



Year 11

Knowledge & Gwaith Cartref

Materials

AutumnTerm

2026-2027

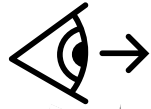
Name _____

Tutor group _____

HOW DO I USE MY KNOWLEDGE BOOKLET?

4 simple strategies to memorise information:

LOOK, COVER, WRITE, CHECK



1) LOOK at a box of information, a diagram, or the definition of a word.



2) COVER it up



3) WRITE down the information/definition or draw the diagram from memory.



4) CHECK your work and use a different colour pen to correct any mistakes.

Keep doing this until you get it completely right

FLASHCARDS

- 1) To make a flashcard, write a question on one side of a piece of paper/card, and the answer on the other.
- 2) Mix up your flashcards from different subjects.
- 3) Use them to quiz yourself or a friend.

The best flashcards are simple, numerous and overlapping.

Q: What is an integer?

A: A whole number.

Q: What is the mathematical word for a whole number?

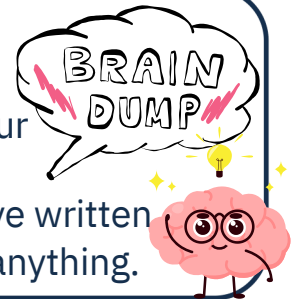
A: An integer.

FILL IN THE BLANKS

- 1) Copy out part of the Knowledge Booklet with key words, formula, dates, etc. missing.
- 2) Fill in the blanks without looking at the original.
e.g. 14th October ...10...6...6.: The Battle of ...H...a...sti...n.g.s

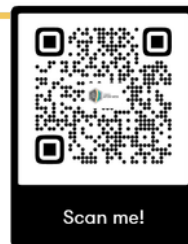
BRAIN DUMP

- 1) Without looking at it, write down everything you can remember from your Knowledge Booklet on a piece of paper.
- 2) When you're done, compare what you've written to the original to see if you've missed anything.



HOW TO USE QR CODES

- 1) Open the camera on your device.
- 2) Hold your device over a QR Code so that it's clearly visible within your screen.
- 3) The device will automatically scan the code and a pop-up will appear on your screen. Tap the pop up to open the link.



You will use your Knowledge Booklet consistently throughout the entire half term. It will play a crucial role in your lessons, homework, and revision. Your teachers will provide guidance on which sections to concentrate on at any given moment.

CWRE
RSE

If you see either of these acronyms (CWRE/RSE), this is what they mean:

CWRE: This task is giving you an opportunity to explore a job role or future career/job skill.

RSE: This task will be linked to relationships and sex education

CREATIVITY



YSGOL
AFON WEN
CREATIVITY
FACULTY



ENGLISH UNIT 2

Term 3 AN INSPECTOR CALLS



This page helps you understand the key skills and knowledge you will develop in the Harry Potter unit. Use it to support your reading, writing, speaking, and listening work in lessons and Gwaith Cartref.

Key Definitions and Concepts

Term	Definition
Authorial Intent	The message or meaning the writer wants you to understand from their work.
Empathy	Understanding and sharing the feelings of characters in a story.
Language Features	Tools writers use to make their writing interesting, such as similes, metaphors, alliteration.
Structural Techniques	Ways texts are organised, like chapters, headings, or flashbacks, to create effects or guide the reader.
Tone	The writer's attitude or feeling expressed through their choice of words.
Context	Societal, political or historical factors that affect or influence the creation of a text. What was happening at the time?

Explicit Meaning: This is the clear and direct meaning that is fully stated in the text. You don't have to guess or read between the lines because the information is obvious and easy to understand.

Example: If a character says, "I am very tired," the explicit meaning is that they feel tired.

Implicit Meaning: This is the meaning that is suggested but not directly said. You have to use clues from the text and your own thinking to understand what the writer really means.

Example: If a character yawns and says, "I stayed up all night," the implied meaning is that they are tired, even if they don't say "I am tired" directly.

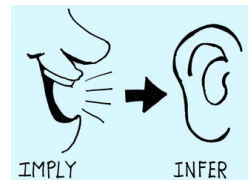
Subject Specific Skills Developed

- Explaining impressions and viewpoints
- Identifying word classes
- Explore how language, structure and form contribute to the presentation of information, ideas and themes.
- Understanding how contexts inform different viewpoints and perspectives.

Watch
the
trailer

Imply—hint at something.
Relates to giving information.

Infer—deduce or conclude something.



Revision: Do you know what these word classes are?

Symbolism	Capitalism	Adverb
Socialism	Dramatic Curtain	Dramatic Irony

Characters		
Inspector Goole	Priestley's mouthpiece; advocates social justice; serves as the Birlings' conscience	Socialist, moralistic, righteous, powerful, intimidating, unconventional, mysterious, imposing, sardonic, omnipotent
Mr. Arthur Birling	Businessman; capitalist; against social equality; a self-made man (new-money)	Capitalist, arrogant, foolish, Panglossian, emasculate, prejudice, ignorant, selfish, stubborn, vainglorious
Mrs. Sybil Birling	Husband's social superior; believes in personal responsibility	Arrogant, cold-hearted, insincere, prejudice, naïve, conformist, bitter, controlling, remorseless
Sheila Birling	Young girl; comes to change views and pities Eva; feels regret	Transformative, remorseful, socialist, pseudo-inspector, sensitive, astute, strong-minded, empowered
Eric Birling	Young man, drinks too much; forces himself on Eva Smith; regrets actions	Rebellious, reckless, immature, insubordinate, compulsive, desperate, disgraced, dualistic, irresponsible
Gerald Croft	Businessman; engaged to Sheila; politically closest to Birling	Aristocratic, evasive, secretive, dishonest, disingenuous, oleaginous, chivalric, privileged, pragmatic
Eva Smith	Unseen in play; comes to stand for victims of social injustice (changes her name to Daisy Renton)	Suffragist, victim, emblematic, allegorical, vulnerable, desperate, socialist, moralistic, principled

Theatrical Stagecraft: Dramatic Devices

Dramatic irony	Birling's speeches, Mrs. Birling's witless implication of Eric
Stage directions	Instructions for the actors; often revealing – such as the lighting change when the Inspector arrives: "Pink and intimate then brighter and harder"
Setting	Constant throughout but subtle changes e.g. lighting; characters on/off stage
Tension	Builds up throughout the play ; interrogation of characters, personal relationships, secrecy
Cliff-hanger	Eric's reappearance in Act 3; the ending allows the audience to make up their minds
Foreshadowing	Symbolism (The Titanic), Mr. Birling's "knighthood", war
Time-lapse	Set in 1912, written in 1945; audience in a privileged position.
The 4th Wall	The Inspector's final speech addressed directly to audience.

