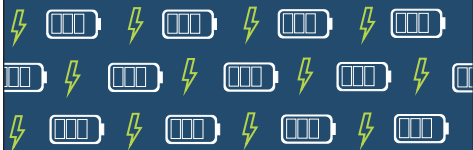
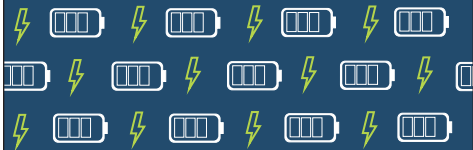


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CARDIAU P[^]WER



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Dan arweiniad:



Swansea University
Prifysgol Abertawe

Ariennir gan:



Engineering and
Physical Sciences
Research Council



Innovate
UK



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Cyfarwyddiadau

Gêm 1: Top Trumps (chwaraewyr: 2-5)

Cymysgwch a rhannwch y cardiau wyneb i lawr. Mae pob chwaraewr yn dal y cardiau fel eu bod yn gallu gweld y cerdyn top yn unig. Darllenwch categori o'ch dewis o'r cerdyn top (e.e. Munudau y defnydd). Mae'r chwaraewyr eraill wedyn yn darllen yr un categori o'u cardiau nhw. Yr un gyda'r gwerth gorau sy'n ennill, ac mae'r chwaraewr hwnnw yn casglu'r cardiau top i gyd a'u rhoi ar waelod ei bentwr. Ei dro ef sydd nesaf. Y person gyda'r holl gardiau ar ddiwedd y gêm yw'r enillydd.

Gêm 2: Uwch neu Is (chwaraewyr: 1-4)

Cymysgwch y cardiau a dalwch y pecyn fel bod y chwaraewr/wyr yn gallu gweld y cerdyn top yn unig. Edrychwch ar y cerdyn o dan y cerdyn top, ond dim ond ar yr eitem (nid ar y rhifau). Dyfalwch a yw'r rhifau ar y cerdyn top yn uwch neu'n is na'r cerdyn nesaf (e.e. mwy/llai o ddefnydd y flwyddyn). Mae chwaraewyr yn derbyn pwynt ar gyfer pob ateb cywir. Y chwaraewr sydd â'r mwyaf o bwyntiau ar y diwedd sy'n ennill.



Gwybodaeth ychwanegol

Rhifau'n seiliedig ar ddefnyddiau cartref ar gyfartaledd

- carbonfootprint.com/energyconsumption.html
- nissan.co.uk/vehicles/new-vehicles/leaf/range-charging
- carbonindependent.org/15.html
- tomsguide.com/us/xbox-one-ps4-power-consumption,news-18882.html
- currys.co.uk/gbuk/tv-and-home-entertainment/televisions/televisions/samsung-ue43-ru7100kxxu-43-smart-4k-ultra-hd-hdr-led-tv-10191732-pdt.html

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TELEDU



Munudau y defnydd	90
-------------------	----

Defnydd y flwyddyn	360
--------------------	-----

kWh y flwyddyn	0.15
----------------	------

kg CO ₂ y flwyddyn	13.5
-------------------------------	------

Ffaith: Gall gadael y teledu ar fodd segur gostio 4.5kg CO₂ ychwanegol bob blwyddyn

TEGELL



Munudau y defnydd	2
-------------------	---

Defnydd y flwyddyn	1,542
--------------------	-------

kWh y flwyddyn	0.07
----------------	------

kg CO ₂ y flwyddyn	25.7
-------------------------------	------

Ffaith: Gall berwi ond cymaint
o ddŵr ag sydd ei angen arbed
hyd at 30kg CO₂ y flwyddyn

CONSOL GEMAU



Munudau y defnydd	60
Defnydd y flwyddyn	300
kWh y flwyddyn	0.08
kg CO ₂ y flwyddyn	6

Ffaith: Mae gadael eich consol ar fodd segur yn defnyddio brown cymaint o ynni ag y mae'n ei ddefnyddio wrth i chi chwarae

