Homework
Subject: Design & Technology
For Cycles 1 - 4

This cycle you are applying Numeracy & Literacy skills in Design

Year 8

Expectations

Complete 4 homework tasks per cycle (or the equivalent time if doing a longer project).

Complete 1 week of revision based homework per cycle ready for week 8. Your homework will be marked by a mix of peer, self and teacher assessment.

It must be handed in on the due date or you will receive an automatic 60 minute detention.

Rationale for home work this term:
   To consolidate in class learning
   To secure your knowledge of key topics
   To practice skills related to your assessment

Name_____

Teacher _____

Homework Due Dates

Fill in the dates at the beginning of each cycle, this way you can keep up to date with your homework.

Cycle 1

Topic		Page 1	Page 2	Page 3	Page 4
	Due Dates				

Cycle 2

Topic		Page 1	Page 2	Page 3	Page 4
	Due Dates				

Cycle 3

Topic		Page 1	Page 2	Page 3	Page 4
	Due Dates				

Cycle 4

Topic		Page 1	Page 2	Page 3	Page 4
	Due Dates				

Yr 8 DT Food: Numeracy Homework

The basic ingredients in Scones are flour, fat & milk. Other ingredients can be added but these will depend on the type of scone being produced. 220g of flour, 55g butter, 110ml,   25g sugar, 1tsp baking powder.
The ratio of flour to fat is 4:1. For every four parts flour, there is one part fat.

Task

1. What units of measurement do you use for dry ingredients? (1 mark)

2. What units of measurement are used for wet ingredients? (1 mark)

3. For a Scone recipe using 220g of self-raising flour, how many grams of butter or margarine is needed? (1 mark)

4. If I used 110g of margarine, how much sugar would I need? (1 mark)

5. How much flour would I need if I had 110g of fat in my recipe? (1 mark)

6. For my recipe I need 220g of flour for one batch. How many grams of flour would I need for 3 batches? (1 mark)

7. How many grams of flour would I need for 4 batches? (1 mark)

Date due:

1

Yr 8 DT Food: Numeracy Homework

Task

If I had 225g of Scone dough to make 1 pizza. (1 mark)
How many pizzas could I make with 1,350kg?

Answer:_____

Task

If your teacher needed to buy ingredients for the whole class of 22 students to make a pizza, how many bags of flour and butter would they need to buy? (4 marks)

Explain your answer and show your workings out below

1kg

250g

Yr 8 DT Food: Literacy Homework

Adapt the bread roll recipe you have made in school- think about different flours, flavours, glazes and presentations you could add to your recipe.

Task

Draw a picture of your adapted bread, showing how it should now look. Annotate and add colour to your design.

Task

Write about your adaptations, explain what changes you have made and why:

_____
_____
_____
_____
_____
_____
_____
_____

Date due:

3

Yr 8 DT Food: Literacy Homework

You have made your bread rolls in school, so now have a go at making your own adapted rolls at home independently.

Task
Take a picture of you and your family taste testing your rolls:

Using taste testing key words, describe and evaluate your adapted bread recipe. Is there anything that you would improve on or add?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Date due: 4

Yr 8 Engineering: Numeracy Homework

Task

Using a ruler and pencil, measure the engineering drawing below. Are the measurements accurate compared to the engineering drawing?

R35   R20

R12.5

50   <2

12.5   R35

R12.5
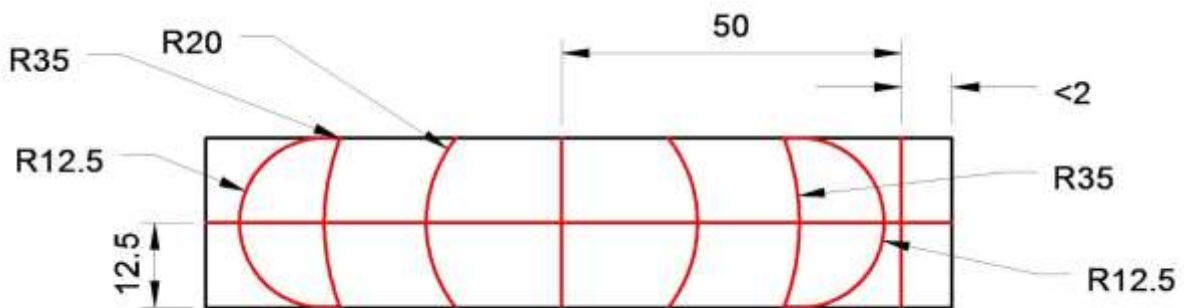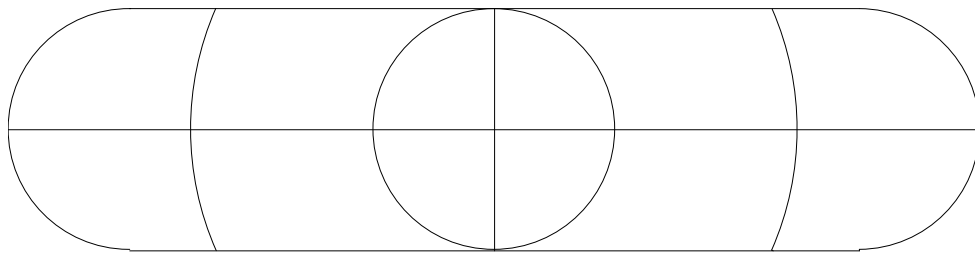
What tool can you use to ensure you have created a perfect arc on metal? Explain how to make sure it is accurate.

