



Maths Grants

What would you do if you had a thousand pounds to spend on communicating maths? Would you concentrate on fractions, geometry, or on another aspect of the subject? Would you focus on one specific age group? Or would you try to start a project that would benefit your whole school? Would you like to have a one-off special event, a long-term project or develop mathematical resources your school can use time and time again? It's time to start planning how such a grant could make a difference to mathematical thinking and learning in your school. The Welsh Assembly Government is again funding a grant scheme through mathcymru to encourage innovative thinking in the classroom.

There's a second chance to apply for a grant to help develop a maths project at your school. The first round of grants has now been allocated. But if you weren't successful, or missed the deadline, there is still a chance to apply. Your project should focus on developing maths at your school – not just on buying a ready-made product. There are more details in the guidelines.

For this second round, forms must be completed and sent to Mathcymru at Techniquest by September 30.

Visit www.mathcymru.org for more details and to apply for your grant. If you have any queries please e-mail Siân Ashton at sian@techniquest.org or call **029 20 475 475**.

Grantiau Mathemateg

Sut byddech chi'n mynd ati i wario mil o bunnoedd ar gyflwyno mathemateg yn eich ysgol? Fyddech chi'n canolbwyntio ar ffracsïynau, geometreg, neu agwedd arall ar y pwnc? Fyddech chi'n hoelio eich sylw ar grŵp oedran penodol? Neu a fydddech chi'n rhoi cynnig ar sefydlu prosiect a fyddai o fudd i'r ysgol gyfan? Efallai y byddech yn dewis cynnal rhyw un digwyddiad arbennig, neu brosiect hir-dymor, neu ddatblygu adnoddau mathemateg y gallai'r ysgol eu defnyddio dro ar ôl tro? Dyma'r adeg i ddechrau cynllunio sut y gallai grant o'r fath wneud gwahaniaeth i'r ffordd mae eich ysgol chi yn meddwl am fathemateg a dysgu'r pwnc. Eleni eto, mae Llywodraeth Cynulliad Cymru yn noddï cynllun grantiau er mwyn annog meddwl blaengar yn yr ystafell ddosbarth.

Mae ail gyfle i wneud cais am grant i helpu datblygu prosiect mathemateg yn eich ysgol. Cafodd grantiau'r rownd gyntaf eu dosbarthu bellach ond os na lwyddoch chi neu os colloch chi'r dyddiad cau, mae yna gyfle eto. Dylai eich prosiect ganolbwyntio ar ddatblygu mathemateg yn eich ysgol – yn hytrach na gofyn am arian i brynu cynnyrch



parod. Cewch ragor o fanylion yn y canllawiau. Ar gyfer yr ail rownd yma, rhaid cwblhau'r ffurflenni cais a'u hanfon at Mathcymru yn Techniquest erbyn 30 Medi.

Ewch i www.mathcymru.org i gael mwy o fanylion ac i gyflwyno eich cais am grant. Os bydd gennych unrhyw ymholiadau, mae croeso i chi e-bostio Siân Ashton yn sian@techniquest.org neu ffonio **029 20 475 475**.

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Maths Week

Techniquest and Mathcymru are organising a special programme of events for this year's Wales Maths Week (5 – 9 October). Primary schools can have a visit from a mathamagician who does amazing maths-based tricks. A level students studying maths or maths-related subjects can benefit from a series of entertaining and interesting maths lectures given by some of the UK's leading mathematicians.

Inside Techniquest our excellent maths kits will be on the exhibition floor, free for any visitors to use. The maths kits are a collection of puzzles and games designed to challenge and promote maths skills while being fun for all ages. We also have two fun and challenging maths shows for Key Stage 2 running during Maths Week. Maths Mystery is on 6 & 7 and Maths Detective is running 8 & 9 October.

Pupils will also have the chance to participate in the Wales Maths week photo competition. Young photographers are encouraged to send in their creations, representing an interesting view of this year's theme "Patterns and more Patterns". The competition will provide pupils with the opportunity to develop and apply their knowledge of number, shape, repetition and sequences in an interesting and innovative way. Pupils could photograph interesting patterns in nature, in the built environment or create their own patterns to photograph. Full details of the competition will be put on the mathcymru website www.mathcymru.org in the autumn. There will be five age categories with a prize for each of the five winners.

