

science made simple

Huw James

Becky Davies



science made simple



science made simple



who we are



why - mission



what we do



why shows



does it work?



what else?





science made simple

who / am...



Biomedical Sciences Department,
Cardiff University



STEMNET



I'm a scientist, Get me out of
here



Techniquiest



science made simple





science made simple

who / am...



Centre for Astronomy
and Space Education



Techniquest



Engineering Explained
Co-ordinator



The British Science Association;
Science Café Wales;
The British Council;
Engineers Without Borders;
SEARCH.





science made simple

Who **We** are...

University spin-out



Team of 11 staff 3 Offices in Britain –
Cardiff, Norwich and Bolton



Work across UK and overseas



250 shows a year, reached over 150,000 so far



Established in 2002, Ltd in 2004



Work across UK and overseas with British Council



Engineering
Explained

www.engineeringexplained.co.uk



science made simple

Who we are...



University spin-out



Team of 11 staff 3 Offices in Britain –
Cardiff, Norwich and Bolton



Work across UK and overseas



250 shows a year, reached over 150,000 so far



Established in 2002, Ltd in 2004



Work across UK and overseas with British Council



working internationally



Cardiff advisory group



Colin Johnson (Chair) - The British Science Association, ASTC, former CEO Techniquest



Professor Teresa Rees - Pro-vice Chancellor, Cardiff University



Eric Coombes - Head of Science, Whitchurch High School



Nick Bodycombe - EU funding, RACD, Cardiff University



science made simple

the mission...



inspire a new
generation
of scientists
and engineers



science made simple

the mission...



*engage a
wider public
with STEM as
part of popular
culture*



science made simple

the mission...



translate the complexities of STEM research



science made simple

- old
- male
- eccentric hair
- wears a lab coat
- is really clever
- slightly sad and geeky
- no friends
- blows things up





- all ages
- sometimes female!
- normal looking
- doesn't know everything
- gets things wrong
- sociable
- works in teams
- creative



Who's who?

Patron: Adam Hart-Davis

Becky Holmes (Part Time)
(Marketing)

David Price (Full time)
(Noth-West Region/Training)

Debbie Syrop - visualise
Project Manager

Nigel Davies
Accountant

Wendy Sadler, Director

Helen Lloyd (Full time)
Operations Manager

Huw James (Full time)
Engineering Explained

James Piercy
(East Region/Training)

Dan Reed (0.4)
Office Manager

Advisory
Groups

Becky Davies (Full Time)

...

Gareth Smith - visualise
Stage and Technical Manager

Helen James (0.2)
Administrator



the shows...

5 to 11 years

Music To Your Ears
On Your Marks
It's Only Water!... Or Is It?
Who Wants to be a Superhero!?
Bubbles and Balloons
Cartoon Science
Izzy's adventures

11 to 18 years

Music To you Ears
Science of Sport
Beyond The Rainbow
A Rough Guide to Engineering
E4L: Cradle To Grave
Sound at the Extremes
Gravity: Beyond the Apple
Herschel's Telescope
Top Ten Myths
Einstein Made Simple
Bloodhound
Spooks and Spies



Bubbles and Balloons
Cartoon Science

Science of Sport
Music To Your Ears

Spooks and Spies



popular - things kids are interested in



easy to get the science in around the subject



provide survival



no funding



can't just keep doing same shows



GRAVITY
Beyond
The Apple



work with researchers - disseminate and translate cutting edge research



funding



difficult to sell



limited shelf life



Engineering
Explained

www.engineeringexplained.co.uk



engineering presentations for schools and festivals



mission - to explain what engineering **IS** to schools and public



to build a skills base of new engineering communicators



to reach around 20,000 students in two years



to investigate opinions about engineering



Engineering Explained

www.engineeringexplained.co.uk

"I thought engineering was about machines but now I think I might be one!"
Student