Social, Historical and Literary Allusions

"the Titanic"	The Titanic sailed from Southampton and sank in the early hours of 15th April 1912. Priestley clearly wants his audience to see his drama play out against a background of real historical events and he has also chosen a moment in time when Birling's comments appear particularly ironic.
"Nobody wants war"	In reality, economic rivalry between the British Empire and the new German Empire was one of the many causes of the First World War.
"Russia"	The irony here suggests that Russia will have progressed further than other European countries by the 1940s.
"Bernard Shaws and H. G. Wells"	Both the noted Irish playwright George Bernard Shaw (1856-1950) and the father of science-fiction H. G. Wells (1866-1946) were well-known and outspoken socialists.

'An Inspector Calls' by J.B. Priestley: A Knowledge Organiser

Plot	
Act 1	Set in April 1912, Brumley, Midlands, UK. The Birling family and Gerald Croft are celebrating Sheila Birling's engagement to Gerald with a dinner. Mr Birling lectures his son, Eric Birling, and Gerald about the importance of every man looking out for himself if he wants to get on in life. Edna (the maid) announces that an inspector has arrived. Inspector Goole says that he is investigating the death of a young woman who committed suicide, Eva Smith. Mr Birling is shown a photograph of Eva, after initially denying recognising the woman in the photo, he remembers firing her in 1910 for organising a strike over workers pay. Sheila recalls also having Eva sacked about her manner when served by her in an upmarket department store. The Inspector reveals that Eva Smith changed her name to Daisy Renton. Gerald reveals to Sheila he had an affair with Daisy Renton.
Act 2	Gerald explains to The Inspector that he had an affair with Eva, but hasn't seen her since he ended their relationship back in Autumn 1911. Sheila gives her engagement ring back to Gerald. The Inspector turns his attention to Mrs Sybil Birling, she confesses that she also had contact with Eva, but Eva gave herself a different name to Mrs Birling. Eva approached a charity chaired by Mrs Birling to ask for help. Eva was desperate and pregnant but help was refused by Mrs Birling because she was offended by the girl calling herself 'Mrs Birling'. She tells Eva that the baby's father should be made entirely responsible. She also tells Inspector Goole that the father should be held entirely responsible and should be made an example of.
Act 3	Eric is revealed as the father. He stole money from Mr Birling's office to provide money to Eva. The Inspector delivers his final speech. After he leaves, the family begin to suspect that he was not a genuine police inspector. A phone call to the Chief Constable confirms this. Next, they phone the infirmary to be informed that no suicide case has been brought in. Mr Birling, Mrs Birling and Gerald congratulate themselves that it was all a hoax and they continue can continue as before. This attitude upsets Sheila and Eric. The phone rings. Mr Birling announces to the family that a girl has just died on her way to the infirmary, a police inspector is coming to question them

Key concepts and context: Think about...

1912	Set just before WWI and the sinking of the Titanic. A moment of rising international tensions and industrial expansion. End of Victorian era saw the demise of the rigid class system. Labour Party, founded in 1900, gaining momentum. The Russian Revolution began in 1917.
1945	People were recovering from six years of warfare, danger and uncertainty. Class distinctions greatly reduced as a result of two world wars. Women had a more valued place in society. Desire for social change. Following WW2, Labour Party won a landslide victory over Winston Churchill and the Conservatives.
Wealth, Power and Influence	The Birlings and the Crofts are representative of the wealthy upper-class. They all misuse their social influence to benefit themselves. Their actions adversely affect the vulnerable people in society.
Blame and Responsibility	Who is to blame for Eva's death? Each of the Birlings contribute to a chain of events leading to the destruction of Eva Smith. What responsibilities do the characters have to each other? To society?
Public v Private	How do the public lives, the facades, of the Birlings juxtapose their private personas? What are their motivations for this? What are the repercussions, and for who?
Morality and Legality	What are the moral and legal laws of the society depicted in the play? How do they interweave? What actions do the characters undertake that are wrong, morally or legally?
Class Politics	How do the ideologies of capitalism and socialism collide in the play? Which characters are representative of which political allegiance? Is there a correlation between a character's political beliefs and their behaviours?
Prejudice	What are the prejudices held by the Birlings? What are their inherent views regarding class and status? How do they act on these prejudices, and what are the consequences?
Young v Old	What differences are evident between the younger and older generation? They react and behave differently throughout the play – why? What are their attitudes towards each other? What do they learn? Which characters change, and how?

Below are a range of activities for you to complete independently whilst we are learning about An Inspector Calls . You will be set these tasks by your English teacher as part of the YAW Gwaith Cartref Cycle.

1

Vocabulary Detective

Create your own definition for these 5 words, and use each one to write a sentence about the play.

- **Socialist**
- **Capitalist**
- **Omniscient**
- **Dramatic Irony**
- **Social Responsibility**



2

Research and infographic

Research J.B. Priestley's life and his socialist beliefs to understand how his background shaped the play's message that we must all take social responsibility for one another. Create an infographic about Priestley with key information, facts and Priestley's message about social responsibility.



3

Diary

Write a diary entry from Mr Birling's point of view after he has been interrogated by the Inspector. Write in the first person and show Mr Birling's thoughts, feelings, and fears about the Inspector, his reputation, and what might happen next. Refer to events from the play and use language that reflects his personality and attitudes.



4

Watch the play and then create a summary of plot.



5

Exam Style Question

Complete the ten mark 'What Impressions Question' on a character set by your teacher.

6

Who is the most responsible?

Who do you think is most responsible for Eva Smith's death? Choose one character and explain your opinion using at least two reasons and one quotation from the play.



Eva Smith

Tick off and date the ones you have completed

Vocab Detective	Diary	Infographic
Plot Summary	What Impressions Question	Who is the most responsible?

Response

Roedd ___ yn dweud ... was saying that
Yn siarad am ... was talking about
Yn trafod ... was discussing

Mae ___ yn meddwl bod ... thinks that
yn credu bod ... believes that
yn teimlo bod ... feels that
yn son am ... mentions

Ym marn ___ In ...'s opinion
Yn ôl ___ According to ...
Roedd y fideo am The video was about

Tenses

Dylwn i I should
Hoffwn i I would like
Dylai should
Hoffai would like
Es i I went
Aethon ni We went
Aeth went

Connectives

Ond
Hefyd But
Weithiau Also
Gyda Sometimes
Fel With
Felly Such as
Fodd bynnag So
Weithiau However
O gwbl Sometimes
At all

Questions

Wyt ti'n hoffi Do you like
Mwynhau Enjoy
Cytuno Agree
anghytuno Disagree

Beth wyt ti'n meddwl am...? What do you think about?
Credu am...? Believe about?

Beth ydy dy farn di am...? What is your opinion about?
hoff? Favourite?
gas? Least favourite?

