



DT – EYFS Learning Objectives - Autumn



Structures: Junk Modelling

<u>Lesson 1: Exploring Junk Modelling</u>	<u>Lesson 2: Cutting and Scissor Skills</u>	<u>Lesson 3: Choosing Resources</u>	<u>Lesson 4: Making Models</u>	<u>Lesson 5: Evaluation and Presentation</u>	<u>Lesson 6: Temporary Joins</u>
To explore and investigate the tools and materials in the junk modelling area.	To investigate cutting different materials.	To learn how to plan and select the correct resources needed to make a model.	To verbally plan and create a junk model.	To share a finished model and talk about the process in its creation.	To explore different ways to temporarily join materials together.

<u>Intended outcome of the unit</u>
Learn about the names and use of various craft tools and materials for junk modelling.
Practise and develop scissor and fine motor skills by investigating how easy or difficult it is to cut and shape different materials.
Decide which resources they would like to use and generate ideas to develop a class-based junk model.
Develop their own unique junk model which includes the tools, materials and components that they will need to make it.
Build on their knowledge of joins such as glue, paper clips and sticky tape and tinker with a range of temporary joining methods and their use.

<u>Key Vocab</u>	
Join	Elbow
Stick	Bubble wrap
Cut	Cooked pasta
Bend	Tin foil
Slot	Playdough
Smooth	Straws
Bendy	Measure
Bumpy	Bigger
Scissors	Shorter
Blades	Longer
Handle	Taller
Snip	Thicker
Cut	Thinner
Squeeze	Cork
Thumb fingers	Plastic
	Glue stick



DT – EYFS Learning Objectives - Spring

Textiles: Bookmarks

<u>Lesson 1: Exploring Threading and Weaving</u>	<u>Lesson 2: Paper Weaving</u>	<u>Lesson 3: Sewing with Hessian</u>	<u>Lesson 4: Designing Bookmarks</u>	<u>Lesson 5: Creating Bookmarks</u>	<u>Lesson 6: Evaluating Bookmarks</u>
To develop threading and weaving skills.	To practise and apply weaving skills to a specific material.	To practise and apply threading skills with specific materials.	To use threading or sewing to design a product.	To create a textiles product (bookmark) following their own design.	To reflect with children on how they have achieved their aims.

<u>Intended outcome of the unit</u>
Develop threading and weaving skills by exploring different materials and objects and using a weaving base and paper strips.
Develop threading skills using wool through hessian fabric and then with a sewing needle and thread.
Learn about the history of the bookmark back in the Victorian times and compare them to modern-day styles before developing design ideas for their own bookmark.
Plan and sew their bookmark design using hessian fabric and thread.
Reflect and evaluate bookmarks in pairs.

<u>Key Vocab</u>	
Thread	Bookmark
Weave	Embroider
Pinch	Victorian
Push	Design
Pull	Evaluate
Through	Think
Under	Sew
Over	Sewing needle
Up	Wool
Down	Hessian
Pattern	



DT – EYFS Learning Objectives - Summer

Structures: Boats

<u>Lesson 1: Waterproof Materials</u>	<u>Lesson 2: Floating and Sinking</u>	<u>Lesson 3: Boats</u>	<u>Lesson 4: Investigating Boats</u>	<u>Lesson 5: Designing Boats</u>	<u>Lesson 6: Creating and Testing Boats</u>
To understand what waterproof means and to test whether materials are waterproof.	To test and make predictions for which materials float or sink.	To compare the uses of boats.	To investigate how the shape and structure of boats affect the way they move.	To design a boat.	To create a boat based upon their own design.

<u>Intended outcome of the unit</u>
Investigate and learn about waterproof materials. Conduct a test in groups to observe what happens when water is poured through different materials.
Investigate and learn about what floating and sinking means. Make predictions about whether an object will sink or float and test their ideas.
Reflect on their experiences with boats and learn how boats and ships are used.
Discuss what would make a successful boat and sketch their ideas for their own boat.
Create and test their own boats on the water.