CARDIFF UNIVERSITY
PRIFYSGO CAERDYFF

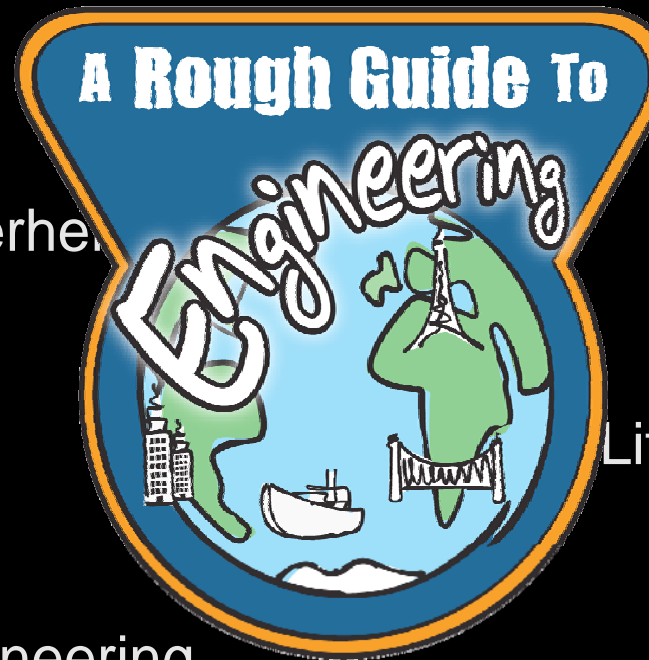
productions projects presentations promotion productions projects presentations

Green
Name
Number



Engineering
Explained

www.engineeringexplained.co.uk



Shows

Who wants to be a Superhero?

Life: From Cradle to Grave

A Rough Guide to Engineering

MadLab Cymru



“Engineering I thought was to do with machines and I thought it would be a boring job, but now I think I might be one.”

10 year old girl

visualise

the beauty of science

format

- old favourites - but different
- scaled-up or close up
- chapters or 'acts' with follow-up films
- silent performer, not mime act

