



Wales Maths Week Wythnos Fathemateg Cymru

9-13 October 2006

9-13 Hydref 2006

October is fast approaching and preparations are underway to make this year's Wales Maths Week the best ever. Once again mathcymru has distributed £15,000 in grants to support mathematic activities across Wales. This year's grant funding is now closed but for further information about the mathcymru grant support scheme, visit www.mathcymru.org. Numerous events will be taking place across the country, including;

mathcymru prestigious lectures

These fascinating free, and fun lectures are aimed at 15 - 18 year old pupils.

Maths and Magic

Dr Kevin Houston, Leeds University

Mon 9 October - Techniquet@Newi

Contact Dr Belinda Bray for further details **01978 293400**

Fri 13 October - University of Wales, Newport

Contact Helen Beddow for further details **01633 432432**

The content of the Maths and Magic talk varies according to the type of audience, their interests and, in fact, their response during the talk - it all depends on the day.

During the talk, magic tricks are performed that have some mathematical working behind them, some involve playing - cards, mind-reading, calendars and even ISBN numbers.

One theme covered is modular arithmetic (which as you may know is just a mathematician's fancy way of saying what is the remainder after division). The numbers used are not large, so most pupils can cope without thinking too hard.

A particular interest for the speaker is the mathematics of playing cards. This is a really rich area involving probability, algebra, arithmetic, (and even really high-faluting modern stuff like Markov chains (which is not mentioned). For example, how many times do you have to shuffle a deck to make sure it is really mixed? (One of Simon Singh's Radio 4 programmes last year covered this; see (and hear!) at

<http://www.bbc.co.uk/radio4/science/another5.shtml>)

Mae mis Hydref yn prysur agosáu ac mae trefniadau ar y gweill i sicrhau y bydd Wythnos Fathemateg Cymru eleni yr orau erioed. Unwaith eto mae mathcymru wedi dosbarthu £15,000 mewn grantiau i gefnogi gweithgareddau mathemategol ledled Cymru. Bellach, mae'r arian ar gyfer grantiau eleni wedi dod i ben, ond, os hoffech wybodaeth ychwanegol am gynllun grantiau mathcymru, ewch i ymweld â www.mathcymru.org. Bydd pob math o ddigwyddiadau ym mhob cwr o'r wlad, gan gynnwys:

Darlithoedd mawreddog mathcymru

Mae'r darlithoedd hyn, sydd bob amser yn rhyfeddu ac yn hwyl, yn rhad ac am ddim ac wedi eu hanelu at ddisgyblion 15 - 18 oed.

Mathemateg a Hud

Dr Kevin Houston, Prifysgol Leeds

Llun 9 Hydref - Techniquet@NEWI

Cysylltwch â'r Dr Belinda Bray am fanylion pellach ar **01978 293400**

Gwener 13 Hydref - Prifysgol Cymru, Casnewydd
Cysylltwch â Helen Beddow am fanylion pellach ar **01633 432432**

Bydd cynnwys y sgwrs, ar Fathemateg a Hud yn amrywio yn ôl natur y gynulleidfa, eu diddordebau ac, mewn gwirionedd, eu hymateb i'r sgwrs - bydd y cyfan yn dibynnu ar y diwrnod.

Yn ystod y sgwrs bydd triciau hud yn cael eu perfformio, a'r rhain yn ymwneud â pheth gwaith mathemategol, rhai yn defnyddio cardiau chwarae, darllen y meddwl, calendrau a hyd yn oed rhifau safonol rhyngwladol llyfrau (ISBN).

Un thema sy'n cael sylw yw rhifydddeg fodylol (sef, fel y gwyddoch, ffordd glyfar mathemategwyr o ddweud beth yw'r gweddi ar ôl rhannu). Nid yw'r rhifau a ddefnyddir yn fawr ac felly gall y mwyafrif o ddisgyblion ymdopi heb orfod meddwl yn rhy galed.

