Design, Make, Evaluate, Technical knowledge<br><br>To make a model of a Tudor house.<br><br>**Knowledge**<br>• A net is what a 3D shape would look like if it was unfolded.<br>• You can make a structure stronger by using stiffer materials.<br>**Skills**<br>• Folding and sticking together a net to create a 3d shape.<br><br>***End of unit outcome: To create a model of a house using nets to create 3d shapes.*** | **From Plant to Plate**<br>Design, Make, Evaluate, Technical knowledge, Cooking and Nutrition<br><br>To make a healthy food item.<br><br>**Knowledge**<br>• Healthy eating means eating a variety of different types of foods in the right amounts.<br>• Different fruits and vegetables grow in different parts of the world.<br>**Skills**<br>• Use a grater to safely grate vegetables.<br>• Use a knife to safely cut vegetables.<br><br>***End of unit outcome: To create a healthy salad.*** | **Wish you were here. Holiday in Kenya!**<br>Design, Make, Evaluate, Technical knowledge, Cooking and Nutrition<br><br>To make Kenyan chapati.<br><br>**Knowledge**<br>• Chapati are a type of flatbread eaten in Kenya.<br>• They can be eaten with curries for a main meal or tea and eggs for breakfast.<br>**Skills**<br>• Mix dry and wet ingredients to make a dough.<br>• Roll out the dough into flat rounds.<br><br>***End of unit outcome: To make a traditional Kenyan chapati.*** |
| **Vocab** | 2-D, 3-D, cut, fold, join, fix, materials | Grate, cut, slice, mix, vitamins, minerals, varied diet, grow | Chapati, dough, mix, kneed, roll |

# Kestrels DT Key Learning Points and End of Unit Outcomes

Year A

| | Autumn Term | Spring Term | Summer Term |
|---|---|---|---|
| Links | **Previous Learning:** Designing in Owls<br>**Future learning**: Making shaped cams in Eagles<br>**Big Ideas**: Changes | **Previous Learning:** Designing in Owls<br>**Future learning**: Creating circuits using crumble cards for moon buggies in Eagles<br>**Big Ideas**: Changes | **Previous Learning:** Puppet making in Owls<br>**Future learning**: Sewing in Eagles<br>**Big Ideas**: Changes/Similarities and differences |
| Kestrels | **The Victorians**<br>Design, Make, Evaluate, Technical knowledge<br><br>To create a pop up card.<br><br>**Knowledge**<br>• Pop up cards are simple cards that can be made for a variety of occasions.<br>• An internal stand is when a piece of paper is folded in half and cuts are made and folded to create a stand.<br>**Skills**<br>• Use a V fold to create a symmetrical 45° degree angle fold.<br>• Use scissors to accurately cut out detailed designs out of card.<br><br>***End of unit outcome: Create a Victorian pop up Christmas card.*** | **Extreme Earth**<br>Design, Make, Evaluate, Technical knowledge<br><br>To design and make a torch.<br><br>**Knowledge**<br>• Different battery powered light sources include: torches, head lamps, bike lights, lamps and light up toys.<br>• You can conceal an electrical circuit inside a casing whilst having the switch outside.<br>**Skills**<br>• Create a simple electrical circuit using a split pin and paperclip as a switch.<br><br>***End of unit outcome: Create a simple electrical circuit concealed inside a casing to create a working torch.*** | **We Will Rock You!**<br>Design, Make, Evaluate, Technical knowledge<br><br>To create a drawstring pouch.<br><br>**Knowledge**<br>• Weaving is the interlacing of two sets of threads or yarns.<br>• A pattern is a template used to create the size and shapes for a garment.<br>**Skills**<br>• Create a pattern and use it to cut out the shapes needed to make the purse.<br>• Use a running stitch to combine the fabric.<br><br>***End of unit outcome: Sew a drawstring purse using a pattern to create the pieces.*** |
| Vocab | V-fold, symmetrical, tabs, assemble, attach, internal stand, | Motor, series circuit, fault, connection, switch, insulator, conductor, control, device, battery, battery holder, light bulb, bulb holder | Annotated sketch, prototype, back stitch, running stitch, taking, cross stitch, |

