

Welcome to Wood Metal & Plastic

Lesson 1

Year 7 tasks: Mood board

What is a mood board? A mood board is a range of pictures that overlap each other to form one large picture. There should be no gaps on your page. Please see the example below.

Create 1xA4 mood board on one of the following topics based on which subject area you are currently studying in school at the moment.

Area of study

W.M.P: Wooden moving toys



Lesson 2

Year 7 task: Designer research

Create 1xA4 information page about a designer from Pixar, answer the following questions

Who are they?

What do they do?

How did they get into their trade?

What colours can you see?

What style do they use?

Include at least three examples (pictures) of their work. Follow the link below.

Areas of study

W.M.P:

<https://pixarartcollection.com/pages/the-artists>

(Pick one designer to research on this web page)

Lesson 3

This week you will be investigating motion and mechanisms.

<https://www.youtube.com/watch?v=OfOQKv1mjks&safe=true>

Watch the above link.

There are four different motions.

Linear

Reciprocating

Rotary

Oscillating

Using the link below write a short sentence about each motion, and/or draw a diagram.

<https://technologystudent.com/forcmom/motion1.html>

The mechanism being used in this project is a CAM. Have a look at the link below.

<https://technologystudent.com/cams/cam1.htm>

Using the link below, 2nd answer the questions. Please spend no longer than 1 hour on this lesson. Keep you work safe and bring back into school when you return.

<https://technologystudent.com/pdfs/mech3.pdf>

Lesson 4

This week you will be looking at where to place the cam, wheels and axle on your moving toy.



Using the two photos to help, draw/trace or print off dory (photo above) Add the following items,

2 wheels

Label the axles

How do you think Dory's fin might go up and down on picture 2?

Please use words or diagrams to answer. (Hint the cam is behind the back wheel.)

You may want to look at some of the links from last week's lesson to help with this question.

Lesson 5&6

For the next two lessons you will be looking at how tools and equipment can be used in the workshop to shape materials.

Lesson 5

Coping Saw

Using the link below, read through the information and answer the questions in the yellow box at the bottom of the page.

<https://technologystudent.com/equip1/coping1.htm>

Lesson 6

Pillar Drill

Using the link below answer the following questions

1. What is the primary function of a pillar drill?
2. Can you list 5 safety points whilst using a pillar drill?
3. What would you use the pillar drill for when making your moving toy?

<https://technologystudent.com/equip1/macdr11.htm>

Please spend no longer than 1 hour on each piece of work, keep your work safe and bring it back into school with you.

Lesson 7,8 & 9

Starter activity – answer the questions below, you do not need to print out the questions just answer them on a piece of paper. Answers at the bottom of the next page try not to look, have a go first.

Motion & Mechanisms

Motion means movement?

- ☐ A. True
- ☐ B. False

There are four types of motion in mechanical systems?

- ☐ A. True
- ☐ B. False

The four types of motion are called _____, _____, _____ and _____

Can you name 4 mechanisms, the first one has been done for you?

- ☐ Gears
- ☐ _____
- ☐ _____
- ☐ _____

Time for some modelling.

Task 1 - watch the YouTube clips below. You may want to stop it halfway through to have a closer look at how it works.

Especially the CAM TOY PROJECT YOUTUBE CLIP.

Task 2 - I would like you to design your own moving toy using the Lion moving toy as your starting point. The character to be used for your design is PIXAR. You can also use a CAM of your choice.

Task 3 - Getting ready for the practical task you will need some corrugated cardboard, a split pin, scissors, glue or tape, a sharp pencil and an adult to help you make a hole.

<https://www.youtube.com/watch?v=tzWQasmUfLY>

<https://www.youtube.com/watch?v=-lpx772-M8I>

Using the step by step guide below, design and model your moving toy using a Pixar character of your choice.

