Curriculum Overview

Subject: Design & Technology

Year Group: 10

CHASE HIGH
Aspirations, Character & Excellence

Students are working in line with the AQA GCSE Design Technology specification. Developing core technical principles to demonstrate a breadth of technical knowledge and understanding. Specialist technical principles to assess a more in-depth knowledge of technical principles. Designing and making principles. Students will be working towards developing their practical skills in all areas, extending on prior knowledge in polymers, timbers, textiles, papers and boards and
metals. Students will focus on two key areas in more depth; timbers and either polymers or metalwork.
This is taught through a mix of theory and practical sessions following the SOW

TERM 1	**TERM 2**	**TERM 3**
<u>Papers & Boards Desk Tidy Mini Project</u> Analysing a contextual analysis Introduction to material properties Introduction to strength forces Generating design ideas Six Rs of sustainability Modelling in corrugated cardboard <u>Polymers Mini Project</u> Polymer hand skills practical assessment Application of templates Scales of production Polymer theory <u>Metals and Sustainability</u> Metals theory Finite and non-finite resources Life cycle assessment <u>Timbers: Designer Inspired Photo Frame</u> Designer analysis Generating design ideas Iterative design Forestry management	<u>Timbers: Designer Inspired Photo Frame</u> Introduction to timber joints Frame construction CAD with Techsoft Timber finishes Stock forms Standard components Application of tolerance and accuracy CAM: Laser cutting <u>Mock NEA – Storage in the home or work environment</u> Section A: Research and investigation ➢ Contextual challenge analysis ➢ Client / customer interview ➢ Existing product analysis Section B: Design brief and specification Section C: Generating design ideas ➢ Freehand sketching skills ➢ Technical drawing skills Section D: Design Development ➢ Prototype modelling NEA Linked Theory: ➢ Ecological considerations	<u>Mock NEA – Storage in the home or work environment</u> Section A: Research and Investigation Section D: Design Development ➢ Prototype modelling ➢ Non-destructive testing ➢ Visual testing ➢ Exploded diagrams ➢ Manufacturing specification Section E: Prototype Manufacture ➢ Scale modelling ➢ Component modelling Section F: Evaluation and Analysis ➢ Evaluation ➢ Future modifications NEA Linked Theory: ➢ Specialist industrial processes ➢ Enterprise ➢ Energy generation and storage <u>NEA – 1st June release date</u> Section A: Research and Investigation Section B: Design brief and specification Section C: Generating Design Ideas

Evaluating manufactured boards Seasoning Timber provenance Modelling and prototyping	➢ Carbon and social footprints ➢ Inclusive designing ➢ How designs impact society ➢ Developments in new materials	NEA Linked Theory: ➢ The work of others: designers ➢ The work of others: design companies ➢ Design strategies
KEY ASSESSMENTS Half term 1: Materials 1 Half term 2: Materials 2	**KEY ASSESSMENTS** Half term 1: Materials and Automation Half term 2: New and Emerging Technological World	**KEY ASSESSMENTS** Half term 1: PPE : Core and Specialist Principles Half term 2: Year 10 Theory Review

Extended reading suggestions and external resources:

https://www.theguardian.com/environment/2016/jun/25/illegal-logging-amazon-timber-tougher-laws-british-products
https://www.theguardian.com/world/2015/sep/17/illegal-timber-myanmar-china-forests https://www.youtube.com/watch?v=luygMuoFnXs
https://www.youtube.com/watch?v=NvbgwdTGoyo
https://www.youtube.com/watch?v=7pNWI1dcbg4
https://www.youtube.com/watch?v=SLUcVh_4wlM
https://www.youtube.com/watch?v=UGnDzE9mfUc
https://www.youtube.com/watch?v=eF5LVBW1vl8
https://www.youtube.com/watch?v=P9KPJlA5yds
https://www.youtube.com/watch?v=3RUE367Sb9A
https://www.youtube.com/watch?v=CBmsOvbGh-Y
https://www.youtube.com/watch?v=fcBXtwGexNc
https://www.bbc.co.uk/news/science-environment-39217985
https://www.youtube.com/watch?v=I8nMKH3y_1I
https://www.youtube.com/watch?v=ALWwK7Vz4gY
https://www.bbc.co.uk/news/business-38472652
https://www.theguardian.com/world/2016/sep/19/waste-not-want-not-sweden-tax-breaks-repairs
https://www.bbc.co.uk/news/science-environment-37902773
https://www.bbc.co.uk/news/business-38263177
https://www.youtube.com/watch?v=ftj23FRS2LI
https://www.youtube.com/watch?v=BOo8gxp3K3w
https://www.youtube.com/watch?v=BqkekY5t7KY
https://footprint.wwf.org.uk/#/
https://www.youtube.com/watch?v=BtBLXll2FNE
https://www.rapidonline.com/pdf/87-2330S_v2.PDF
https://footprint.wwf.org.uk/#/
https://www.youtube.com/watch?v=BtBLXll2FNE