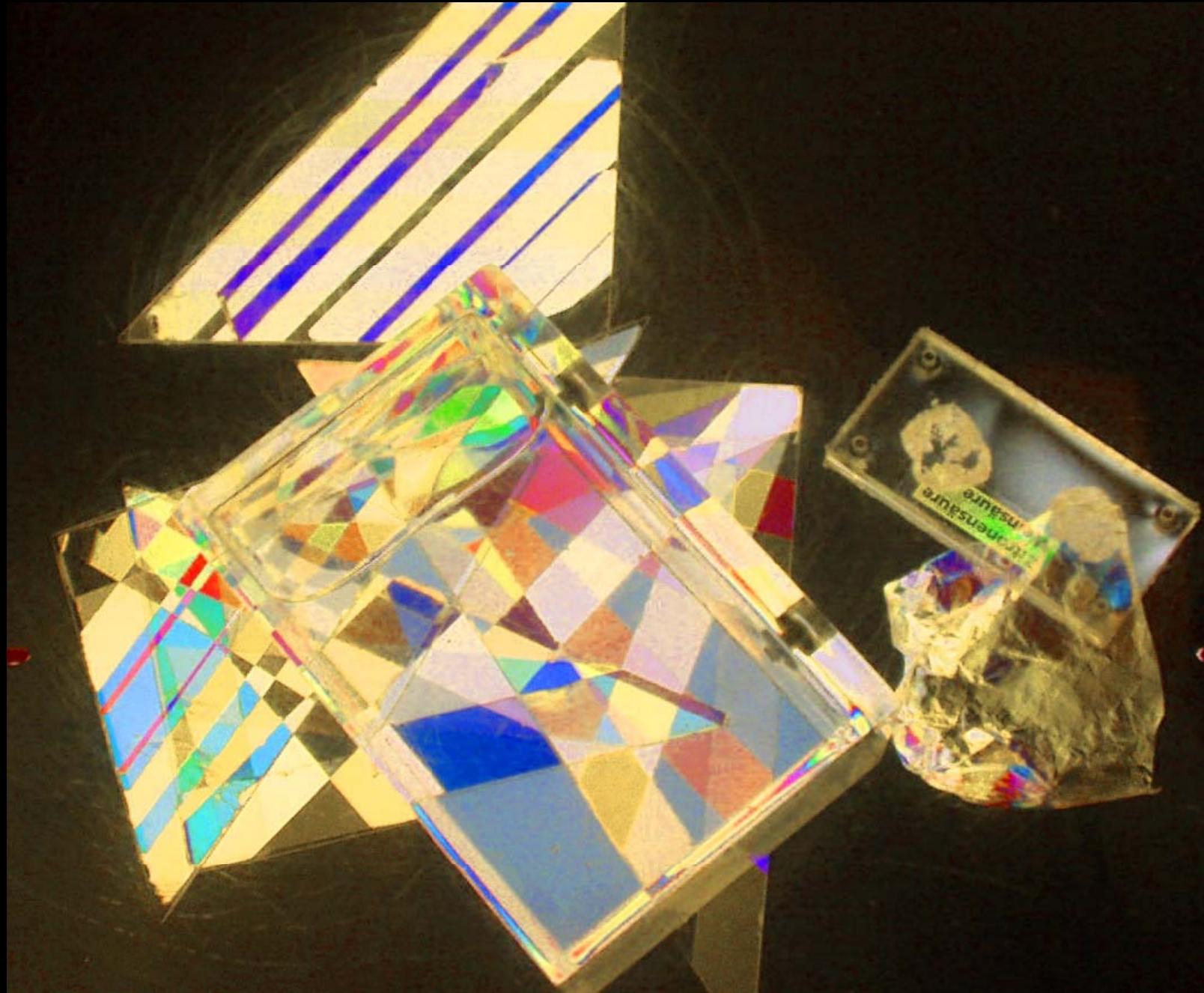
branching



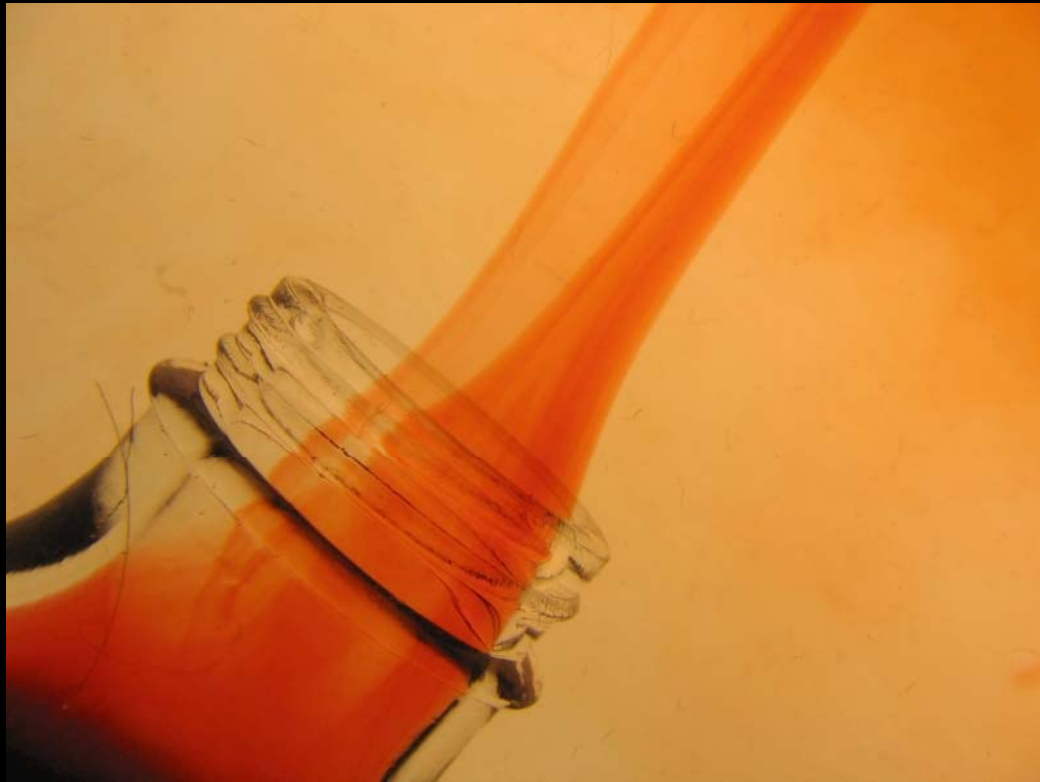
twisting



colour



flow



waves







КРАСИВА НАУКА: ПРЕДСТАВЛЕНИЕ

visualise

Visual Mathematics for children

За какво са ти думите, когато можеш да визуализираш?
 Вместо да си вътрешен диалог, изреченията стават от глас и танцуващи пукнатини. Няма фокус. Внимавай на кари, забавни съобщения от интерактивни експерименти и нестандартни изчисления. Някои неговори. Някои не разказва. Някои думи. Думите в подкрепа за всички възрасти.

Ели и кариери своите собствени опции в

| | | |
|---------------------------------|-----------|-----------------------------|
| Математика (от 12 до 15 години) | 20 минути | 11.00 € - 15.00 € - 19.00 € |
|---------------------------------|-----------|-----------------------------|

*Използването на компютър и интернет е задължително за всички възрасти. *Всички цени са в български левове. *Всички цени са в български левове. *Всички цени са в български левове.

Винаги е по-лесно да се научат от видео, отколкото да се научат от видео. Винаги е по-лесно да се научат от видео, отколкото да се научат от видео.