Answers

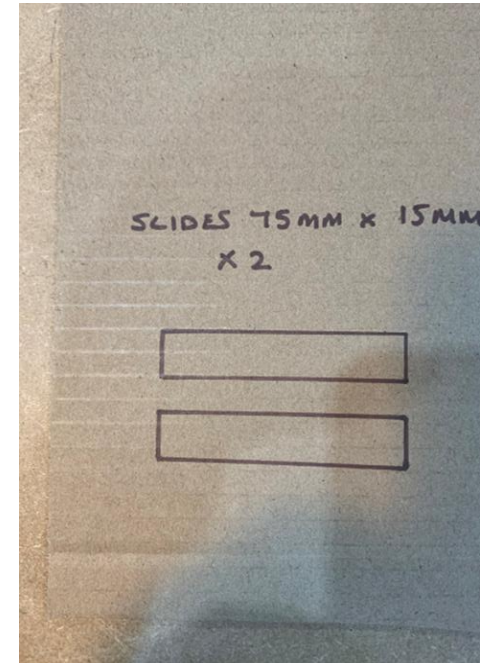
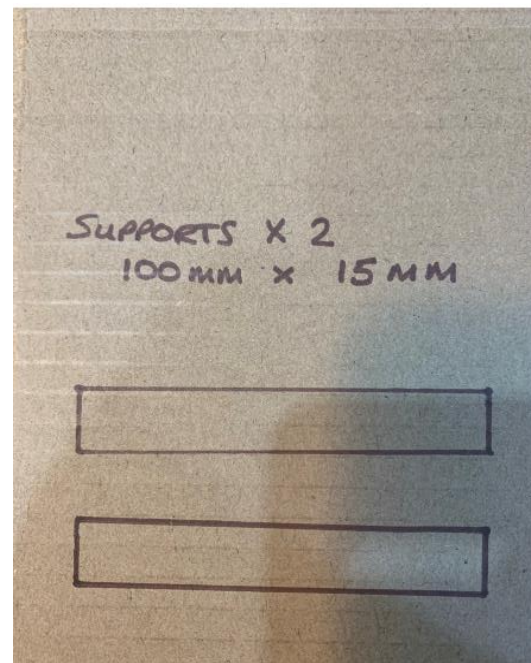
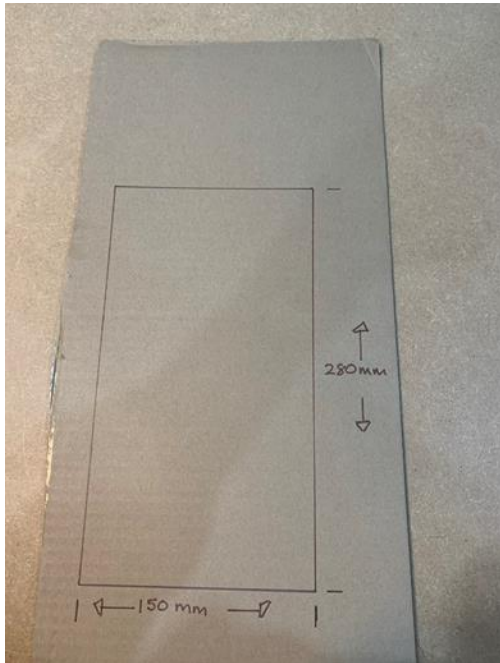
True, True, Rotary, Reciprocating, Oscillating, Linear, Gears, Cams, Linkages, Pulleys



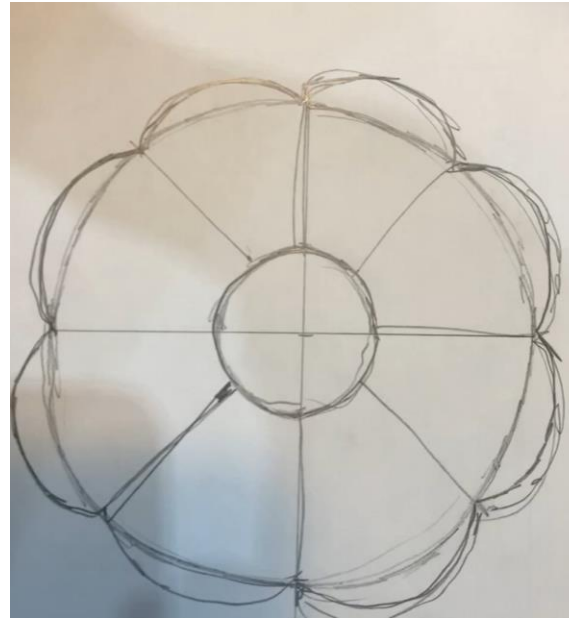
You will need

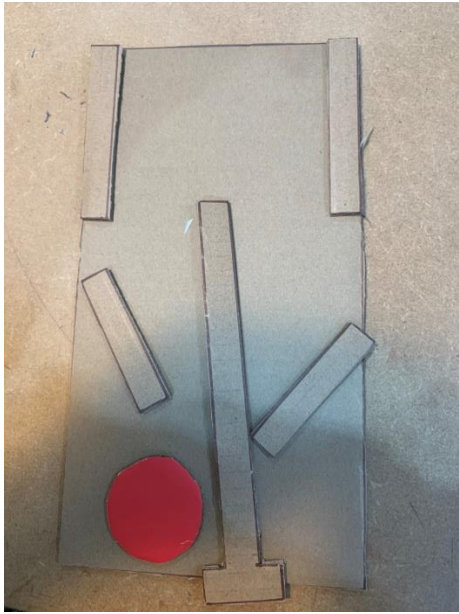
Glue
 Scissors
 Ruler
 Various pens/pencils
 Decorative paper
 Scrap paper
 Drawing pins
 Corrugated cardboard

Mark out on the cardboard the various moving parts from below, cut out, put to one side.