GWEFRU FFÔN



Munudau y defnydd	160
Defnydd y flwyddyn	365
kWh y flwyddyn	0.01
kg CO ₂ y flwyddyn	1.22

Ffaith: Mae defnyddio sgrîn llai
llachar yn gallu arbed hyd at
20% o ddefnydd ynni'r ffôn

MEICRODON



Munudau y defnydd	5
-------------------	---

Defnydd y flwyddyn	96
--------------------	----

kWh y flwyddyn	0.07
----------------	------

kg CO ₂ y flwyddyn	1.6
-------------------------------	-----

Ffaith: Mae microdonnau yn defnyddio 82% llai o ynni na ffwrn confensiynol bob awr

GWEFRU CAR TRYDANOL



Munudau y defnydd	360
Defnydd y flwyddyn	52
kWh y flwyddyn	36
kg CO ₂ y flwyddyn	469

Ffaith: Mae gyrru car petrol
neu ddisel yn allyrru dwywaith
gymaint o CO₂ na char trydanol

PEIRIANT GOLCHI



Munudau y defnydd	90
-------------------	----

Defnydd y flwyddyn	187
--------------------	-----

kWh y flwyddyn	1.05
----------------	------

kg CO ₂ y flwyddyn	49.1
-------------------------------	------

Ffaith: Mae golchi ar 30°C yn hytrach na 40°C yn lleihau eich defnydd o ynni gan 57% bob tro

SYCHDAFLWR



Munudau y defnydd	50
-------------------	----

Defnydd y flwyddyn	148
--------------------	-----

kWh y flwyddyn	2.1
----------------	-----

kg CO ₂ y flwyddyn	77
-------------------------------	----

Ffaith: Os byddai pob cartref sydd â sychdaflwr yn sychu un llwyth o ddillad tu fas bob wythnos, byddant yn arbed dros miliwn tonnell o CO₂ y flwyddyn

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FFWRN TRYDAN



Munudau y defnydd	40
-------------------	----

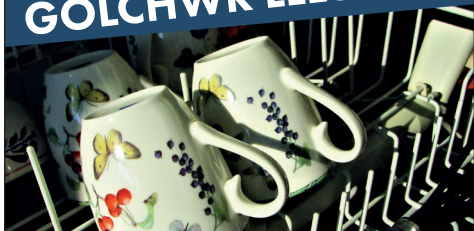
Defnydd y flwyddyn	136
--------------------	-----

kWh y flwyddyn	2
----------------	---

kg CO ₂ y flwyddyn	68
-------------------------------	----

Ffaith: Mae agor y ffwrn wrth goginio yn gallu colli 25°C bob tro

GOLCHWR LLESTRI



Munudau y defnydd	90
-------------------	----

Defnydd y flwyddyn	110
--------------------	-----

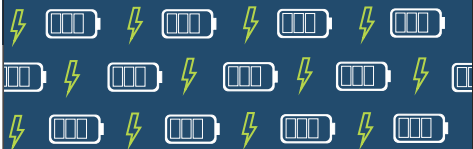
kWh y flwyddyn	2.7
----------------	-----

kg CO ₂ y flwyddyn	74.25
-------------------------------	-------

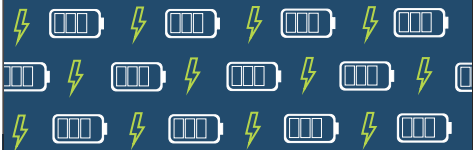
Ffaith: Gall defnyddio
tymheredd is arbed 33kg CO₂ y
flwyddyn

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POWER CARDS



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Led by:



Swansea University
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Funded by:



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Research Council



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Instructions

Game 1: Top Trumps (Players: 2-5)

Shuffle and deal all the cards face down. Each player holds their cards so that they can see the top card only. Read out a category of your choice from the top card (e.g. Minutes per use). Other players then read out the same category from their cards. The one with the best value wins, and that player collects all the top cards and moves them to the bottom of their pile. It is then their turn again. The person with all the cards at the end is the winner.

