

B

MEDDYLFRYD DYLUNIO I ADDYSGWYR (DESIGN THINKING) IDEO

Meddylfryd Dylunio

Mae Meddylfryd Dylunio yn ymwneud â chredu y gallwn ni wneud gwahaniaeth, a chael proses bwriadol er mwyn cyrraedd datrysiadau perthnasol sy'n cael effaith cadarnhaol.

Mae Meddylfryd Dylunio yn rhoi ffydd i chi yn eich gallu creadigol a phroses ar gyfer trawsnewid sialensau anodd yn gyfleoedd dylunio.

Mae Meddylfryd Dylunio yn

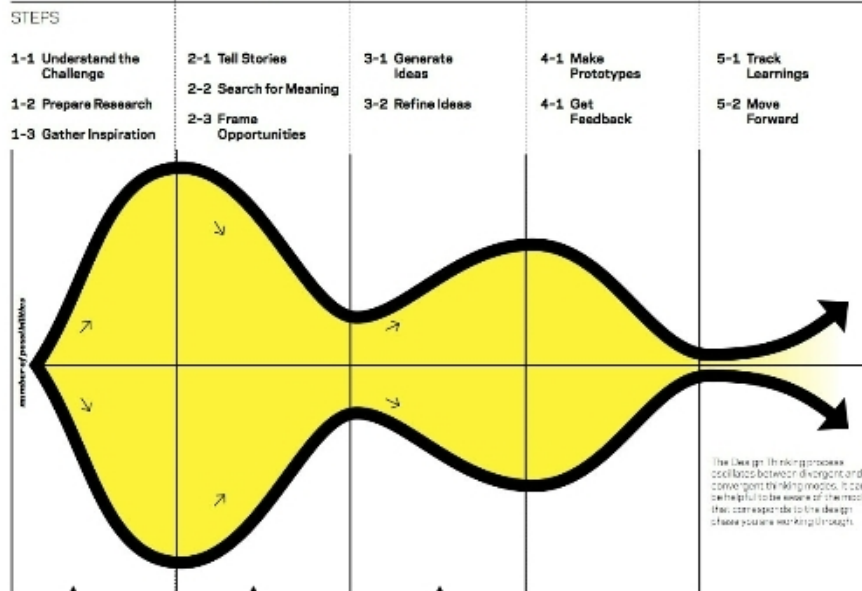
Berson Ganolog

Gydweithredol

Optimistaidd

Arbrofol

Yn gryno felly, hyder fod pethau newydd, gwell yn bosib yw Meddylfryd Dylunio, ac y gallwch wneud iddyn nhw ddigwydd. Mae angen y math yma o optimistaeth ym myd addysg.



1 - DARGANFOD

- D1
- D2
- D3
- D4
- D5
- D6

2 - DEHONGLIAD

3 - SYNIADAETH

- S1
- S2
- S3
- S4

<http://www.designthinkingforeducators.com>

B

DESIGN THINKING FOR EDUCATORS

IDEO

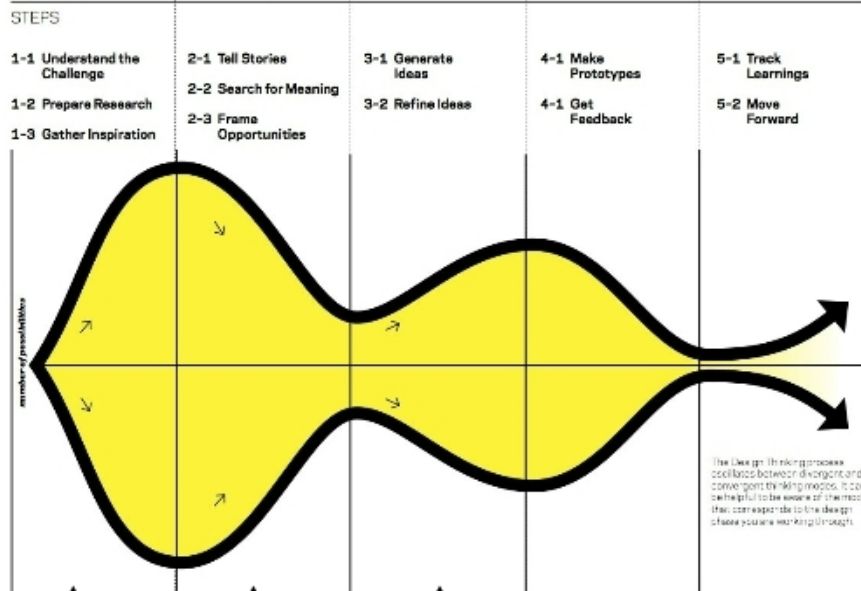
Design Thinking is a mindset.

Design thinking is about believing we can make a difference, and having an intentional process in order to get to new, relevant solutions that create positive impact.

Design Thinking gives you faith in your creative abilities and a process for trans-forming difficult challenges into opportunities for design.