_____

_____

_____

_____

_____

_____

Date due: 1

Yr 8 Engineering: Numeracy Homework

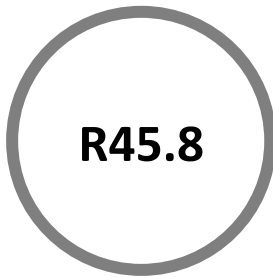In Engineering it is important that you can work out the radius and diameters of circles.

Task

Explain the difference between a Radius and a Diameter measurement:

Radius:

_____

_____

_____

Diameter:

_____

_____

_____

Task

Work out the values below using the skills you used in class:

R45.8

Ø39

R73.3

Ø _____

R _____

Ø _____

Task

Draw a perfect circle in the space below, what tools around the house could you use to help you?

Date due:

2

Yr 8 Engineering: Literacy Homework

Task

Identify these common hand tools and explain what they are used for:

_____
_____
_____
_____
_____

_____
_____
_____
_____

_____
_____
_____
_____

_____
_____
_____

_____
_____
_____
_____

Date due:

3

Yr 8 Engineering: Literacy Homework

The image below shows a simple manual centre lathe used for shaping cylindrical materials.

Place the key words below next to each part of the machine.

Gear Levers, Chuck, Coolant Pipe, Saddle Handle, Motor Lever, Tailstock, Leadscrew, Top Slide, Headstock, Toolpost, Guard, Lathe Bed, Feed Shaft, Cross Slide, Saddle, Emergency Stop
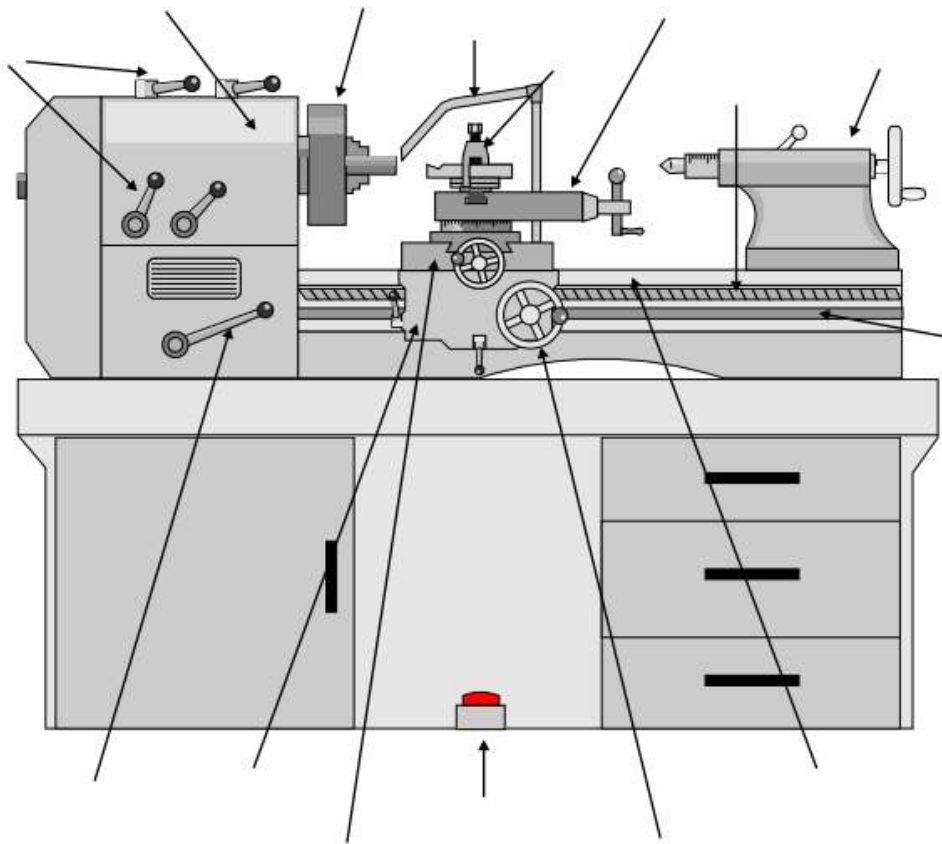
Identify 3 hazards when using this machine and suggest what PPE should be used to protect yourself when using this piece of equipment:

1. _____

2. _____

3. _____

Date due: 4

Yr 8 Product Design: Numeracy Homework

Task

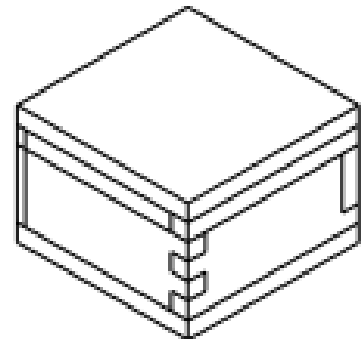1. What angle do all the corners need to be to ensure the box is perfectly straight?