Mae gan y siaradwr ddiddordeb arbennig ym mathemateg chwarae gemau cardiau. Dyma faes sy'n friith o broblemau'n ymwneud â thebygolrwydd, algebra, rhifydddeg (a hyd yn oed pethau cyfoes crand fel cadwynau Markov, er nad oes sôn am y rhain yn y sgwrs hon). Er enghraifft, sawl tro sy'n rhaid i chi gymysgu pecyn o gardiau i sicrhau eu bod wedi eu cymysgu'n drwyadl? (Roedd un o raglenni Simon Singh ar Radio 4 y llynedd yn trafod hyn; ewch i weld (a chlywed!) yn <http://www.bbc.co.uk/radio4/science/another5.shtml>)

Lies, Damned Lies and Statistics

Dr Paul Baxter of Leeds University

Tues 10 October - University of Wales, Bangor
Contact Chris Wensley for further details

01248 382495

Ever since Benjamin Disraeli uttered this infamous line, statistics seems to have suffered a bad press. With the current trend towards spin and sound bites, it is essential to cast a sceptical eye over information from the media. In this talk some of the classic scams are described which are used to deceive, and how to spot them!

From Peace Deals to Penalties

Rob Eastaway

Wed 11 October - University of Wales, Swansea
Contact Jan Barham for further details

01792 295459

Yr 12-13, bright Yr 11s will enjoy this talk. A famous Coca-Cola advertisement used the line 'I'd like to teach the world to sing in perfect harmony'. Yet Coca-Cola and Pepsi have been competing viciously for decades. Collaboration and competition are everywhere around us, and mathematics and game theory can tell us a lot about why peace and harmony are not quite as easy to achieve as the songs might suggest.

How to play games with trees

By Dr Alan Slomson - Director of Undergraduate Studies, School of Mathematics, University of Leeds

Fri 13 October - University of Wales, Newport
Contact Helen Beddow for further details

01633 432134

All games are mathematically interesting. This talk is about the mathematical theory of board games, such as Chess, Go, and Noughts and Crosses. The basic mathematical theory is really very simple. It depends on the key equation $1 + 1 = 0$ and uses tree structures that are also used in probability problems. The talk will explain how computers may be programmed to play games of this type. The audience will be encouraged to play some games they probably haven't seen before.

Anwiredd, Celwydd Golau ac Ystadegau

Dr Paul Baxter, Prifysgol Leeds

Dydd Mawrth 10 Hydref - Prifysgol Cymru, Bangor
Cysylltwch â Chris Wensley am fanylion pellach ar

01248 382495

Byth oddi ar i Benjamin Disraeli ynganu ei linell adnabyddus "Lies, Damned Lies and Statistics" mae ystadegaeth wedi tueddu i gael cyhoeddusrwydd gwael. Gyda'r tueddiad gyfoes tuag at ymadroddion bachog a sbin, mae'n hanfodol ein bod braidd yn ddrwgdybus o'r wybodaeth a gawn gan y cyfryngau. Yn y sgwrs hon, tynnir sylw at rai o'r triciau clasurol a ddefnyddir i'n camarwain, a sut i'w hadnabod!

O Gytundebau Heddwch i Giciau Cosb

Rob Eastaway

Mercher, 11 Hydref - Prifysgol Cymru, Abertawe
Cysylltwch â Jan Barham am fanylion pellach ar

01792 295459

Bydd disgyblion Blynnydoedd 12-13, a goreuon Blwyddyn 11, yn mwynhau'r sgwrs hon. Defnyddiodd hysbyseb enwog gan Coca-Cola y llinell (yn Saesneg) 'Hoffwn ddysgu'r byd i ganu mewn harmoni perffaith'. Serch hynny, mae Coca-Cola a Pepsi wedi cystadlu'n chwyrn â'i gilydd am flynyddoedd. Mae cydweithredu a chystadlu o'n cwmpas ym mhobman, a gall mathemateg a damcaniaeth gemau ddweud llawer wrthym pam nad yw heddwch a harmoni mor hawdd i'w cyrraedd ag y mae'r gân yn tueddu i awgrymu.