- Design thinking is
- Human Centered**
- Collaborative**
- Optimistic**
- Experimental**

In short, Design Thinking is the confidence that new, better things are possible and that you can make them happen. And that kind of optimism is well-needed in education.



1 - DISCOVER

- D1
- D2
- D3
- D4
- D5
- D6

2 - INTERPRETATION

3 - IDEATION

- S1
- S2
- S3
- S4

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D1

CYCHWYNNA YMA - Pa gyfleoedd sydd gennyt i wneud gwahaniaeth?

Pam ei fod yn BWYSIG?

[Empty box for response]

[Empty box for response]

[Empty box for response]

[Empty box for response]

Pa RWYSTRAU sydd o dy flaen?

[Empty box for response]

[Empty box for response]

[Empty box for response]

[Empty box for response]

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A THECHNOLEG

D1

START HERE - What is the opportunity you have to make a difference?

Why is it IMPORTANT?

[Empty box for importance]

[Empty box for importance]

[Empty box for importance]

[Empty box for importance]

What BARRIERS will be in your way?

[Empty box for barriers]

[Empty box for barriers]

[Empty box for barriers]

[Empty box for barriers]

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D2

Beth yw gwir achos dy broblem?

Gofynna PAM? o leiaf 5 gwaith er mwyn mynd i wraidd y broblem.

Pam?

1

Pam?

2

Pam?

3

Pam?

4

Pam?

5

https://www.mindtools.com/pages/article/newTMC_5W.htm

D2

What is the real cause of your problem?

Ask WHY? at least 5 times to find the root of the problem

Why?

1

Why?

2

Why?

3

Why?

4

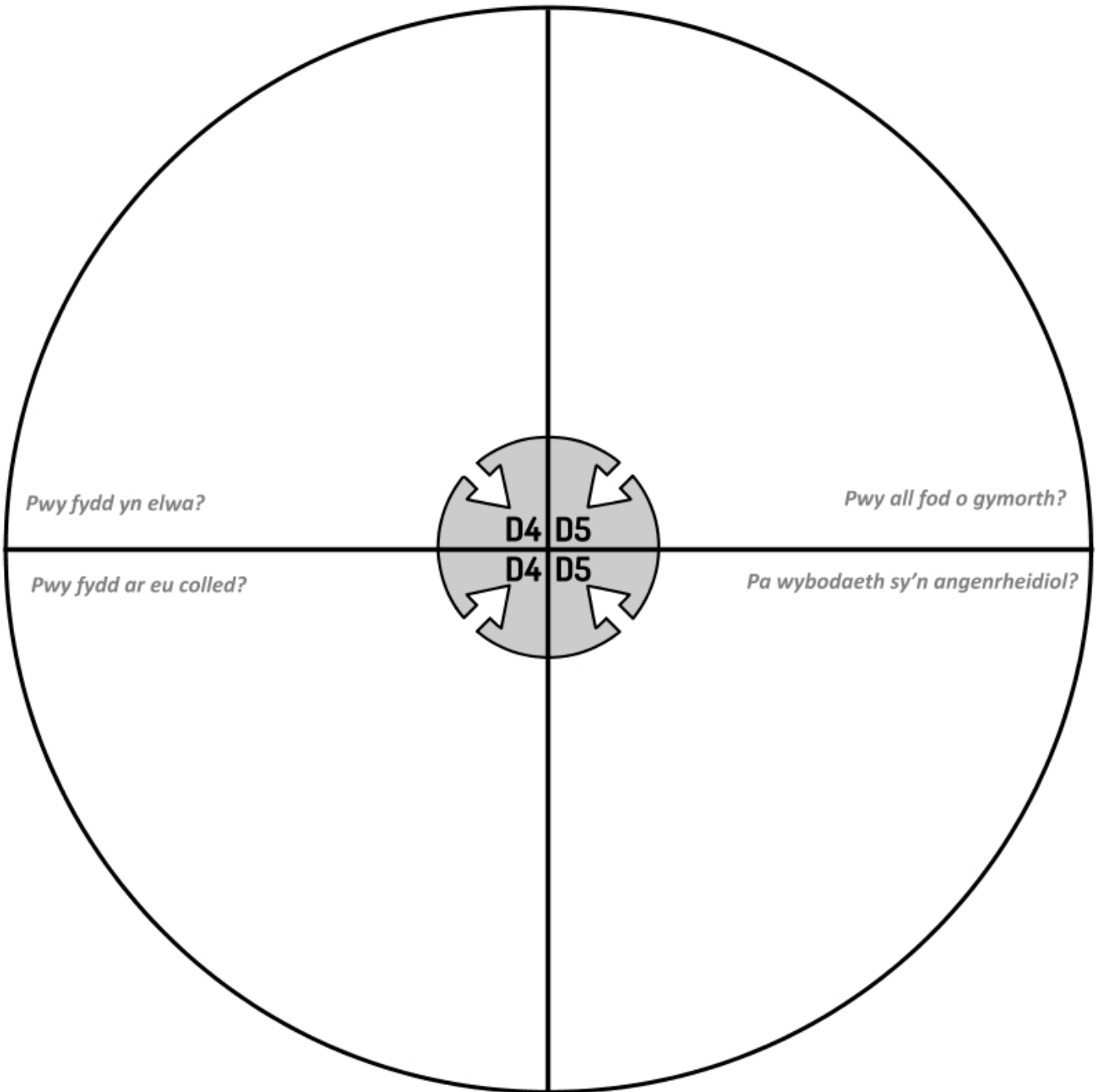
Why?

