



SHIPSTON HIGH

Design & Technology

Curriculum journey from Year 7 to Year 11



YEAR 11

NEA Sections A–F, examination review and revision

Exam preparation	Testing and evaluation	Prototype manufacture	Modelling and development	Design ideas	Research and specification
Paper review, revision and exam question practice	Section F: evidence, feedback and specification review	Section E: preparation, making and quality control	Section D: test models, refine and plan manufacture	Section C: generate and communicate concepts	Sections A–B: context, client, analysis, brief and criteria

YEAR 11

YEAR 10

GCSE projects, core theory and NEA preparation

Laser-cut box mock NEA	Workshop and timbers	3D-printed holder	Inclusive and formed products	Theory and challenges	NEA and exam preparation
Research, ideas, CAD, manufacture and evaluation	Mini projects, joints, pine box and formed tray	Apple research, SketchUp and AirPods holder	Design for disability and vacuum-forming project	Materials, systems, sustainability and cardboard chair	Iterative design, contextual research and paper review

YEAR 10

YEAR 9

Biomimicry, form, function and iterative design

Quality and assessment	Iterative challenge	Biomimicry models	Technical skills	Design from nature	Form and function
Refine, test, present and evaluate	Context, specification, prototypes and feedback	Build, refine and present concepts	Drawings, safe tools and pop-up cards	Geometry and organic architecture	Product comparison and biomimicry

YEAR 9

YEAR 8

Alessi-inspired design, CAD/CAM and creative sketching

Product analysis	Ideas and specification	2D Design CAD	Digital manufacture	Packaging and evaluation	Scruffiti concepts
Alessi, user needs, typography and branding	Generate concepts and refine final designs	Vector drawings, nesting and pop-up cards	Laser cutting, engraving and 3D printing	Nets, prototypes and product presentation	Perspective, rendering and final product ideas

YEAR 8

YEAR 7

Mechanisms, levers, linkages and hydraulics

Testing and showcase	Sustainable manufacture	Hydraulic lift design	Mechanical cards	Materials and drawing	Robotics and design
Evaluate, refine and demonstrate the lift	Life cycles, structures and quality control	Pressure, syringes, specification and 3D drawing	Levers, linkages and safe manufacture	Cardboard strength, technical sketches and prototypes	Automation and ACCESS FM

YEAR 7

START YOUR DT JOURNEY

Design, make, evaluate and improve



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Design & Technology

Curriculum learning journey



YEAR 7

Mechanisms, levers, linkages and hydraulics

Testing, evaluation and engineering showcase

Engineering showcase

Practical assessment and presentation

20



Final modifications

Reliability, finish and presentation

19



Product evaluation

Use evidence against the specification

18



Testing and improvement

Reach, load, accuracy and stability

17



Sustainable design and accurate manufacture

Sustainable engineering

Product life cycles, reuse and recycling

13



Safe, accurate manufacture

Base, frame and pivot locations

14



Manufacturing the lift

Assembly, alignment and quality control

15



Structures and strength

Forces, stresses, ties and struts

16



Hydraulics and design communication

Perspective drawing

One- and two-point views; exploded views

12



Oblique drawing

Crating and annotated hydraulic lift ideas

11



Brief and specification

Measurable criteria and final design choice

10



Hydraulic systems

Syringes, pressure, force and movement

9



Levers, linkages and mechanical cards

Levers and linkages

Pivots, movement and mechanical advantage

5



Mechanism drawings

Communicate movement and card concepts

6



Safe manufacture

Measure, mark, cut and check accuracy

7



Mechanical card finish

Aesthetics, reflection and assessment

8



Robotics, materials and modelling

Rapid prototyping

Model, test and improve movement

4



Engineering drawing

Isometric and orthographic sketches

3



Engineering with cardboard

Strength testing and reinforcement

2



Robotics and the design process

Automation, ACCESS FM and the design brief

1



ENRICHMENT WEEK

Follow lessons 1–20 from the bottom upwards

YEAR 7



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YEAR 8

Alessi-inspired design, CAD/CAM and creative sketching

Rendering and product concepts

Final product concept	Developing product ideas	Communicating materials	Rendering techniques
Refine, annotate, render and evaluate	Combine creativity, function and user needs	Render wood, metal, plastic and glass	Tone, highlights, shadows and texture

20



19



18



17



Evaluation and creative sketching

Nets and prototypes	Evaluation and presentation	Scruffiti and perspective	Crating in perspective
Score, fold, assemble, test and improve	Product, branding and packaging assessment	Generate shapes; one- and two-point views	Turn abstract shapes into 3D concepts

13



14



15



16



CAD/CAM manufacture and packaging

Packaging design	3D printing	Laser cutting	Final CAD assessment
Protection, branding and sustainability	Additive manufacture and process choice	Vector cutting, engraving and safety	Dimensions, layers and manufacture checks

12



11



10



9



Design development, CAD and paper engineering

Final design development	Introduction to 2D Design	Developing CAD designs	Christmas pop-up card
Feedback, annotations and specification	Accurate CAD vectors and drawing tools	Editing, grouping and efficient nesting	Folds, tabs and paper engineering

5



6



7



8



Alessi, product analysis and graphic communication

Generating design ideas	Typography and branding	Alessi design research	Product analysis and brief
Sketch and annotate coaster concepts	Fonts, logos and product identity	Compare existing coaster products	User needs, function and aesthetics

4



3



2



1



ENRICHMENT WEEK

Follow lessons 1–20 from the bottom upwards

YEAR 8



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Design & Technology

Curriculum learning journey



YEAR 9

Biomimicry, functionality, aesthetics and iterative design

Refinement, quality and assessment

Iterative design assessment

Knowledge, evaluation and design communication

20



Presenting progress

Explain evidence and iterative improvements

19



Is it ready?

