

The background of the entire image is a close-up photograph of a light-colored wood grain, likely pine or spruce, showing natural knots and grain patterns. A white rectangular box with a thin black border is centered on the page, containing the text.

Design & Technology

Bird Box Design

Project

Timbers

Art Movements

&

Wood Finishing

Health & Safety in The Workshop

What is Health and Safety?

Regulations and procedures intended to prevent accident or injury in workplaces or public environments.

Health & Safety Rules

1. Never enter a workshop without a member of staff present! You may be at risk of injuring yourself or others.
2. Always put bags in basket – trip hazard
3. Remove blazers and jumpers for a practical so you do not damage them. Or get them caught in machinery.
4. Remove tie for every practical – so it does not get caught in machines.
5. Put chairs away during all practical work—trip hazard.
6. Do not touch machines and equipment - you could injure yourself.
7. Tie back long hair to prevent it from being caught in machines.
8. Always wear goggles so you don't injure your eyes when using
9. machines.
10. No running so you don't hurt yourself or other people.
11. Always wear an apron so you do not damage your clothes.
12. Watch and listen to teacher demonstrations so you know how to follow the practical task. If you do not pay attention you may injure yourself or other people.
13. Only one person uses/operate machinery at a time. To prevent injury to yourself or others.



Health & Safety in The Workshop

Health & Safety Rules Questions:

Why must you never enter the workshop without a teacher?

.....
.....

Explain why bags and chairs can not be left out during a practical?

.....
.....

Why must ties and blazers be removed and aprons worn during a practical?

.....
.....
.....

Why must long hair be tied back?

.....
.....

When and why must goggles be worn?

.....
.....

Explain why there must be no running in the workshop?

.....
.....

Explain why it is important to watch the teacher demonstration, never touch and use machines or tool unless shown by the teacher?

.....
.....
.....

Health & Safety in The Workshop

What is Health and Safety?

Regulations and procedures intended to prevent accident or injury in workplaces or public environments.

Health & Safety Rules Poster

Complete an information poster to help new Year 7's keep themselves and others safe when working in the workshop environment.

Include images: Add colour, be creative





Task

Health & Safety Rules Poster

Health and Safety Signage

Safety signs are found almost everywhere; in schools, hospitals, offices, shopping centres, hotels, conference facilities and construction sites. Clear signs convey an unambiguous and easily understood message. Internationally recognised symbols, such as the 'fire exit running man' help to support a sign's instruction.

Safety signage can also be used to warn of potential hazards, indicate the location of the nearest emergency exit, first aid facility or fire fighting equipment. Effective safety signage can restrict access, ensure that personal protective equipment is worn, or convey that fire exit doors should be kept clear.



PROHIBITION

MANDATORY

WARNING









FIRE SAFETY

EMERGENCY

RECYCLING

Task



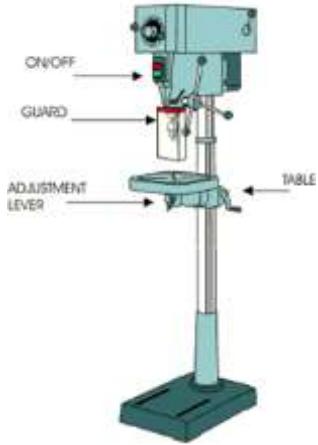
Health and Safety Symbols	Sketch Diagram/ Symbol	Identify Symbol and explain why needed in the workshop?	Mandatory or hazardous signs
			
			
			
			
			
			



Tools used for the Timber Project

Draw and copy the tools in the boxes below. If you would like to make drawing bigger use A4 paper.

Pillar Drill



Disc Sander



Mitre Saw



Coping Saw



Engineer Files



Machine Engineer Vice



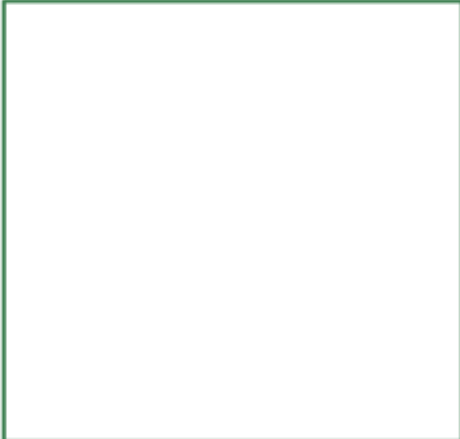
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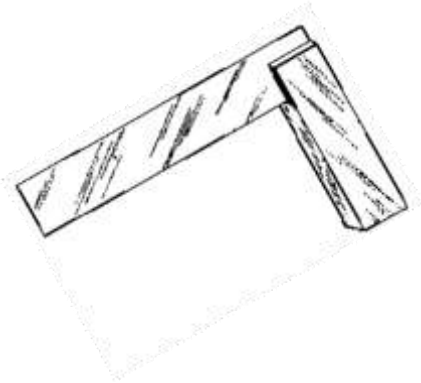