5

https://www.mindtools.com/pages/article/newTMC_5W.htm

D3

ADNABOD RHANDDEILIAID



D3

IDENTIFYING STAKEHOLDERS



D4

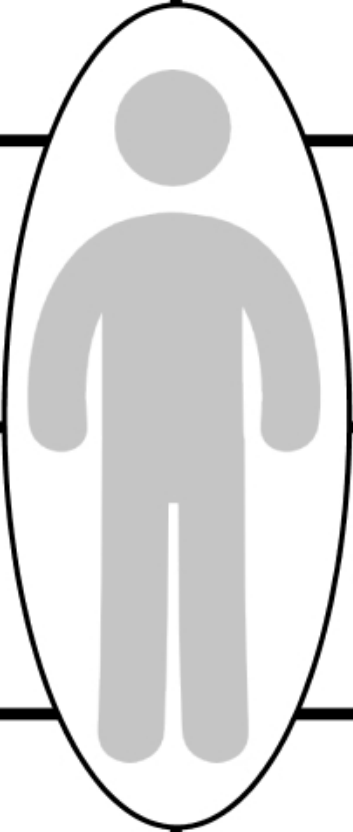
EMPATHI

Wrth geisio creu a chynllunio newid, RHAID ystyried y bobl fydd yn elwa ac yn colli o ganlyniad i'r newid.

Rhowch eich hunain yn esgidiau y bobl yma ac ystyriwch y newid hwn o safbwynt y ddwy ochr.

Beth ydych yn gallu ei ddysgu? Pa fewnwelediadau ydych chi wedi creu?

ELWA	COLLED
Gwneud	Gwneud
Gweld a Chlywed	Gweld a Chlywed
Teimlo	Teimlo
Anghenion (dyfalu)	Anghenion (dyfalu)



D4

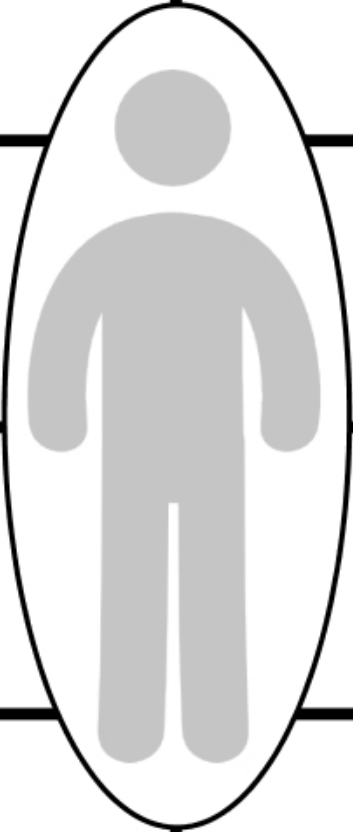
EMPATHY

By attempting to design and create a change, you **MUST** consider the people who will benefit and lose out from this change.

Place yourself in the shoes of these people, and consider the change from both sides.

What have you learnt? What new insights have you generated?

WINNERS	LOSERS
Doing	Doing
Seeing and Hearing	Seeing and Hearing
Feeling (guesses)	Feeling (guesses)
Needs (guesses)	Needs (guesses)



D5

CYNLLUN YMCHWIL

BETH Wyf eisiau ei wybod	BLE/SUT gallaf ddarganfod hyn	PA GWESTIWN dylwn ei ddefnyddio	SUT fydd y wybodaeth yn cael el ddefnyddio	ERBYN PRYD byddaf angen y wybodaeth yma



D5

RESEARCH PLAN

WHAT Do I need to know	WHERE/HOW can I source this information	WHICH QUESTION should I use	HOW will this information be used	BY WHEN will I need this information