<u>Key Vocab</u>	
Waterproof	Boat
Material	Cruise ship
Absorb	Fishing boat
Leak	Kayak
Wet	Ocean liner
Dry	Pirate ship
Prediction	Watercraft
Variable	Reeds
Fair test	Sink
Experiment	Float
Investigation	Sail
Rudder	Anchor
Helm	Hull
Deck	Mast
Crow's nest	



DT – Year 1 Learning Objectives - Autumn



Structures: Constructing a Windmill

Lesson 1: Designing the structure	Lesson 2: Assembling the structure	Lesson 3: Assembling the windmill	Lesson 4: Testing and evaluating
To include individual preferences and requirements in my design.	To make a stable structure.	To assemble the components of my structure.	To evaluate my project and adapt my design.

Intended outcome of the unit
Follow design criteria to meet the needs of a user. Make a stable structure. Make functioning sails/blades that attach to the supporting structure. Improve their windmill.

Key Vocab	
axle bridge design design criteria model net packaging	structure template unstable stable strong weak



DT – Year 1 Learning Objectives - Spring



Textiles: Puppets

Lesson 1: Joining fabrics	Lesson 2: Designing my puppet	Lesson 3: Making and joining my puppet	Lesson 4: Decorating my puppet
To join fabrics together using different methods.	To use a template to create my design.	To join two fabrics together accurately.	To embellish my design using joining methods.

Intended outcome of the unit

Join fabrics together using pins, staples or glue.
Design a puppet and use a template.
Join their two puppets' faces together as one.
Decorate a puppet to match their design.

Key Vocab

decorate
design
fabric
glue
model

hand puppet
safety pin
staple
stencil
template



DT – Year 1 Learning Objectives - Summer



Cooking and Nutrition: Smoothies

Lesson 1: Fruits	Lesson 2: Growing	Lesson 3: Cutting and juicing	Lesson 4: Testing ingredients	Lesson 5: Making smoothies	Lesson 6: Evaluating
To identify fruits.	To describe where fruits and vegetables grow.	To practise food preparation skills.	To select ingredients for a recipe.	To apply food preparation skills to a recipe.	To evaluate against the design brief.

Intended outcome of the unit

Describe fruits and vegetables and explain how to identify fruits.

Name a range of places that fruits and vegetables grow.

Describe basic characteristics of fruit and vegetables.

Prepare fruits and vegetables to make a smoothie.

Key Vocab

blend
blender
chopping board
compare
cut
design
evaluate

flavour
fork
fruit
healthy
ingredients
juice
juicer



DT – Year 2 Learning Objectives – Autumn

Structures: Baby Bear's Chair

Lesson 1: Exploring stability	Lesson 2: Strengthening materials	Lesson 3: Making Baby Bear's chair	Lesson 4: Fixing and testing Baby Bear's chair
To explore the concept and features of structures and the stability of different shapes.	To understand that the shape of the structure affects its strength.	To make a structure according to design criteria.	To produce a finished structure and evaluate its strength, stiffness and stability.

Intended outcome of the unit

Identify man-made and natural structures.
Identify stable and unstable structural shapes.
Contribute to discussions.
Identify features that make a chair stable.
Work independently to make a stable structure, following a demonstration.
Explain how their ideas would be suitable for Baby Bear.
Produce a model that supports a teddy, using the appropriate materials and construction techniques.
Explain how they made their model strong, stiff and stable.

Key Vocab

design criteria
man-made
natural
properties
structure

stable
shape
model
test



DT – Year 2 Learning Objectives - Spring



Mechanisms: Fairground Wheels

<u>Lesson 1: Design a Ferris wheel</u>	<u>Lesson 2: Planning the build</u>	<u>Lesson 3: Building the frame and wheels</u>	<u>Lesson 4: Adding pods and decoration</u>
To explore wheel mechanisms and design a Ferris wheel.	To select appropriate materials.	To build and test a moving wheel.	To make and evaluate a structure with a rotating wheel.

Intended outcome of the unit

Design and label a wheel.

Consider the designs of others and make comments about their practicality or appeal.

Consider the materials, shape, construction and mechanisms of their wheel.

Label their designs.

Build a stable structure with a rotating wheel.

Test and adapt their designs as necessary.

Follow a design plan to make a completed model of the wheel.