Curriculum Overview

Subject: Design & Technology

Year Group: 11

CHASE HIGH
Aspirations, Character & Excellence

Students are working in line with the AQA GCSE Design Technology specification. Developing core technical principles to demonstrate a breadth of technical
knowledge and understanding. Specialist technical principles to assess a more in-depth knowledge of technical principles. Designing and making principles.
Students will be working towards developing their practical skills in all areas, extending on prior knowledge in polymers, timbers, textiles, papers and boards and
metals. Students will focus on two key areas in more depth; timbers and either polymers or metalwork.
This is taught through a mix of theory and practical sessions following the SOW

TERM 1	**TERM 2**	**TERM 3**
<u>NEA continued</u> Section A: Research and Investigation Section C: Generating Design Ideas Section D: Developing Ideas Section E: Developing Prototype Section F: Analysis and Evaluation Students must produce a digital portfolio (PowerPoint recommended) to record their NEA journey in their independent project. Students are required to include a range of primary and secondary sources of research, on-going client/customer feedback, and evaluation in line with the iterative design process. The portfolio will be developed alongside a final prototype outcome that must be tested by the client/customer upon conclusion, with future modifications considered.	<u>NEA continued</u> Section A: Research and Investigation Section E: Developing Prototype Section F: Analysis and Evaluation Students must produce a digital portfolio (PowerPoint recommended) to record their NEA journey in their independent project. Students are required to include a range of primary and secondary sources of research, on-going client/customer feedback, and evaluation in line with the iterative design process. The portfolio will be developed alongside a final prototype outcome that must be tested by the client/customer upon conclusion, with future modifications considered. <u>Exam Revision – Post NEA Submission</u> Students will follow a revision programme based upon the following units. Content will be revisited where necessary before being applied to a range of examination questions covering	<u>Exam Revision</u> Students will follow a revision programme based upon the following units. Content will be revisited where necessary before being applied to a range of examination questions covering sections A, B and C in the 2 hour exam paper. Where possible, practical learning opportunities will be given to support retrieval of exam knowledge. <u>Unit 1: New and emerging technologies</u> <u>Unit 2: Energy, materials, systems and devices</u> <u>Unit 6: Designing Principles</u> <u>Unit 7: Making Principles</u>

	sections A, B and C in the 2 hour exam paper. Where possible, practical learning opportunities will be given to support retrieval of exam knowledge. Unit 3: Materials and their working properties Unit 5B: Timber based materials Unit 4: Common specialist technical principles	
KEY ASSESSMENTS PPE Exam Internal topic test	**KEY ASSESSMENTS** PPE Exam Internal topic test	**KEY ASSESSMENTS** Internal topic test Public Examination

Extended reading suggestions and external resources:

https://www.theguardian.com/environment/2016/jun/25/illegal-logging-amazon-timber-tougher-laws-british-products
https://www.theguardian.com/world/2015/sep/17/illegal-timber-myanmar-china-forests https://www.youtube.com/watch?v=luygMuoFnXs
https://www.youtube.com/watch?v=NvbgwdTGoyo
https://www.youtube.com/watch?v=7pNWI1dcbg4
https://www.youtube.com/watch?v=SLUcVh_4wlM
https://www.youtube.com/watch?v=UGnDzE9mfUc
https://www.youtube.com/watch?v=eF5LVBW1vl8
https://www.youtube.com/watch?v=P9KPJlA5yds
https://www.youtube.com/watch?v=3RUE367Sb9A
https://www.youtube.com/watch?v=CBmsOvbGh-Y
https://www.youtube.com/watch?v=fcBXtwGexNc
https://www.bbc.co.uk/news/science-environment-39217985
https://www.youtube.com/watch?v=I8nMKH3y_1I
https://www.youtube.com/watch?v=ALWwK7Vz4gY
https://www.bbc.co.uk/news/business-38472652
https://www.theguardian.com/world/2016/sep/19/waste-not-want-not-sweden-tax-breaks-repairs
https://www.bbc.co.uk/news/science-environment-37902773
https://www.bbc.co.uk/news/business-38263177
https://www.youtube.com/watch?v=ftj23FRS2LI
https://www.youtube.com/watch?v=BOo8gxp3K3w
https://www.youtube.com/watch?v=BqkekY5t7KY
https://footprint.wwf.org.uk/#/
https://www.youtube.com/watch?v=BtBLXll2FNE
https://www.rapidonline.com/pdf/87-2330S_v2.PDF
https://footprint.wwf.org.uk/#/
https://www.youtube.com/watch?v=BtBLXll2FNE