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Trawsnewid Addysg, Trawsnewid Bywydau

Transforming Education, Transforming Lives

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www.uwtsd.ac.uk

ECAD6015 BA3

Astudiaethau Proffesiynol ac Addysgegol:
Arwain y Dysgu: beth, sut a pham rydw i'n addysgu?

Professional and Pedagogic Studies:
Leading the Learning: what,
how and why am I teaching?

Gwyddoniaeth a Thechnoleg Science and Technology

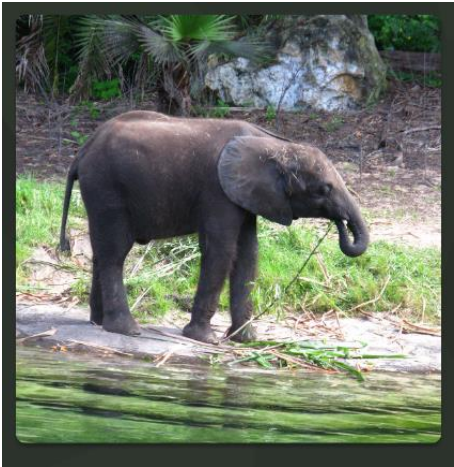
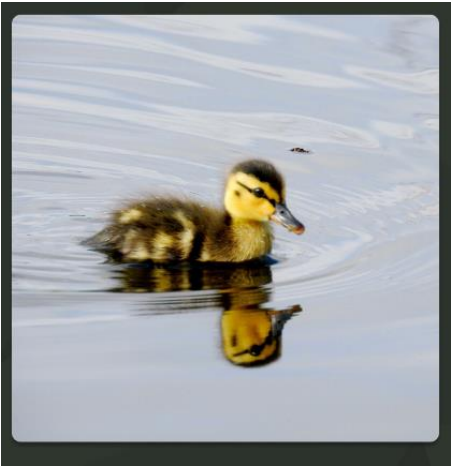
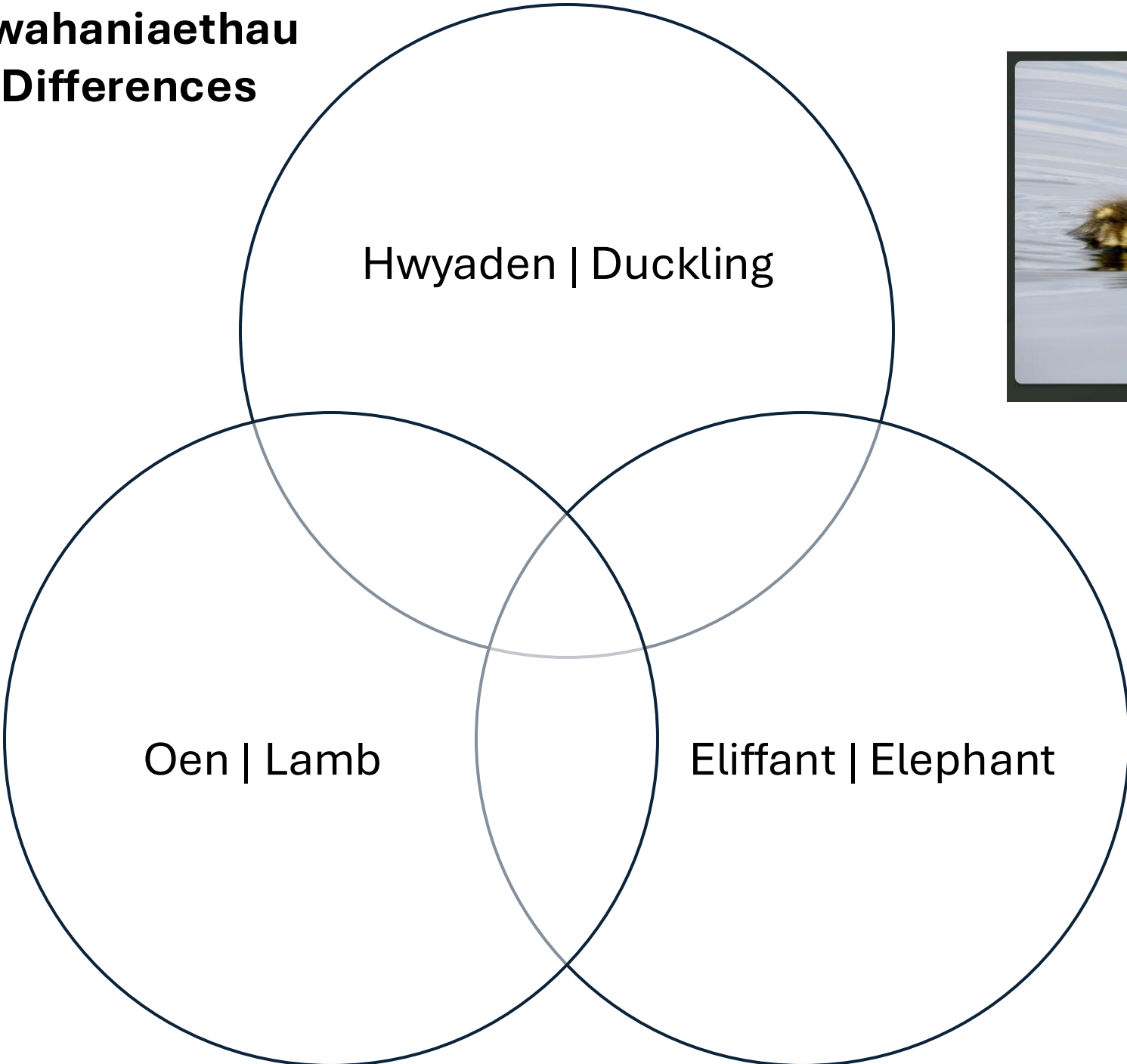
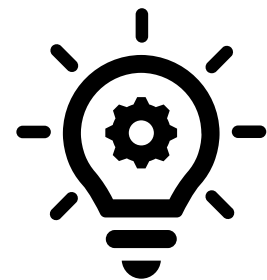
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Lilian Martin a Menna Davies

Yr eithriad? | Odd one out?



Tebygrwydd a Gwahaniaethau
Similarities and Differences





Yr eithriad? | Odd one out



Hwyaden | Duckling

0%



Oen | Lamb

0%



Eliffant | Elephant

0%



7

Join at: vevox.app

ID: 152-785-706

Preparing Results

Yr eithriad? | Odd one out



Hwyaden | Duckling



71.43%



Oen | Lamb



0%



Eliffant | Elephant



28.57%

RESULTS SLIDE



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Bwriadau Dysgu

- ▶ Ystyried Egwyddorion Cynnydd y MDaPh Gwyddoniaeth a Thechnoleg
- ▶ Archwilio cysylltiadau dilys rhwng y MDaPh Gwyddoniaeth a Thechnoleg a'r meysydd dysgu a phrofiad eraill.
- ▶ Datblygu eich gwybodaeth bynciol er mwyn cymhwyso'r wybodaeth a'r ddealltwriaeth i'ch ymarfer

Learning Intentions

- Consider Principles of Progression within the Science and Technology AoLE
- Consider authentic links between the Science and Technology AoLE and the other areas of learning and experience.
- Develop your subject knowledge in order to apply this knowledge and understanding to your own practice .



Datganiadau o'r hyn sy'n bwysig

Statements of what matters



- Mae bod yn chwifrydig a chwilio am atebion yn hanfodol i ddeall a rhagfynegi ffenomenau.
- Mae meddylfryd dylunio a pheiranneg yn cynnig ffyrdd technegol a chreadigol i ddiwallu anghenion a dymuniadau cymdeithas.
- Mae'r byd o'n cwmpas yn llawn pethau byw sy'n dibynnu ar ei gilydd i oroesi.
- Mae mater, a'r ffordd y mae'n ymddwyn, yn diffinio ein bydysawd ac yn ffurfio ein bywydau.
- Mae grymoedd ac egni yn gosod sail i ddeall ein bydysawd.
- Mae cyfrifiaduraeth yn gosod sail i'n byd digidol.