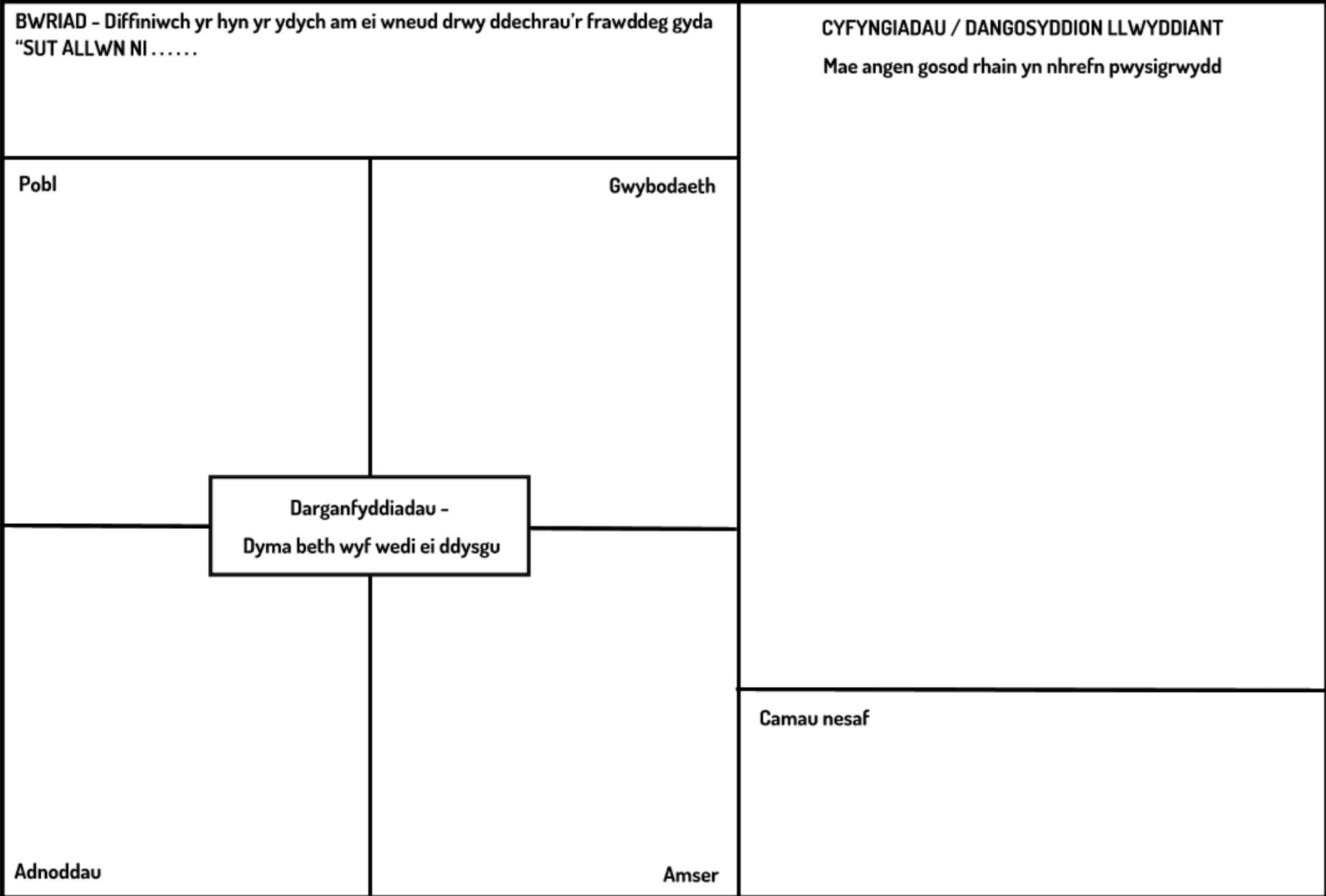
D6

CRYNHOI YN DILYN Y DARGANFOD A'R YMCHWIL

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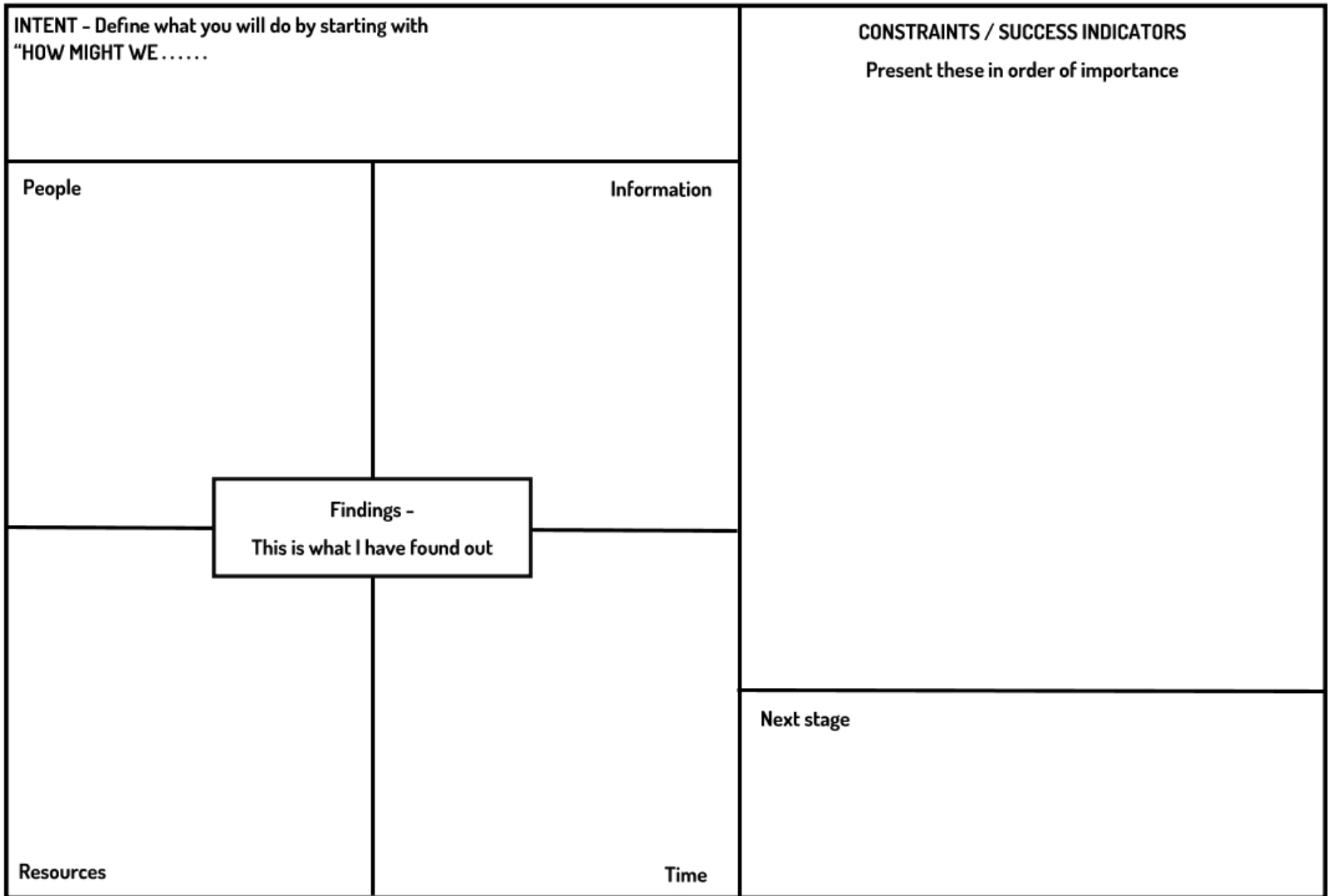



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D6

FINDINGS AND SUMMARY FROM RESEARCH



MEDDWL DARGYFEIRIOL A CHREU SYNIADAU

CANLLAWIAU

- ◆ Gweithio yn well mewn grŵpiau bach
- ◆ Gohirio beirniadaeth
- ◆ Dim un person i reoli
- ◆ Gosod terfyn amser i'r sesiwn
- ◆ Angen cynhyrchu nifer fawr o syniadau
- ◆ Angen cynhyrchu amrywiaeth eang o syniadau
- ◆ Ansawdd y syniadau ddim yn bwysig ar hyn o bryd
- ◆ Cydweithio i gynhyrchu syniadau
- ◆ Adeiladu ar syniadau pobl eraill
- ◆ Anwybyddu rheolau cyffredin
- ◆ Yn ystod y broses, peidiwch â dechrau cytuno ar y syniadau all fod yn llwyddiant.
- ◆ Bydd y syniadau yn cael eu gwerthuso yn y cam nesaf.

Brainstorming—Tasgu Syniadau

Pam - Y dull traddodiadol o gynhyrchu llawer o syniadau

Sut - Syniadau yn cael eu cyflwyno ar lafar, eu cofnodi a'u harddangos gyda'i gilydd

- Un person i srarad ar y tro, dim torri ar draws, dim beirniadu