   _____(1)

2. You need to create a Finger Joint. To do this you split your Pine into 3 sections. What is 1/3 of 45mm?

   _____(2)

3. What is 26.8 centimeters (cm) in millimeters (mm)?

   _____(1)

4. What tools would you use to mark out a straight line on a piece of material?

   _____

   _____
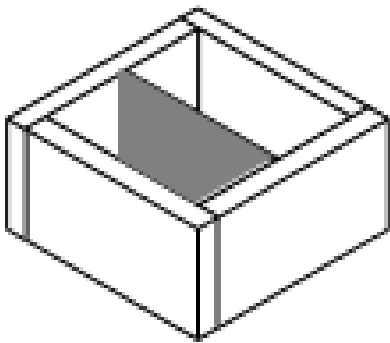
   _____

   _____

   _____ (3)

Date due:

1

Yr 8 Product Design: Numeracy Homework

Task

1. You have been given a 2m length of Pine to create as many boxes as you can. Each box must measure 125mm x 125mm, how many boxes can you make? (show your workings).

Answer:_____

2. If the outside size of the box is 125 mm x 125 mm and the wood is 10mm thick, how long will the divider need to be inside of the box?

Task

Measure the shape below, how many sections of 15mm can you make?

Date due:

Yr 8 Product Design: Literacy Homework

Task

Label the tools below and explain what they are used for :

_____
_____
_____
_____
_____

_____
_____
_____
_____

_____
_____
_____
_____
_____

_____
_____
_____
_____

_____
_____
_____
_____

Yr 8 Product Design: Literacy Homework

Date due:

3

Yr 8 Product Design: Literacy Homework

Task

Describe what you should wear and what you should do to stay safe using the Disk Sander.

_____

_____

_____

_____

Task

Can you explain the Laser Cutting process to an Alien who has never seen or heard of a Laser Cutter before?

_____

_____

_____

_____

_____

_____

_____

Task

Identify 2 risks when using a Chisel to cut a wood joint:

Risk 1:_____

Risk 2: _____

Date due:

4

Yr 8 CAD: Numeracy Homework

Task

Creating 3D shapes is an important part of DT. Before a physical model is made, designers create a CAD model to work from. Along with this designers need to know how much material is needed.
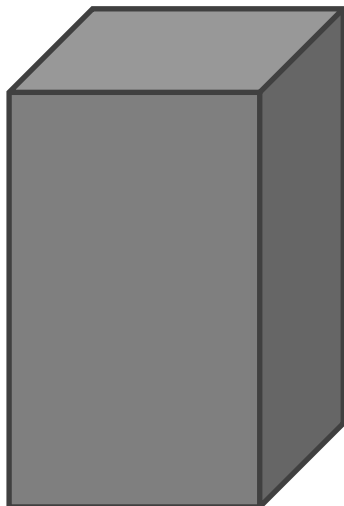
Work out the volumes of the shapes below:
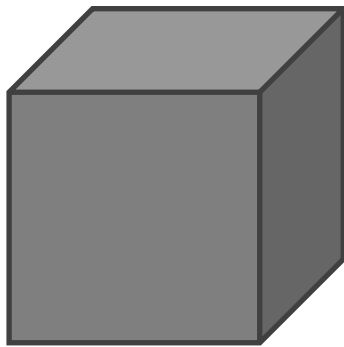
40mm

40mm

Answer: _____

95mm

65mm

Answer:_____

Date due:

Yr 8 CAD: Numeracy Homework

Different countries use different systems of measurement, in the UK we use metric however in the USA they use Imperial. Therefore when drawings are sent around the world some designers need to convert the measurements so they can understand it better.
For example:
1 inch = 25.4mm
1 Inch = 2.5 cm
3.2 Feet = 1 Metre

Task

Convert the measurements below:

1. 6 inches   = _____cm
2. 15 inches   = _____cm
3. 9.5 inches = _____cm
4. 23 inches   = _____cm
5. 53 inches   = _____cm

1. 4 ft   = _____m
2. 12 ft   = _____m
3. 6.5 ft   = _____m
4. 22 ft   = _____m
5. 34.5 ft   = _____m

1. 4.89 cm = _____mm
2. 7.2cm   = _____mm
3. 89.4cm   = _____mm
4. 103.1cm = _____mm
5. 2260 cm = _____mm

1. 20 mm   = _____cm
2. 4444mm   = _____cm
3. 308.5mm = _____cm
4. 965 mm   = _____cm
5. 40.8mm   = _____cm

Jessie bought a section of wood that is 2.5 inches wide but needs to know the measurement in mm, what is it?

Answer:_____

Date due:

2

Yr 8 CAD: Literacy Homework

Task

Identify each of the icons used in AutoCAD Inventor and explain what they are used for:

	Name of Tool	Description

Yr 8 CAD: Literacy Homework

As a designer using CAD, you will need to make 3D shapes on a regular basis. Articulating your ideas through the use of technology.
In the box below, explain using a flowchart how you would create Lego Block using CAD (AutoDesk Inventor).

START