*Използването на компютър и интернет е задължително за всички възрасти. *Всички цени са в български левове. *Всички цени са в български левове.



science made simple



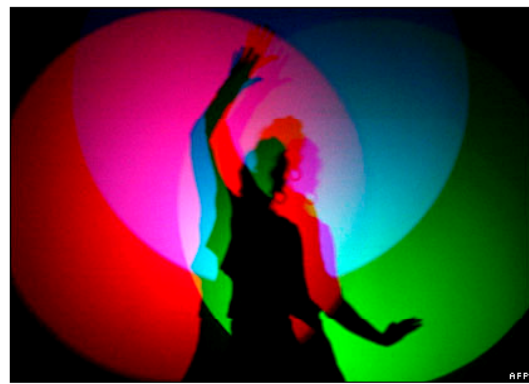
"it takes a lot to impress your average nine-year-old.
But this show does the trick" *ThreeWeeks*



Last Updated: Thursday, 20 September 2007, 13:45 GMT 14:45 UK

E-mail this to a friend

Day in pictures



An actress is seen on a screen showing the breakdown of light into basic colours at a science fair in Sofia, Bulgaria.

◀ Back 1 2 3 4 5 6 Next ▶

E-mail this to a friend

TOP IN PICTURES STORIES

- Week in pictures: 15-21 Sept
- Your perspective: 17-21 Sept
- Day in pictures: 21 September
- News feeds

MOST POPULAR STORIES NOW

MOST E-MAILED MOST READ

- Pot-bellied Jesus ad irks Church
- Explosion in schoolteacher's car
- New foot-and-mouth case confirmed
- Merck abandons HIV vaccine trials
- Savings guarantee plan considered

Most popular now, in detail



ΔΙΑΣΚΕΔΑΣΤΕ... ΕΠΙΣΤΗΜΟΝΙΚΑ!