<https://hwb.gov.wales/cwricwlwm-i-gymru/gwyddoniaeth-a-thechnoleg/disgrifiadau-dysgu/>

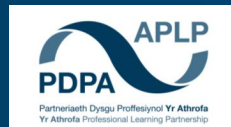
- Being curious and searching for answers is essential to understanding and predicting phenomena.
- Design thinking and engineering offer technical and creative ways to meet society's needs and wants.
- The world around us is full of living things which depend on each other for survival.
- Matter and the way it behaves defines our universe and shapes our lives.
- Forces and energy provide a foundation for understanding our universe.
- Computation is the foundation for our digital world.

<https://hwb.gov.wales/curriculum-for-wales/science-and-technology/descriptions-of-learning/>



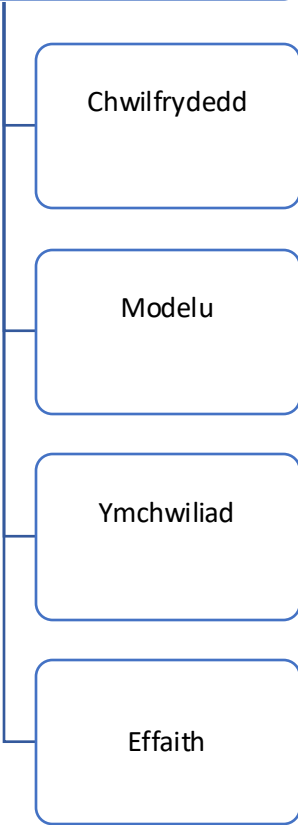
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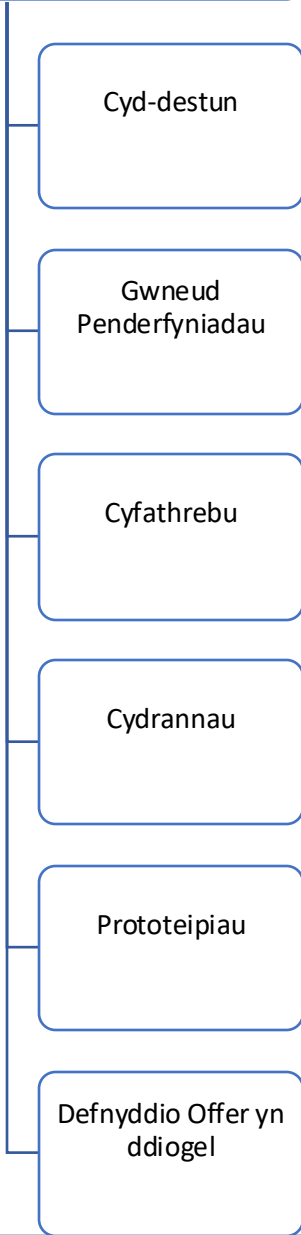


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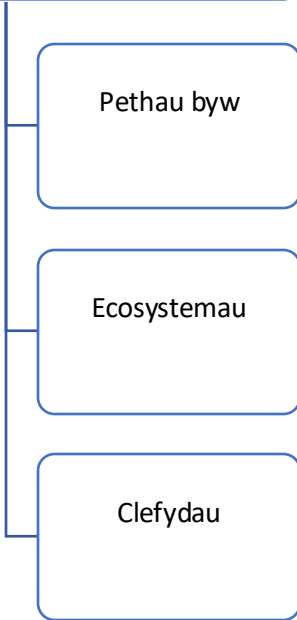
Ymholiad