Oes barn gyda ti? Do you have an opinion?
reswm gyda ti? Reason?

Pam? Why?
A ti? And you?

Ddylet ti? Should you?
Hoffet ti? Would you like to?

Ddylai ___? Should ...?
Hoffai ___? Would ... like to?

Est ti? Did you go?
Fyddi di'n? Will you?

Fydd ___? Will ...?

Adjectives

Ansbaradigaethus Superb
Ddiddorol Interesting
Ardderchog Excellent
Bwysig Important
Helpgar Helpful
Ffasiynol Fashionable
Dwp Stupid
Ofnadwy Awful
Sbwriel Rubbish
Wastraff amser Waste of time
Wastraff arian Waste of money

Opinions

Dw i'n hoffi I like
mwynhau enjoy
cytuno agree
anghytuno disagree
dwlu ar love
casau hate

Dw i'n meddwl bod I think that
teimlo bod feel that
credu bod believe that

Yn fy marn i In my opinion
Fy hoff ... ydy ... My favourite ... is ...
Fy nghas ... ydy ... My least favourite ... is ...

Mae well gyda fi I prefer
Mae ... yn well na is better than ...
Mae ... yn waeth na is worse than ...

Dw i ddim yn hoffi ... I don't like
yn mwynhau ... enjoy

Idioms

Ti'n jocan? Are you joking?
Yn personol Personally
A bod yn onest To be honest
nawr ac yn y man Now and again
Paid a siarad sbwriel Don't talk rubbish
Cau dy geg! Shut your mouth!
O dro i dro From time to time
Jiw jiw / pobl bach! Oh my gosh!
Diolch byth Thank goodness
Digon teg Fair enough
Chwarae teg Fair play
Heb os nac oni bai Without a doubt

Below are a range of activities for you to complete independently whilst we are learning about uned 1. You will be set these tasks by your Welsh teacher as part of the YAW Gwaith Cartref Cycle.

1

Please write an introduction about yourself that you can use at the beginning of your oral exams.

2

Please use this quizlet to revise and learn important vocabulary to be able to express your opinion clearly.

3

Please use this quizlet to learn the connectives and idioms. These will give you extra marks in your exam.

MYSELF

SCAN
ME!



SCAN
ME!



Art Term 1

Art and Design Themes and Information Theme: Creativity and Nature



This page helps you understand the key skills and knowledge you will develop in Art and Design. Use it to support your work in lessons and Gwaith Cartref.

Exploring the dark side of nature with Slenderman.

Drawings and mixed media work on the theme of Slenderman and his fantasy legend.

Photographing twigs and shadows to try to recreate a slenderman through shadows.

Using mixed media to portray the Green Man or Slenderman in a collage style.

Show that you can produce a page of mixed media art on the theme of the Green Man or Slenderman.

Investigate tribal art and how they portray the face.



Create and paint an African Mask based on a mixture of styles out of cardboard relief style.



Research and gather images on the painting by Picasso called Demoiselles D' Avingon.

Brian Froud is a fantasy illustrator whose work has gone on to be used in Hollywood movies such as Labyrinth and the Dark Crystal. Copy his work into your book



Below are a range of activities for you to complete independently. You will be set these tasks by your art teacher as part of the YAW Gwaith Cartref Cycle.

1

Complete any outstanding work from the summer term. Consider clear, neat headings, completed artwork and clear process notes with artistic terms mentioned as much as possible eg cross hatching.

2

Create a half human, half African tribal mask portrait of your own design at home. Use any materials and try to say what you like about it and how you created it as supporting notes.

3

Ensure that most pages have self reflection notes about the work you have produced. Say what went well with the work and what you would do better if you had more time.

4

Say why your work on African Masks is like the work of the abstract artist Pablo Picasso. 5 similarities and 5 differences in sentences please.

5

Plan sketches (at least 3) of what your final image for this folder on Creativity and Nature might be. Sketching can be simple and brief but add a few notes to explain your work as well.

6

Ensure that you have a final written evaluation of at least 1 side of A4 saying what you did step by step in your folder, what went well along the way. Also say what could have been better and what materials you found difficult to control. Mention your final piece and how it was made. Finally mention what you have learnt in the coursework and how you would develop it further if you had more time.

Tick off and date the ones you have completed



Links to past
papers



Links to Blended
learning for Unit 3



Below are a range of activities for you to complete independently. You will be set these tasks as part of the YAW Gwaith Cartref Cycle.



1

Unit 1

Attempt the past paper questions using the QR code link - focus on 12 and 15 mark questions and time stamp your work



2

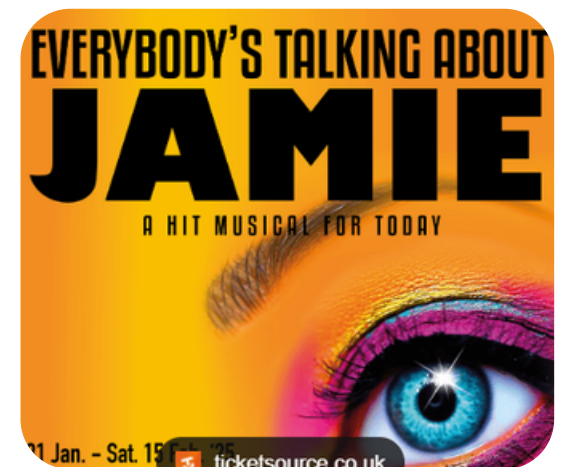
Re-Read FACE

Go back to your hard copy and re-read the text. Ensure you are fully prepared with the the section of text that you have chosen to write about in the 12 and 15 markers.

3

Watch Live theatre

Watch your performances and consider all elements of acting, lightng, sound, costume, hair and make-up. And don't forget the shoes!



This page helps you understand the key skills and knowledge you will develop in Media Studies .

Check out the
knowledge
organisers for
Representation



Check out the
knowledge
organisers for
Representation in
Wales



Check out the
knowledge organisers
for Music Industry



Check out the
knowledge
organisers for Gavin
and Stacey



Industry



Hollywood

Genre



Hollywood

Narrative



Hollywood Film

Below are a range of activities for you to complete independently. You will be set these tasks by Mrs O'Carroll as part of the YAW Gwaith Cartref Cycle.

1

Watch Spectre



4

Complete a mindmap about Spectre, the characters, themes and narrative .

2

Watch Skyfall

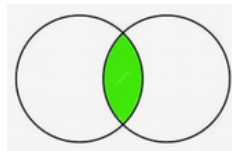


5

Complete a mindmap about the James Bond Franchise.

3

Compare the teaser poster and the main Poster using a venn diagram



6

Create a revision mindmap about Hollywood film



Tick off and date the ones you have completed

1	2	3
4	5	6

This page helps you understand the key skills and knowledge you have developed in music .



