DT Curriculum Overview

Design & Technology at Bridge Junior School

Children solve practical problems by designing purposeful products for particular users. They investigate, plan, make, test and improve through projects in structures, mechanisms, electrical systems, computing, textiles and food.

Purpose and users

Children consider who a product is for, what it needs to do and how it should look. They research needs and wants before agreeing a clear design brief and criteria.

Design and communicate

Children analyse existing products and communicate ideas through discussion, annotated sketches, diagrams, templates, models, prototypes and computer-aided design.

Make and improve

Children select tools, materials, components, ingredients and processes for purpose. They work accurately, test products with users and refine them against the specification.

Design and Technology helps children become resourceful, creative problem-solvers. They learn that successful products grow from careful research, practical skill, testing and thoughtful improvement.

What we want our children to know...

Big Ideas

Children meet important ideas again and again:

- users, purpose and function
- design brief, criteria and specification
- materials and their properties
- structures and mechanical systems
- electrical systems and control
- healthy, seasonal food
- testing, feedback and improvement

Knowledge

Children learn how structures are strengthened, how levers, linkages, pulleys, gears and circuits work, how computing can control products, and how ingredients, seasonality and preparation affect food design.

Skills

Children research users and products, write criteria, communicate through annotated drawings and prototypes, select tools and materials, make accurately, test functionality and evaluate against the original brief.

How we teach DT at Bridge...

DT projects follow a purposeful design process. Children revisit technical knowledge and make increasingly informed, accurate and independent decisions.

1

Investigate

Children examine existing products, technical systems and user needs. They gather ideas through research, surveys and practical exploration.

2

Define the brief

Children clarify the user, purpose and constraints, then agree design criteria or a specification for a successful product.

3

Design and model

Children communicate and develop ideas with annotated sketches, diagrams, templates, mock-ups.

4

Make

Children select tools and materials, then safely make and finish with accuracy.

5

Test and improve

Children test function, quality and fitness for purpose, listen to users, compare the outcome with the brief and identify improvements.

Connected learning

Projects connect with History, Geography, Science and Computing. Prior learning in structures, mechanisms, food and materials is deliberately revisited and extended.

Experiences

Children learn through practical challenges, product analysis, prototypes, surveys, taste tests, collaborative planning, construction, cooking and authentic competitions.

How we know that our children are doing well...

They research

Children investigate existing products, identify user needs and explain how designs, materials, mechanisms or recipes meet a purpose.

They design

Children create realistic and innovative ideas, write criteria or specifications, and communicate clearly through drawings, models and prototypes.

They make

Children plan stages, select suitable tools, components and ingredients, and make functional, appealing products with increasing accuracy.

They improve

Children test products against the brief, purpose and intended user. They use evidence and feedback to identify strengths and make improvements.

What teachers check

Teachers use questioning, discussion, design work, observation of practical skills, finished products, testing, pupil evaluations and subject-leader monitoring to check progress.

What success looks like

Children become confident designers and makers. They can explain how a product works, justify choices, use tools and processes safely, respond to constraints and improve outcomes independently.

DT Units at Bridge...

Year Group	Autumn	Spring	Summer
Year 3	**Tribal Tales** Dwellings	**Spring & Summer** **Sandwich · Bridges · 3-D packaging**	
Year 4	—	**Climb Every Mountain: Night light** Roman mechanisms	**Raiders and Invaders** Honey shortbread
Year 5	**Victorious Vikings** Longhouse	**East 17** Windmill and gears	**Out of Africa** Jollof rice
Year 6	—	**A Linked World** **Fusion food**	**Moving On** **CAD and electrical systems**

Why it is sequenced this way?

Children move from familiar structures, simple food products and shell packaging towards reinforced frames, mechanical and electrical systems, CAD, programmable control and independent food design. Research, accuracy and evaluation deepen each year.

What children learn about in each year group...

Year 3

Tribal Tales · Dwellings
Children investigate Stone Age dwellings, develop a brief and explore nets and material strength. A prototype informs an accurately measured, cut, scored, folded and joined model.

Food, Glorious Food · Sandwich Making
School surveys and sensory evaluation help children set criteria for an appealing sandwich. They plan ingredients and utensils, prepare safely, present the product and evaluate it with users.

Let It Flow · Bridges and 3-D Packaging
Children compare beam, arch and truss bridges, test strength and choose a design for a bridge challenge. Shell-structure knowledge, nets and finishing skills are then applied to packaging.

Year 4

Climb Every Mountain · Night Light
Children analyse electrical products and user needs, design a shell structure and use a simple series circuit with a switch and bulb to create a purposeful night light.

Roman Britain · Mechanisms
Children solve Roman engineering problems using levers, linkages and pulleys. They distinguish pivots, build and test mechanisms, then compare their solutions with Roman designs.