Key Vocab

design
design criteria
wheel
Ferris wheel
pods

axle
axle holder
frame
mechanism



DT – Year 2 Learning Objectives - Summer

Mechanisms: Making a Moving Monster



<u>Lesson 1: Pivots, levers and linkages</u>	<u>Lesson 2: Making linkages</u>	<u>Lesson 3: Designing my monster</u>	<u>Lesson 4: Making my monster</u>
To look at objects and understand how they move.	To look at objects and understand how they move.	To explore different design options.	To make a moving monster.

Intended outcome of the unit

Identify the correct terms for levers, linkages and pivots.

Analyse popular toys with the correct terminology.

Create functional linkages that produce the desired input and output motions.

Design monsters suitable for children, which satisfy most of the design criteria.

Evaluate their two designs against the design criteria, using this information and the feedback of their peers to choose their best design.

Select and assemble materials to create their planned monster features.

Assemble the monster to their linkages without affecting their functionality.

Key Vocab

axle
design criteria
input
linkage

mechanical
output
pivot
wheel



DT – Year 3 Learning Objectives - Autumn



Cooking and Nutrition: Eating Seasonally

Lesson 1: Food around the world	Lesson 2: Seasonal food	Lesson 3: Cutting and peeling	Lesson 4: Tasting seasonal ingredients	Lesson 5: Making a mock-up	Lesson 6: Evaluating seasonal tarts
To explain why food comes from different places around the world.	To explain the benefits of seasonal foods.	To develop cutting and peeling skills.	To evaluate seasonal ingredients.	To design a mock-up using criteria.	To evaluate a dish.

Intended outcome of the unit

Explain that fruits and vegetables grow in different countries based on their climates.

Understand that seasonal fruits and vegetables grow in a given season.

Understand that eating seasonal fruit and vegetables positively affects the environment.

Design a tart recipe using seasonal ingredients.

Key Vocab

appearance

arid

climate

complementary

country

cut

design

evaluate

export

fruit

grate

import

ingredients

Mediterranean



DT – Year 3 Learning Objectives - Spring

Digital World: Wearable Technology

Intended outcome of the unit

Give a brief explanation of the digital revolution and/or remember key examples.

Suggest a feature from the virtual micro:bit that is suitable for the product.

Write a program that initiates a flashing LED panel, or another pattern, on the virtual micro:bit when a button is pressed.

Identify errors, if testing is unsuccessful, by comparing their code to a correct example.

Explain the basic functionality of their finished program.

Suggest key features for a way to attach the product to the user, with some consideration for the overall theme and the user.

Create annotated diagrams to help illustrate how their product is worn.

Describe what is meant by 'point of sale display' with an example.

Follow basic design requirements using computer-aided design, drawing at least one shape with a text box and bright colours, following a demonstration.

Evaluate their design using a focus group.

Lesson 1: Evaluating wearable technology	Lesson 2: Light-up wearables	Lesson 3: Programming wearable technology	Lesson 4: Product concept	Lesson 5: Point of sale displays	Lesson 6: Focus groups
To research and evaluate existing products.	To develop design criteria.	To use code to program and control a product.	To develop and communicate ideas.	To develop ideas through computer-aided design.	To improve a design based on feedback.

Key Vocab

analogue
analyse
annotate
badge
computer-aided design (CAD)
control
design criteria

develop
digital
digital revolution
digital world
display
electronic
electronic products



DT – Year 3 Learning Objectives - Summer



Structures: Constructing a Castle

Lesson 1: Features of a castle	Lesson 2: Designing a castle	Lesson 3: Nets and structures	Lesson 4: Building a castle
To recognise how multiple shapes (2D and 3D) are combined to form a strong and stable structure.	To design a castle.	To construct 3D nets.	To construct and evaluate my final product.

Intended outcome of the unit

- Draw and label a simple castle that includes the most common features.
- Recognise that a castle is made up of multiple 3D shapes.
- Design a castle with key features which satisfy a given purpose.
- Score or cut along lines on the net of a 2D shape.
- Use glue to securely assemble geometric shapes.
- Utilise skills to build a complex structure from simple geometric shapes.
- Evaluate their work by answering simple questions.