Sut i chwarae gemau â choed

Dr Alan Slomson - Cyfarwyddwr Astudiaethau Is-radd, Yr Ysgol Fathemateg, Prifysgol Leeds

Gwener 13 Hydref - Prifysgol Cymru, Casnewydd
Cysylltwch â Helen Beddow am fanylion pellach ar

01633 432134

Yn fathemategol, mae unrhyw gêm yn ddiddorol. Yn y sgwrs hon trafodir damcaniaeth fathemategol gemau bwrdd, er enghraifft Gwyddbwyll, Go, a Seroau a Chroesau. Mewn gwirionedd, mae'r ddamcaniaeth fathemategol sylfaenol yn syml iawn. Mae'n dibynnu ar yr hafaliad hollbwysig $1 + 1 = 0$ ac yn defnyddio adeileddau canghennog a welir hefyd ar waith mewn problemau tebygolrwydd. Bydd y sgwrs yn egluro sut y gellir rhaglennu cyfrifiaduron i chwarae gemau o'r math yma. Bydd anogaeth i'r gynulleidfa chwarae rhai gemau na fyddan nhw'n debygol o fod wedi dod ar eu traws o'r blaen.

Launch of Maths Week Activity

mathcymru would like all year 3 & 4 school pupils to recite the 7 times table at 10am on 9 October to mark the launch of Maths Week 2006. Taking part is easy; simply call John O'Hare-Price on

02920 475475 ext **281** or

johnohp@techniquet.org for more details and to register your interest. Certificates will be supplied to all pupils who take part.

Lansiadd i Gweithgarwch yr Wythnos Fathemateg

Hoffai mathcymru gwahodd bob disgybl Blynnydoedd 3 a 4 i adrodd y tabl 7 am 10 o'r gloch y bore ar 9 Hydref i nodi dechrau Wythnos Fathemateg 2006. Mae'n hawdd cymryd rhan, dim ond rhoi galwad i John O'Hare-Price ar **02920 475475** est **281**, neu anfon e-bost at **johnohp@techniquet.org** i gael rhagor o wybodaeth ac i gofrestru eich diddordeb. Cyflwynir tystysgrif i bob disgybl fydd yn cymryd rhan.

Maths Matters

KS3 - 9-13 October 2006

'Maths Matters' runs throughout Maths Week at Techniquest in Cardiff and incorporates the most popular parts of Mathamagic:

Pupils can enjoy a practical and fun maths challenge trail in the exhibition with stimulating puzzle-solving and thought-provoking activities. This is followed by the Mathamagic presentation: what are the chances of winning the lottery? how do computers store and transmit information? Find out the maths behind tricks and illusions. This entertaining presentation includes the following topics; probability, algebra, computing, binary numbers, topology, shape and mental arithmetic all delivered in a fun and interactive format.

For Maths Matters please contact our bookings team on **029 20 475 475**. The cost per pupil is £3.90, with free admission to accompanying teachers.

Maths Detective

KS2 - 16-20 October

Whodunit is a maths mystery. A baffling burglary awaits pupils when they take part in this investigative 'Maths Detective' show. Pupils will be put on the case of a fictional theft and will have to use their maths skills to solve the crime.

Graphs, timetables and eyewitness accounts will all be used to help pupils investigate and uncover the identities of thieves, who have stolen top-secret computer components from a laboratory. Pupils will have to use mathematics to work out the weight and height of the robber and discover which vehicle was large enough to hold the stolen goods.

For Maths Detective please contact our bookings team on **029 20 475 475**. The cost per pupil is £3.90, with free admission to accompanying teachers.

Mathamagic Show

KS2 - 10-13 October


TECHNIQUEST@NEW!

A Maths trail is offered for KS2 pupils - visit the centre and use our exhibits to bring maths alive. Cover a wide range of skills, including using numbers, calculations, understanding measures and so much more. A great way to introduce maths in a novel environment. Certificates available for all participants.

To book please contact our bookings team on **01978 293400**. The cost per pupil is £2.75, with free admission to accompanying teachers.