Tips - Defnyddiwch 'Post-its'. Un syniad i bob 'post-it', eu gosod nhw ar wal neu siart fflip a'u grwpio

<https://www.mindtools.com/brainstm.html?>

Brainwriting —'Sgwennu Syniadau

Pam - Tasgu syniadau distaw. Defnyddiol gyda grŵpiau tawel, neu pan fydd rhai unigolion yn hoffi clywed eu llais eu hunain!

Sut - Taflen i gofnodi 3 syniad mewn rhes i bawb. Pawb i osod eu taflen yn y canol, a chymryd taflen person arall. Darllen y syniadau ac ysgrifennu 3 syniad arall o dan y rhai cyntaf sydd yn adeiladu ar y syniadau gwreiddiol

Tips - Defnyddiwch grid 3x3 ar y taflenni, peidiwch â gorffen nes fod y bocsus i gyd wedi eu llenwi.

https://www.mindtools.com/pages/article/newCT_86.htm

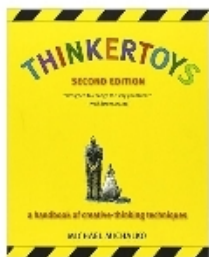
Visual Prompt—Ysgogiad Gweledol

Pam - Meddwl am y broblem a syniadau mewn ffordd weledol

Sut - Casglu nifer o ddelweddau sydd yn ymwneud â'r sefyllfa, neu/a deweddau i ysbrydoli. Trafod a chofnodi'r geiriau, teimladau a'r syniadau cyntaf sydd yn dod i'r meddwl wrth edrych ar y delweddau

Tips - Gweithio yn dda pan fydd pobl yn rhan o'r sefyllfa, trafod emosiynau, teimladau a rhyngberthynas. Beth am gynhyrchu bwrdd stori i gyflwyno darganfyddiadau?

