

# Knowledge organiser clock project

## 2. Plastics

Acrylic		<p>Properties:</p> <ul style="list-style-type: none"> <li>• Hard wearing</li> <li>• Will not shatter</li> <li>• Can be coloured</li> <li>• Bathtubs, School Projects, Display signs</li> </ul>
Polypropylene		<p>Properties:</p> <ul style="list-style-type: none"> <li>• High impact strength</li> <li>• Softens at 150°C</li> <li>• Can be flexed many times without breaking</li> <li>• School chairs, Crates</li> </ul>
High Impact Polystyrene (HIPS)		<p>Properties:</p> <ul style="list-style-type: none"> <li>• Light but strong</li> <li>• Widely available in sheets</li> <li>• Used for casings of electronic products</li> </ul>
Polythene (LDPE)		<p>Properties:</p> <ul style="list-style-type: none"> <li>• Weaker and softer than HDPE.</li> <li>• Lightweight</li> <li>• Carrier Bags + Squeezy Bottles</li> </ul>
Polythene (HDPE)		<p>Properties:</p> <ul style="list-style-type: none"> <li>• Stiff strong plastic</li> <li>• Used for pipes and bowls</li> <li>• Buckets</li> </ul>
Urea formaldehyde		<p>Properties:</p> <ul style="list-style-type: none"> <li>• Colourless plastic</li> <li>• Can be coloured</li> <li>• Door and cupboard handles, Electrical fittings</li> </ul>

- Use to select objects
- Drawing circles (click and hold for more options)
- Shape tool (click and hold for more options)
- Double line tool.
- Text. Click on the page to place, then type in. Click options for fonts, etc.
- Makes construction points.
- Click and hold for options. Contains mirror, rotate, scale, etc.
- Vectorise. Turns a Bitmap image into a vector image.
- Clip path. Draw a path to clip (crop) an object to.
- Zoom
- Line tool. Click and hold for more options.
- Arc. Click and hold for more options.
- Draws curvy lines. Click and hold for more options.
- Fill tool.
- Ruler.
- Contour. Draws an outline(s) a set distance from an object.
- Allows you to align objects.
- Turns a 2d shape into a 3D drawing.
- Use with the clip path to clip (crop) an image.
- Delete. Click and hold to delete part of a line.

- Select to turn on the grid.
- Double-click to change the grid.
- Turn on the grid lock
- Attach a new line to the end of the old one.
- Zoom in
- Goes to last zoom setting
- Zooms to fit all objects in
- Undo
- Refresh the screen
- Turns on the step lock
- Radial lock: allows you to rotate in 45 steps.
- Zoom out
- Zoom to the size of the page
- Zoom to your selection
- Delete last object

**CAD – computer aided designing**  
**CAM – computer aided manufacture**  
**CNC – computer numerical control**

## CAM Machines in school

Laser cutter



Vinyl cutter



## Design development key words

Key words to know and use	Meaning
Inspired	when someone's work makes you enthusiastic to design using similar themes.
Influence	other peoples ideas help you with your ideas
Aesthetics	how Objects are attractive – colour –shape - proportion
Pattern	where you can see repeating themes and images
Tessellate	Making parts fit into a space so that no material is wasted
Symmetry	where parts of a design are equal and opposite on both sides
Mirror / reflection	where parts of a design are equal and opposite on both sides – there is usually an un seen line that separates the sides
Modifications	changes that can be made
Mechanism	A group of parts that work together to do a job ( eg. Clock)

## Sustainability

**Sustainability means** using natural resources in a way that we could keep doing for a long time. We can be more **sustainable** by reducing our use of natural resources. ... We can also help restore natural resources.

## The 6 R's



**Recycle** - Take an existing product that has become waste and re-process the material for use in a new product.

**Reuse** - Take an existing product that's become waste and use the material or parts for another purpose, without processing it.

**Reduce** - Minimise the amount of material and energy used during the whole of a products life cycle.

**Refuse** - Don't accept a product at all if you don't need it or if its environmentally or socially unsustainable.

**Rethink** - Our current lifestyles and the way we design and make.

**Repair** - When a product breaks down or doesn't function properly, fix it.

Pacific Ocean, great plastic garbage patch.