# Eagles DT Key Learning Points and End of Unit Outcomes

Year A

| | Autumn Term | Spring Term | Summer Term |
|---|---|---|---|
| Links | **Previous Learning:** Cooking in Kestrels<br>**Future learning:** KS3 Cooking and nutrition<br>**Big Ideas**: Similarities and differences/environment | **Previous Learning:** Levers in Kestrels<br>**Future learning:** KS3 mechanical systems<br>**Big Ideas**: Similarities and differences/Changes | **Previous Learning:** Sewing in Kestrels<br>**Future learning:** KS3 textiles<br>**Big Ideas**: Similarities and differences |
| Eagles | **Survival of the Fittest!**<br>Design, Make, Evaluate, Technical knowledge, Cooking and Nutrition<br><br>To design and make a healthy snack.<br>**Knowledge**<br>• Carbohydrates, proteins, fats, vitamins and minerals are important for a healthy diet.<br>• Different types of food help our bodies in different ways.<br>**Skills**<br>• Use market research to find out what your target audience likes/dislikes.<br>• Design your product with a detailed diagram, packaging and list of ingredients.<br><br>***End of unit outcome: To use their knowledge of what constitutes a healthy and varied diet to design a healthy snack.*** | **Let the Battle Commence!**<br>Design, Make, Evaluate, Technical knowledge<br><br>To create moving longboat using CAMs movement.<br>**Knowledge**<br>• Cam is part of a mechanical linkage; it can rotate or slide.<br>• Different shaped cams can make something move in different ways.<br><br>**Skills**<br>• Create a template for the body of their longboat.<br>• Create a cam to move the sail up and down.<br><br>***End of unit outcome: Create a cam mechanism that can move the sail of a boat up and down.*** | **The World at War**<br>Design, Make, Evaluate, Technical knowledge<br><br>To design and make a tote bag.<br><br>**Knowledge**<br>• A motif is a decorative image or design.<br>• Different stitches have different uses when creating a garment: invisible stitch, running stitch, back stitch and blanket stitch.<br>Skills<br>• Create a pattern using specified measurements.<br>• Use the running stitch to attach their motif.<br>• Use the back stitch to join their fabric pieces of the bag together.<br><br>***End of unit outcome: Sew a tote bag using two different stitches.*** |
| Vocab | Carbohydrate, protein, fat, vitamins and minerals, seasonality, source, intolerance, allergy, varied, gluten, nutrition | CAM, linkage, pully, rotation, driver, cam, crank, mock-up | Hem, fastenings, (poppers, Velcro, hook and eyes, zip) pinking shears, mock-up, prototype, running stitch, back stitch, blanket stitch, invisible stitch |

# Owls DT Key Learning Points and End of Unit Outcomes

Year B

| | Autumn Term | Spring Term | Summer Term |
|---|---|---|---|
| Links | **Previous Learning:** Making in Merlins<br>**Future Learning:** Designing/making in Kestrels<br>**Big Ideas**: Similarities and differences/environment | **Previous Learning:** Designing a vehicle in Merlins<br>**Future Learning:** Sewing in Kestrels<br>**Big Ideas:** Changes | **Previous Learning:** Joining materials in Merlins<br>**Future Learning:** Designing/making in Kestrels<br>**Big Ideas**: Changes |
| Owls | **Jaws, Paws and Claws**<br>Design, Make, Evaluate, Technical Knowledge<br><br>To design and make a bird feeder.<br><br>**Knowledge**<br>• A bird feeder, bird table or tray feeder is placed outdoors to supply bird food to birds.<br>• You can use strong materials e.g. card, plastic bottles or plastic yoghurt pots to hold the bird food in.<br>**Skills**<br>• Measure the length of the materials using a ruler.<br>• Use scissors to cut the materials.<br><br>***End of unit outcome: To make a hanging bird feeder.*** | **Kapow!**<br>Design, Make, Evaluate, Technical Knowledge<br><br>To design and make a superhero car.<br>To be able to sew.<br><br>**Knowledge**<br>• A chassis is the frame of a car.<br>• An axel is a rod that goes through the wheel to help it move and stay in place.<br>• A running stitch is where you poke the needle down through the fabric and back up again.<br>**Skills**<br>• To use a needle and thread to create a running stitch.<br><br>***End of unit outcome: To sew an initial onto a cape using a running stitch.*** | **Uplands News**<br>Design, Make, Evaluate, Technical Knowledge<br><br>To design and make a shadow puppet.<br><br>**Knowledge**<br>• Shadow puppets are figures that can be placed between lights and a screen.<br>• A lever can make things move.<br>• A lever is a stiff bar that moves around a pivot.<br>**Skills**<br>• Use glue to attach their puppet to a stick.<br>• Use scissors to cut out the materials.<br>• Use a split pin to create a lever.<br><br>***End of unit outcome: Create a shadow puppet using that has a moving part that uses a lever created with a split pin.*** |
| Vocab | Materials, length, cut, fold, join, fix, measure, tape | Chassis, axel, vehicle, wheel, fabric, template, pattern pieces, mark out, decorate, running stitch | Puppet, join, scissors, fabric, template, pattern pieces, mark out, decorate, cut, fold, join, fix, lever, pivot, materials. |