Rhoi amser rhwng edrych ar y delweddau a chofnodi.



S1

DIVERGENT THINKING AND IDEA GENERATION

GUIDELINES

- ◆ Works better in small groups
- ◆ Defer judgement
- ◆ No one person to manage (boss)
- ◆ Set a time limit
- ◆ Focus on quantity of ideas
- ◆ Focus on a range of ideas
- ◆ Quality of ideas not important at this stage
- ◆ Collaborate to generate ideas
- ◆ Build on other peoples ideas
- ◆ Ignore general rules and conventions
- ◆ During the process do not agree on potential successful ideas
- ◆ Ideas will be evaluated in the next stage

Brainstorming

Why - The traditional way to generate lots of ideas

How - Ideas are said out loud, recorded and displayed together

- One person to speak at a time, no interruptions, no judgement

Tips - Use 'Post-its'. One idea per 'post-it', stick on wall or flipchart and group

<https://www.mindtools.com/brainstm.html?>

Brainwriting

Why - Quiet brainstorming session. Useful with quiet groups, or when some individuals dominate!

How - Form to record 3 ideas for each person. Everybody to place their completed form in the middle, and take somebody else's form. Read it, and write 3 more ideas building on the existing ideas.

Tips - Use a 3x3 grid on the forms, do not stop until all boxes have been filled.

https://www.mindtools.com/pages/article/newCT_86.htm

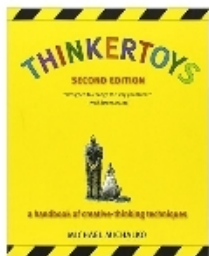
Visual Prompt

Why - To think about the problem and ideas in a visual way.

How - Collect a number of images which relate to the situation. Collect a number of images which inspire you. Discuss and record the words, feelings and ideas which come to mind through looking at the images.

Tips - Works well when people are central to the situation, to discuss emotions, feelings and interactions. How about producing a storyboard to communicate findings.

Allow time between looking at the images and recording.



S2

Dadansoddiad SWOT Analysis

	<p>HELPFUL to your objectives Yn GYMORTH i'r amcanion</p>	<p>HARMFUL to your objectives Yn NIWEIDIOL i'r amcanion</p>
<p>PRESENT — What we know now. INTERNAL — We can control these aspects PRESENNOL — Beth ydym yn ei wybod nawr. MEWNOL — Gallwn rheoli'r agweddau hyn</p>	<p>STRENGTHS / CRYFDERAU</p>	<p>WEAKNESSES / GWENDIDAU</p>
<p>FUTURE — Calculated guesses we can make EXTERNAL — We have no real control over these aspects DYFODOL — Beth fyddwn yn meddwl fydd yn digwydd ALLANOL — Does gennym ni ddim reolaeth dros rhain</p>	<p>OPPORTUNITIES / CYFLEOEDD</p>	<p>THREATS / BYGYTHIADAU</p>

https://www.mindtools.com/pages/article/newTMC_05.htm

S3

GRADDIO SYNIADAU (RANKING)

Gwerthuswch eich syniadau yn erbyn y CYFYNGIADAU / DANGOSYDDION LLWYDDIANT.

Defnyddiwch 'post-its' er mwyn gosod y syniadau mewn trefn gyda'r syniad gorau ar y brig.

+ Pwyntiau Da / Cadarnhaol

- Pwyntiau Gwael / Negyddol

SYNIAD

SYNIAD

SYNIAD

SYNIAD

SYNIAD



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S3

RANKING OF IDEAS

Evaluate your ideas against the **CONSTRAINTS / SUCCESS INDICATORS**.

Use 'post-it' notes to rank ideas with the best outcome on top of the list.

+ Good Points / Positives

- Weak Points / Negatives

IDEA

IDEA

IDEA

IDEA

IDEA



S4

SCAMPER

Defnyddiwch SCAMPER i ddatblygu a gwella eich syniadau. Ystyriwch pob gair er mwyn gwthio eich creadigrwydd. Gwerthuswch eich syniadau yn erbyn y cyngiadau/dangosyddion llwyddiant.