Πώς μπορεί να σφραγιστεί επιστημονικά θέματα με μεταμορφώσεις σε διακοσμητικό θέμα; Θα το διαπιστώσουν όσοι παρακολουθήσουν σήμερα τις παρουσιάσεις του Science Made Simple στην Αθήνα

Μια νέα... τίτλη

Μια νέα είδηση είναι ο τίτλος του θεματικού προγράμματος που διοργανώνει η ομάδα Science Made Simple και με την είδηση παρακολουθώντας τους επιστημονικούς διαγωνισμούς σε ολόκληρη τη Ελλάδα και στις Βουλγαρίες. Η είδηση αφορά στην παρουσίαση των αποτελεσμάτων των διαγωνισμών που διοργανώνει η ομάδα Science Made Simple στην Αθήνα, στις 21 Σεπτεμβρίου 2007. Η ομάδα Science Made Simple είναι μια ομάδα που διοργανώνει διαγωνισμούς επιστημονικών θεμάτων σε ολόκληρη τη Ελλάδα και στις Βουλγαρίες. Η ομάδα Science Made Simple είναι μια ομάδα που διοργανώνει διαγωνισμούς επιστημονικών θεμάτων σε ολόκληρη τη Ελλάδα και στις Βουλγαρίες. Η ομάδα Science Made Simple είναι μια ομάδα που διοργανώνει διαγωνισμούς επιστημονικών θεμάτων σε ολόκληρη τη Ελλάδα και στις Βουλγαρίες.

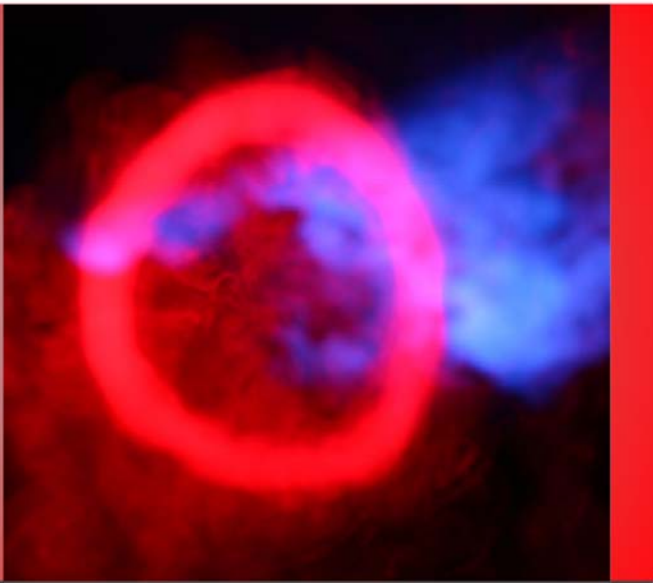
Μια νέα... επιστήμη

Ο Γαλιλαιο Στρίτς είναι ένας γάμος σε αυτό το κεφάλαιο. Έτσι είναι το πρόγραμμα της Science Made Simple που διοργανώνει επιστημονικούς διαγωνισμούς σε ολόκληρη τη Ελλάδα και στις Βουλγαρίες. Η ομάδα Science Made Simple είναι μια ομάδα που διοργανώνει διαγωνισμούς επιστημονικών θεμάτων σε ολόκληρη τη Ελλάδα και στις Βουλγαρίες.

Μια νέα... επιστήμη

Ο Γαλιλαιο Στρίτς είναι ένας γάμος σε αυτό το κεφάλαιο. Έτσι είναι το πρόγραμμα της Science Made Simple που διοργανώνει επιστημονικούς διαγωνισμούς σε ολόκληρη τη Ελλάδα και στις Βουλγαρίες. Η ομάδα Science Made Simple είναι μια ομάδα που διοργανώνει διαγωνισμούς επιστημονικών θεμάτων σε ολόκληρη τη Ελλάδα και στις Βουλγαρίες.

How can you make a doughnut out of air?



Make a doughnut out of thin air...