Drawing Task

Draw the imagers, be creative add colour and label

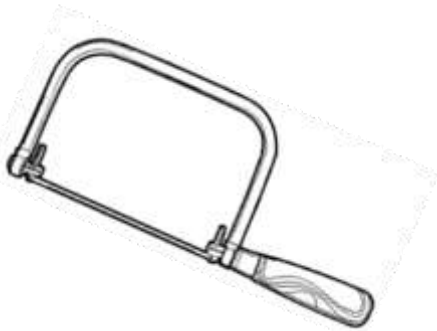
Try Square (tri square/set square/carpenters square/engineers square)

A device for testing the squareness of carpentry work or the like, or for laying out right angles, consisting of a pair of straightedges fixed at right angles to one another



Coping saw

A saw with a very narrow blade stretched across a D-shaped frame, used for cutting curves in wood



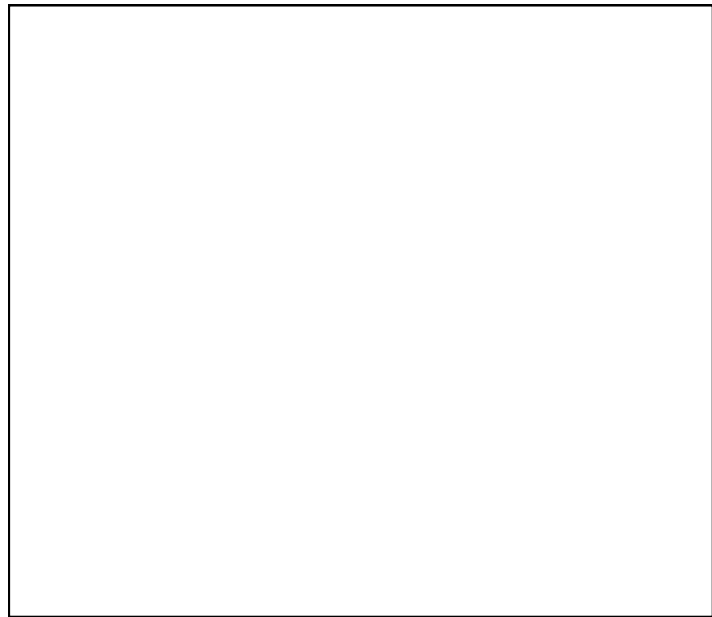


Drawing Task

Draw the imagers, be creative add colour and label

Tenon Square to cut straight lines

A **tenon saw** is one kind of backsaw primarily **used** for cutting furniture joinery pieces with accuracy. ... This **saw** can keep its blade stable when it's cutting using its hard edges. No matter whether the wood is hard or soft, you can **use** the **tenon saw** for making smooth cuts on both of them.



A bench Hook

A **bench hook** is a workbench accessory **used** in woodworking to hold workpieces in place.



Theory Subject Knowledge

Read and learn the following information. It is important to be able to identify different timbers.

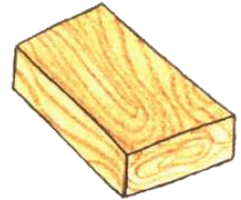
Hardwood

- Usually grow in warm climate and are slow growing (deciduous) trees, which shed their leaves each autumn
- Expensive
- Tighter grain, denser and harder



Softwood

- Usually grow in colder climate and are fast growing (Coniferous) maintain foliage all year round, which is one reason why they grow faster than hardwood trees.
- Fairly cheap – new trees planted as each one is cut - felled—to cut down trees
- Light, knotty, open grain
- Knots come from where the branches have been removed. They can be seen as being decorative but do tend to make the wood weaker when cut into planks etc.



Manufactured boards

- Boards are made by gluing together sheets, blocks, chips or fibers of wood
- Generally cheaper
- Easier to work with, great for creating curves
- MDF—Medium Density Fibreboard, Veneers , Plywood, Chipboard



An example of the grain pattern and knots.