Testing, sustainability and quality assurance

18



Refining the design

Final drawings and manufacturing preparation

17



Presentation and iterative design

Presenting concepts

Explain scale, function and aesthetics

13



Identifying a design context

User needs, ACCESS FM, brief and specification

14



Modelling and testing

Prototype, test and evaluate against criteria

15



Developing the prototype

Use feedback to improve and annotate changes

16



Biomimicry model development

Completing the model

Refine details and prepare to present

12



Refining the model

Improve construction and finish

11



Biomimicry model build

Develop the card model and check progress

10



Constructing natural forms

Choose materials and create a card model

9



Concepts, technical drawing and safe modelling

Nature-inspired concepts

Sketch designs from organic and geometric forms

5



Technical drawings

Orthographic and isometric communication

6



Safe cutting and gluing

Craft knife, metal rule and hot glue gun

7



Christmas pop-up card

Paper engineering and interactive design

8



Form, function and nature-inspired design

Organic architecture

Buildings inspired by natural forms

4



Geometric shapes

Use geometry to improve form and function

3



Natural structures

Biomimicry and nature-inspired systems

2



Functionality and aesthetics

Compare products and balance form with function

1



ENRICHMENT WEEK

Follow lessons 1–20 from the bottom upwards

YEAR 9



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YEAR 10

GCSE projects, core theory and NEA preparation

Forming, systems, NEA preparation and revision

Iterative design and NEA

Contextual challenges, mind maps and Section A research

20



Exam practice and review

Revision, past-paper marking and improved answers

19



Systems and design challenges

Electronics, Dragons' Den, paper, boards and cardboard chair

18



Vacuum-forming project

Design and make a former; form, trim and test HIPS

17



Manufacture, inclusive design and materials

Timber joint box

Pine box, lid, base and vacuum-formed tray insert

13



Manufacture and material choice

Tolerances, selection, management, finishes and tools

14



Designing for disability

User needs, adapted products, prototypes and evaluation

15



Material technologies

Smart, modern, composite, textile, polymer and metal

16



Workshop, timber and digital project skills

Apple-inspired AirPods holder

Research, SketchUp CAD, slicing and 3D printing

12



Timbers and joint skills

Sources, properties, manufacture and joint practice

11



Workshop skills and forces

Name plate, desk tidy, stresses and ecological footprint

10



Workshop mini projects

Bottle opener, phone stand and scroll-saw puzzle

9



Prototyping, CAD and production systems

Paper and card prototypes

Full-size models, usability testing and improvement

5



2D Design and drawings

CAD box design, annotation and technical views

6



Production and the 6Rs

CAD/CAM, JIT, production scales and responsible design

7



SketchUp and box assembly

3D CAD, laser-cut assembly, testing and evaluation

8



Mock NEA research, ideas and design influences

Design influences

People, culture, sustainability and ethical choices

4



Specification and ideas

SCAMPER, concept sketches and final proposal

3



Industry and enterprise

Automation, robotics and changing workplaces

2



Mock NEA box research

Brief, target market, mood board and ACCESS FM

1



GCSE PROJECTS AND CORE THEORY

Follow the numbered milestones from the bottom upwards

YEAR
10



SHIPSTON HIGH

Design & Technology

Curriculum learning journey



YEAR 11

NEA Sections A–F, exam review and revision

Section F evaluation and examination preparation

GCSE exam revision

Recall knowledge, practise questions and improve technique

20



Exam paper review

Mark, grade, correct and improve exam answers

19



F: final evaluation

Judge the outcome against specification and user needs

18



F: feedback and results

Record user feedback, photographs and test evidence

17



Sections E and F: manufacture and testing

E: material preparation

Measure, mark out and prepare safely with minimal waste

13



E: making the prototype

Manufacture components and assemble accurately

14



E: quality and refinement

Solve manufacturing problems and document changes

15



F: prototype testing

Photograph the product and test its performance

16



Section D: modelling and design development

D: manufacturing plan

Refine the proposal and plan how it will be made

12



D: materials and components

Test joints, select materials, fixings and finishes

11



D: testing and feedback

Test models and use evidence to improve designs

10



D: models and prototypes

Use suitable methods to communicate and test ideas

9



Sections B and C: brief, specification and ideas

B: design brief

Justify the problem, user needs and chosen context

5



B: design specification

Set clear, justified requirements for the product

6



C: generating ideas

Communicate imaginative, functional design concepts

7



C: communication and review

Present ideas and review Sections A, B and C

8



Section A: contextual research and investigation

A: review and gap-fill

Strengthen research, user needs and societal impact

4



A: product analysis

Analyse existing products to inform design possibilities

3



A: client investigation

Identify and justify user needs and wants

2



A: context and problems

Explore the challenge and develop a problem mind map

1



NEA AND EXAM PREPARATION

Follow the numbered milestones from the bottom upwards

YEAR 11