Blended learning
resource for 'Sir
Duke' by Stevie
Wonder - Set Work
List B



Verse

This is the part of the song which usually has the most lyrics. Verses contain the main ideas of the song. Lyrics tell the story and they often change in new verses.

Chorus

This is usually more memorable than the verse. A chorus often contains repeated phrases and patterns. It is usually repeated throughout the song.

Introduction

This is the section at the start of a piece of music and is usually instrumental.

Outro

This is the section at the end of the music. Another word for ending is coda.

Instrumental

This is a part of the song where there are no lyrics and the instruments are featured more prominently.

Pre-chorus

This is a short section of the song that provides a transition from the verse to the chorus.

Middle 8

A section that consists of 8 bars which usually appears after the second chorus and has a different melody and lyrics from the other sections. It provides contrast to the verse and chorus.

Knowledge organisers
for 'Sir Duke' by Stevie
Wonder - Set Work List B



Below are a range of activities for you to complete independently. You will be set these tasks by Mrs Fitzgerald-Lombard as part of the YAW Gwaith Cartref Cycle.

1

Composing

Complete the draft of your composition in response to a WJEC brief. Then, complete your reflective log for this composition



4

Use the QR code to learn more about writing a melody. Continue to develop your ideas for your second 'free choice' composition.



2

Performing

Choose a piece of music for the second of your performance GCSE assessments. It should be music that you will be able to play accurately, demonstrating good technique and showing off your skills. You will need to provide a score for your chosen piece.



5

Continue to work on your chosen performance piece. Prepare for your live recording.



3

Listening

Complete the Sir Duke keywords task. Use the blended resource to help you provide accurate definitions for each word. You could turn them into flash cards in order to consolidate your learning.



6

Complete the factfile about 'Sir Duke' by Stevie Wonder. Make sure to include detailed information about each of the elements of music.



Tick off and date the ones you have completed

Photography

Term 1

Theme: Transforming Portraits



This page helps you understand the key skills and knowledge you will develop in photography. Use it to support your work in lessons and Gwaith Cartref.

Surreal Head in a Box Art.

Looking at ways to transform a portrait by photographing the head in a box and in a surreal world.



Surreal Portrait Photography



Destroying portraits

Looking at different ways to destroy and then re-photograph portraits. With artists like Nigel Tomm and Matthew Brandt



Surreal background ideas for the box interior.



Exploring ways of producing surreal portraits with surprise elements using photopea.

Photographing close up fruit still life groups in various lighting ready to be blended with our best portraits for a surreal final outcome.



Below are a range of activities for you to complete independently whilst we are learning about Transforming Portraits. You will be set these tasks by your photography teacher as part of the YAW Gwaith Cartref Cycle.

1 Take self portraits where you surround your head with unusual objects so your face is lost in amongst items for a surreal effect.

2 Ensure that previous work is completed with full process notes, self reflection notes about what went well and even better if. Finally try to ensure that you have compared final outcomes back to the artists that you looked at like Arcimboldo for example.

3 Research and write a page on surreal photography. Try to pay particular attention to the artist known as Man Ray.



4 Photograph your face and print it out. Then place the image into your freezer overnight and then photograph.

5 Try to take blurred faces that are moving quickly with your phone. The more blur and distortion the better.

6 Ensure that you have a final written evaluation of at least 1 full slide saying what you did step by step in your folder, what went well along the way. Also say what could have been better and what materials you found difficult to control. Mention your final piece and how it was made. Finally mention what you have learnt in the coursework and how you would develop it further if you had more time.

Tick off and date the ones you have completed

INNOVATION



**FACULTY OF
INNOVATION**

This page helps you understand the key skills and knowledge you will develop in the Classification unit. Use it to support your work in lessons and Gwaith Cartref.

Classifying and naming organisms - Traditionally based on morphological features but more recently DNA analysis has been used to more accurately group organisms to show how related they are.

DOMAIN	The largest groups. There are 3 domains. Eukarya (which contains 4 of the 5 kingdoms), Bacteria and Archaea.
KINGDOM	There are 5 kingdoms: animals, plants, fungi, single celled organisms, and bacteria.
PHYLUM	Groups get smaller and organisms
CLASS	become more similar as they have more
FAMILY	morphological features (body structures) in common. ↓
GENUS	The first part of an organism's scientific name. Starts with a capital letter e.g. Panthera.
SPECIES	The second part of an organism's scientific name e.g. tigris.

Panthera tigris

Scientific names are used as they are **universal**. Language barriers or the use of common names for organisms could be confusing. The use of these names from the binomial system by all scientists **avoids any confusion**.

Adaptations

Living things become adapted to their habitat.

These adaptations may be **morphological**.

Fennec foxes who live in hot climates have large ears to radiate heat away from their bodies.

Arctic foxes have small furry ears to reduce heat loss.

Adaptations may also be behavioural; the Fennec fox is mostly nocturnal (awake at night) and burrows under the sand to avoid the heat of the day in the desert.

Competition

All organisms compete for survival.

Animals compete for:

- food, territory and mates.

Plants compete for:

- light, water and minerals.

Interspecific competition is competition between different species.

Intraspecific competition is competition between members of the same species.

Other than competition, the size of a population is changed by:

Predation, pollution or disease

This page helps you understand the key skills and knowledge you will develop in the Classification unit. Use it to support your work in lessons and Gwaith Cartref.

Measuring biodiversity

Plants

To measure the biodiversity of plants in an area or to investigate the different distribution of plants we can use a **quadrat**.

It is important to take a **random sample** of an area to avoid collecting **biased data**.

A **larger sample** will give a valid estimate of the number of plants in the area.

Quadrat

1. Randomly throw a quadrat.
2. Count the different species and the number of each in each quadrat.
3. Take a mean number of each species of plants from all the quadrats collected.
4. Multiply up to estimate how many in the whole area.



Quadrat, usually a 1m square
grid

Measuring the distribution of plants can be carried out using quadrats set in a row 1m apart. This will give you an idea of how plant life changes along a particular route e.g. Along a seashore. This is called a **transect**.

Measuring biodiversity

Animals

Measuring the biodiversity of animals can not be achieved using quadrats as animals may move quickly out of the area.

Instead scientists use the **capture/recapture technique**.

Method

1. Carefully collect organisms found in 1 area without trampling habitat or leaving litter.
2. Mark the organisms and return them to the same area they were collected from.
3. Leave time for organisms to reintegrate into their community.
4. Return and again collect as many organisms as found, collect as those already marked and unmarked samples.
5. Use an equation to calculate the estimated population size.

When using capture-recapture data, assumptions made include:

- no death
- immigration or emigration
- marking technique does not affect chances of survival.