Theory Subject Knowledge

Read and learn for the Mind Map Poster

Hard-wood	Characteristic Properties Deciduous trees, which shed their leaves each autumn	Typical Uses
Oak	Very Strong and hard, but easy to work with. Open grained; light brown colour	High quality furniture
Birch	Hard but easy to work with. Close, fine grain; pale, very light brown colour	Furniture and cabinets and turned items
Ash	Tough and flexible. Open-grained, light creamy brown colour	Tool handles. Sports equipment, wooden ladders
Mahogany	Fairly strong and durable. Some interlocking grain; pink to reddish-brown colour	High-quality furniture
Balsa	Soft: can be marked using a finger off-white to tan colour	Modelling
Soft-wood	Characteristic Properties Coniferous - maintain foliage all year round, which is one reason why they grow faster than hardwood trees	Typical Uses
Pine	Fairly strong and durable, but easy to work with. Straight grained, light brown or yellowish. Less expensive	Construction work and joinery furniture
Larch	Tough, water resistant and durable. Grain is generally straight or spiralled. Heartwood ranges from yellow to medium brown colour; sapwood is nearly white	Boats and yachts, exterior cladding or buildings, interior panelling
Spruce	Strong and hard, but low resistance to decay. Straight grained with yellowish-white colour	General construction. Wooden aircraft frames

Theory Subject Knowledge

Read and learn for the Mind Map Poster

Manufactured Boards	Description	Typical Uses
MDF – Medium-Density Fibreboard	Made from particles of timber, mixed with a bonding agent or glue and compressed. Smooth, even surface, easily machined.	Furniture, interior paneling
Plywood	Constructed from layers of veneer or plies; these are cut or shaved from timber, then glued together with the grain structure at 90degrees to each other.	Furniture making, marine plywood is used for boat building
Chipboard	Made from coarse particles (chips) of timber, mixed with a bonding agent or glue and compressed. Rough surface and uneven texture; often covered with a laminate of natural timber or a polymer such as melamine formaldehyde.	Kitchen worktops

Key Facts

Wood can be burnt as fuel. Wood is biodegradable.

Wood may be seasoned – this means that it is dried before to use to remove moisture

Plank sizes are limited by the size of the tree trunks

Felling/felled – cut down trees

Manufactured boards – no grain, large sheets. thicknesses:; 3, 6, 9, 12mm etc. veneer from a high quality wood to give a good appearance.



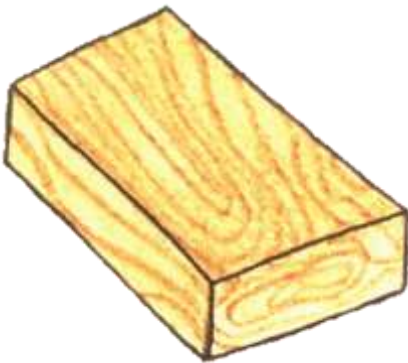
Task

Mind Map Poster on Timbers



Drawing Task

Draw the imagers, be creative add colour and label the knots, grain and veneers





Drawing Task

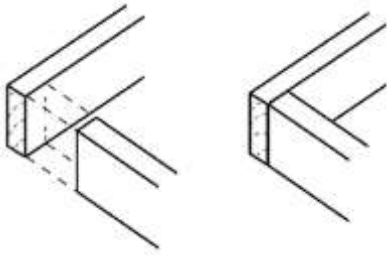
Draw the imagers, be creative add colour and label