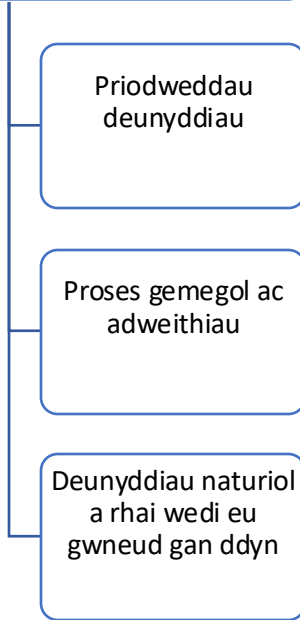
Dylunio a Thechnoleg



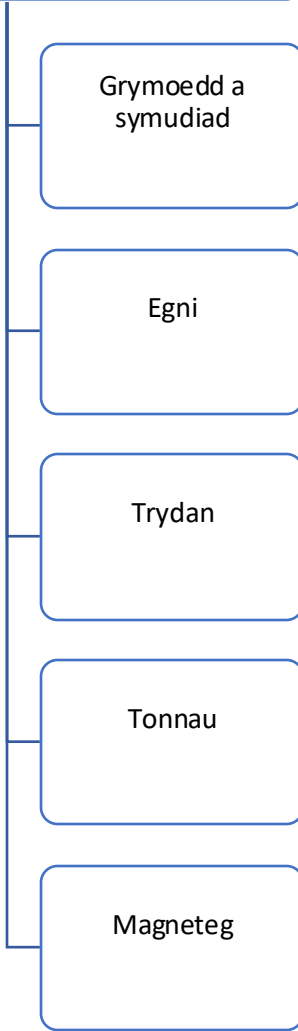
Bioleg



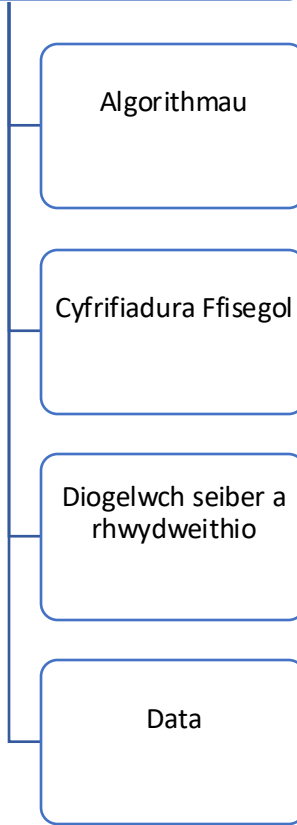
Cemeg



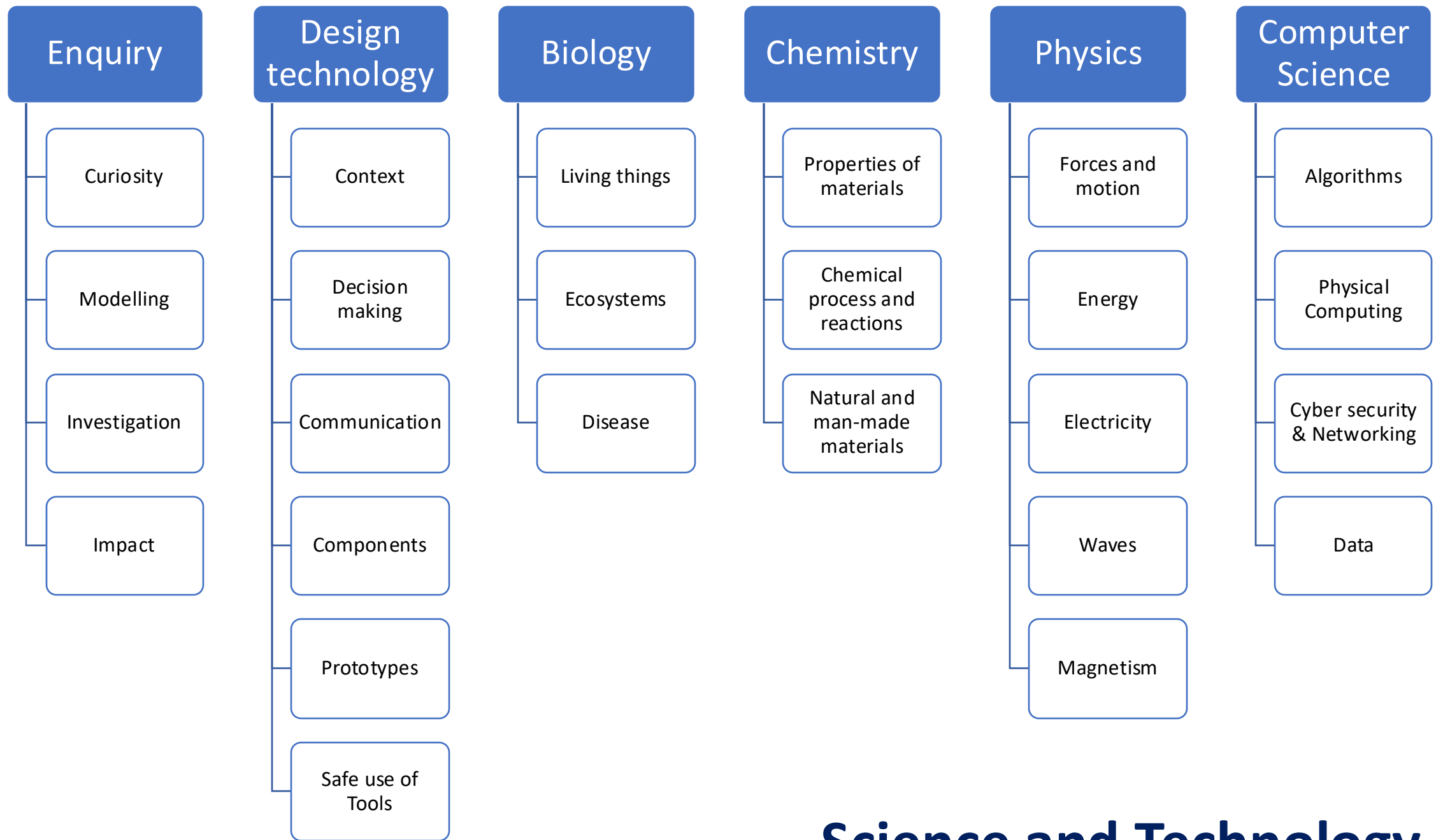
Ffiseg



Cyfrifiadureg



Gwyddoniaeth a Thechnoleg



Science and Technology

Cwricwlwm i Gymru 2022:Cynnydd

‘Proses o ddatblygu a gwella sgiliau a gwybodaeth dros amser
yw cynnydd wrth ddysgu’.

Egwyddorion cynnydd

Dyma’r egwyddorion trosfwaol pob Maes Dysgu
a Phrofiad a’r cwricwlwm yn gyffredinol. Maen
nhw’n ymwneud â chynnydd ar draws y
cwricwlwm cyfan.



Gwyddoniaeth a Thechnoleg

[Gwyddoniaeth a Thechnoleg: Egwyddorion cynnydd - Hwb
\(gov.wales\)](https://gov.wales/gwyddoniaeth-a-thechnoleg/egwyddorion-cynnydd)

Curriculum for Wales 2022: Progression

Progression in learning is a process of developing and improving skills and knowledge over time'.

Principles of progression

These are the overarching principles of each Area of Learning and Experience and the curriculum in general. They are about progress across the whole curriculum.



Science and Technology

[Science and Technology: Principles of progression - Hwb \(gov.wales\)](https://gov.wales/science-and-technology/principles-of-progression)

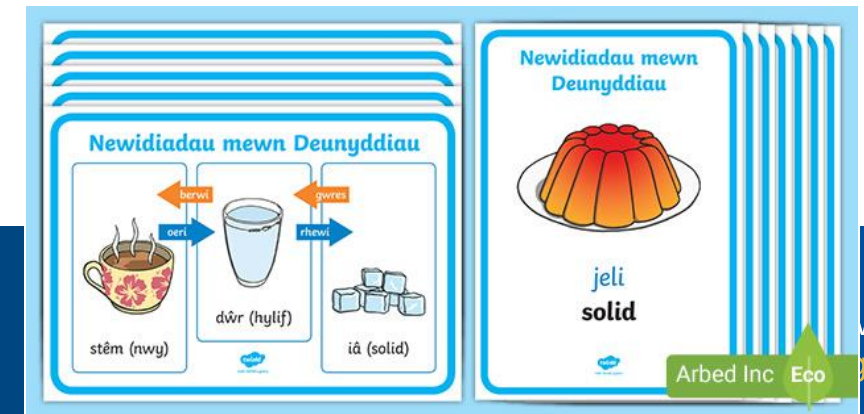
Egwyddorion Cynnydd :Cynllunio ar gyfer cynnydd:

“Caiff cynnydd ym Maes Dysgu a Phrofiad Gwyddoniaeth a Thechnoleg ei ddangos wrth i ddysgwyr archwilio a phrofi syniadau a chysyniadau cynyddol gymhleth sy'n rhan o'r datganiadau o'r hyn sy'n bwysig”

Gwyddoniaeth a Thechnoleg: Egwyddorion cynnydd - Hwb (gov.wales)

Enghraifft: dysgu sut y gellir trin deunyddiau:

- ar gamau cynharach trwy chwarae, cymysgu deunyddiau a gwybod y gall deunyddiau newid, ac o dan rai amodau byddant yn ymateb i ffurfio rhywbeth newydd, yn ogystal â chael eu cyfuno i greu cynhyrchion newydd
- yn nes ymlaen, gellir archwilio gwahanol fathau o adweithiau cemegol



Principles of progression : Planning for progression

“Progression in the Science and Technology Area of Learning and Experience is demonstrated by learners exploring and experiencing increasingly complex ideas and concepts that sit within the statements of what matters.”

<https://hwb.gov.wales/curriculum-for-wales/science-and-technology/principles-of-progression/>

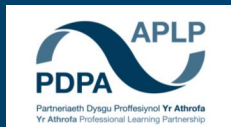
Example: learning how materials can be manipulated:

- at earlier steps through play, mixing materials and knowing that materials can change, and under certain conditions will react to form something new, as well as be combined to create new products
- at later steps, different types of chemical *reactions* can be explored



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ASSESSMENT & PROGRESSION in Curriculum for Wales

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PROGRESSION STEPS



Age 5



Age 8



Age 11



Age 14



Age 16

At each progression step there will be **ACHIEVEMENT OUTCOMES** these are:

- * Short statements in learner friendly language
- * Reference points for each pupil's learning journey
- * Cover the AoLE What Matters Statements
- * Address the 4 Purposes of the curriculum
- * A sequence of learning across the curriculum

The cross curricular responsibilities of Literacy, Numeracy & Digital Competency will be subsumed into the new Areas of Learning & Experience.

Areas of Learning & Experience

What Matters / 4 Purposes

Knowledge, skills, experience



Achievement Outcomes



What skills do children need for science?





What skills do children need for science?



RESULTS SLIDE



Dysgu Sylfaen:

Datblygu sgiliau

Mae'r sgiliau canlynol yn hanfodol ar gyfer y Maes Dysgu hwn a gellir eu datblygu ar draws y cwricwlwm hefyd.

- Arsylwi
- Cymharu
- Dosbarthu
- Ymholi
- Archwilio ac arbrofi
- Gwrando
- Gwneud penderfyniadau
- Rhagfynegi a phrofi
- Myfyrio
- Disgrifio
- Didoli a grwpio
- Trefnu
- Gofyn/ateb cwestiynau
- Ymchwilio
- Meddwl
- Datrys problemau
- Cofnodi
- Cyfathrebu
- Gwerthuso

Foundation Learning:

Development of skills

The following skills are essential to this Area of Learning and can also be developed across the curriculum.

- Observing
- Comparing
- Classifying
- Enquiring
- Exploring and experimenting
- Listening
- Making decisions
- Predicting and testing
- Reflecting
- Describing
- Sorting and grouping
- Sequencing
- Asking/answering questions
- Investigating
- Thinking
- Solving problems
- Recording
- Communicating
- Evaluating

Ydych chi'n cofio ? Sut i gefnogi meddwl ymchwiliol....

- Ateb cwestiwn gyda chwestiwn
- Seiliwch ar yr hyn maen nhw'n ei wybod yn barod
- Yn ddiddorol
- Diogel – dim atebion anghywir
- Cyd-adeiladu / Scaffaldio
- Dysgu trwy ddisgwrs



Do you remember? How to support an enquiring mind....