Key Vocab

- | | |
|--------------|-----------|
| 2D | shape |
| 3D | stable |
| castle | stiff |
| design | strong |
| key features | structure |
| net | tab |
| scoring | |



DT – Year 4 Learning Objectives - Autumn



Structures: Pavillions

Lesson 1: Exploring frame structures	Lesson 2: Designing a pavilion	Lesson 3: Pavilion frame	Lesson 4: Pavilion cladding
To create a range of different shaped frame structures.	To design a structure.	To build a frame structure.	To add cladding to a frame structure.

Intended outcome of the unit

Produce a range of free-standing frame structures of different shapes and sizes.

Design a pavilion that is strong, stable and aesthetically pleasing.

Select appropriate materials and construction techniques to create a stable, free-standing frame structure.

Select appropriate materials and techniques to add cladding to their pavilion.

Key Vocab

3D shapes
Cladding
Design criteria
Innovative

Natural
Reinforce
Structure



DT – Year 4 Learning Objectives - Spring

Mechanical Systems: Making a Slingshot Car

[Lesson 1: Chassis and launch mechanism](#)

To build a car chassis.

[Lesson 2: Designing the car body](#)

To design a shape that reduces air resistance.

[Lesson 3: Making the car body](#)

To make a model based on a chosen design.

[Lesson 4: Assembly and testing](#)

To assemble and test my completed product.

Intended outcome of the unit

Work independently to produce an accurate, functioning car chassis.

Design a shape that is suitable for the project.

Attempt to reduce air resistance through the design of the shape.

Produce panels that will fit the chassis and can be assembled effectively using the tabs they have designed.

Construct car bodies effectively.

Conduct a trial accurately and draw conclusions and improvements from the results.

Key Vocab

chassis
energy
kinetic
mechanism
air resistance
design

structure
graphics
research
model
template



DT – Year 4 Learning Objectives - Summer



Electrical Systems: Torches

Lesson 1: Electrical products	Lesson 2: Evaluating torches	Lesson 3: Torch design	Lesson 4: Torch assembly
To learn about electrical items and how they work.	To analyse and evaluate electrical products.	To design a product to fit a set of specific user needs.	To make and evaluate a torch.

Intended outcome of the unit

Identify electrical products and explain why they are useful.

Help to make a working switch.

Identify the features of a torch and how it works.

Describe what makes a torch successful.

Create suitable designs that fit the success criteria and their own design criteria.

Create a functioning torch with a switch according to their design criteria.

Key Vocab

battery

bulb

buzzer

conductor

circuit

circuit diagram

electricity

insulator

series circuit

switch

component

design

design criteria

diagram



DT – Year 5 Learning Objectives - Autumn

Electrical Systems: Doodlers

Intended outcome of the unit

Identify simple circuit components (battery, bulb and switch) with a basic explanation of their function.

Explain that a series circuit is assembled in a loop to allow the electricity to flow along one path.

Describe a motor as a circuit component that changes electrical energy into movement.

Provide examples of motorised products that use movement to rotate or spin different parts.

Remove and replace different parts of a Doodler, as part of a team.

Suggest ways to switch the configuration to amend the form or function of the Doodler.

Explain, in an investigation report, each of the changes they made and the effect this had on the Doodler's ability to draw scribbles (function) and appearance (form).

Develop design criteria with consideration for the target user, the purpose of their Doodler, a key function and the Doodler's form and final appearance (e.g. fun, bright, soft).

Explain simply why their Doodler has a certain configuration based on the findings of their investigation (e.g. I used four pens because the Doodler would fall over with two).

Create a functional Doodler that creates scribbles on paper with or without a switch.

Lesson 1: Electrical systems and motors	Lesson 2: Meet the Doodlers	Lesson 3: Doodler design and construction	Lesson 4: Doodler DIY kits
To understand how motors are used in electrical products.	To investigate an existing product to determine the factors that affect the product's form and function.	To apply the findings from research to develop a unique product.	To develop a DIY kit for another individual to assemble their product.

Key Vocab

circuit component
 configuration
 current
 develop
 DIY
 investigate
 motor

motorised
 problem solve
 product analysis
 series circuit
 stable
 target user



DT – Year 5 Learning Objectives - Spring

Mechanical Systems: Making a Pop-Up Book

Lesson 1: Pop-up book page design	Lesson 2: Making my pop-up book	Lesson 3: Using layers and spacers	Lesson 4: Writing and illustrating
To design a pop-up book.	To follow my design brief to make my pop up book.	To use layers and spacers to cover the working of mechanisms.	To create a high-quality product suitable for a target user.