Below are a range of activities for you to complete independently whilst we are learning about _____. You will be set these tasks by your _____ teacher as part of the YAW Gwaith Cartref Cycle.

1

Classification: Write a mnemonic to remember the classification hierarchy.

Give the full classification for the following:
Human
Shark
Penguin

2

You have been asked to estimate the population of daisies on the school field.

Give a set of instructions to be able to estimate the population in the whole field.

3

Describe why, during the capture-recapture method of sampling population size, insects would be marked on the underside of their body.

4

Watch the 'Adaptation Song' video. Describe the adaptations of a camel to survive in this environment.



5

Watch this clip. Use this, and your own knowledge to explain why some species might go extinct.



6

QER exam style question: Explain how the binomial naming system and DNA analysis helps use to understand the relationships between different species.

Tick off and date the ones you have completed

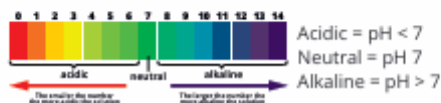
1	2	3
4	5	6

Chemistry Unit 1: Term 1

This page helps you understand the key skills and knowledge you will develop in the Chemistry unit. Use it to support your work in lessons and Gwaith Cartref.

Indicators and the pH Scale:

- Indicators are substances that **change colour** when they are added to acids and alkalis.
- Litmus** is the most well-known indicator.
- It turns **red in acid** and **blue in alkalis**.
- Universal indicator is most commonly used in the laboratory. When added to a solution, it changes to a colour that shows the pH of the solution.



Acids, Bases and Alkalis:

- Acids and alkalis are commonly used both in industry and at home.

Acids:

- Acids produce hydrogen ions, H^+ , when they dissolve in water, e.g. for hydrochloric acid:



Bases:

- A base is chemically opposite to an acid. A base that dissolves in water is called an alkali.

Alkalis:

- Alkalis produce hydroxide ions, OH^- , when they dissolve in water, e.g. for sodium hydroxide:



Whilst some acids and alkalis are dangerous, others, such as those in vinegar or lemon juice, can be sprinkled on our food! Those that are dangerous have the **corrosive** hazard warning symbol on their containers.

Neutralisation:

- A neutralisation reaction happens when an acid and an alkali 'cancel each other out'. The reaction always produces a **salt** and **water**.



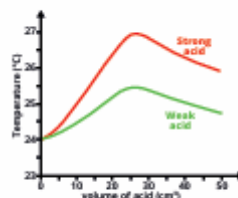
- The H^+ ions from the acid react with the OH^- ions from the alkali to form **water**. (HT only)



- The name of the **salt** produced depends upon the acid and alkali that react.

Strong and Weak Acids (SS only):

- Strong acids **fully dissociate** (ionise) in water whereas weak acids only partially dissociate.
- Strong acids have **high numbers of H^+ ions** in their solutions, so low pH values.
- Strong acids react more quickly than weak acids.



The graph shows that the temperature rise during the reaction between magnesium and a strong acid is higher than that with a weak acid.

Note – acid strength and concentration are not the same thing!

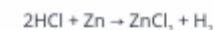
- The **strength** of an acid is a measure of the degree of its dissociation.
- The **concentration** of an acid is a measure of the **number of moles** of acid in **1 dm³ of solution**.

Reactions of acids:

- Acids react with metals, bases and carbonates to form **salts**.
- The name of a salt formed has **two parts**. The first part comes from the metal, base or carbonate. The second part comes from the acid.

Acids and Metals:

- Acids will react with **metals** to make a **salt** and **hydrogen** gas.

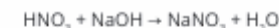


- The hydrogen causes **bubbling** during the reaction. The reaction is **exothermic**.
- The **more reactive the metal**, the **faster** the reaction is, resulting in **more bubbling** and a **bigger temperature rise**.

Acids and Alkalis/Bases:

- Acids react with **alkalis** and **bases** to make a **salt** and **water**.

- Alkalis** are commonly **metal hydroxides**.



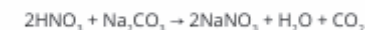
- Bases** are commonly **metal oxides**.



- The reactions of acids with alkalis and bases are **exothermic**.

Acids and Carbonates:

- Acids will react with carbonates to make a **salt**, **water** and **carbon dioxide** gas.

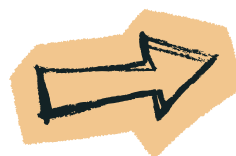


- The **carbon dioxide** causes **bubbling** during the reaction. The reaction is **exothermic**.

Below are a range of activities for you to complete independently whilst we are learning about Acids, Bases and Salts. You will be set these tasks by your teacher as part of the YAW Gwaith Cartref Cycle.

1

Watch the blended learning clip to answer part 1 of the homework booklet

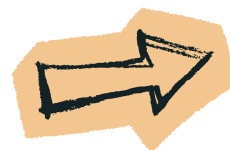


**SCAN
ME!**



2

Watch the blended learning clip to answer part 2 of the homework booklet.



**SCAN
ME!**



3

Watch the blended learning clip to answer part 3 of the homework booklet.



**SCAN
ME!**



Tick off and date the ones you have completed

Part 1 Homework Booklet	Part 2 Homework Booklet	Part 3 Homework Booklet

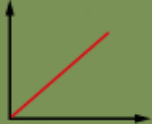
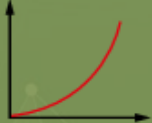
This page helps you understand the key skills and knowledge you will develop in the Physics unit. Use it to support your work in lessons and Gwaith Cartref.

These terms describe the **motion** of a body:

1. Stationary
2. Constant speed or velocity
3. Accelerating
4. Decelerating

Remember: **Velocity** is the speed in a specific **direction**.

Motion is described using distance-time graphs and velocity-time graphs. It is important to work out which type it is before you start to describe the graph as the shapes represent different things on each type. Look for the labelling on the axes to help recognise the graph.

Motion	Distance-time	Velocity-time
Stationary		
Constant speed		
Acceleration		
Deceleration		

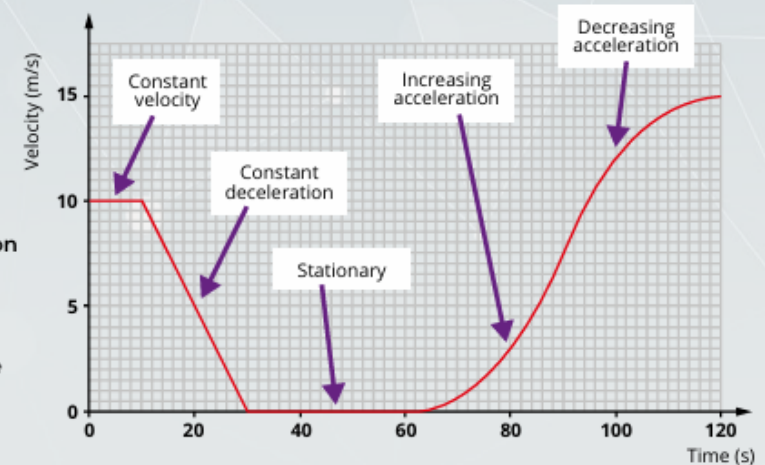
Calculating speed (or velocity)

$$\text{Speed (m/s)} = \frac{\text{distance (m)}}{\text{time (s)}}$$

Calculating acceleration (or deceleration)

$$\text{Acceleration (m/s}^2\text{)} = \frac{\text{change in velocity (m/s)}}{\text{time (s)}}$$

Using velocity-time graphs



The **acceleration** or **deceleration** can be calculated by calculating the **gradient of the line**.