Winners... so far

We have already awarded maths grants to Cardiff High School and Guilsfield C.P. School to help them start up Maths clubs. Castell Alun High School is using their grant to create a support website for homework. Pupils in Cornist Park CP School will be producing a model of their school playground. Cradoc CP School is going to employ a maths advisor to run workshops and CPD sessions with teachers. Gwernyfed High School will use their grant to provide a maths fun day based on Pythagoras' Theorem. Pupils at Trewen Community School will be doing maths activities all about eggs. A maths grant will be used to create outdoor maths puzzles to which the whole school will have access at Ysgol Bro Cynllaith. Bishop of Llandaff School has been awarded a grant to visit a local cathedral to study the maths related to its architecture. Pupils at Ysgol Llechyfedach will be using digital cameras to investigate maths in the local environment while pupils at Ysgol y Berllan Deg will be establishing a business and entrepreneur scheme that the pupils will manage.

Mathamagic

Techniquest's unique maths experience: Mathamagic was a huge success this year with even more pupils attending than in recent years. Mathamagic combines a unique exhibition of maths-based puzzles and games with an interactive presentation on topics such as probability, algebra, computing, topology and mental arithmetic. Pictures on page 3.

Wythnos Fathemateg



Mae Techniquest a Mathcymru yn trefnu rhaglen arbennig o ddigwyddiadau ar gyfer Wythnos Fathemateg Cymru (5 – 9 Hydref). Gall ysgolion cynradd drefnu bod "mathemategonsurwr" yn dod i ymweld â nhw i wneud triciau mathemategol anhygoel. Gall myfyrwyr Safon Uwch sy'n astudio mathemateg

neu bynciau sy'n gysylltiedig â mathemateg gael budd o gyfres o ddarlithoedd a gyflwynir gan rai o fathemategwyr mwyaf blaenllaw'r Deyrnas Unedig.

Y tu mewn i Techniquest, bydd ein citiau mathemateg rhagorol ar lawr ein prif arddangosfa, i'w defnyddio'n rhad ac am ddim gan ymwelwyr. Mae'r citiau hyn yn gasgliad o bosau a gemau mathemategol a gynlluniwyd i herio'r defnyddwyr a hyrwyddo eu sgiliau mathemateg tra eu bod, ar yr un pryd, yn hwyl i bawb o bob oedran. Rydym hefyd yn ystod yr Wythnos Fathemateg yn cynnal dwy sioe fathemateg i herio a diddori disgyblion Cyfnod Allweddol 2. Cynhelir Dirgelwch Mathemateg ar 6 a 7 Hydref, a Ditectif Mathemateg ar 8 a 9 Hydref.

Bydd hefyd gyfle i ddisgyblion gymryd rhan yng nghystadleuaeth ffotograffiaeth Wythnos Fathemateg Cymru. Y thema eleni yw "Patrymau a mwy o Batrymau" a gwahododd bob ffotograffydd ifanc i dynnu llun eu golygfeydd diddorol nhw ar y thema yma ac anfon eu campweithiau atom. Bydd y gystadleuaeth yn gyfle i'r disgyblion ddatblygu a chymhwyso eu gwybodaeth am rif, siâp, ailadrodd a dilyniant mewn modd diddorol a newydd. Gallai disgyblion dynnu ffotograffau o batrymau diddorol ym myd natur neu mewn amgylchedd o adeiladau, neu greu eu patrymau eu hunain a thynnu eu lluniau. Bydd manylion llawn y gystadleuaeth ffotograffiaeth i'w gweld ar wefan mathcymru www.mathcymru.org yn yr hydref. Bydd pum categori a gwobr i bob un o'r pum enillydd.

Ennillwyr... hyd yn hyn

Rydym eisoes wedi rhoi grantiau i Ysgol Uwchradd Caerdydd ac Ysgol Gynradd Guilsfield i'w helpu i sefydlu Clybiau Mathemateg. Bydd Ysgol Uwchradd Castell Alun yn defnyddio eu grant hwythau i greu gwefan gymorth ar gyfer gwaith cartref. Bydd disgyblion yn Ysgol Gynradd Parc Cornist yn cynhyrchu model o iard yr ysgol, tra bo Ysgol Gynradd Cradoc yn bwriadu cyflogi ymgyngorydd mathemateg i gynnal gweithdai a sesiynau Datblygiad Proffesiynol Parhaus gyda'r athrawon. Bydd Ysgol Uwchradd Gwernyfed yn defnyddio eu grant i gynnal diwrnod o hwyl mathemateg yn seiliedig ar Theorem Pythagoras. Gweithgareddau mathemateg yn ymwneud ag wyau fydd gan ddisgyblion Ysgol Gymuned Trewen a bydd Ysgol Bro Cynllaith yn defnyddio eu grant i greu posau mathemateg yn yr awyr agored y gall disgyblion yr ysgol gyfan eu mwynhau. Derbyniodd Ysgol Esgob Llandaf grant i ymweld â'r eglwys gadeiriol leol i astudio'r fathemateg sy'n gysylltiedig â'i phensaernïaeth. Bydd disgyblion Ysgol Llechyfedach yn defnyddio camerâu digidol i ymchwilio i fathemateg yn yr amgylchedd lleol, a bydd Ysgol y Berllan Deg yn sefydlu cynllun busnes a menter dan reolaeth y disgyblion eu hunain.

