

Episode 1

Health, Safety and Using the Workshop



- 1 YOU ARE RESPONSIBLE FOR YOUR OWN SAFETY AND FOR THE SAFETY OF OTHERS.
- 2 ALL ACCIDENTS ARE PREVENTABLE.
- 3 DO NOT TAKE SHORTCUTS. ALWAYS FOLLOW THE RULES.
- 4 IF YOU ARE NOT TRAINED, DON'T DO IT.
- 5 USE THE RIGHT TOOLS & EQUIPMENT AND USE THEM IN THE RIGHT WAY.
- 6 ASSESS THE RISKS BEFORE YOU APPROACH YOUR WORK.
- 7 NEVER WEAR LOOSE CLOTHES OR SLIPPERY FOOTWEAR.
- 8 DO NOT INDULGE IN HORSEPLAY WHILE AT WORK.
- 9 PRACTICE GOOD HOUSEKEEPING.
- 10 ALWAYS WEAR PPEs.

Episode 2

Anthropometric Data

Anthropometrics is the practice of taking measurements of the human body that can be used by designers. Ergonomics can incorporate the use of anthropometric data when designing products to improve the user experience.

Data is used to help make products more comfortable to use. It is difficult to design a product that would suit everyone but generally when data is used it would improve the experience for 90% of users.

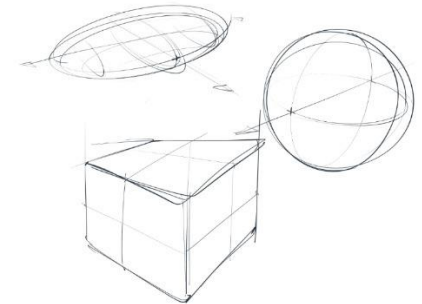


Episode 3

Design Ideas

The iterative design process helps to develop designs, focusing on improving them and making them more successful. It is important at this stage for the designer to consider the design as a whole, rather than the separate components.

Following the design process, designers will use this process to support in creating models, prototypes or simulations, to further evaluate the effectiveness of the design.



Year 8 Subject: Technology

Episode 4

Block Foam Modelling

This a great way to create prototypes to help visualise products you have designed. To create your model you will start by drawing out the outline of your shape onto the block of foam. You would cut along this line initially using a knife. You can then sand the foam to get the desired shapes you need.

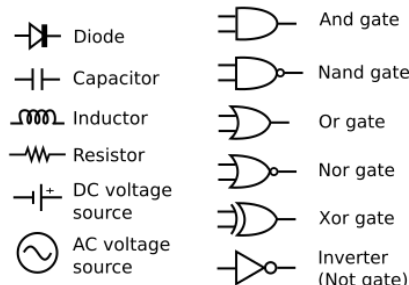


Episode 5

Electronic Circuits

Understanding how electronic circuits will be included in your designs is important. For this episode you will learn how to put together simple circuits using breadboards.

Breadboard are used to train beginners in electronic circuitry. They will allow you to build simple circuits using LEDs. Being able to read a circuit diagram is also important.



Key Terminology

Terminology	Definition
Anthropometric	The science that deals with the measurements of the size, weight and proportion of the human body and skeleton.
Ergonomic	Relating to or designed for efficiency and comfort in the working environment.
Iterative	The process of making repetition to improve designs.
Prototype	An early sample, model or product test.
Breadboard	Base used to build semi-permanent prototypes of electronic circuits.
Circuitry	A circuit or system of circuits performing a particular function in an electronic device.

Episode 1

Question	Answer
Who is responsible for the safety of everyone in the workshop?	Everybody is.
Are all accidents preventable?	Yes, if everyone follows the rules.
Should you be trained on machinery before using it?	Yes, so that you use it correctly.
What could happen if you wear the wrong clothing/footwear?	Loose clothing could get trapped in machines and improper footwear could cause a fall.
What is PPE?	Personal, Protective, Equipment.

Episode 2

Question	Answer
What is anthropometric data?	Measurements of the human body.
Where is this data used?	Through ergonomics to make products more user friendly.
Roughly what percentage of users will benefit from the use of this data for designing products?	Around 90%.
Can this data be used to improve the experience for all users?	No, this is unlikely due to the differences we all have as users.
What kind of products would this data normally be used to design?	Office equipment is popular as it is used for long periods of time and the users benefit from it being designed better.

Skills Practice

Designing a Product

Use your knowledge of designing products to make rough sketches of your games controlled at home.



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Skills Practice

Evaluating your Prototype

Use the following questions to get quick feedback from potential users. These can be family, friends or others in your class.

“I Like...”

These are statements about your prototype that users like. They don't need to be long, just specific about the useability of your design.












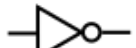
“I Wish...”

These are statements about your prototypes that user feels could be improved or different.

“What If...”

These are statements about the design that the user may like but have not been considered as part of the design process.

Episode 5

 Diode	 And gate
 Capacitor	 Nand gate
 Inductor	 Or gate
 Resistor	 Nor gate
 DC voltage source	 Xor gate
 AC voltage source	 Inverter (Not gate)

Electronic Circuits

Use table above to practice what each symbol means in a circuit diagram.

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