Special Lecture: Medicine, Molecules and Maths

KS3

Thursday 12 October 2006, 11am
(SPECIAL OFFER - £20 for up to 50 pupils)

Dr Belinda Bray will be looking at the use of maths in medical discoveries, particularly in the development of new drugs. Applicable for upper key stage 3 pupils, the lecture

Materion Mathemategol

CA3 - 9-13 Hydref 2006

Cynhelir 'Materion Mathemategol' trwy gydol yr Wythnos Fathemateg yn Techniquest yng Nghaerdydd a bydd yn cynnwys y rhannau mwyaf poblogaidd o Mathamagic:

Gall ddisgyblion fwynhau dilyn llwybr mathemateg sy'n hwyli a llawn her yn yr arddangosfa, lle bydd posau i'w datrys a gweithgareddau i hogi'r meddwl. Dilyniir hyn gan y cyflwyniad Mathamagic: beth yw'r siawns o ennill y loteri? sut mae cyfrifiaduron yn storio a throsglwyddo gwybodaeth? Dewch i weld beth yw'r fathemateg y tu ôl i driciau a rhithiau. Rhai o'r pynciau sy'n cael eu trin yn y cyflwyniad difyr hwn yw: tebygolrwydd, algebra, cyfrifiaduro, rhifau deuaidd, topoleg, siapiau a rhifydddeg pen, a chyflwynir y cyfan mewn natur hwyliog a rhyngweithiol.

Ar gyfer Materion Mathemategol cysylltwch â'n fîm archebu tocynnau ar **029 20 475 475**. Y pris i bob disgybl yw £3.90, a bydd mynediad am ddim i'r athrawon ddaw sy'n hebrwng.

Ditectif Maths

CA2 - 16-20 Hydref

Dirgelwch mathemateg i'w ddatrys. Ymchwiliad i ladrad sy'n wynebu'r disgyblion a ddaw i gymryd rhan yn y sioe 'Ditectif Maths'. Bydd gofyn iddyn nhw roi eu sgiliau mathemateg ar waith wrth fynd ati i geisio datrys y dirgelwch a chanfod pwy yw'r lleidr.

Defnyddir graffiau, amserlenni a thystiolaeth llygad-dystion i helpu'r disgyblion yn eu hymchwiliad a dod o hyd i'r lleidr sydd wedi dwyn cydrannau hynod gyfrinachol o gyfrifiadur mewn labordy. Bydd rhaid i'r disgyblion ddefnyddio mathemateg i ddarganfod pwysau a thaldra'r lleidr a darganfod pa gerbyd oedd yn ddigon mawr i gludo'r defnyddiau oedd wedi'u dwyn.

Ar gyfer Ditectif Maths cysylltwch â'n fîm archebu tocynnau ar **029 20 475 475**. Y pris i bob disgybl yw £3.90, a bydd mynediad am ddim i'r athrawon ddaw gyda nhw.

Sioe Mathamagic

CA2 - 10-13 Hydref

Taith fathemateg i ddisgyblion CA2 - dewch i ymweld â'n canolfan a dilyn ein llwybr trwy eitemau'r arddangosfa i gael gweld mathemateg yn dod yn fyw. Mae'n cwmpasu amrywiaeth eang o sgiliau, gan gynnwys rhifau, cyfrifo, deall mesurau, a llawer mwy. Dyma ffordd wych o gyflwyno mathemateg mewn amgylchedd newydd a gwahanol. Cyflwynir tystysgrifau i bawb sy'n cymryd rhan.

I archebu lle, cysylltwch â'n fîm archebu ar **01978 293400**. Y pris i bob disgybl yw £2.75, a bydd mynediad am ddim i'r athrawon sy'n hebrwng.