Intended outcome of the unit

Produce a suitable plan for each page of their book.
Produce the structure of the book.
Assemble the components necessary for all their structures/mechanisms.
Hide the mechanical elements with more layers using spacers where needed.
Use a range of mechanisms and structures to illustrate their story and make it interactive for the users.
Use appropriate materials and captions to illustrate the story.

Key Vocab

design
input
motion
mechanism

criteria
research
reinforce
model



DT – Year 5 Learning Objectives - Summer

Cooking and Nutrition: Developing a Recipe

Lesson 1: From farm to fork	Lesson 2: Different choices	Lesson 3: Nutritional value	Lesson 4: Preparing ingredients	Lesson 5: Designing labels	Lesson 6: Making bolognese
To understand how ingredients are reared and processed.	To make adaptations to design a recipe.	To evaluate nutritional content.	To practise food preparation skills.	To design a product label.	To follow and make an adapted recipe.

Intended outcome of the unit

Describe the process of beef production.
Research a traditional recipe and make changes to it.
Add nutritional value to a recipe by selecting ingredients.
Prepare and cook a version of bolognese sauce.

Key Vocab

abattoir	cut
adaptation	design
balanced	enhance
beef	equipment
brand	evaluate
cook	farm
cross-contamination	grate



DT – Year 6 Learning Objectives - Autumn



Structures: Playgrounds

Lesson 1: Design a new playground	Lesson 2: Building structures	Lesson 3: Perfecting structures	Lesson 4: Playground landscapes
To design a playground with a variety of structures.	To build a range of structures.	To improve and add detail to structures.	To create a surrounding landscape.

Intended outcome of the unit

Create five apparatus designs, applying the design criteria to their work.

Make suitable changes to their work after peer evaluation.

Make roughly three different structures from their plans using the materials available.

Complete their structures, improving the quality of their rough versions and applying some cladding to a few areas.

Secure their apparatus to a base.

Make a range of landscape features using a variety of materials which will enhance their apparatus.

Key Vocab

apparatus
design criteria
equipment

playground
landscape features
cladding



DT – Year 6 Learning Objectives - Spring



Digital World: Navigating the World

Intended outcome of the unit

Incorporate key information from a client's design request such as 'multifunctional' and 'compact' in their design brief.

Write a program that displays an arrow to indicate cardinal compass directions with an 'On start' loading screen.

Identify errors (bugs) in the code and suggest ways to fix (debug) them.

Self and peer evaluate a product concept against a list of design criteria with basic statements.

Identify key industries that use 3D CAD modelling and why.

Recall and describe the name and use of key tools used in Tinkercad (CAD) software.

Combine more than one object to develop a finished 3D CAD model in Tinkercad.

Complete a product pitch plan that includes key information.

Lesson 1: Navigating the world	Lesson 2: Programming a navigation tool	Lesson 3: Product concept	Lesson 4: 3D CAD models	Lesson 5: Product pitch
To write a design brief and criteria based on a client request.	To write a program to include multiple functions as part of a navigation device.	To develop a sustainable product concept.	To develop 3D CAD skills to produce a virtual model.	To present a pitch to 'sell' the product to a specified client.

Key Vocab

smart
smartphone
equipment
navigation
cardinal compass
application (apps)
pedometer

GPS tracker
design brief
design criteria
client
function
program
duplicate



DT – Year 6 Learning Objectives - Summer



Textiles: Waistcoats

Lesson 1: Waistcoat design	Lesson 2: Preparing fabric	Lesson 3: Assembling my waistcoat	Lesson 4: Decorating my waistcoat
To design a waistcoat.	To mark and cut fabric according to a design.	To assemble a waistcoat.	To decorate your waistcoat.

Intended outcome of the unit

Consider a range of factors in their design criteria and use this to create a waistcoat design.
Use a template to mark and cut out a design.
Use a running stitch to join fabric to make a functional waistcoat.
Attach a secure fastening, as well as decorative objects.
Evaluate their final product.

Key Vocab

annotate
decorate
design criteria
fabric

target customer
waistcoat
waterproof