Mathamagic

Dyma brofiad mathemategol unigryw Techniquest: roedd Mathamagic yn llwyddiant ysgubol y llynedd gyda mwy nag erioed o ddisgyblion yn dod i'w weld. Mae Mathamagic yn cyfuno arddangosfa unigryw o bosau a gemau mathemategol gyda chyflwyniad rhyngweithiol ar feysydd fel tebygolrwydd, algebra, cyfrifiannu, topoleg a rhifydded pen. Lluniau ar dudalen 3.

The Prisoner of Polygonia

Techniquet is happy to be hosting the play The Prisoner of Polygonia as a prelude to Wales Maths Week Polygonia is a country ruled by Queen Parabola where the official language is maths. Join Zeta as she learns the Queen's guilty secret, rescues the Wizard Vertex, defeats the evil Lord Fibonacci in a mathematical game and shows the Queen that it's important for maths to be fun so everyone can enjoy it.

This show is designed to make maths fun and engaging for pupils aged 8-12. It is packed with humour, audience participation and mathematical ideas drawn from the curriculum. The show will come with a booklet of investigations for teachers to take away with them.

The Prisoner of Polygonia will be running at Techniquet on October 1 & 2. If you would like to bring your class to Techniquet and see this show call **029 20 475 476**. School groups coming for the show will also get to spend time on the exhibition which will have our popular maths kits out for students to use as well as our usual interactive science and maths exhibits and puzzles.

We're on the road again

The Maths Roadshow is on the road again! The roadshow includes performances of the "Maths Detective" show for primary pupils and "Mathamagic" for secondary students, together with hands-on puzzles and games to stimulate interest and enthusiasm for maths. Last year the roadshow was in Powys and Pembrokeshire and will be traveling around again this year. If your school is interested in taking part in a mathcymru roadshow please call the Techniquet booking line on **029 20 475 476**. Apply early to avoid disappointment.

You can rent our maths kits on their own, which can stay in your school from 1 to 4 days. Techniquet also has the Mama Mia Maths show which can be presented at your school. It uses the theme of a visit to a pizzeria to explore fractions, number patterns, calculations with money and many more mathematical concepts, suitable for years 3-4.

Y Carcharor Polygonia

Mae'n bleser gan Techniquet goesawu'r ddrama Y Carcharor Polygonia fel rhagarweiniad i Wythnos Fathemateg Cymru. Gwlad yw Polygonia sy'n cael ei rheoli gan y Frenhines Parabola, ac iaith swyddogol y wlad yw mathemateg. Ymunwch â Zeta wrth iddi ddod i wybod am gyfrinach gas y Frenhines, ac wrth iddi achub y Dewin Fertig, gorchfygu'r milain Arglwydd Fibonacci mewn gêm fathemateg a dangos i'r Frenhines pa mor bwysig yw gwneud mathemateg yn hwyl y gall pawb ei fwynhau.

Cynlluniwyd y sioe hon i wneud mathemateg yn hwyliog a diddorol i ddisgyblion 8-12 oed. Mae'n byrlymu o hiwmor, ymwneud â'r gynulleidfa, a syniadau mathemategol sy'n berthnasol i'r cwricwlwm. I gyd-fynd â'r sioe, caiff athrawon lyfryn o ymchwiliadau i fynd nôl i'w hysgolion.

Bydd Y Carcharor Polygonia yn cael ei pherfformio yn Techniquet ar 1 a 2 Hydref. Os hoffech ddod â dosbarth i Techniquet i weld y sioe, ffoniwch **029 20 475 476**. Bydd cyfle i grwpiau ysgolion a ddaw i'r sioe dreulio amser yn yr arddangosfa hefyd, lle bydd ein citiau mathemateg poblogaidd ar gael i'r disgyblion eu defnyddio, yn ogystal â'r holl eitemau a phosau rhyngweithiol mathemategol a gwyddonol arferol.

Rydyn ni ar y lôn eto

Mae ein Sioe Deithiol Fathemateg ar y lôn unwaith eto. Bydd y sioe'n cynnwys perfformiadau o "Ditectif Mathemateg" i ddisgyblion cynradd a "Mathamagic" i ddisgyblion uwchradd, ynghyd â phosau a gemau ymarferol i ennyn diddordeb a brwdfrydedd mewn mathemateg. Y llynedd bu'r sioe deithiol ym Mhowys a Sir Benfro, a bydd yn symud o le i le eto eleni.