- Answer questions with questions
- (Socratic questioning)
- Based on what they know already
- (Piaget –Constructivist)
- Playful
- Safe ...no wrong answers
- Co-construction / Scaffolding
- Learning through discourse

Gwella Gwyddoniaeth Cynradd | EEF

- Beth yw eich profiadau o ran cysylltu dysgu newydd â chyd-destunau perthnasol y byd go iawn?

Ystyriwch y profiad ar gyfer dogfen adlewyrchol (PET)

- Pa gwestiynau y gellid eu gofyn i chwilio am welliannau?
- Nodwch eich camau nesaf.

Recommendation 4: Relate new learning to relevant, real world contexts (page 20)

Mr Hayes wants to engage his pupils in science so that they are inspired and curious to find out more about the world. His Year 5 class has been focusing on the topic of forces and he wants to make the subject as relevant and meaningful to his pupils as possible.

He heard one of his pupils discuss how he rides his bicycle to school and thought this would be a great way to introduce pupils to the topic of friction. He uses this idea to create a scenario where the pupils must explain what happens to make a bicycle stop moving. However, some of the pupils have never used a bicycle before so the concept of bicycle brakes is unfamiliar to them, others start insisting that a scooter is much more fun than a bicycle, and others feel sad because they don't have a bicycle at home and have never had the chance to ride one. Overall, the scenario didn't have the effect he intended.

It leads Mr Hayes to contemplate the following questions:

- How can I ensure that all of my pupils can engage with the real-world contexts I integrate into my teaching?
- How can I create learning opportunities which are memorable for the right reasons?
- Could I have done anything before, during, or after the scenario to better support learning?



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Improving Primary Science | EEF

- What are your experiences in relating new learning to relevant real-world contexts?

Consider the experience for a reflective document (PET).

- What questions could be asked to seek improvements?
- State your next steps.

Recommendation 4: Relate new learning to relevant, real world contexts (page 20)

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Partnersiaeth Dyysg Proffesiynol Yr Athrofa
Yr Athrofa Professional Learning Partnership

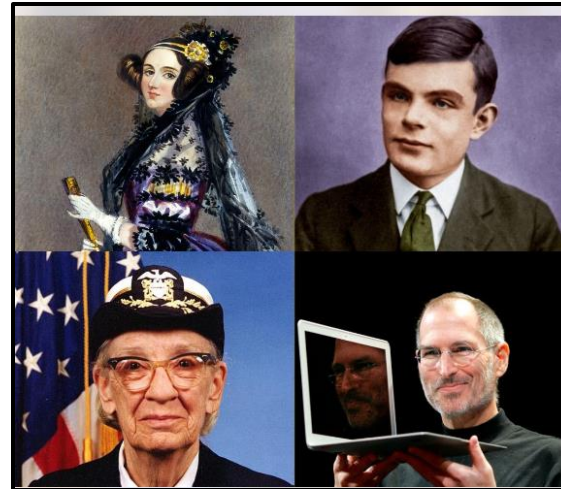


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Thema/Theme
Dathliadau/Celebrations

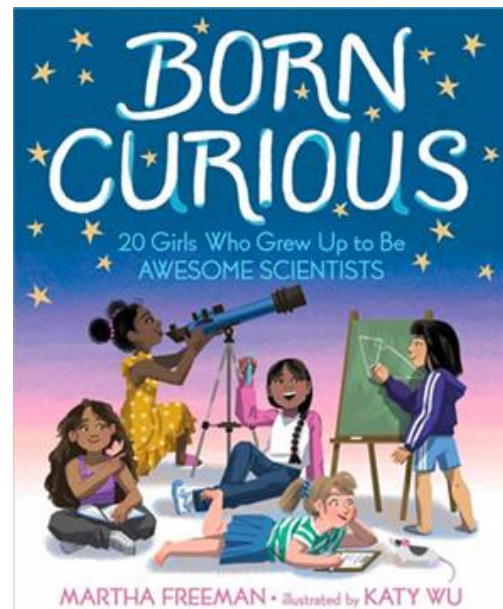
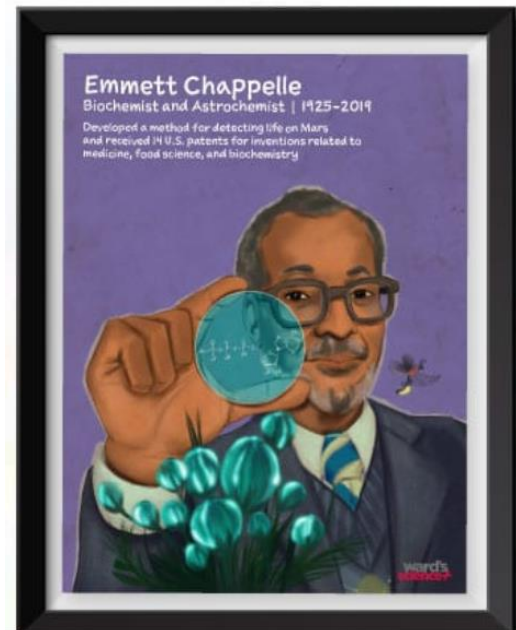
Dathlu Gwyddonwyr/Celebrating Scientists



Sir Martin Evans, Nobel Prize in Medicine



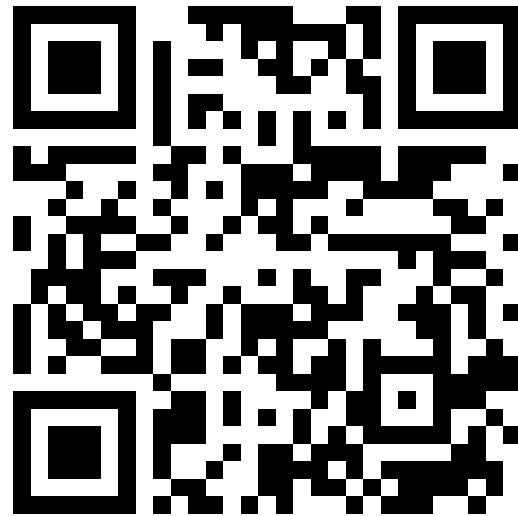
Sir Martin Evans



In 2007 Professor Sir Martin Evans from the School of Biosciences was awarded the Nobel Prize in Medicine for a series of ground-breaking discoveries concerning embryonic stem cells and DNA recombination in mammals.

Thema/Theme

Map Cymuned |



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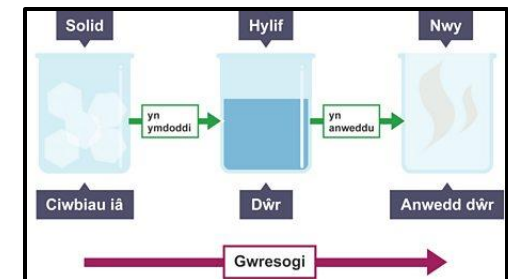
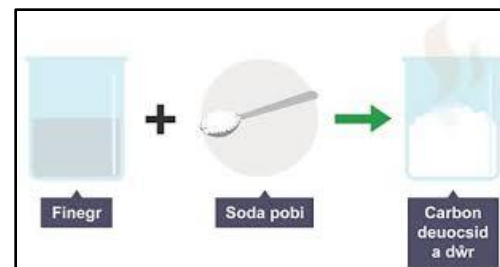


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Yr hyn sy'n bwysig :

Mae mater, a'r ffordd y mae'n ymddwyn yn diffinio ein bydysawd ac yn ffurfio ein bywydau.

- Mae'r bydysawd a phob peth byw wedi ei wneud o fater
- Mae sut y mae mater yn ymddwyn yn pennu priodweddau defnyddiau ac yn ein galluogi i ddefnyddio adnoddau naturiol a chreu sylweddau newydd.
- Gall deall natur mater fod o gymorth i ddysgwyr werthfawrogi y dylanwad y caiff Cemeg ar ein byd.
- Mae adweithiau cemegol yn digwydd yn gyson yn ein hamgylchedd ac oddi mewn i bethau byw,



Statement of what matters :

Matter and the way it behaves defines our universe and shapes our lives

- The universe and all living things are made up of *matter*.
- The behaviour of matter determines the properties of materials and allows us to use natural resources, as well as to create new substances.
- Understanding the nature of matter can help learners to appreciate the impact that chemistry has on the world around them
- Chemical reactions happen continuously in our environment as well as in living things



Yr hyn sy'n bwysig :

Mae mater, a'r ffordd y mae'n ymddwyn yn diffinio ein bydysawd ac yn ffurfio ein bywydau.