The **distance** travelled can be calculated by calculating the **area under the line of the graph**.

Total stopping distance = Thinking distance + Braking distance



Thinking distance = 9m

Braking distance = 14m

Car travelling at 13.5m/s (30mph) has a **total stopping distance of 23m**

This depends on the reaction time of the driver and is the **distance travelled between seeing the hazard and braking**.

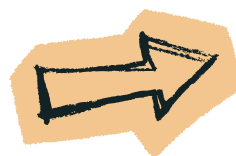
This is the **distance the car travels whilst braking**.

	Thinking distance	Braking distance
Factors that affect the distance	• Speed • Alcohol or drugs • Tiredness • Mobile phones	• Speed • Road conditions (e.g. rain) • Mass of the car • Condition of the brakes • Condition of the tyres

Below are a range of activities for you to complete independently whilst we are learning about Speed, Distance and Time.
You will be set these tasks by your teacher as part of the YAW Gwaith Cartref Cycle.

1

Watch the blended learning clip to answer part 1 of the homework booklet

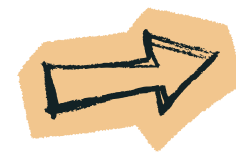


**SCAN
ME!**



2

Watch the blended learning clip to answer part 2 of the homework booklet.



**SCAN
ME!**



3

Watch the blended learning clip to answer part 3 of the homework booklet.



**SCAN
ME!**



Tick off and date the ones you have completed

Part 1 Homework Booklet	Part 2 Homework Booklet	Part 3 Homework Booklet

Product Design (1) - Sustainability in Design

Use this page to watch the tutorials. You are going to follow the sketch of the phone shelf and try to create your own.

Recycling Easter Eggs



Follow the QR code on this page. Look at the information about the change in Easter egg packaging and consider how they have become better for the environment.

Compare traditional packaging against the new style packaging to consider how they have improved the ideas, considering sustainability and green issues

Easter egg packaging



Product Design (1) - Sustainability in Design

Compare the old and new Easter egg packaging. Annotate each image explaining positive and negative impacts these products have on the environment.



Old packaging, plastic casing, surrounding all contents, Large packaging/ casing.



New packaging, smaller box, cardboard and foil casing, smaller chocolates held within egg.

Product Design (2) - CAD/CAM

Use this page to watch the videos and read the information. Use this information to answer the following questions on the next page.

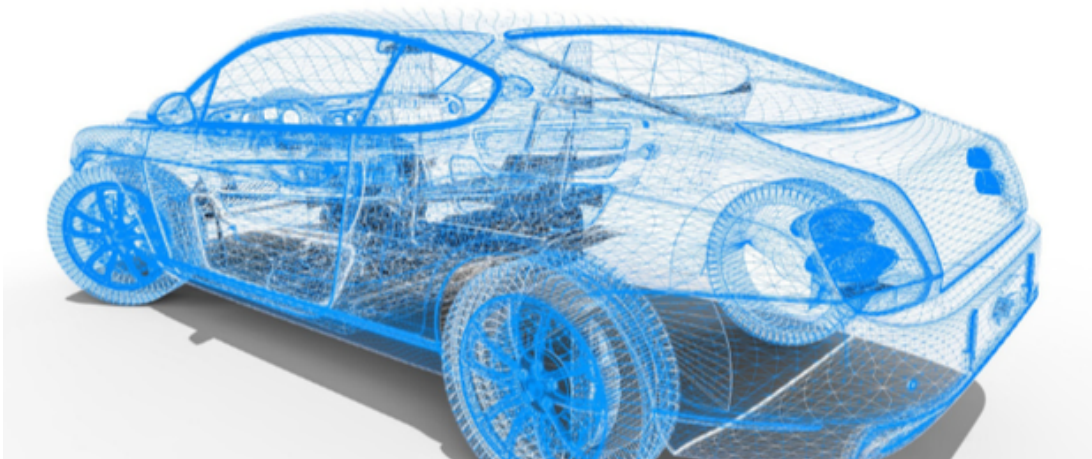
CAD



CAD/ CAM video



Watch the videos on CAD/CAM and 3D printing. Use these videos to help you respond to questions on the following page.



Use this page to watch the videos and read the information. Use this information to answer the following questions on the next page.
Use the support in your theory book to further your response.

Examples of CAM

Advantages of CAM

Examples of CAD

Advantages of CAD

Product Design (3) - 3D Printing



3D Printing Process



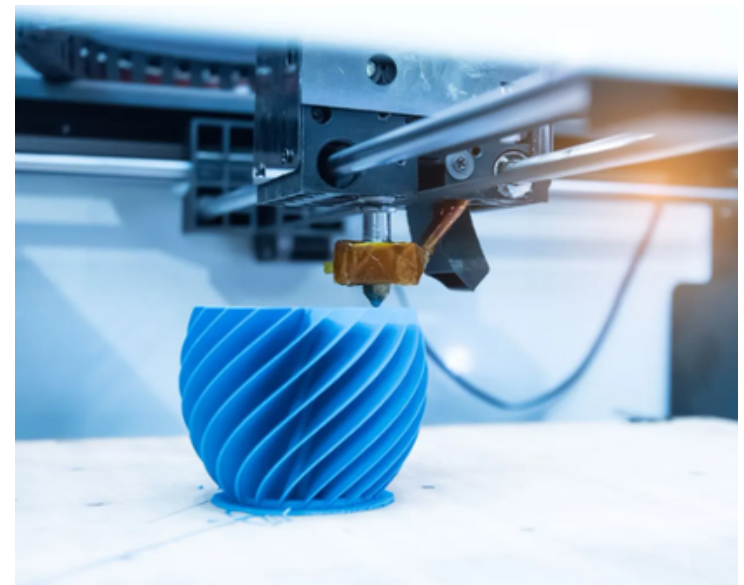
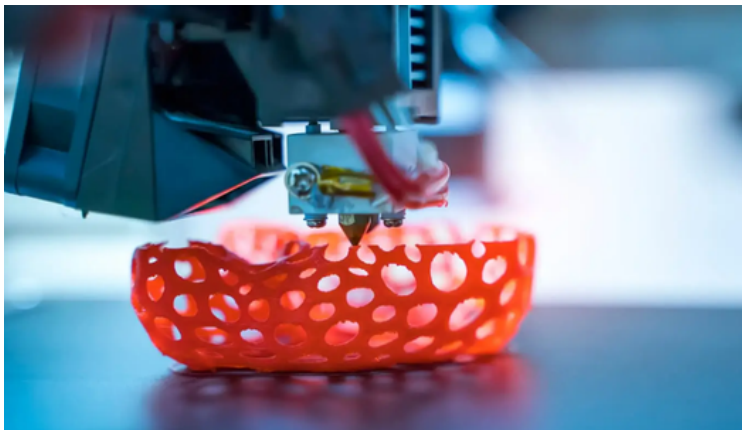
3D Printing