Butt Joint

Basic

Not strong due to little adhesive area

Pins and nails often used

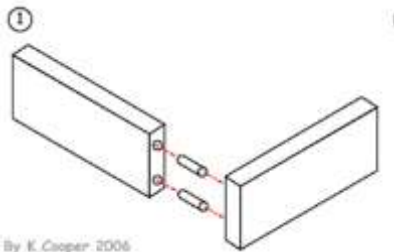


Dowel Joint

Similar t Butt Joint but with wooden dowels

Add strength

Glued for extra strength

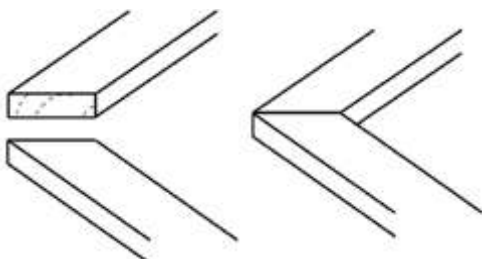


Mitre Joint

More attractive

Used for frames

Weak due to lack of surface area





Drawing Task

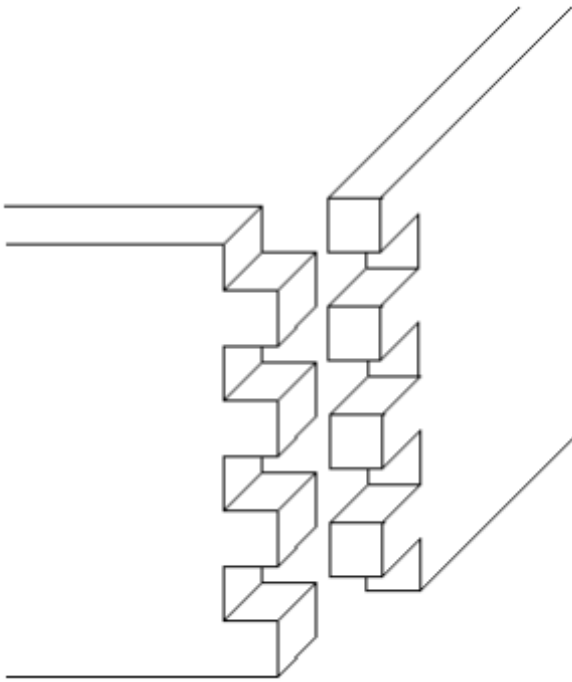
Draw the imagers, be creative add colour and label

Comb Joint

More attractive and decorative

Used for furniture

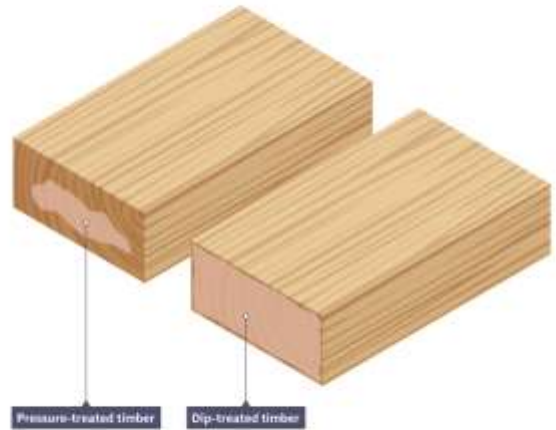
Strong



Drawing Task—Finishing for Timber



Label with arrows the correct wood finish



Paint

Pressure Treatment
Tanalising

Wax

Varnish



Art Movements

To inspire decorative ideas for the frames

Design Movements Timeline

1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2007





Art Movements

To inspire decorative ideas for the frames

Art Nouveau 1890 - 1905

- Curvy 'whiplash' lines and stylised flowers
- Elongated lines, leaves, roots, buds & seedpods
 - Exotic insects and peacock feathers
- Inspiration from Nature and the female form
 - Charles Rennie Mackintosh
 - Designer & architect
- Use of geometric shapes in his work





Art Movements

To inspire decorative ideas for the frames

Arts & Crafts 1850—1900

Some Victorian designers, led by William Morris, rejected the ideas of the industrial revolution.

They believed that automation and mass production separated designers from their products, and that the crafts and workmanship of the past were dying out.

These designers preferred to design and make products that were original and hand-crafted.

The Arts and Crafts Movement produced designs based on forms in nature, such as animals and plants.

Making the designs required highly skilled workers, so most of the products were too expensive for the average person to buy.



Art Movements

To inspire decorative ideas for the frames

Arts & Crafts 1850—1900

Simplicity – hand made

Inspiration from nature – plants, birds and animals.

Natural forms and materials

Colour and texture

William Morris

“Have nothing in your houses that you do not know to be useful, or believe to be beautiful





Art Movements

To inspire decorative ideas for the frames

Art Deco 1925 - 1939

- Geometric forms
- Symmetry and repetition
- Zig-zagged geometric fan motifs and sunbursts
- Inspiration from ancient Egypt and Aztec Mexican Art
- Discovery of Tutankhamum's tomb
- Machine age; explicit use of man made materials

Key designer: Claris Cliff (ceramicist)



