Highsted Knowledge Organiser

Year 8 Term 3: Design & Technology

What I need to know	Key Vocabulary
To be able to design and make a light for a relevant target audience. How to use all materials safely in the workshop to create a fully functioning product.	Design movements Mood board Product analysis Aesthetic Environments Customer/Client Safety Innovation

Student reference point
***Design movements**:
Memphis
Pop Art
De Styjl
Bauhaus

* **Product analysis**:
Aesthetics What does the product look like?
Environment What impact does the product have on the environment, both in terms of how it is made and when it is being used?
Customer/client Who is your lamp aimed at?
Safety What do you need to consider to ensure that you create and make a safe product?
Innovation How is this different from any of the other lights currently on the market? Why?

* **Systems and control – Inputs:**
Light dependent resistor (LDR) Detects changes in light levels. Resistance increases in the dark and decreases in the light. Used in street lighting and security lights.
Switch Switches turn a circuit on or off. Types include push, slide or toggle. Used in lighting, control panels and power switches.
Temperature sensor Detect a change in temperature. When the temperature increases, resistance decreases. Used in household appliances and vehicles.
* **Systems and control – Outputs:**
Lamp Uses electricity to produce lights of varying levels. Available in different sizes and power outputs. Used for household lighting.
Speaker Speakers translate an electrical signal into an audible sound. Used in sound systems, laptops and radios.

* **Process:**
Resistor Used to limit the flow of current and helps to protect some components from being over loaded.

* **Electronic symbols** To be able to know and recognise what different electronic symbols mean.

Challenge question
How could I apply the six R's to my product?
Research into manufacturing products for electronics.

Suggested reading
GCSE bitesize website: www.bbc.co.uk/bitesize
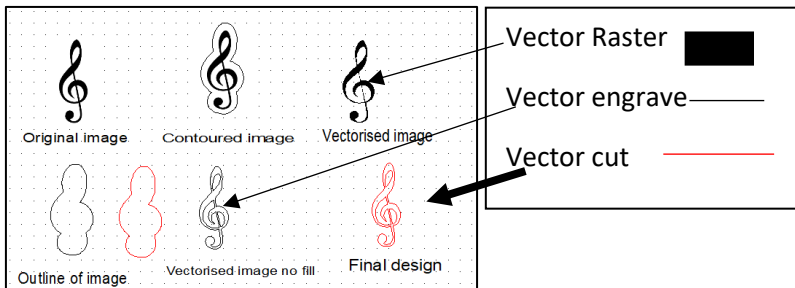www.technologystudent.com

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Year 8 Term 4: Design & Technology

What I need to know	Key Vocabulary:
Manufacture high quality product using CAD CAM.	Computer Aided Design
Understand how to use the tools in 2D design.	Computer Aided Manufacture

CAD art work **2D Design**

Original image   Contoured image   Vectorised image

Outline of image   Vectorised image no fill   Final design

Vector Raster

Vector engrave

Vector cut

Common 2D Design Tools

Select — Straight line
Shapes
Double path — Bezier — Grid Lock — Step Lock
Text
Zoom In — Zoom Out
Contour
Undo Last
Select zoom

Annotating Design Ideas

Always use this as a starting point to specification & annotating.

Aesthetics: What does the product look like?

Cost: How much does the product cost to buy?

Customer: Who will buy your product?

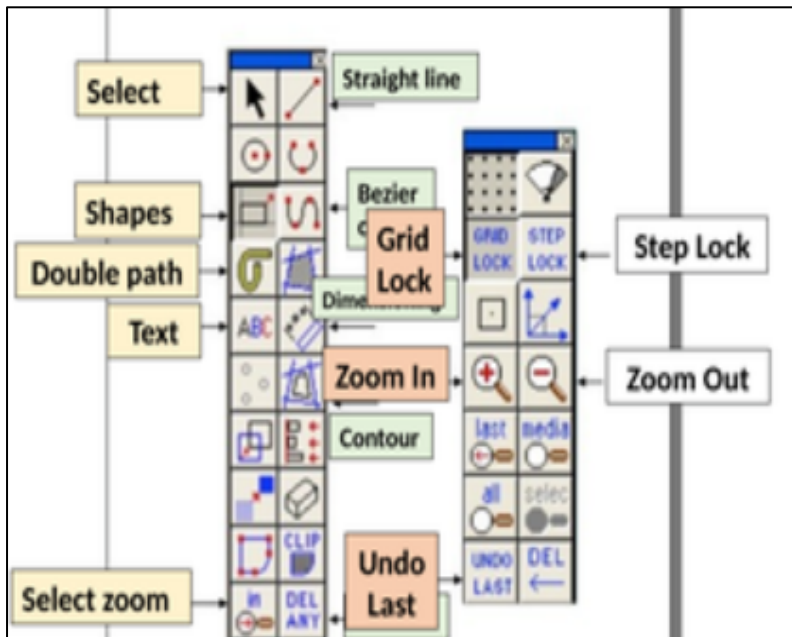**Environment:** Will the product affect the environment?

Size: How big or small is the product?

Safety: How safe is the product when it is used?

Function: How does the product work?

Material: What is the product made out of?

Challenge question:
Consider the type of interior environment that your night light will go into.
Think about how you could make your night light more sustainable.

Suggested reading:
BBC bitesize,
Technology student.com