3D Printing explained



Watch the videos on CAD/CAM and 3D printing. Use these videos to help you respond to questions on the following page.

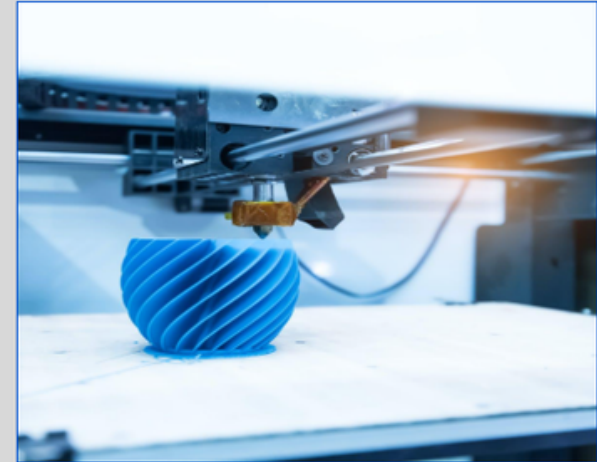


Product Design (3) - 3D Printing

PRODUCT DESIGN - CAD/CAM - 3D PRINTER

WHAT IS 3D PRINTING?

What material is used for 3D printing?



3D PRINTING PROCESS

Keywords and meaning

Product Design (4) - Laser Cutting



Use this page to watch the videos and read the information. Use this information to answer the following questions on the next page.

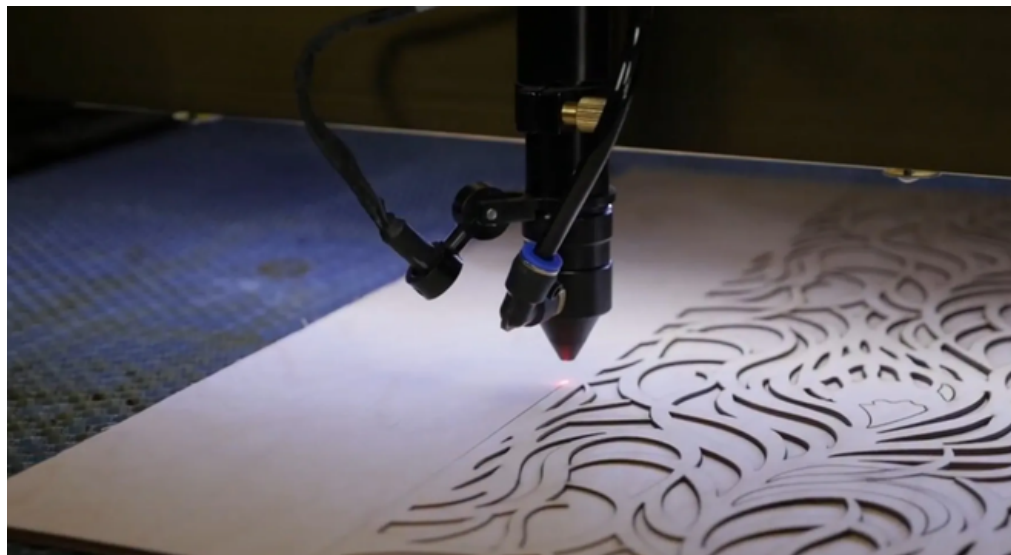
CAM/ Laser Cutter
knowledge organiser



Use the knowledge organiser and the laser cutting video to help you answer the questions on the following page.

Consider what you have already learnt in school about this process.

Laser Cutting process



Product Design (4) - Laser Cutting

CAD - What is it?

CAM - What is it?



LASER CUTTING PROCESS -Step-by-step

BENEFITS AND FLAWS OF LASER CUTTING

Product Design (5) - CNC Router



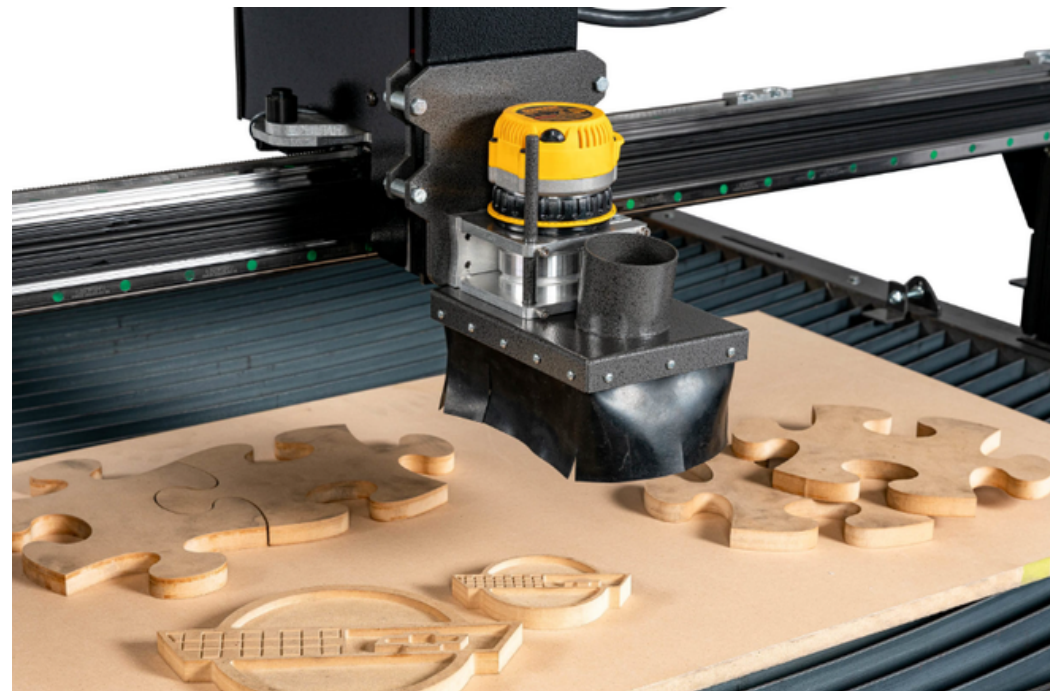
Use this page to watch the videos and read the information. Use this information to answer the following questions on the next page.

