



Year 2

YEAR 2 — DESIGN TECHNOLOGY CAREERS

Children connect DT knowledge and practical skills with recognisable careers.

SLIDERS & LEVERS

WE COULD BE...

Toy Designers • Product Designers

Discover how designers use mechanisms and movement to create products for particular users, then test and improve them.

CAREER ENCOUNTER

Toy or product designer video, visitor or manufacturing link.

TEMPLATES & JOINING

WE COULD BE...

Textile Designers • Costume / Toy Makers

Explore how textile professionals use templates, fabrics, joining techniques and finishing skills to create a finished product.

CAREER ENCOUNTER

Tailor, sewing enthusiast, costume maker or textile professional.

FRUIT & VEGETABLES

WE COULD BE...

Chefs • Nutritionists • Food Technologists

Consider how food professionals create products that are safe, healthy, nutritious and appealing to the intended user.

CAREER ENCOUNTER

School cook, chef or food professional.

YEAR 2 — DESIGN TECHNOLOGY KNOWLEDGE

Substantive knowledge • Disciplinary knowledge and skills

SLIDERS & LEVERS

SUBSTANTIVE KNOWLEDGE

- Sliders and levers create controlled movement; a lever turns around a pivot.
- Movement can be described as push/pull, up/down, forwards/backwards and in/out.
- Slots and guides control slider movement; paper fasteners can form pivots.
- Different mechanisms suit different intended movements.

DISCIPLINARY KNOWLEDGE & SKILLS

- Investigate products with moving parts and explain how the mechanism works.
- Replicate slider and lever teaching aids using correct tools/materials.
- Choose a mechanism for a user/purpose; communicate ideas through labelled drawings and mock-ups.
- Cut, shape, join and finish safely; test smoothness and evaluate against design criteria.

TEMPLATES & JOINING

SUBSTANTIVE KNOWLEDGE

- Templates/pattern pieces support accuracy and repeatability when cutting fabric.
- Fabrics have different properties and suitability for a product.
- Joining methods include running stitch, lacing, stapling and gluing; fastenings and finishes serve purposes.
- Quality depends on accurate cutting, joining and finishing.

DISCIPLINARY KNOWLEDGE & SKILLS

- Investigate textile products, fabrics, fastenings, joins and finishes.
- Mark out, pin/tape to templates and cut fabric accurately.
- Practise and compare joining/finishing techniques, including threading and running stitch.
- Design for user/purpose, select suitable materials, make and evaluate a finished textile product.

FRUIT & VEGETABLES

SUBSTANTIVE KNOWLEDGE

- Vegetables, like fruit, contribute to a balanced diet and have different sensory properties.
- Food hygiene controls risk; ingredients may need washing/preparation before eating.
- Processing techniques include washing, grating, peeling, slicing and squeezing.
- Ingredient choice should reflect health, user preference and purpose.

DISCIPLINARY KNOWLEDGE & SKILLS

- Investigate/taste fruit and vegetables and gather user preferences.
- Select and use appropriate utensils safely and hygienically with increasing independence.
- Plan a healthy product using balanced-diet principles and communicate ingredient/presentation choices.
- Prepare the product and evaluate nutrition, sensory qualities and success for the intended user.

Prior learning being retrieved

Year 1 wheels and axles: mechanisms make things move. Pupils also retrieve cutting, joining, finishing and designing for a user/purpose. There is also a link with Forces in science.

New knowledge / skill introduced

Pupils learn slider, lever and pivot. They create controlled movement, replicate mechanisms and choose a suitable mechanism for their own product.

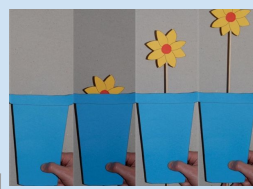
Why this? Why now?

Once pupils know products can move, they are ready to control movement more deliberately through push, pull and pivot actions. This allows for application of previous learning in science about forces.

What does this prepare pupils for?

Directly prepares for Year 3 levers and linkages where components work as systems with input, process and output.