# Kestrels DT Key Learning Points and End of Unit Outcomes

Year B

| | Autumn Term | Spring Term | Summer Term |
|---|---|---|---|
| Links | **Previous Learning:** Lever making in Owls<br>**Future Learning:** Cams movement in Eagles<br>**Big Ideas**: Changes | **Previous Learning:** Joining materials in Owls<br>**Future Learning:** Bridge making in Eagles<br>**Big Ideas**: Changes | **Previous Learning:** Cooking in Owls<br>**Future Learning:** Cooking in Eagles<br>**Big Ideas**: Similarities and differences/environment |
| Kestrels | **The Romans are Coming!**<br>Design, Make, Evaluate, Technical Knowledge<br><br>To design and make a lever.<br><br>**Knowledge**<br>• A lever is a simple machine that involves moving a load using a pivot motion as a force.<br>• All levers have the following:<br>➢ A beam is the lever or arm resting on the fulcrum.<br>➢ Fulcrum is the pivot or turning point.<br>➢ Force is the effort being put on.<br>➢ Load is the object being moved.<br>**Skills**<br>• Use a ruler to accurately measure the correct lengths of wood needed.<br>• Use a saw to cut the wood to the correct measurement.<br>• Use card to create triangular join supports.<br><br>***End of unit enquiry question: To make a working catapult out of wood using levers.*** | **Roots, Shoots and Poops!**<br>Design, Make, Evaluate, Technical Knowledge<br><br>To design and make a mini greenhouse.<br><br>**Knowledge**<br>• A butt joint is where one end of the wood butts up against the edge of another piece at a right angle.<br>• A vice or clamp can be used to keep the wood secure.<br>**Skills**<br>• Create a simple butt joint with two pieces of wood.<br>• Create a frame using dowel.<br><br>***End of unit outcome: To make a mini greenhouse using a frame and see-through plastic.*** | **Amazing Mayas**<br>Design, Make, Evaluate, Technical Knowledge<br><br>To design and make an item of food.<br><br>**Knowledge**<br>• Mexican food has a combination of savoury and earthy flavours, using fresh herbs, vegetables and citrus.<br>• Mexican salsa includes tomatoes, onions and chillies.<br>• Limes are grown mostly in California and in Mexico.<br><br>**Skills**<br>• Use the bridge method for cutting. Hold the food to be cut between the fingers and thumb creating a bridge. The knife should go through the bridge to cut the food.<br><br>***End of unit outcome: Design and make a Mexican salsa.*** |
| Vocab | Beam, lever, pivot, force, vice, accurate, junior hacksaw, pliers, dowel, file | Scoring, tabs, adhesive, assemble, graphics, prototype, vice, accurate, junior hacksaw, pliers, dowel, file | Grams, kilograms, millilitre, litre, temperature, celsius, hygiene, utensils, texture, appearance, preference, edible, reared, grown, processed, seasonal, varied diet |

# Eagles DT Key Learning Points and End of Unit Outcomes Year B

| | Autumn Term | Spring Term | Summer Term |
|---|---|---|---|
| Links | **Previous Learning:** Chassis making in Owls/Creating a circuit in Kestrels.<br>**Future Learning:** KS3 Applying computing and electronics to embed intelligence in products.<br>**Big Ideas**: Changes | **Previous Learning:** Designing in Kestrels<br>**Future Learning:** KS3 mechanical systems<br>**Big Ideas**: Changes | **Previous Learning:** Strengthening/joining materials in Kestrels and Owls.<br>**Future Learning:** KS3 Understand the properties of materials and structural elements.<br>**Big Ideas**: Changes/Similarities and differences/Environment |
| Eagles | **The Race for Space (Moon Buggies)**<br>Design, Make, Evaluate, Technical Knowledge<br><br>To design, make and program a moon buggy using Crumble or Microbit.<br>Knowledge<br>• A chassis is the base frame of a car, carriage or other wheeled vehicle.<br>• Crumble connects to a computer using a USB cable.<br>• A program is simply a list of instructions that the Crumble will follow.<br>**Skills**<br>• Use Crumble/Microbit to program a set of instructions to make a vehicle move.<br>• Create a circuit using a motor, batteries and crocodile clips.<br><br>***End of unit outcome: Create a program to make a moon buggy move.*** | **The Ancient Egyptians (Pneumatics)**<br>Design, Make, Evaluate, Technical Knowledge<br><br>To design and make a pneumatic toy.<br>**Knowledge**<br>• Pneumatics is the use of pressurised air to make things move.<br>• The word pneumatic comes from the Greek pneuma, meaning “air” or “wind.”<br>• Pneumatic systems use a combination of compressed air and pneumatic valves to move cylinders or operate tools.<br>• Rock drills, jackhammers, spray painters, and air brakes are examples using pneumatics.<br>**Skills**<br>• Use a balloon and bottle to make a pneumatic system.<br>• Use syringes and plastic tubing to make a pneumatic system.<br>***End of unit outcome: Make a moving toy using a pneumatic system.*** | **Opa! (Bridges)**<br>Design, Make, Evaluate, Technical Knowledge<br>To identify the different types of bridges.<br>**Knowledge**<br>• A bridge is a structure that carries a road, path or railway across a road, river or other obstacle.<br>• A beam is a length of sturdy material that is cut and shaped to span a gap or support a floor/roof.<br>• A truss is made up of several beams connected together in different ways.<br>• The deck of a suspension bridge hangs from cables attached to pillars.<br>**Skills**<br>• To create a design using an exploded diagram.<br>• To design and carry out a test to see if their model meets the design criteria.<br>***End of unit outcome: To design a bridge and create a test to see if it meets the original design criteria.*** |
| Vocab | Computer-aided design (CAD), computer-aided manufacture (CAM), mock-up, prototype, motor, motion, USB cable | Pneumatic, frame, stiffen, reinforce, stability, temporary, specification | Beam, truss, suspension, frame, stiffen, reinforce, stability, temporary, specification |