Raiders and Invaders · Honey Shortbread
Children explore Anglo-Saxon ingredients and modern shortbread, then create criteria for a traditional recipe with a modern twist. They plan, weigh, combine, cook and evaluate safely.

What children learn about in each year group...

Year 5

Victorious Vikings · Longhouse
Children investigate frame structures, angled supports, diagonal bracing, cladding and thatch. Annotated and exploded drawings guide an accurate model evaluated against its design brief.

East 17 · Windmill
Children explore how gears turn wind energy into useful movement. They test cog size and position, develop a functioning design, list components and stages, construct carefully and evaluate performance.

Out of Africa · Jollof Rice
Children compare Jollof recipes and agree success criteria. Groups write and follow a recipe, cook safely, then evaluate flavour and presentation.

Year 6

A Linked World · Fusion Food
Children research how cuisines are combined and plan a healthy, seasonal dish for the Great Bridge Menu. They explain cultural influences, cost ingredients, cook selected dishes and suggest improvements.

Moving On · Electrical Systems
Children research users and products, develop a specification and communicate ideas with CAD. They assemble reliable electrical components, apply computing to control a product, test it and refine its working features.

Connections across our DT curriculum...

Purposeful links with school life and other subjects give every DT project a meaningful context, user and reason to improve.

1

School surveys

Children gather the views of pupils and intended users to shape sandwich criteria and evaluate whether products meet real needs.

2

Great Bridge Menu

Year 6 designs a healthy, seasonal fusion dish that celebrates the cultures and diversity of the school community.

3

History

Stone Age dwellings, Roman mechanisms, Anglo-Saxon food and Viking longhouses connect technical design with historical knowledge.

4

Geography

East Anglian windmills, Jollof rice and global fusion food connect products, ingredients and systems with places and cultures.

5

Science and Computing

Circuits, forces, materials, gears and programmed control help children apply scientific and digital understanding to working products.

6

Authentic challenges

Bridge testing, product briefs, competitions and real users give children clear constraints, evidence and an audience for evaluation.

Vocabulary for new to English learners...

These high-utility words help pupils take part in DT lessons. They support designing, practical work, testing and evaluation across projects.

DESIGN WORDS

idea
plan
draw
label
shape
size
colour
user
purpose
choose

MAKING WORDS

make
cut
join
stick
fold
measure
build
fix
test
finish

TECHNICAL WORDS

tool
material
part
strong
weak
move
wheel

THINKING WORDS

look
think
ask
choose
compare
try
check
change
improve

FOOD WORDS

food
recipe
ingredient
bowl
spoon
measure
mix
cut
cook
taste

SPEAKING STEMS

My design will...

I chose... because...

I would change...

Vocabulary across the school...

Stage	Year and topic	Words designers use	Technical vocabulary
Year 3	Structures and Packaging		
	Sandwich Making		
	Bridges		
Year 4	Night Light		
	Roman Mechanisms		
	Honey Shortbread		
Year 5	Viking Longhouse		
	Windmill		
	Jollof Rice		
Year 6	Fusion food		
	Electrical Systems		

How design thinking builds over time...

	Year 3	Year 4	Year 5	Year 6
Designing	Develop ideas using existing products and models.	Set design criteria – develop realistic ideas.	Research users and create innovate ideas.	Research independently and create thoughtful designs.
Making	Plan key stages and choose appropriate materials.	Follow plans – select tools and materials.	Make accurately within practical limits.	Make reliable well finished products.
Evaluating	Test produces against criteria and user needs.	Identify strengths and areas for development.	Test with users and evaluate against aims.	Use feedback to improve products and plans.
Technical Understanding	Build strong structures and use nets.	Use levers, pivots and simple circuits.	Strengthen structures and use mechanical systems.	Build and program electrical products.
Food & Nutrition	Follow supported recipes.	Plan recipes with greater ingredients and equipment.	Write recipes and cook safely.	Adapt recipes using seasonality and feedback.

DT at home...

Spot good design

Choose an everyday product. Ask who it is for, what it does well, how it works, which materials it uses and what could be improved.

Sketch and label

Draw product ideas and add labels for materials, measurements, moving parts and the intended user. Try more than one possible solution.

Make and test

Use clean recycled card, paper or fabric to make simple models. Test strength or movement, record what happened and improve one feature.

Cook together

Plan a simple healthy dish, read a recipe, measure ingredients and discuss taste, texture and aroma. Adults should supervise tools and heat.

Support design thinking

Value the process as much as the finished product. Let children explain the user and purpose, make choices, test ideas and learn from things that do not work first time.

Useful questions

Who is it for?
What must it do?
Why did you choose that material or method?
How will you test it?
What evidence would help you improve it?