Cam cynnydd 3

Cam cynnydd 1

Rwy'n gallu archwilio priodweddau defnyddiau, a dewis gwahanol ddefnyddiau at ddefnydd penodol.

Rwy'n gallu nodi, dilyn a dechrau creu dilyniannau a phatrymau mewn gweithgareddau pob-dydd.

Cam cynnydd 2

Rwy'n gallu adnabod patrymau ar sail fy arsylwadau a'm hymchwiliadau, ac rwy'n gallu mynegi fy nghanfyddiadau.

Rwy'n gallu defnyddio fy [ngwybodaeth](#) a'm dealltwriaeth i ragfynegi effeithiau fel rhan o'm hymchwiliadau gwyddonol.

Rwy'n gallu gwneud penderfyniadau dylunio, gan ddefnyddio fy [ngwybodaeth](#) am ddefnyddiau a chynnyrch sy'n bodoli eisoes, ac awgrymu gwelliannau dylunio.

Rwy'n gallu archwilio a disgrifio priodweddau defnyddiau, a chyfiawnhau'r defnydd a wneir ohonyn nhw.

Rwy'n gallu arsylwi ar a disgrifio'r ffyrdd y mae defnyddiau yn newid wrth eu cymysgu gyda'i gilydd.

Rwy'n gallu adnabod bod newidiadau mewn defnyddiau, o dan wahanol amodau, yn effeithio ar eu priodweddau a'r defnydd a wneir ohonyn nhw.

Rwy'n gallu adnabod bod ein planed yn darparu defnyddiau naturiol, a gallu esbonio pam y gellir eu bod wedi cael eu prosesu i'w gwneud yn ddefnyddiol.

Statement of what matters:

Matter and the way it behaves defines our universe and shapes our lives

Descriptions of learning- arranged in progression steps

Progression step 1

I can explore the properties of materials and choose different materials for a particular use.

I can identify, follow and begin to create sequences and patterns in everyday activities.

Progression step 2

I can recognise patterns from my observations and investigations and can communicate my findings.

I can use my [knowledge](#) and understanding to predict effects as part of my scientific exploration.

I can make design decisions, using my [knowledge](#) of materials and existing products, and suggest design improvements.

I can explore and describe the properties of materials and justify their uses.

I can observe and describe ways in which materials change when they are mixed together.

Progression step 3

I can recognise that changes in materials affect their properties and uses under different conditions.

I can recognise that our planet provides natural materials and can explain why they may have been processed to make them useful.

Darpar athro:	Miss Morgan	Dosbarth / Grŵp	Bl 3/4
MDPh neu Bwnc:	Gwyddoniaeth a Thechnoleg	Dyddiad (sylwer y gall y sesiwn hon fod yn un barhaus):	10.10.23
Cysylltiadau ystyrion â'r Cwricwlwm (Datganiadau o'r Hyn sy'n Bwysig, Disgrifiadau dysgu, y cwricwlwm 'blaenorol'...)	YHSB1 : Mae bod yn chwilfrydig a chwilio am atebion yn hanfodol i ddeall a rhagfynegi ffenomenau Rwy'n gallu gofyn cwestiynau a defnyddio fy mhrofiad i awgrymu dulliau ymholi syml.(CC2) YHSB4: Mae mater a'r ffordd y mae'n ymddwyn yn diffinio ein bydysawd ac yn ffurfio ein bywydau Rwy'n gallu archwilio a disgrifio priodweddau defnyddiau, a chyfiawnhau'r defnydd a wneir ohonyn nhw.(CC2)		
Cysylltiadau ystyrion ar draws y Cwricwlwm (Cysylltiadau â MDPheu eraill neu'r Fframweithiau sgiliau trawsgwricwlaidd)	ILlCh: YHSB3 -Mae mynegi ein hunain drwy ieithoedd yn allweddol i gyfathrebu FfLIRh: Llythrennedd – Gwrando: Rwy'n gallu gwrando ar eraill a deall y gallan nhw fod â safbwynt gwahanol i mi.(CC2) FfLIRh: Rhifedd: Mesur: Rwy'n gallu datblygu i ddefnyddio unedau mesur safonol: Hyd: Rwy'n gallu mesur ar bren mesur i'r 0.5cm agosaf (CC2) FfCD: Llythrennedd Gwybodaeth a Data : Rwy'n gallu casglu, cofnodi a threfnu data yn wahanol grwpiau neu fformatau, e.e. tablau, siartiau, cronfeydd data a thaenlenni.(CC2)		
Targedau Personol (targedau a'r effaith ganlyniadol ar ddysgu – cyfeiriwch at unrhyw dargedau sydd wedi'u nodi yn y dyddlyfr dysgu neu gyfarfod adfyfyrio wythnosol a disgrifiwch yr effaith a ddymunir ar ddysgu) Defnyddio strategau AagD i wirio dealltwriaeth yn ystod y wers.			
Bwriad Dysgu 'Dylai hyn ganolbwyntio ar y dysgu gan y disgyblion yn ystod y wers, yn hytrach na'r hyn y byddant yn ei wneud, a dylai fod yn fyr, yn gyraeddadwy ac yn fesuradwy.' (Crichton, H., a Mcdaid, A. 2016 t. 196)			
Nodi sut mae rhai defnyddiau cyffredin yn cael eu defnyddio Awgrymu pam mae defnydd yn addas Gwneud mesuriadau hyd gan ddefnyddio unedau safonol			
Meini prawf llwyddiant Yr hyn mae angen i'r disgyblion ei ddangos i fodloni'r Bwriad Dysgu yn llwyddiannus.			
Gallaf archwilio ac adnabod gwrthrychau sydd wedi'u gwneud o ddeunydd penodol. Gallaf nodi ac egluro rhesymau dros ddefnyddio defnydd penodol i greu gwrthrych. Byddaf yn gallu defnyddio ffon fetr i fesur mewn centimetrau.			

Cynllunio

Planning

Student-teacher:	Miss Morgan	Class / Group:	Year 3/4
AoLE or Subject:	Science and Technology Topic: Characteristics of materials	Date <i>(please note that this may be a continuous session):</i>	10.10.23
Meaningful links to Curriculum (What Matters Statements, Descriptions of learning, 'previous' curriculum...)	SOWM 1 Being curious and searching for answers is essential to understanding and predicting phenomena. Progression Step 2 (PS2): I can ask questions and use my experience to suggest simple methods of inquiry. SOWM 4 Matter and the way it behaves defines our universe and shapes our lives. PS2 : I can explore and describe the properties of materials and justify their uses.		
Meaningful links across the curriculum <i>Links to other AoLEs or the Cross-curricular skills frameworks</i>	LLC – WM3 Expressing ourselves through languages is key to communication. LNF – Literacy: Listening :I can listen to others and understand that they may have a different perspective to my own(PS2) LNF- Numeracy:I can progress to use standard units of measure: length: I can measure on a ruler to the nearest 0.5cm(PS2) DCF-Data and Information Literacy: I can collect, enter, <u>organise</u> and analyse data into different groups or formats, e.g., tables, charts, databases and spreadsheets (PS2)		
Personal Targets (targets and consequent impact on learning - refer to any targets that have been identified in learning journal or weekly reflection meeting and describe the desired impact on learning) Develop questioning skills to incorporate more open questions rather than closed ones. Use AFI techniques to check for understanding during the lesson.			
Learning Intention <i>'This should focus on the pupils' learning during the lesson, rather than what they will be doing, and should be short, achievable and measurable.'</i> (Crichton, H., and Mcdaid, A. 2016 p. 196)			
Identify uses of some common materials Suggest why a material is suitable. Make measurements of length using standard units			
Success Criteria <i>What the pupils need to demonstrate to successfully meet the Learning Intention.</i>			
I can explore and identify objects made of a particular material. I can identify and explain reasons for using a particular material to create an object. I will be able to use a meter ruler to measure in centimetres.			