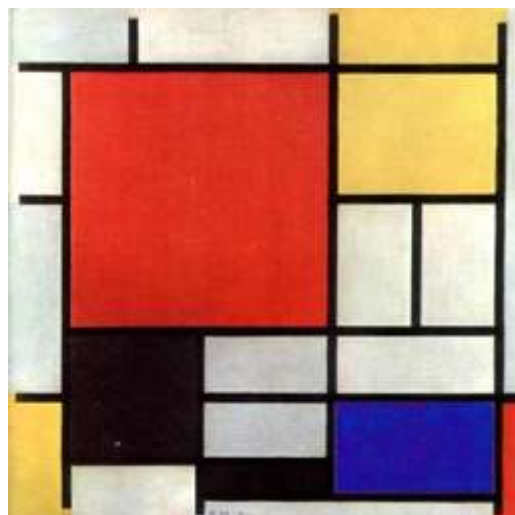


Art Movements

To inspire decorative ideas for the frames

De Stijl 1917 - 1931

- Black outlines
- Inspiration using extreme geometric designs, rectangles and primary colours
- Ultimate simplicity and abstraction
- Disconnected lines
- Inspired completely new designs in furniture & architecture
- Artist: Mondrian & Designer: Rietveld





Art Movements

To inspire decorative ideas for the frames

Memphis

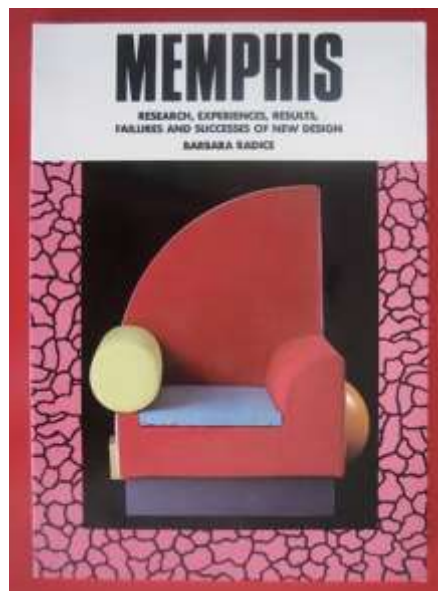
- Bright colours and geometric shapes

The group was an alternative view point to minimalism

It was started by a group of initial designers led by Ettore Sottsass

They produced highly decorative laminates and humorous products

Their post modernism influence can be seen in many of today's products





Art Movements

To inspire decorative ideas for the frames

Pop Art

Pop art is an art movement that emerged in the United Kingdom and the United States during the mid- to late-1950s. The movement presented a challenge to traditions of fine art by including imagery from popular and mass culture, such as advertising, comic books and mundane cultural objects.

This type of art is called pop art and it began in the 1950s. Pop art is a style of art based on simple, bold images of everyday items, such as soup cans, painted in bright colours. Pop artists created pictures of consumer product labels and packaging, photos of celebrities, comic strips, and animals.

The predominant colours used by Pop Art artists are yellow, red and blue. The colours used were vivid.





Art Movements

To inspire decorative ideas for the frames

Modernism

Was influenced by industrial designs and made use of geometric shapes. Movements that are influenced by technological developments in industry are:

- Bauhaus
- Art Deco
- De Stijl

They rejected decorative forms and embraced a look that they felt was universally acceptable. It was a period of design, literature, music & architecture that spans from 1920's to 1960's . Key figures include Le Corbusier – a French designer & architect.

- Machines for living....





Art Movements

To inspire decorative ideas for the frames

Questions on Art Movements:

Name three different art movements and include the dates?

.....

.....

.....

Explain the main design feature of Art Nouveau?

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Explain the main design feature of Art Deco?

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Explain the main design feature of De Stijl?

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Art Movements

To inspire decorative ideas for the frames

Questions on Art Movements:

Name three different art movements and include the dates?

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Explain the main design feature of Arts & Crafts?

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Explain the main design feature of Memphis?

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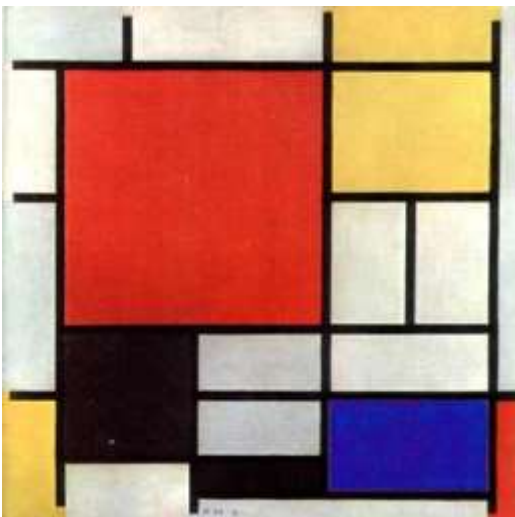
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Art Movements

To inspire decorative ideas for the frames

Draw the Art Movements:

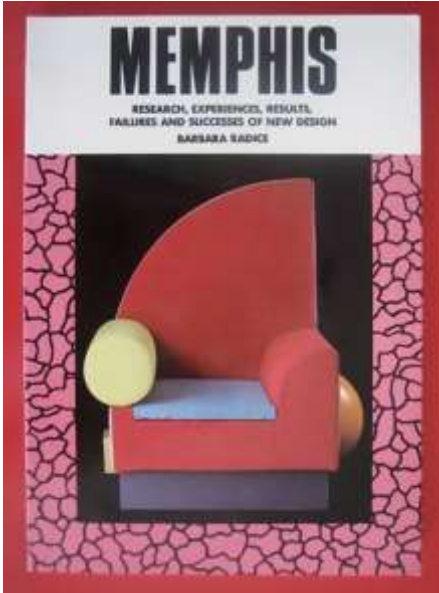




Art Movements

To inspire decorative ideas for the frames

Draw the Art Movements:

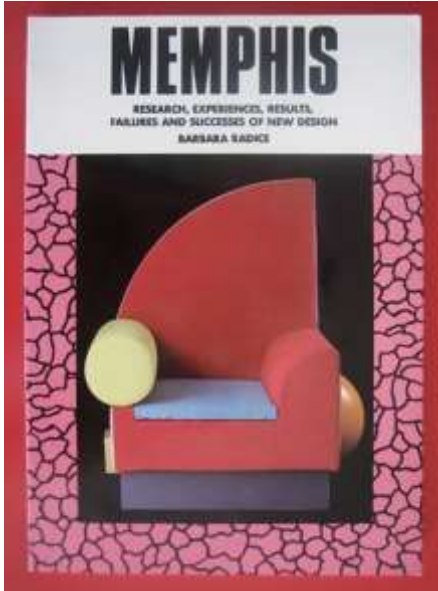




Art Movements

To inspire decorative ideas for the frames

Draw the Art Movements:





Art Movements

To inspire decorative ideas for the frames

Draw the Art Movements:





Art Movements

Example of how to Analyse Artwork:

- What do you see: colours, shape, images, texture positioning, background, foreground?
- The imagery displays two colourful birds in the foreground. They are positioned on the print in a diagonal composition. The birds are bright yellow with a light blue head. The contrasting black on the feathers breaks up the vibrant yellows and blues. There is a hint of white on the birds face. They are standing on brown texture branches. The background displays an intricate pattern of nature. William Morris has designed foliage of leaves, branches and peached. The colour is a pale, faint green with a soft orange to represents the fruits. The texture of the peaches uses dots and hatching to create shading. Lines have been used on the birds to create the effect of feathers. The background is of a light blue with is a complimentary colour to orange (peaches tone). The colour does not use tonal shading but is of a block colour (no shading) which makes the birds stand out due to the tonal shading on the feathers.
- What do the colours communicate?
- How does the image relate to the art movement?
- William Morris disagrees with product such as furniture, upholstery and textiles being mass produced in a factory. He believed in seeing the brush strokes and hammering dents in timber. The image shows dots and hatching showing the texture of brushes.
- How could you improve the work?





Art Movements

Questions to Analyse Artwork:

- What do you see: colours, shape, images, texture, positioning, background, foreground?
- What do the colours communicate?
- How does the image relate to the art movement?
- How could you improve the work?



Research Of Other Peoples Work

Observe the frames and analyses the work and take inspiration form the work to help inspire your own ideas.



Questions on next page

Research Of Other Peoples Work

Observe the frames and analyses the work and take inspiration from the work to help inspire your own ideas.

Questions: Product Analysis all Four Bird Box. Full paragraphs and use key words, characteristics of the timbers.

What do you like about the Bird Box design?

How could you improve the Bird Box design?

Describe what you see e.g. colours, shapes, texture?

What specific materials have been used to make this Bird Box

Can you identify the joints that have been used to make the Bird Box?

What aspects/features of the product could inspire/influence your own design ideas?

Could these products have been influenced by a designer or design period?

What finish has been used on the frame? Why are finishes used on timber?



Examples of how to analyse work of other designers:

I really like the frame because it is so colourful and creative. The flowers are pretty and decorative and have been placed around the rectangle frame. The background is a navy blue and the flowers are a bright yellow with contrasting greens. The inside of the flowers have a light, vibrant blue. There is also a bead placed in the centre of the flower. The flowers have elongated swirls around them and the frame inspired by Art Nouveau the art movement where they used nature an swirls in their design work.

If I was going to remake the design I would add less blue and include another colour e.g. pinks and purples as they are more colourful and work well with yellow and greens. The flowers are very girly and I would add other things to do with nature, butterflies, bumble bees.