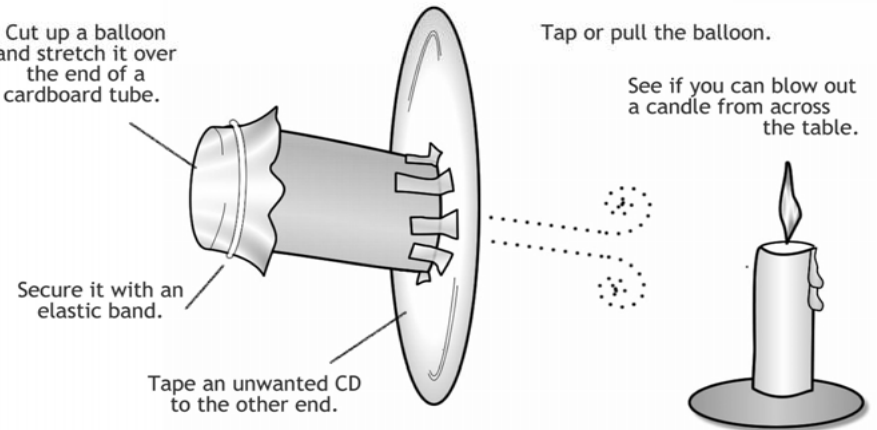
Cut up a balloon and stretch it over the end of a cardboard tube.

Secure it with an elastic band.

Tape an unwanted CD to the other end.

Tap or pull the balloon.

See if you can blow out a candle from across the table.



As the air is forced out of the cannon it is slowed by the edges of the opening. The fast moving air in the centre creates a low pressure which holds the 'doughnut' together as it travels through the air.

Picture - Smoke rings in 'Visualise - the beauty of science' Copyright Kiran Ridley 2007

www.sciencemadesimple.co.uk

How can you make a spiral from a candle and a camera?



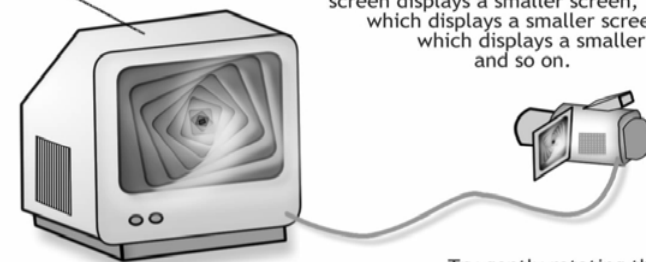
Look into infinity...



Connect a video camera to the input of a TV monitor
(You could use a webcam and a computer screen instead.)

Get the screen to display the camera view

Point the camera at the screen so that the screen displays a smaller screen, which displays a smaller screen, which displays a smaller screen and so on.