Fframweithiau sgiliau trawsgwricwlaidd

Rhan o [Cwricwlwm i Gymru](#)

CYNNWYS

Trosolwg

Fframwaith Llythrennedd a Rhifedd

Fframwaith Cymhwysedd Digidol

Trosolwg

Mae llythrennedd, rhifedd a chymhwysedd digidol yn **sgiliau trawsgwricwlaidd gorfodol** o fewn Cwricwlwm i Gymru. Cyfrifoldeb yr ymarferwyr, ar draws pob maes y cwricwlwm, fydd datblygu a sicrhau cynnydd yn y sgiliau hyn. Mater i'w benderfynu arno ar lefel leol yw sut y bydd sgiliau llythrennedd, rhifedd a chymhwysedd digidol yn cael eu datblygu o fewn y cwricwlwm, a rhaid i hynny weddu hefyd i ddulliau gweithredu'r ysgolion unigol.

Er mwyn helpu ysgolion ac ymarferwyr i ddarparu cyfleoedd i ddatblygu, ymestyn a chymhwyso'r sgiliau hyn, mae'r Fframwaith Llythrennedd a Rhifedd a'r Fframwaith Cymhwysedd Digidol wedi eu diweddarau ac yn parhau i fod ar gael fel canllawiau cynorthwyol anstatudol.

Fframwaith Llythrennedd a Rhifedd

Fframwaith Llythrennedd a Rhifedd ➔

Cross-curricular skills frameworks

Part of [Curriculum for Wales](#)

CONTENTS

Overview

Literacy and Numeracy Framework

Digital Competence Framework

Overview

Literacy, numeracy and digital competence are **mandatory cross-curricular skills** within Curriculum for Wales. It will be the responsibility of all practitioners, across all curriculum areas, to develop and ensure progression in these skills. How literacy, numeracy and digital competence skills are developed in and across the curriculum will be decided at a local level and will fit with individual schools' approaches.

To support schools and practitioners in providing opportunities to develop, extend and apply these skills, the Literacy and Numeracy Framework (LNF) and the Digital Competence Framework (DCF) have been updated and continue to be available as non-statutory supporting guidance.

Literacy and Numeracy Framework

Literacy and Numeracy Framework ➔

[Fframweithiau sgiliau trawsgwricwlaidd - Hwb \(gov.wales\)](#)

<https://hwb.gov.wales/curriculum-for-wales/cross-curricular-skills-frameworks/#literacy-and-numeracy-framework>

[Cross-curricular skills frameworks - Hwb \(gov.wales\)](#)

<https://hwb.gov.wales/curriculum-for-wales/cross-curricular-skills-frameworks/#literacy-and-numeracy-framework>

YHSB/SOWM 4 :



<https://hwb.gov.wales/repository/resource/5a9010f1-aadc-4d1b-8f96-d98d4d3adbd3>



Adnoddau :Cam cynnydd 1,2 a 3



<https://hwb.gov.wales/repository/resource/5a9010f1-aadc-4d1b-8f96-d98d4d3adbd3>

Resources: Progression Step 1,2 & 3

Crewch sbardun:

Un gair bach o'i le.

Cam Cynnydd 1,2 & 3

- Ar ddechrau thema er mwyn asesu beth mae'r dysgwyr yn gwybod yn barod.
- Ar ddiwedd thema i asesu beth a ddysgwyd.
- Defnyddiwch luniau yn lle geiriau gyda dysgwyr ifanc.
- Asesu'r rhesymu oddeutu eu dewisiadau.
- Meddwl yn feirniadol.

Newidiadau

Pa un o'r geiriau sydd allan o le a paham?

Ymestyn. Rhydu. Plygu	1	Pam?
Malu. Hydoddi. Distyllu.	2	Pam?
Llosgi. Ymdoddi. Anweddu.	3	Pam?
Hydoddi. Niwtraleiddio. Hidlo.	4	Pam?
Crafu. Cynydu. Peintio.	5	Pam?
Pobi. Cymysgu. Curo.	6	Pam?

Create a Starter for Science: Odd one Out

- At the start of a topic to assess what learners already know.
- At the end of a topic to apply ideas
- Use pictures instead of words with younger learners
- Assess the reasoning behind the choices
- Involves critical thinking

Changes

WHICH IS THE ODD ONE OUT
IN THE FOLLOWING AND WHY?

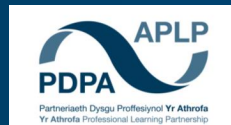
Stretching. Bending. Rusting.	1	WHY?
Grinding. Dissolving. Distilling.	2	WHY?
Burning. Melting. Evaporating.	3	WHY?
Dissolving. Neutralising. Filtering.	4	WHY?
Corroding. Scraping. Painting.	5	WHY?
Mixing. Beating. Baking.	6	WHY?
Fermenting. Condensing. Freezing.	7	WHY?

© S Naylor, B Keogh, A Goldsworthy (2004)



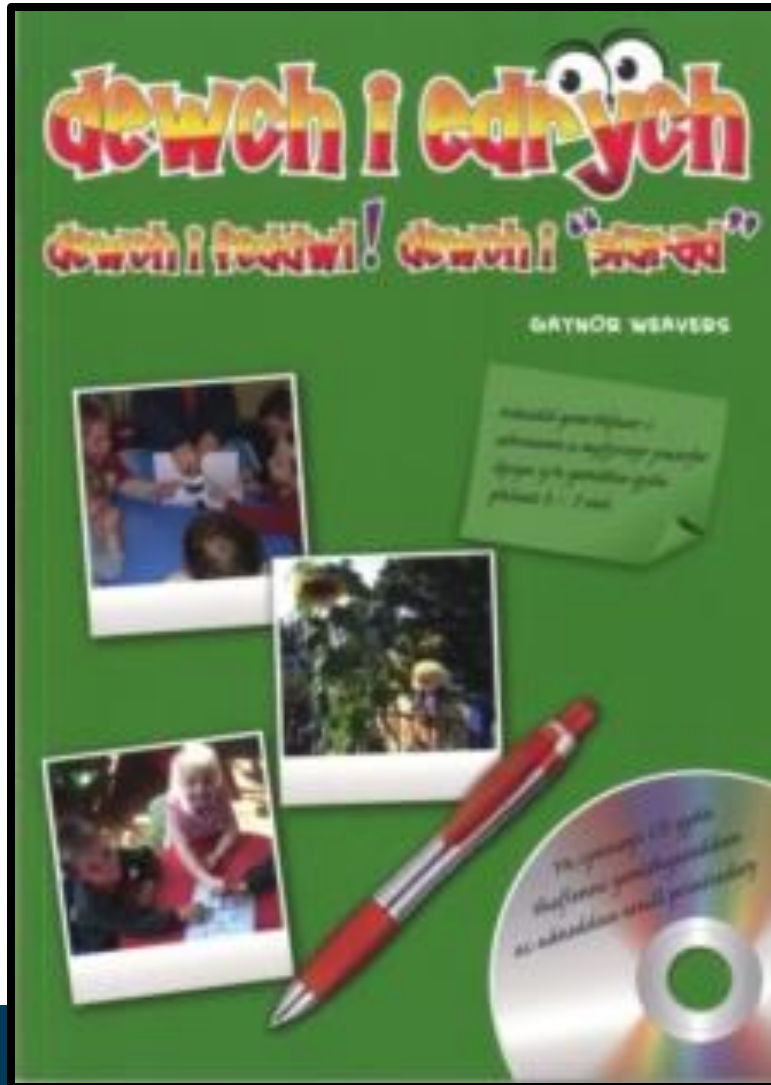
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vydau
Lives

Datblygu Gwyddoniaeth a Thechnoleg Cam cynnydd 1 & 2



Weavers, G., Keogh, B., & Naylor, S.
(2008). Dewch i edrych. Dewch i feddwl,
Dewch i siarad. Sandbach: Millgate House

MYL_Welsh_Chap_Worksheets.p
df

Yn ffeil Darlith 1 moodle

GADEWCH FI'N RHYDD! 6



Beth yw hwn?

