LITHERLAND HIGH SCHOOL

# LIVO CATCH-UP 10

## Year 8 Design Technology

## Windchime Project

## 1 WHAT ARE DESIGN MOVEMENTS?

Design movements influence the style and features of products. For the windchime project we look at Art Nouveau, Art Deco and Modernism.

Design styles give us ideas patterns and decoration!

### Art Nouveau (1890s)



- Inspired by nature
- Curved, flowing lines
- Decorative
- Often used plants and animals

### Art Deco (1920s-1930s)



- Bold, geometric shapes
- Symmetry
- Influenced by African, Egyptian and Aztec art
- Used in buildings, fashion and films

### Modernism (1918-1950)



- Simple, functional design
- Form over function
- Cleaner shapes
- Looks modern and futuristic

## 2 HOW DO WE GENERATE DESIGN IDEAS?

- Look at existing wind chimes and products for inspiration.
- Use sketches, mood boards and research.
- Consider themes such as wind, nature, sound, movement and design styles.
- Avoid design fixation – try lots of different ideas!

Explore lots of ideas before choosing your final design!



Mood board examples

## 3 WHAT MATERIALS CAN WE USE?

We can use a range of materials to make our windchime.

Choose materials that are suitable, strong and look good!



Aluminium (lightweight & recyclable) | Copper (decorative & durable) | Brass (strong & shiny)



- Consider cost, appearance and workability.
- Think about the environment – can it be recycled?
- Materials can be cut, drilled, filed and finished.

## 4 WHICH TOOLS AND EQUIPMENT DO WE USE?

We use a range of tools to cut, shape, drill and finish metal safely and accurately.



Engineers square



Marking out (scriber)



Hack saw



Pillar drill



Files (flat, round)



Emery cloth and wet & dry



Bench vice



Coping saw (for MDF moulds)



Buffing machine (for shiny finish)

## 5 HOW DO WE MAKE A PEWTER CAST USING A MOULD?

Pewter is an alloy made from 96% tin and 4% copper. It has a low melting point, so it is safe and easy to cast in school.

Follow the steps carefully to make a high-quality cast!

1. Design your shape (e.g. leaf or star)
2. Make a mould from MDF using a coping saw.
3. Add a sprue (channel for molten metal).
4. Heat the pewter until it melts.
5. Carefully pour into the mould (with safety equipment).
6. Allow to cool and remove the casting.
7. File, sand, polish and buff to a smooth finish.





MDF mould with sprue | Pour molten pewter | Finished cast

## 6 HOW DO WE CUT, DRILL AND FINISH ALUMINIUM?

Aluminium is a non-ferrous metal and is on a recycled closed loop cycle.
It is lightweight, strong and easy to work with.

1. Measure and mark out accurately using an engineers square and scriber.
2. Cut to shape using a hacksaw.
3. Drill holes using a pillar drill (safely with goggles).
4. Use files to refine the shape.
5. Finish with emery cloth, wet & dry and a buffing machine.



Aluminium can be recycled over and over again!



## 7 HOW DO WE USE TYPE AND GRAPHICS IN OUR DESIGN?

We can use typography and graphics to add decoration to our windchime, inspired by design movements.




Art Nouveau style (curved and decorative)




Art Deco style (bold and geometric)




Modernism style (clean and modern)

- Serif fonts are often used in books and look traditional.
- Sans serif fonts are clearer and used in signs and modern design.
- Script fonts look handwritten and decorative.
- Fonts can be adapted – bold, italic, condensed and outlined.

## 8 HOW DO WE PLAN AND MAKE OUR FINAL DESIGN?

We follow the design process to create our windchime.

A good design follows a clear process!

1. Identify the design situation
2. Research and analyse existing products
3. Generate and develop design ideas
4. Produce annotated designs (3 ideas)
5. Choose your best idea
6. Make your product
7. Evaluate and suggest improvements



## 9 HOW DO WE EVALUATE OUR WINDCHIME?

We can evaluate our finished product using ACCESSFM and the 6Rs.

### ACCESSFM

- **A** Aesthetics – does it look good?
- **C** Cost – is it good value?
- **C** Customer – does it meet their needs?
- **E** Environment – is it sustainable?
- **S** Size – is it the right size?
- **S** Safety – is it safe to use?
- **F** Function – does it work well?
- **M** Manufacture – is it well made?

### 6Rs

- **R** Recycle
- **R** Reduce
- **R** Reuse
- **R** Refuse
- **R** Repair
- **R** Rethink

Be honest and suggest how you could improve your

## 10 YOUR CATCH-UP 10

1. Name the three design movements and give one key feature of each.
2. What is design fixation and how can you avoid it?
3. Name three materials you could use for a windchime and give one advantage of each.
4. What is an alloy? What is pewter made from?
5. List the steps for making a pewter cast using an MDF mould.
6. How do you measure and mark out aluminium accurately?
7. Name three tools used to cut, drill or file metal.
8. What is the difference between a serif, sans serif and script font?
9. What do the letters in ACCESSFM stand for?
10. Give three ways you could improve your final windchime.

## FINAL CHECK

- ☐ I can name the key features of Art Nouveau, Art Deco and Modernism.
- ☐ I can generate and develop a range of design ideas.
- ☐ I can choose suitable materials and explain why.
- ☐ I can use tools safely and accurately.
- ☐ I can explain the steps to make a pewter cast.
- ☐ I can mark out, cut, drill, file and finish aluminium to a high standard.
- ☐ I understand the purpose of a design brief, specification and task analysis.
- ☐ I can evaluate my finished product using ACCESSFM and the 6Rs.
- ☐ I can suggest improvements to my design.
- ☐ I know the key vocabulary for this topic.

NOW I'M READY TO REVISE THE LESSON!



Kindness • Integrity • Tenacity