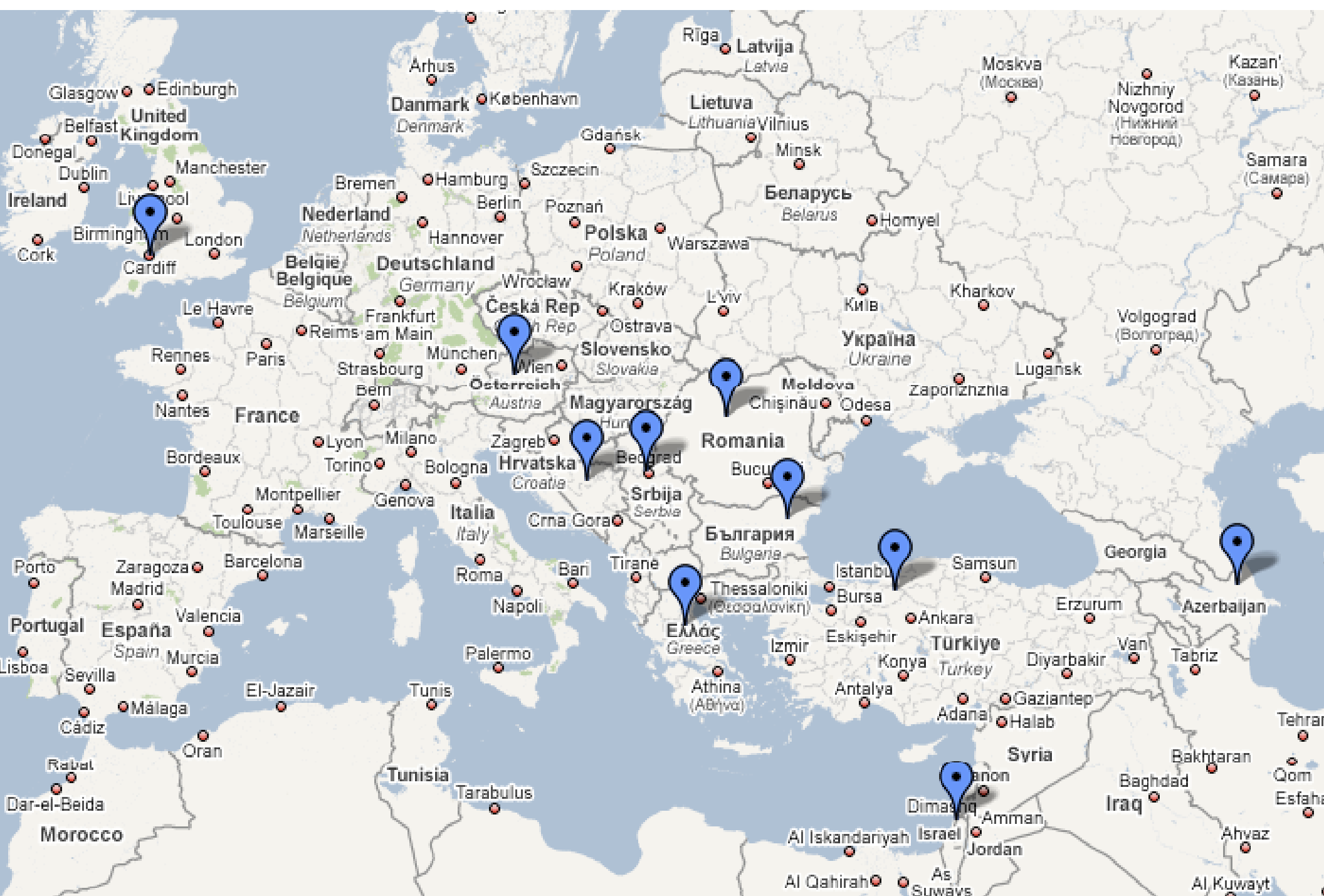


Try gently rotating the camera.

Repeating the same simple shape over and over again creates very intricate and beautiful patterns, called fractals. Lots of things in the natural world have fractal shapes and software designers take advantage of this fact to create virtual worlds with realistic trees, mountains and clouds.

Picture - Video feedback with candle. Copyright D.Syrop 2007

www.sciencemadesimple.co.uk
www.handsonscience.org.uk



9 countries - 11,152 people





science made simple
presents

visualise

RELOADED

"an enjoyable and hypnotic show, mischievously presented and skillfully combining multimedia effects with live science to engage a wide audience" Hairline

"...thoroughly engaging" "Awesome!"

"It's like the Blue Man Group meets the Christmas lectures"



2.15pm 1-9, 18-22 Aug

12pm 10-17 Aug (Except 11th)

Box Office 07074 201313

venue 13, Lochend Close, Canongate

www.sciencemadesimple.co.uk/visualise



www.venue13.com



"It's the science lesson children will so enjoy, they'll never know they've learned something."

The Herald

"It's not often children's theatre truly inspires but this defies anyone, no matter what their age, not to stare in wonder at an altogether different kind of science class."



science made simple

why shows?