Mae plant yn mynd i'r afael â gwrthrych sydd wedi'i lapio mewn ffoil yn y gweithgaredd cyffrous hwn. Maen nhw'n cael eu hannog i feddwl am beth allai fod y tu mewn. Maen nhw'n trafod y posibilïadau gyda'i gilydd a'r athro/athrawes. Ar ôl ei agor, maen nhw'n canfod mai ffigur bach, fel cymeriad Lego® sydd yno wedi'i gau mewn blocyn o rew! Sut gallen nhw ei helpu i ddianc o'i garchar o rew?

Gallech hyd yn oed droi hyn yn adroddiad newyddion a rhagolygon y tywydd gyda dynion gofod yn cyrraedd y Ddaear mewn cenillys enfawr!

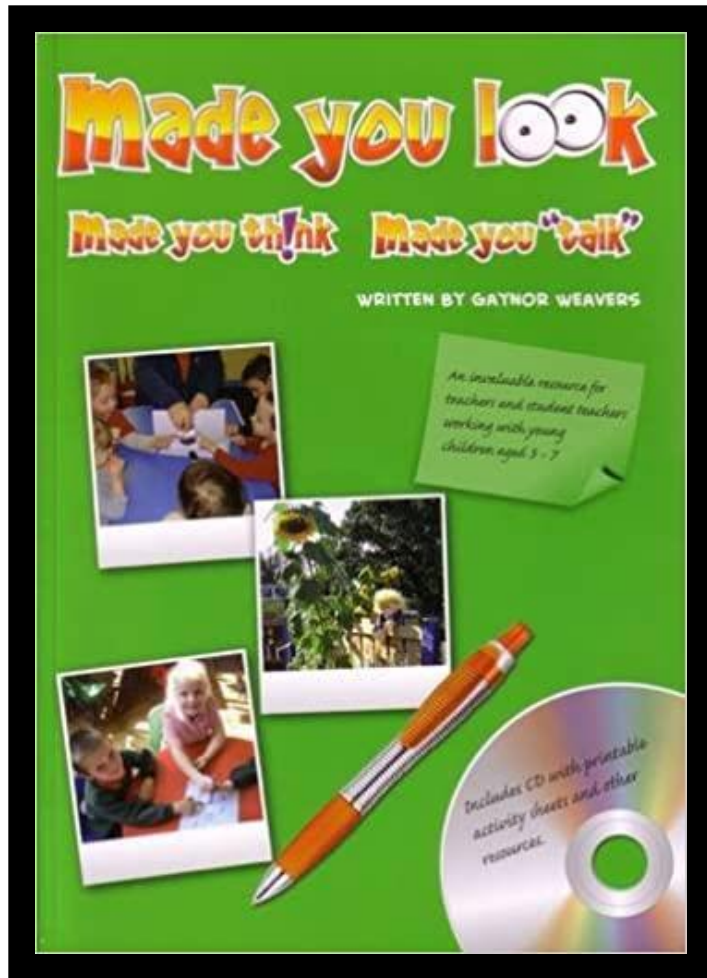
Cychwyn arni

- ☐ Rhowch ychydig bach o ddŵr mewn pot iogwrt neu rywbeth tebyg a rhowch y cymeriad plastig y tu mewn. Rhowch hwn yn y rhewgell. Defnyddiwch gymeriadau Siôn Corn adeg y Nadolig!
- ☐ Ar ôl ei rewi, ychwanegwch ddŵr a'i rewi eto fel bod y cymeriad y tu mewn i'r rhew yn hytrach nag yn arnofio yn y rhan uchaf.
- ☐ Lapiwch y rhew mewn ffoil.
- ☐ Casglwch bowlenni ac unrhyw adnoddau eraill y gallen nhw ofyn amdanynt nhw i geisio rhyddhau'r cymeriad, fel morthwylion bach.



Cymerwch ofal os yw'r plant yn ceisio taro'r cymeriad allan o'r rhew â morthwyl. Gall rhew a morthwylion fynd i bobman!

Developing Science and Technology Progression step 1 & 2



MYL_Chap_Worksheets.pdf
In Lecture 1 resources file on
Moodle .

LET ME OUT! 6



What it is

In this exciting activity children handle a foil-wrapped object. They are encouraged to think about what might be inside. They discuss the possibilities with each other and their teacher. When it's opened up, they find a small figure, such as a Lego® person, trapped inside a block of ice! How can they get him out of his icy prison?

You could even turn this into a news report and weather forecast with spacemen arriving on Earth in giant hailstones!

Getting started

- Put a small amount of water in a yoghurt pot or similar and add a plastic figure. Put this in the freezer. Try little Santa figures at Christmas time!
- When it is frozen, tap up the water and freeze again so that the figure will be inside the ice, not floating on top.
- Wrap the ice in foil.
- Collect some bowls and any other resources that they may request to release the figure, such as little hammers.

 Take care if children do try to hammer the person out. Ice and hammers can both be very mobile!

© Gaynor Weavers 2008 LET ME OUT! 53



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Weavers, G., Keogh, B., & Naylor, S.
(2008). Made you look, made you
think, made you talk. Sandbach:
Millgate House

Trawsnewid Addysg, Trawsnewid Bywydau
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Ymchwilio, Arbrofi, Creu, Darganfod

Cam Cynnydd 1&2



<https://primarylibrary.crestawards.org/all-star-challenges-in-welsh/64363075>

Cam Cynnydd 2&3

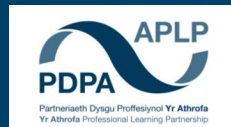


<https://primarylibrary.crestawards.org/all-superstar-challenges-in-welsh/64363180>



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Investigate, Experiment, Create, Discover

Progression step 1&2

Progression Step 2&3



<https://primarylibrary.crestawards.org/all-star-challenges/61746949>

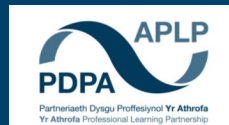


<https://primarylibrary.crestawards.org/all-superstar-challenges/61747644>



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YHSB/SOWM 1-6

The following CREST SuperStar challenges map onto the six science content areas in the Curriculum for Wales for ages 7-11:

Curiosity



- A hole in my bucket
- A sticky problem
- Bumblebee mystery
- Camouflaged creatures
- Colorado brown stain
- Over to you

Living things

- Making toothpaste
- Buy them and try them
- Colorado brown stain
- Outdoor gym
- Playground games

Design thinking and engineering

- Bridge blunder
- Band rollers
- Bowled over
- Crafty rafts
- Discus dilemma
- Kite calamity
- Outdoor gym
- Spinning solutions



Matter and its behaviours

- A hole in my bucket
- A sticky problem
- Cheesy challenge
- Get set jellies
- Investigating ink
- Just my cup of tea
- Polymer problem
- Protecting polymers
- Surprising stains
- Testing and comparing tea
- Tomato sauce
- Yummy yogurt



Forces and energy

- Band rollers
- Bowled over
- Bridge blunder
- Super spinners
- Racing rockets



Computation and the digital world *

- Bumblebee mystery
- Drifting dandelions
- Super spinners

* You can use digital tools such as cameras to record and analyse results in these challenges



You can read about the curriculum for Wales in full here:

<https://hwb.gov.wales/curriculum-for-wales/>



Cam Cynnydd 2 & 3

Esiamplau:

Tyrrau Papur:

<https://www.youtube.com/watch?v=GfVdtAe8JL0>

Blodau Papur

<https://www.youtube.com/watch?v=Tit7hYw1Meo>

Rhew yn Ymdoddi

<https://www.youtube.com/watch?v=TVHUNl9uJk8>

Cromatograffeg

<https://www.youtube.com/watch?v=xPvH-Eev8sA>

<https://pstt.org.uk/resources/curriculum-materials/resources-overview>



Progression steps 2 & 3

Examples:

Paper Towers:

https://www.youtube.com/watch?v=X_e_7bWetGI

Paper Flowers

<https://www.youtube.com/watch?v=9khE5wHTgjU>

Melting Ice

<https://www.youtube.com/watch?v=CTsygsa-v5c>

Colourful Ink

<https://www.youtube.com/watch?v=0BWiuHkRF4s>

<https://pstt.org.uk/resources/curriculum-materials/resources-overview>

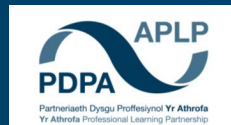
STARTERS FOR SCIENCE

- ✱ Short videos to get started with practical science enquiry
- ✱ Can be used in school or at home
- ✱ Minimal resources needed



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STARTERS FOR SCIENCE

Created by the Primary Science Teaching Trust

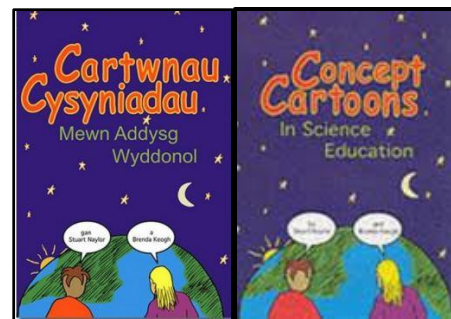


AagD mewn Gwyddoniaeth a Thechnoleg

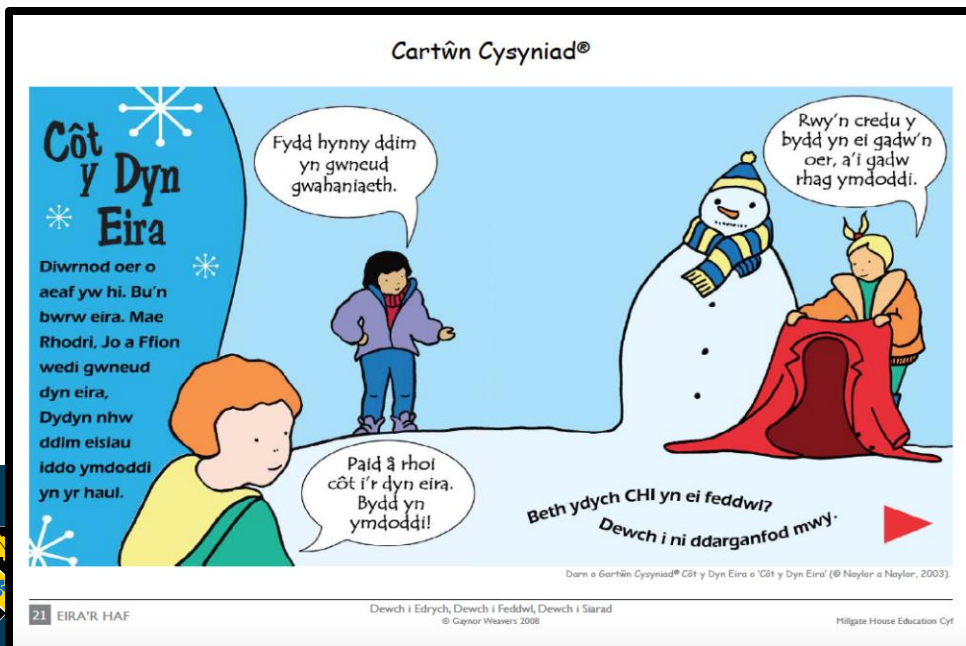
AFL in Science and Technology



Puppets and engagement in science:
a case study- PDF Moodle



ISBN: 9780952750628

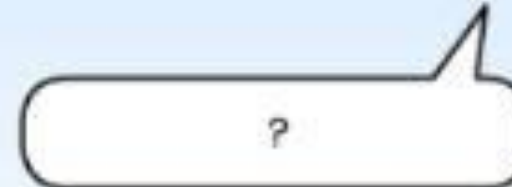


ysg, Trawsnewid Bywydau
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A: When the nails go rusty the jar of nails will get heavier

B: When the nails go rusty the jar of nails will get lighter

C: When the nails go rusty the jar of nails stay the same weight



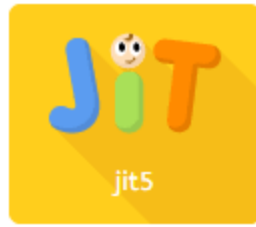
A: Pan fydd yr ewinedd yn mynd
yn rhydlyd bydd jar ewinedd yn
drymach

B: Pan fydd yr ewinedd yn
mynd yn rhydlyd bydd jar
ewinedd yn mynd yn
ysgafnach

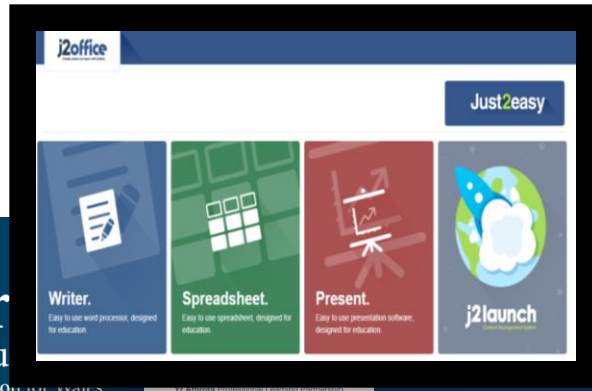
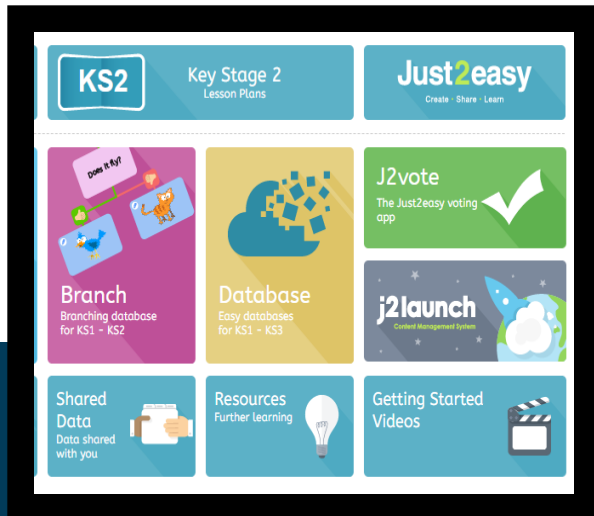
C: Pan fydd yr ewinedd yn
mynd yn rhydlyd mae jar
ewinedd yn aros yr un pwysau



Cynrychioli Data : Representing Data



<https://www.j2e.com/>



Diogelwch : Safety

CLEAPSS

<https://www.cleapss.org.uk/>

Supporting practical work in science,
D&T and art

CLEAPSS
primary

Always check [CLEAPSS](https://www.cleapss.org.uk/) before you do anything with risky with your class. Be wary of taking anything off social media without a risk assessment. All LEAs sign up to CLEAPSS as a way of insurance. If you do something risky and it is not covered in CLEAPSS, then you are not covered.

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“Rydym yn cynnig ystod o gynhyrchion a gwasanaethau sy'n cefnogi addysgu a dysgu pynciau STEM yng Nghymru yng nghydestun y byd go iawn.”

<https://www.gweld-gwyddoniaeth.co.uk/>



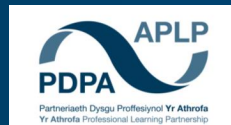
“We offer a range of products and services that support the teaching and learning of STEM subjects in Wales within a real world context.”

<https://www.see-science.co.uk/>



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Cysylltiadau defnyddiol:

Useful links:

- <https://www.stem.org.uk/resources/collection/3485/teaching-primary-science>
- <https://www.ase.org.uk/resources/primary-science>
- <https://www.tes.com/teaching-resources>
- [Teaching Resources | Countryside Classroom](#)
- [Explorify](#)
- <https://pstt.org.uk/>



<https://pstt.org.uk/what-we-do/why-how-magazine>



##/##

Join at: **vevox.app**

ID: **152-785-706**

Question slide

State 3 things you have learnt today.



##/##

Join at: **vevox.app**

ID: **152-785-706**

Results slide

State 3 things you have learnt today.

RESULTS SLIDE