Design Technology Sliders and Levers



Investigative and Evaluative Activities	L.O. to explore and evaluate a collection of books and everyday products that have moving parts, including those with levers and sliders. e.g. What is it? Who is it for? What is it for? Use questions to develop children's understanding e.g. What do you think will move? How will you make it move? What part of the product moved and how did it move? How do you think the mechanism works? What else could move in the product? How well does it work? Introduce and develop vocabulary e.g. lever, pivot, slider, left, right, push, pull, up, down, forwards, backwards, in, out.
Focused Tasks	L.O. to use the correct tools and materials to replicate a slider and lever teaching aid Demonstrate simple levers and sliders to the children using prepared teaching aids. It is helpful if these are also used in context e.g. the slider is used to show a snail appearing from behind a stone, the lever is used to show a butterfly flying to a flower. Use questions to develop children's understanding e.g. How does the slider move? How does the lever move? Which part of the mechanism is the pivot? What does the movement of the slider and lever remind you of? Following teacher demonstration of the correct use of tools and materials, children should develop their knowledge and skills by replicating the slider and lever teaching aids. Encourage children to add pictures to their mechanisms
Design	L.O. to discuss and plan what product we will make, identifying its purpose and intended user. L.O. to draw and or label diagrams to show what our design will look like. Discuss with the children what they will be designing, making and evaluating e.g. Who will your product be for? What will be its purpose? How do you want it to move? Will you use a lever or a slider? Generate simple design criteria with the children e.g. the mechanism should work smoothly, it should make the right type of movement. Encourage the children to develop their ideas through talking, drawing and making mock-ups of their ideas with paper and card.
Make	L.O. to use appropriate tools correctly to cut, shape and join materials and use simple finishing techniques to enhance our product. L.O. to follow safety rules As a whole class, talk about the order in which the mechanisms will be made. Discuss the finishing techniques the children might use e.g. using digital text and graphics, paint, felt tipped pens or collage.
Evaluate	L.O. to discuss and evaluate our product discussing how well it works in relation to its purpose and the user and whether it meets design criteria. Ask children to evaluate their developing ideas and final products against the original design criteria. Ask the children to recognise good and bad points and how they could improve next time.

Vocabulary

slider, lever, pivot, slot, bridge/guide

card, masking tape, paper fastener, join

pull, push, up, down, straight, curve, forwards, backwards

design, make, evaluate, user, purpose, ideas, design criteria, product, function

Prior learning being retrieved

EYFS and Year 1 material selection, cutting, shaping, joining and finishing, with growing awareness of user, purpose and function.

New knowledge / skill introduced

First focused textiles unit. Pupils use templates/patterns, investigate fabrics and fastenings, and practise running stitch, lacing, gluing and finishing.

Why this? Why now?

Pupils have the fine-motor control to apply cutting and joining to fabric. Templates introduce accuracy and repeatability.

What does this prepare pupils for?

Prepares for Year 4 2D shape to 3D product and Year 5 CAD textiles, where pattern pieces and textile construction become more precise.

Design Technology Templates and Joining



Vocabulary

names of existing products, joining and finishing techniques, tools, fabrics and components

template, pattern pieces, mark out, join, decorate, finish

features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function

Investigative and Evaluative Activities	L.O. to investigate and evaluate a range of existing products <i>(similar to the one to be made to give starting point for a design)</i> Children investigate and evaluate existing products linked to the chosen project. Explore and compare e.g. fabrics, joining techniques, finishing techniques and fastenings used. Use questions to develop children's understanding e.g. How many parts is it made from? What is it joined with? How is it finished? Why do you think these joining techniques have been chosen? How is it fastened? Who might use it and why? Make drawings of existing products, stating the user and purpose. Identify and label, if appropriate, the fabrics, fastenings and techniques used.
Focused Tasks	L.O. to investigate fabrics to determine which is best for the purpose of the product they are creating L.O. to use the appropriate tools to mark out, tape or pin fabric to templates and cut out the relevant fabric pieces for the product Using prepared teaching aids, demonstrate the use of a template or simple paper pattern. Children could make their own templates or paper patterns. If necessary, they can use ones provided by the teacher. Using prepared teaching aids, demonstrate the correct use of appropriate tools to mark out, tape or pin the fabric to the templates or paper patterns and cut out the relevant fabric pieces for the product. L.O. to investigate, use and evaluate a range of joining techniques Using prepared teaching aids, demonstrate appropriate examples of joining techniques for children to practise in guided groups e.g. running stitch including threading own needle, stapling, lacing and gluing. Talk about the advantages and disadvantages of each technique. Using prepared teaching aids, demonstrate examples of finishing techniques for children to practise in guided groups e.g. sewing buttons, 3-D fabric paint, gluing sequins, printing.
Design	L.O. to discuss and plan what product we will make, identifying its purpose, intended user and select materials L.O. to draw and or label diagrams to show what our design will look like. Provide the children with a context that is authentic. Discuss with children the purpose and user of the products they will be designing, making and evaluating. Design criteria developed with the teacher should be used to guide the development and evaluation of the children's products. Ask the children to generate a range of ideas e.g. What parts will the product need to have and what will it be made from? What size will it be? How will it be joined and finished? Through talk, drawings and mock-ups, ask the children to develop and communicate their ideas. Information and communication technology could be used for symmetry and pattern ideas. Choose one idea to follow through.
Make	L.O. to use appropriate tools to join materials together and use simple finishing techniques to create a Paddington Puppet. L.O. to follow safety rules Talk with the children about the stages in making before assembling quality products, applying the knowledge, understanding and skills learnt through the IEAs and FTs.
Evaluate	L.O. to discuss and evaluate our product <i>discussing how well it works in relation to its purpose and the user and whether it meets design criteria.</i> Evaluate ongoing work and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed

Prior learning being retrieved

Year 1 food hygiene, sensory evaluation, balanced diet language, peeling, slicing, washing and preparing fruit. Links to science and balanced diet.

New knowledge / skill introduced

Pupils extend to vegetables, refine food processing skills, consider user preferences and design a healthy product using balanced-diet principles.

Why this? Why now?

Revisiting food secures hygiene and tool routines while increasing independence and purposeful ingredient choice. Children have an opportunity to apply learning about balanced diets from science.

What does this prepare pupils for?

Prepares for Year 3 Healthy and Varied Diet where pupils combine ingredients, follow recipes and use broader cooking techniques.

Design Technology

Preparing Fruit and Vegetables



Investigative and Evaluative Activities	L.O. to identify and evaluate a range of vegetables Children examine a range of fruit/vegetables. Use questions to develop children's understanding e.g. What is this called? Who has eaten this fruit/vegetable before? Where is it grown? When can it be harvested? What are its taste, smell, texture and appearance? What will it look like if we peel it or cut it in half? What are the different parts called? Provide opportunities for children to handle, smell and taste fruit and vegetables in order to describe them through talking and drawing. e.g. What words can we use to describe the shape, colour, feel, taste? Evaluate existing products to determine what the children like best; provide opportunities for the children to investigate preferences of their intended users/suitability for intended purposes e.g. What do you prefer and why? What might we want to include in our product to meet our user's preferences? Which fruit/vegetables might be the best for our product to match the occasion/purpose?
Focused Tasks	Discuss basic food hygiene practices when handling food including the importance of following instructions to control risk e.g. What should we do before we work with food? Why is following instructions important? L.O. to use appropriate tools to practice food processing skills Demonstrate how to use simple utensils and provide opportunities for the children to practise food processing skills such as washing, grating, peeling, slicing, squeezing e.g. Do we eat the whole fruit? Why or why not? Which parts do we eat? What might we have to do before eating this? Why do we cut, grate, peel and slice in this way? Discuss different effects achieved by different processes. L.O. to discuss and explain the importance of vegetables in our balanced diet Discuss healthy eating advice, including eating more fruit and vegetables; using The eatwell plate model talk about the importance of fruit and vegetables in our balanced diet e.g. Why is it good to eat fruit and vegetables? How many pieces of fruit/vegetables do you eat per day? Why is it important to wash fruit/vegetables before we eat them?
Design	L.O. to discuss and plan what product we will make, identifying its purpose and intended user (ensuring we include the principles of a balanced diet) L.O. to draw and label diagrams to show what our design will look like. Set a context for designing and making which is authentic and meaningful. Discuss with the children the possible products that they might want to design, make and evaluate and who the products will be for. Agree on design criteria that can be used to guide the development and evaluation of children's products e.g. Who/what is the product for? What will make our product unique/different? How will we know that we designed and made a successful product? Use talk and drawings when planning for a product; ask the children to develop, model and communicate their ideas e.g. What will you need? What fruit/vegetable will you need? How much will you need? How will you present the product?
Make	L.O. to work safely and hygienically using appropriate tools, techniques and ingredients to make a healthy seaside salad Talk to the children about the main stages in making, considering appropriate utensils and food processes they learnt about through IEAs and FTs.
Evaluate	L.O. to discuss and evaluate our product Evaluate as the children work through the project and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.

Vocabulary

vegetable names,
names of
equipment and
utensils

sensory
vocabulary e.g.
soft, juicy,
crunchy, sweet,
sticky, smooth,
sharp, crisp, sour,
hard

flesh, skin, seed,
pip, core, slicing,
peeling, cutting,
squeezing, healthy
diet, choosing,
ingredients,
planning,
investigating
tasting, arranging,
popular, design,
evaluate, criteria