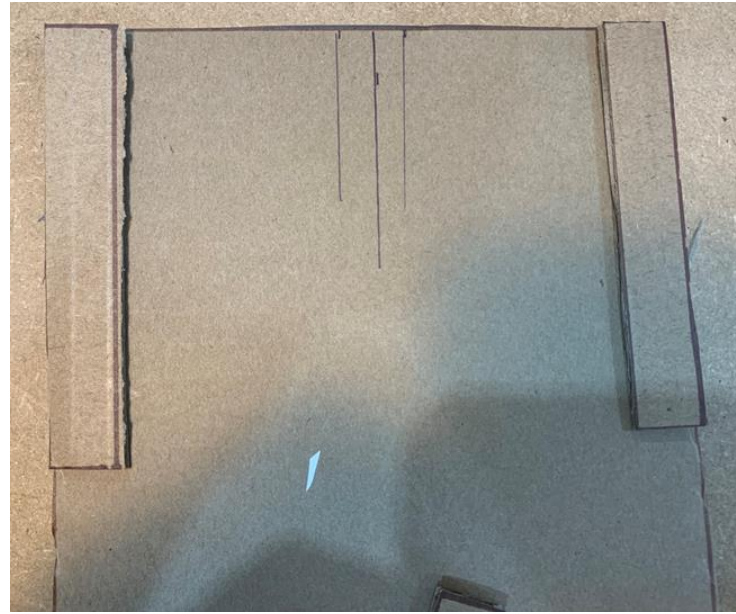


Develop design ideas using scrap paper to make pattern. Transfer and cut from decorative paper and put to one side.

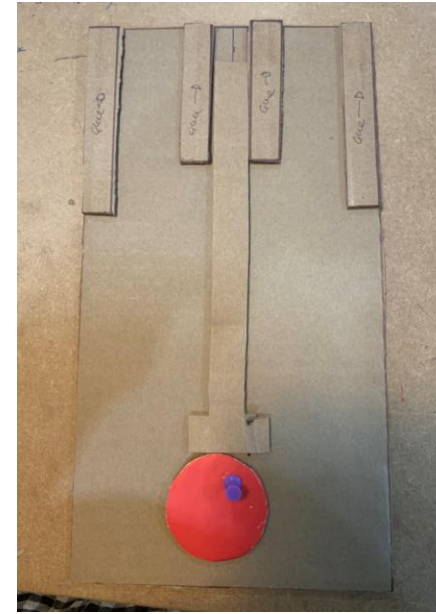




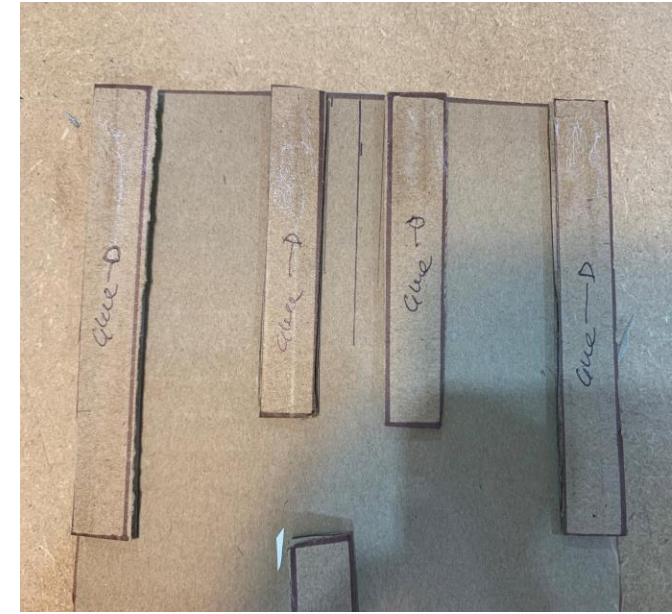
Stick with glue side struts to opposite corners on the top of the rectangle.



Mark centre point between struts, then mark 7.5mm either side of centre point. Stick slides to these lines making a channel for the follower to slide in. The channel must fit around the follower snugly but not too tight or loose.



Attach the cam to the rectangular board and position it so it moves the follower smoothly up and down when rotated in the slot.



Glue the tops of the struts ready for the outer decoration.



Assemble all pieces and mark on the slider the position of the lower part of your moving object, glue and attach using the positioned cam to adjust where necessary.