Os hoffai eich ysgol chi cymryd rhan mewn sioe deithiol mathcymru, rhowch ganiad i linell archebu Techniquet ar **029 20 475 476**. Archebwch yn gynnar i osgoi cael eich siomi.

Gallwch logi ein citiau mathemateg ar eu pennau eu hunain, a'u cadw yn eich ysgol am hyd at 4 diwrnod. Hefyd, mae gan Techniquet y cyflwyniad "Mathemateg Mama Mia", sioe y gellir ei chyflwyno yn yr ysgol. Mae'n defnyddio ymweliad â pizzeria fel thema, gan archwilio ffracsiau, patrymau rhif, gwaith cyfrifo wrth drin arian, a llawer o gysyniadau mathemategol eraill sy'n addas ar gyfer Blynyddoedd 3-4.



Mathcymru/NRICH Project 2009-2010

How good are the thinking skills of your pupils? Do you want your school to benefit from free CPD? Now is the time to sign up for next year's mathcymru/NRICH project where both teachers and pupils improve their thinking skills.

Schools and teachers gain the most from this project when they work in clusters, a secondary school working with a group of feeder primaries. The course starts with a conference where the teachers get to meet each other and the course trainers. There will be an introduction to the NRICH website and an opportunity to try out the materials for use in the classroom.

This will be followed up with a school visit where the mathcymru/NRICH officer demonstrates teaching using the NRICH materials with the class. Further conferences (In Cardiff and Llandrindod Wells) and school visits are scheduled to support the progress of the teachers.

Benefits and Outcomes

- an exploration of alternative techniques in mathematics
- the use of a large bank of resources supported by Cambridge University
- both teachers and pupils learn new approaches to topics
- pupils enjoy working without the restraint of text books

Due to generous sponsorship from the Welsh Assembly Government we are able to offer you free attendance at the conferences and support from NRICH.

A few schools have expressed some interest and last year the places filled quickly so if you want to be included contact sara@techniquet.org giving your school name, your headteacher's name, the name of the teacher taking part and the schools that you want to be grouped with.

Each school will be asked to complete a registration form and to return it before the end of term.

Prosiect Mathcymru/NRICH 2009-2010

Pa mor dda yw sgiliau meddwl eich disgyblion? Hoffech chi petai eich ysgol yn gallu manteisio ar Ddatblygiad Proffesiynol Parhaus am ddim? Dyma'r adeg i gofrestru ar gyfer y flwyddyn nesaf o brosiect mathcymru/NRICH, lle gall athrawon yn ogystal â disgyblion wella'u sgiliau meddwl.



Caiff ysgolion ac athrawon y budd gorau o'r prosiect hwn trwy weithio mewn clystyrau, gydag ysgol uwchradd yn cydweithio â grŵp o ysgolion cynradd ei dalgylch. Mae'r cwrs yn dechrau gyda chynhadledd lle bydd yr athrawon yn cwrdd â'i gilydd ac â'r hyfforddwyr. Bydd cyflwyniad i wefan NRICH a chyfle i roi cynnig ar y deunyddiau fydd i'w defnyddio yn yr ystafell ddosbarth.

Dilynir hyn gan ymweliad ysgol, pryd y bydd y swyddog mathcymru/NRICH yn arddangos sut i ddefnyddio'r deunyddiau NRICH gyda disgyblion. Trefnir rhagor o gynadleddau (yng Nghaerdydd a Llandrindod) ac ymweliadau ag ysgolion i gefnogi cynnydd yr athrawon.

Manteision a Chanlyniadau

- archwilio mathau newydd, gwahanol, o dechnegau mewn mathemateg
- defnyddio storfa eang o adnoddau a gefnogir gan Brifysgol Caergrawnt
- athrawon a disgyblion yn dysgu dulliau newydd o fynd i'r afael â thopigau
- disgyblion yn mwynhau gweithio heb gael eu cyfyngu gan werslyfrau

Oherwydd y nawdd hael a dderbyniwyd oddi wrth Lywodraeth Cynulliad Cymru, gallwn gynnig i chi fynychu'r cynadleddau hyn am ddim, a chefnogaeth gan NRICH.

Mae nifer o ysgolion wedi dangos diddordeb yn barod a chafodd pob lle ei lenwi'n gyflym y llynedd. Felly, os hoffech gael eich cynnwys, cysylltwch â sara@techniquet.org gan roi enw eich ysgol, enw'r pennaeth, enw'r athro neu athrawes fydd yn cymryd rhan, ac enwau'r ysgolion yr hoffech gael eich grwpio â nhw.

Bydd gofyn i bob ysgol gwblhau ffurflen gofrestru a'i dychwelyd cyn diwedd y tymor.

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Llywodraeth Cynulliad Cymru
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