Darlith Arbennig: Meddygaeth, Moleciwlau a Mathemateg

CA3

Dydd Iau 12 Hydref 2006, 11 y bore
(CYNNIG ARBENNIG - £20 am hyd at 50 disgybl)

Bydd y Dr Belinda Bray yn edrych ar y defnydd a wneir o fathemateg mewn darganfyddiadau meddygol, yn enwedig yn natblygiad cyffuriau newydd. Bydd y ddarlith, sy'n addas i ddisgyblion hŷn Cyfnod

From page 3

will look at the real life use of maths as it changes the way we examine medical drugs before they are released on to the market. See how maths can save lives - both human and animal!

Dr Bray is a toxicologist specialising in novel drug development, particularly for breast cancer. She has worked as a lecturer in Pharmacology at Oxford University where she was responsible for teaching toxicology and drug design both to medical and post-graduate students. She also has a wealth of experience in working both with public and high-school audiences and we are delighted that she has made herself available for this lecture series.

For further information or to make a booking please contact Nikki on **01978 293400**.

Parhad o dudalen 3

Allweddol 3, yn dangos mathemateg ar waith mewn sefyllfa go iawn lle mae'n newid y ffordd y caiff cyffuriau meddygol eu harchwilio cyn ei rhoi ar y farchnad. Gwelir sut mae mathemateg yn gallu achub bywydau - bodau dynol yn ogystal ag anifeiliaid!

Gwenwynegydd yw'r Dr Bray, yn arbenigo mewn datblygu cyffuriau newydd, yn enwedig ar gyfer trîn canser y fron. Bu'n ddarlithydd mewn Fferylleg ym Mhrifysgol Rhydychen lle roedd hi'n gyfrifol am addysgu gwenwyneg a dyluniad cyffuriau i fyfyrwyr ac ôl-raddedigion meddygaeth. Mae ganddi hefyd gyfoeth o brofiad o weithio gyda'r cyhoedd a chynulleidfaoedd ysgolion uwchradd, ac rydym wrth ein bodd ei bod wedi cytuno i gyfrannu at y gyfres hon o ddarlithoedd.

I gael gwybodaeth bellach neu i archebu tocynnau, cysylltwch os gwelwch yn dda â Nikki ar **01978 293400**.

Forthcoming Maths events

North East Wales & South Wales Outreach MATHS CHALLENGE KITS suitable for KS2

Set up a hands-on mini exhibition in your own school with this set of maths puzzles and games aimed at primary school pupils and teachers. The 12 exhibits are easy to use, pack neatly onto a trolley and are designed to be used in any school. The kits are accompanied by comprehensive teacher support notes, which act as a guide through a host of learning initiatives.

Curriculum links: Applying mathematics, numbers, shape, space and measures and handling data.

For further information contact Nikki on **01978 293400**.

Digwyddiadau mathemategol sydd ar y gweill

Gwaith Allanol Gogledd Ddwyrain Cymru a De Cymru PECYNNAU HER FATHMATEG - addas i CA2

Sefydlwch arddangosfa fach ymarferol yn eich ysgol chi trwy ddefnyddio'r set hon o bosau a gemau mathemateg a baratowyd ar gyfer disgyblion ysgolion cynradd a'u hathrawon. Mae'r 12 eitem sydd yn yr arddangosfa yn hawdd i'w trin, yn pacio'n ddestlus ar droli ac wedi eu cynllunio i'w defnyddio mewn unrhyw ysgol. I gyd-fynd â'r eitemau, darperir ar gyfer athrawon set o nodiadau cynhwysfawr sy'n ganllawiau i'w harwain trwy bob math o weithgareddau a dulliau dysgu.

Cysylltiadau â'r cwricwlwm: cymhwyso mathemateg, rhifau, siâp, gofod a mesurau, a thrin data.

I gael gwybodaeth bellach, cysylltwch â Nikki ar **01978 293400**.

mathcymru Website

For more information about past events, teachers' learning support services and new projects visit

www.mathcymru.org

Gwefan mathcymru

Os hoffech ragor o wybodaeth am ddigwyddiadau a gynhaliwyd eisoes, gwasanaethau cefnogi dysgu i athrawon, a phrojectau newydd, ewch i

For more information contact:

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