Game 2: Higher or Lower (Players: 1-4)

Shuffle the cards and hold the pack so the player(s) can see the top card only. Look at the card underneath the top card, but only the household item (do not look at the numbers). Guess whether the numbers on the top card are higher or lower than the next card (e.g. More/less uses per year, more/less kWh per use). Each player gets a point for each correct guess. The player with the most points at the end is the winner.



Additional information

Numbers based on average household uses

- carbonfootprint.com/energyconsumption.html
- nissan.co.uk/vehicles/new-vehicles/leaf/range-charging
- carbonindependent.org/15.html
- tomsguide.com/us/xbox-one-ps4-power-consumption,news-18882.html
- currys.co.uk/gbuk/tv-and-home-entertainment/televisions/televisions/samsung-ue43-ru7100kxxu-43-smart-4k-ultra-hd-hdr-led-tv-10191732-pdt.html

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TV



Minutes per use	90
-----------------	----

Uses per year	360
---------------	-----

kWh per use	0.15
-------------	------

kg CO ₂ per year	13.5
-----------------------------	------

Fact: Leaving your TV on standby can cost an extra 4.5kg CO₂ per year

KETTLE



Minutes per use	2
-----------------	---

Uses per year	1,542
---------------	-------

kWh per use	0.07
-------------	------

kg CO ₂ per year	25.7
-----------------------------	------

Fact: Only boiling as much water as you need can save up to 30kg CO₂ per year

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GAMES CONSOLE



Minutes per use	60
Uses per year	300
kWh per use	0.08
kg CO ₂ per year	6

Uses per year	300
kWh per use	0.08
kg CO ₂ per year	6

kWh per use	0.08
kg CO ₂ per year	6

kg CO ₂ per year	6
-----------------------------	---

Fact: Leaving your console on standby uses nearly as much energy as it does when it's in use

PHONE CHARGE



Minutes per use	160
Uses per year	365
kWh per use	0.01
kg CO ₂ per year	1.22

Fact: Using a lower brightness setting can save up to 20% of the phone's energy consumption

MICROWAVE



Minutes per use	5
-----------------	---

Uses per year	96
---------------	----

kWh per use	0.07
-------------	------

kg CO ₂ per year	1.6
-----------------------------	-----

Fact: Microwaves use 82% less energy than conventional ovens per hour

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ELECTRIC CAR CHARGE



Minutes per use	360
Uses per year	52
kWh per use	36
kg CO ₂ per year	469

Uses per year	52
kWh per use	36
kg CO ₂ per year	469

kWh per use	36
kg CO ₂ per year	469

kg CO ₂ per year	469
-----------------------------	-----

Fact: That's almost half the CO₂ emitted by driving a petrol or diesel car

WASHING MACHINE



Minutes per use	90
Uses per year	187
kWh per use	1.05
kg CO ₂ per year	49.1

Fact: Washing at 30°C rather than 40°C reduces your energy consumption by 57% per use

TUMBLE DRYER



Minutes per use	50
Uses per year	148
kWh per use	2.1
kg CO ₂ per year	77

Uses per year	148
kWh per use	2.1
kg CO ₂ per year	77

kWh per use	2.1
kg CO ₂ per year	77

kg CO ₂ per year	77
-----------------------------	----

Fact: If every home with a tumble dryer dried one load of washing outside each week, they would save over a million tonnes of CO₂ in a year

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ELECTRIC OVEN



Minutes per use	40
Uses per year	136
kWh per use	2
kg CO ₂ per year	68

Fact: Opening the oven door while cooking can lose up to 25°C each time

DISHWASHER



Minutes per use	90
-----------------	----

Uses per year	110
---------------	-----

kWh per use	2.7
-------------	-----

kg CO ₂ per year	74.25
-----------------------------	-------

Fact: Using a lower temperature
can save 33kg CO₂ per year