The flowers have been made from paper but the frame looks like it has been made from a soft woot such as pine. It is hard to see as it has been painted. Pine is cheap but does have knots which can make the wood split. It does have a grain which can be decorative. The finish used is a matt paint navy blue to protect the wood from water.

The joinery methods used could be either a butt joint or a mitre joint. Mitres are commonly used in frames around doors as they are strong.



Research Of Other Peoples Work

Observe the product and analyses the work and take inspiration from the work to help inspire your own ideas.

A large area of the page is filled with horizontal dotted lines, providing a space for students to write their observations and inspirations.



Research Of Other Peoples Work

Observe the product and analyses the work and take inspiration from the work to help inspire your own ideas.

A large area of the page is filled with horizontal dotted lines, providing a space for students to write their observations and inspirations.



Task

Design four Bird Boxes inspired by the art movements/research. You

can use the template or draw your own Bird box

Be creative, add colour.

Questions to annotate around each Bird Box design:

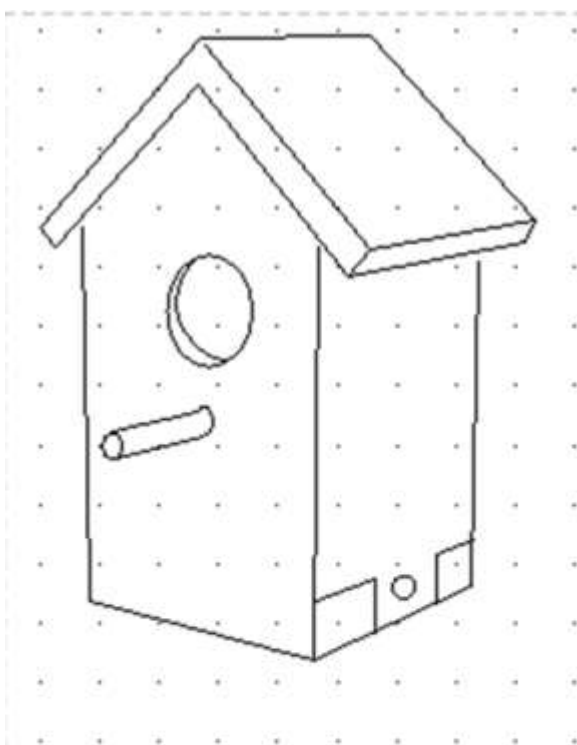
Annotate (label and explain)

What do like about your design?

What do like about the colour, shape?

How could you improve the design, colour, shapes?

What materials , joints and tools will you use to make the frame?



Example of how to annotate:

I like my design because it is colourful and I have used this pinks and blues. I am going to use football and butterflies' to decorate the surface of the frame because.....

I could improve the design by.....

The materials I will use will be pine because it is cheap but it does have knots which makes the wood weak. The grain is decorative though. I will use the mitre joint and comb joint as they are.....

I will use plywood for the roof and front of the bird box.....

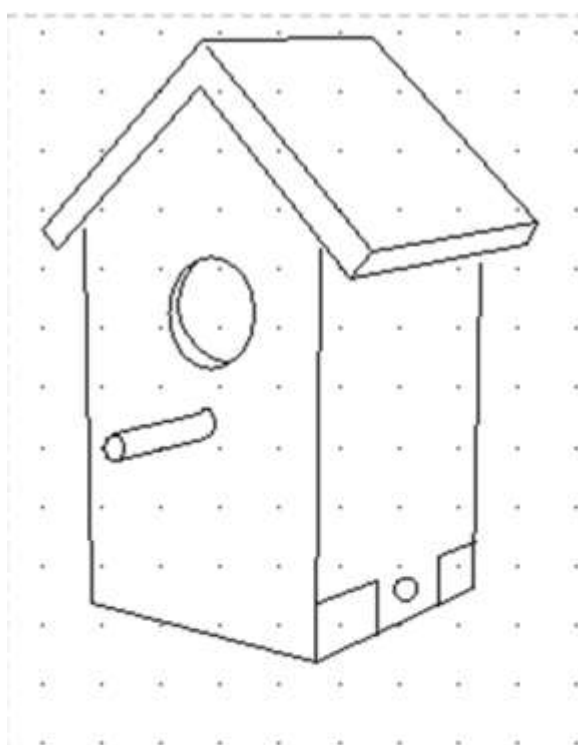
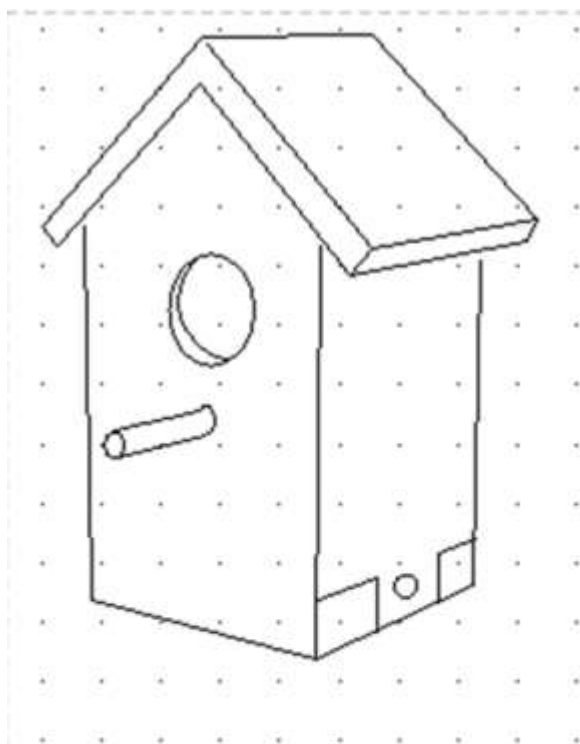


