

YR7

Y7 UNIT 1

How to use CAD
What are key 2D CAD drawing tools?
How does 3D rendering help me visualise my design?
Maritime Futures: What can we do with CAD drawing tools in the maritime sector? What are the benefits of visualising a vessel when using CAD?
Eco Futures: How can CAD and CAM make product manufacturing more environmentally friendly?
How does 3D printing impact the environment?

Y7 UNIT 2

Welcome Aboard
How can I use the kitchen to prepare ingredients and cook safely?
What is the Eat Well Guide and how can I eat a balanced diet?
Maritime Futures: What careers are available in the maritime industry? What are current and historic maritime versions of the dishes?
Eco Futures: How are the foods we eat transported? Are there any local alternatives? What are the environmental issues with a diet including HBV sources of protein? Feeding the nation - Food waste and Food banks. Food provenance and local produce: IOW, England, Britain, UK



Y7 UNIT 4

Model pond yacht
How can I safely use tools and machinery to manufacture a model pond yacht?
How can I use the Centre of Effort and Centre of Lateral Resistance to design a seaworthy model pond yacht?
Eco Futures: What are examples of sea going vessels that have been used in environmental campaigning? What is the Plastiki sailboat? What is the effect of changing weather patterns on sailing?

Y7 UNIT 3

Plywood Secrets box
Which hand tools and machinery can I use safely to manufacture a quality product?
How could I use CAD/CAM within my finished product?
Maritime project: What is marine plywood?
Eco Futures: What are the timbers groups and where in the world are they forested? How are timbers transported around the world? What are alternatives?



YR8

Y8 UNIT 2

CAD for CAM
How can I refine my 2D CAD drawings to ensure they are suitable for CAM output?
What do I need to consider when preparing my design for laser cutting or another CAM process?
Maritime project: How are CAM processes used in the maritime sector? What could a maritime vessel look like when rendered in 3D?
Eco Futures: How can we use CAD to reduce the amount of waste when manufacturing? How can we use CAD/CAM to develop sustainable environments for our future?

Y8 UNIT 1

Cooking in the galley
How can I use the hob and oven safely to produce a range of cooked and baked food products?
How do I know when I have a well-made and nutritious food product?
Maritime project: What can we cook and bake on a ship? Are fish a viable caught food source? Hugh Fearnley-Whittingstall campaign.
Eco Futures: What are staple foods of different countries? Where do fruits come from? What are locally caught, reared and grown sustainable foods? Are there alternatives to protein (bugs and high-tech alternatives)? What are the ways we can compost food waste?

Y8 UNIT 4

Model Powerboat
How can I work effectively within a team to assemble a product?
What careers are available within the maritime industry?
Eco Futures: What are possible sources of power for future powerboats? What is hydrogen power? Are there electric powerboats?

Y8 UNIT 3

Automaton
Which CAMS would suit different types of motion?
When would it be appropriate to use different hand tools and machinery to manufacture a product?
Maritime project: What are the different types of motion and how can these be used in a maritime focused product? Where are the types of motion within the maritime sector?
Eco Futures: How do we use CAMS to solve Eco problems around the World?



YR9

Y9 UNIT 1

CAD/CAM
How can I use CAD to model both functional products and architectural designs?
What makes a 3D visualisation effective in communicating my design?
Maritime project: What are the benefits if having CAD drawings in the maritime sector? What is the importance of following critical CAD dimensions in the maritime sector?
Eco Futures: How can CAD and CAM develop sustainable products? How does CAD and CAM help produce products using minimal materials?

Y9 UNIT 2

Around the World
What is a food group and how can I combine nutritious ingredients?
How can I analyse food products and improve them?
Maritime project: How can I cook and bake international and cultural foods from around the world?
Eco Futures: Food availability; Where does our food come from – where is it grown? What does food labelling tell us about a food's origin? What are seasonal foods? How can we eat more locally and seasonally? Food provenance. How is our food processed and transported? How and why is food wasted? How can we grow our own fruit and vegetables?

Y9 UNIT 3

Passive Amplifier
How can I design and manufacture a product with a limited amount of materials?
Why do we make a model when testing a design idea?
Maritime project: Using a product aboard a sailboat that needs ZERO power to amplify music.
Eco Futures: What are the environmental issues with using timbers? What is deforestation? What is sustainable timber? Where do our timbers come from? How can we calculate the % waste when we make a product? How can we reduce the amount of waste we produce?

Y9 UNIT 4

Vessel challenge
How do I complete an investigation and research into boat hull design, cargo and stability?
How do I prepare for models to be tested?
Maritime project: What are the issues with transportation of goods on our seas? How and where do we transport our goods on the sea? What happens when the goods arrive at the docks?
Eco Futures: How could we travel if/when sea levels rise? What might happen to the Isle of Wight if sea levels rise?

KS4