	Cofymadrodd	Ystyr	Cwestiynau cyfeillgar
S	Substitute Cyfnewid	Pa ran o'ch syniad y gellir ei newid gyda rhywbeth arall? Mae angen i chi arbrofi. Efallai bydd camgymeriad yn fanteisiol, neu cewch fflach o ysbrydoliaeth.	Beth allaf ei newid? Oes posib newid lle fydd yn cael ei ddefnyddio? Oes posib newid sut fydd y cynnyrch yn cael ei ddefnyddio? Oes posib newid adnoddau, neu reolau?
C	Combine Cyfuno	Ceisiwch gyfuno elfennau o wahanol syniadau gyda'i gilydd— beth fyddai'r canlyniad? Meddyliwch am gyfuno syniadau hollol wahanol i greu rhywbeth newydd.	Beth ellir ei gyfuno? Cyfuno elfennau o syniadau gwahanol? Gallaf gyfuno'r pwrpas? Beth ellir ei gyfuno i wella'r syniad? Oes modd cyfuno talent ac adnoddau?
A	Adapt Addasu	Oes modd addasu syniad/cynnyrch presennol? Beth wyt yn ei wybod am y broblem yn barod? Sut mae pobl eraill wedi ceisio datrys y broblem?	Sut mae'r broblem yn cael ei datrys ar hyn o bryd? Sut y gellir gwella hyn? Gelli'r bod yn fwy cyson? Oes bod yn fwy cyfeillgar i'r defnyddiwr? Oes modd i addasu syniad arall neu ei ddefnyddio fel ysbrydoliaeth?
M	Modify (also Magnify or Minify) Cyfaddasu	Pa newidiadau fydd angen ei wneud i'r syniad fod yn well, yn symlach, yn gryfach neu yn ysgafnach? Oes posib canolbwyntio ar rannau penodol o'r syniad a'u chwyddo i dynnu sylw? Mae hefyd yn bosib lleihau elfennau a'u gwneud yn fwy cynnil, ysgafnach a llai.	Sut gellir ei newid er gwell? Beth gelli'r ei addasu? A allaf addasu y siap? A allaf addasu'r maint—chwyddo neu symleiddio? A allaf addasu y ffurf? Oes angen gwneud rhywbeth yn amlwg i'r defnyddiwr?
P	Put to other uses Rhoi i ddefnydd arall	Sut y gellir rhoi eich syniadau i ddefnydd arall, neu sut gellir defnyddio'r cynnyrch i ddatrys problem arall.	Oes defnydd arall i'r cynnyrch/syniad? Beth yw'r defnyddiau hynny? Pwy arall allai ei ddefnyddio? Sut byddent yn ei ddefnyddio? A allwch chi aildefnyddio cynnyrch arall a gwneud rhywbeth newydd?
E	Eliminate (Elaborate) Diddymu Ymhelaethu	A fyddai'r syniad yn elwa o gael gwared â rhannau ohono? Oes posib symleiddio unrhyw elfennau, o gynhyrchu'r cynnyrch neu wasanaeth i'w ddefnyddio?	Beth allaf ei ychwanegu at y syniad? Beth allaf ei ddileu o'r syniad? Beth y gellir ei symleiddio? Oes rhannau sydd ddim yn hanfodol yn y syniad? Beth ellir ei gyfoethogi?
R	Reverse, Rearrange Gwrthdroi, ail drefnu	Wrth ddefnyddio gwrthdroi, meddyliwch am beth fydd y gwrthwyneb neu'r hyn fydd yn gwrthgyferbynnu. Wrth ddefnyddio aildrefnu, ystyriwch sut y byddai'r syniad yn gweithio pe bai'r rhannau mewn trefn wahanol.	Pa drefniadau eraill allai fod yn well? Beth fyddai'n digwydd os dria'i pethau mewn trefn wahanol? Beth os wyf yn aildrefnu'r dilyniant neu batrwm? Ceisiwch wneud rhywbeth am yn ôl - beth ddigwyddodd?



S4

SCAMPER

Use the SCAMPER tool to develop and improve ideas into successful outcomes. Consider every word to push your creativity. Judge the outcomes against the constraints/success indicators.

	Mnemonic	Meaning	Helper Questions
S	Substitute	Which part of your ideas can be substituted by something else? You need to try things out and experiment. Hope for a happy accident.	What can I substitute? Can I substitute where it will be used? Can I substitute how the product will be used? Can I substitute resources? What rules could you substitute?
C	Combine	Try combining different elements of different ideas together – what would the results look like? Think about combining previously unrelated ideas together to create something new.	Combine what? Combine elements of different ideas? Can I combine purpose? What could you combine to improve the idea? Could you combine talent and resources?
A	Adapt	Is it possible to adapt an existing idea/product? What do you already know about the problem? How have other people/product tried to solve the problem.	How the problem is currently solved? How can it be improved? How can it be more consistent? How can it be more user friendly? Could you adapt another idea or use as inspiration
M	Modify (also Magnify or Minify)	How will you modify your ideas in order to improve them? Which changes do you need to make to make it better, or simpler, or stronger, or lighter, or easier to use? By concentrating on specific parts of your ideas you can Magnify them – make them bigger, thicker, stronger or more intense. You can also Minify specific parts to make them lighter, smaller or more subtle	How can it be altered for the better? What can I modify? Can I modify the shape? Can I modify the size – exaggerate or simplify? Can I modify the form? Do you need to make something obvious for the user?
P	Put to other uses	How could you put your ideas to other uses, or how can another product be used to solve your problem.	Is there another use for the product? What are those other uses? Who else could use it? How would they use it? Could you reuse another product and make something new?
E	Eliminate (also Elaborate)	Would the idea benefit from removing apart of it? Could you streamline any elements, from production to using the product or service?	What could I add to the design? What could I take away from the design? What could I simplify? What is non-essential or unnecessary? What could I enrich?
R	Reverse (also Rearrange)	When using Reverse, think about what would the opposite or contrast be. When using Rearrange, consider how the product would look or work if parts were placed or done in a different order.	What other arrangements might be better? What would happen if I tried things in a different order? What if I rearranged a sequence, or a pattern? Try doing something backwards – what would happen?