CNC Router



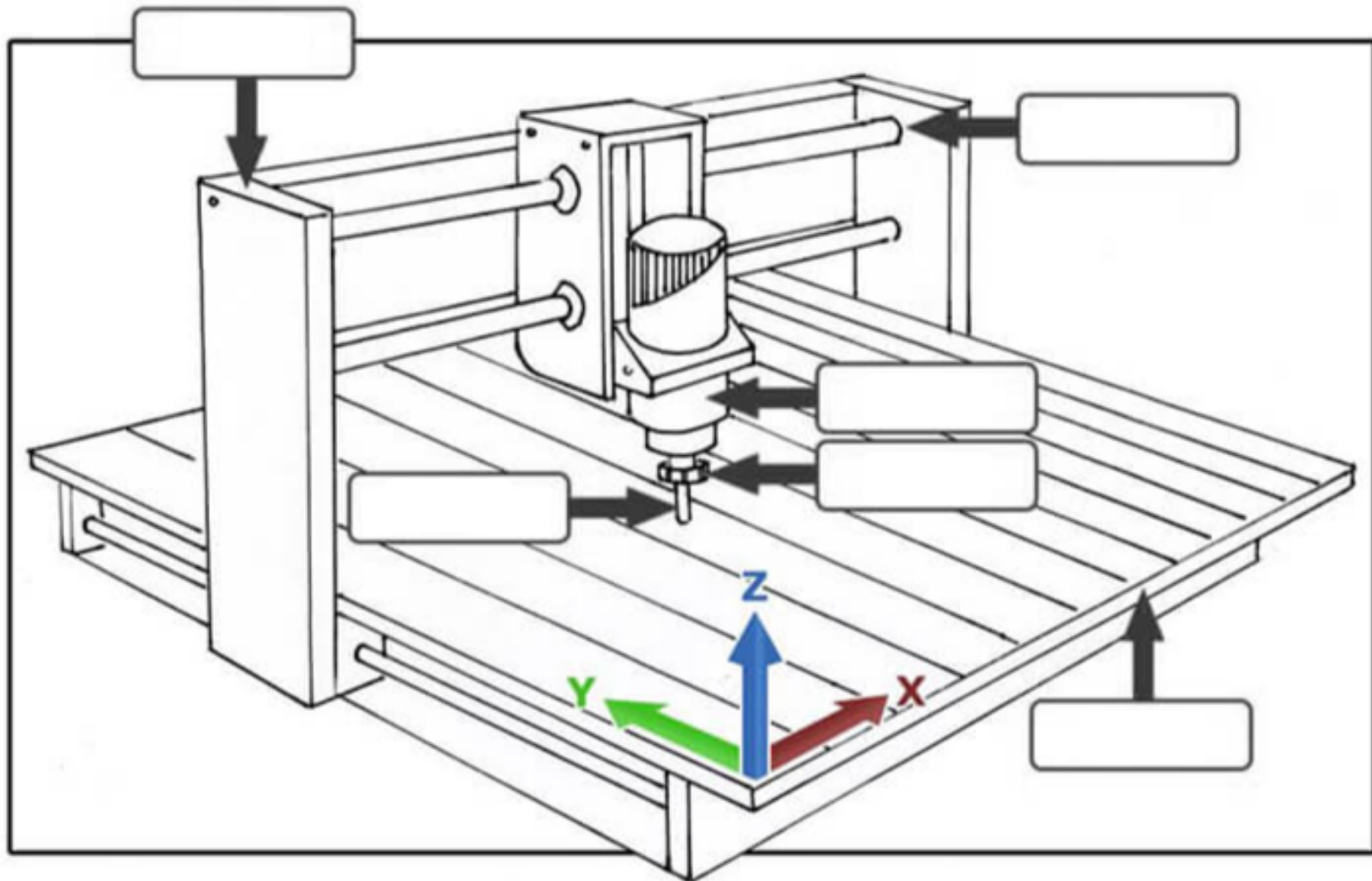
Watch the videos on the CNC router. Use these videos to help you respond to questions on the following page.

CNC Router Components



Product Design (5) - CNC Router

Label the different components of the CNC Router.



Product Design (6) - Vinyl Cutter

Vinyl Cutter



Follow the QR code on this page and watch the video. This will show you how a vinyl cutter creates decals (stickers) for products.

Vinyl Cutter step-by-step



Vinyl Cutting

List the vinyl cutting process below

Examples of Vinyl Cutting in Products

How many examples can you list?

LIFE



FACULTY OF LIFE

This page helps you understand the key skills and knowledge you will develop in unit 4. Use it to support your work in lessons and Gwaith Cartref.

4.1 The concept of sustainability

In this topic learners will gain knowledge, understanding and skills in the following areas:

- 4.1.1 Developing ideas of sustainability
- 4.1.2 The three pillars of sustainability
- 4.1.3 Sustainability goals

This topic will cover the concepts of place and space, inter-relationships, environment and interpretation.



Below are a range of activities for you to complete independently whilst we are learning about Sustainable Solutions . You will be set these tasks by your Geography teacher as part of the YAW Gwaith Cartref Cycle.

1

Come up with a definition of sustainability and list the ways in which you could live more sustainably

4

Use this website to research the 17 Goals and make notes.



<https://sdgs.un.org/goals>

2

Research current geographical issues and sustainable futures - Write up your notes.

5

Use this website to research the 17 Goals and make notes.



Well-being of Future Generations (Wales) Act 2015: the essentials [HTML] | GOV.WALES

3

Research the three pillars of sustainability: • economic • environmental • social. - Write up your notes

6

How do the goals relate to the three pillars of sustainability?
How the goals can contribute to sustainable solutions?
Write up your answers



Tick off and date the ones you have completed



Below are a range of activities for you to complete independently whilst we are learning about Depression, War and Recovery. You will be set these tasks by your History teacher as part of the YAW Gwaith Cartref Cycle.

1

EXAM PRACTICE: Why were hunger marches significant? (12)

2

EXAM PRACTICE: Explain the connections between: appeasement, Treaty of Versailles, rearmament (12)

3

EXAM PRACTICE: Why were women significant in WW2? (12)

4

EXAM PRACTICE: Explain the connections between: Dig for Victory, Radio, Churchill (12)

5

EXAM PRACTICE: What was the significance of the Beveridge Report? (12)

6

EXAM PRACTICE: Explain the connections between: Labour promises, Conservative mistakes, the Beveridge Report (12)