Task

Design four Bird Boxes

inspired by the art movements/research. You

can use the template or draw your own Bird Box



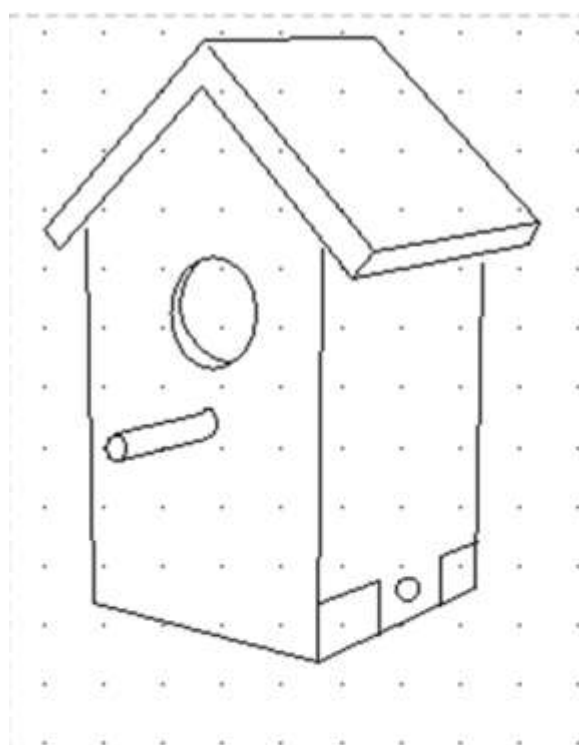
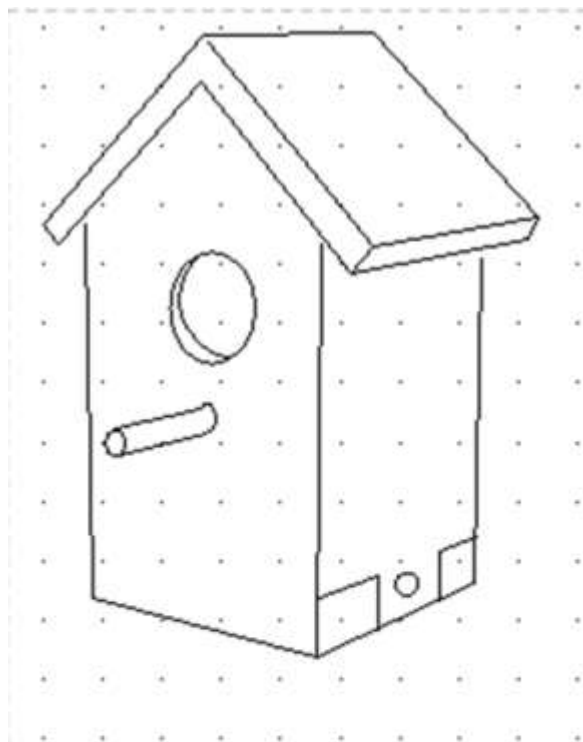


Task

Design four Bird Boxes

inspired by the art movements/research. You

can use the template or draw your own Bird Box





Task

Design four Bird Boxes inspired by the art movements/research.

Drawing Task—Standard Components for Timber

Draw the imagers, be creative add colour and label - name/identify them