S4a

SCAMPER

S

C

A

M

P

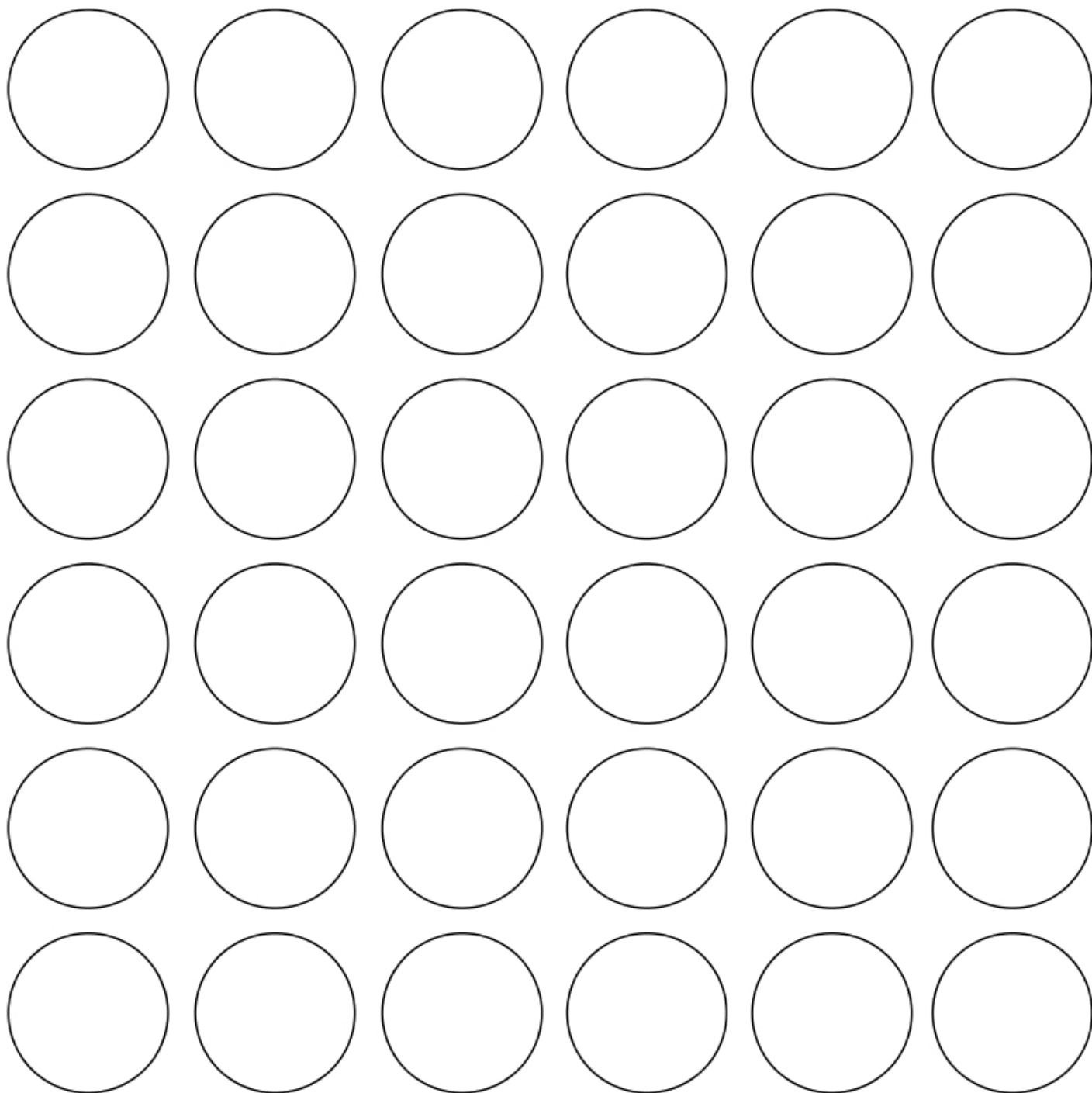
E

R



Sialens y Cylchoedd

The Circle Challenge



**In the time allowed, turn as many of the blank circles as possible
into recognizable objects.**

**Yn yr amser a ganiateir, trowch gymaint ac y gallwch o'r cylchoedd
i wrthrychoedd y gellir eu hadnabod**