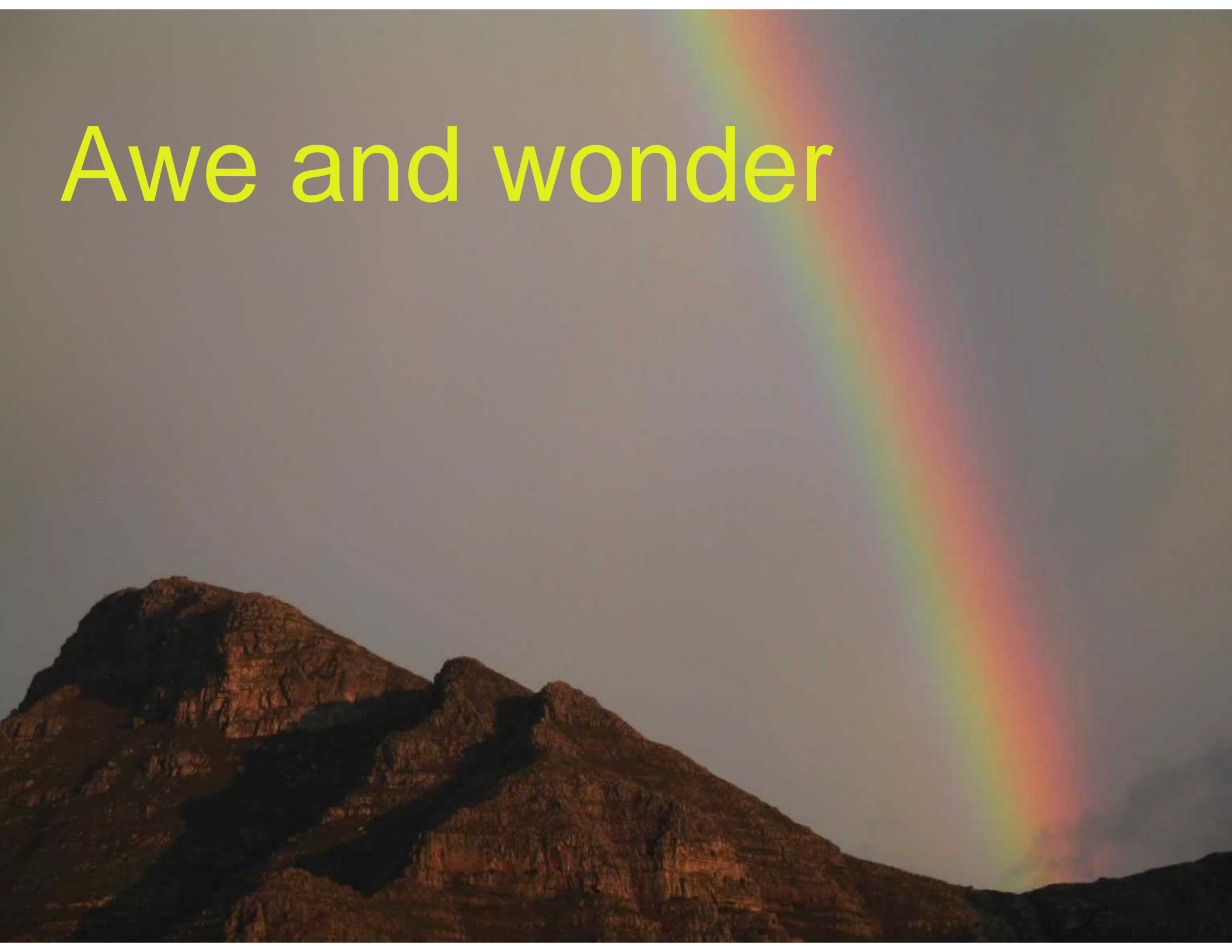
value for money
entertainment
live role models
flexible delivery

“Learning about science in the context of other subjects can help learners to appreciate the creative aspects of science”



science made simple

Awe and wonder



High Impact



demo categories

| Code | Name | The audience... |
|------|-----------|-----------------|
| C | Curiosity | are surprised |
| H | Human | interacts |
| A | Analogy | understands |
| M | Mechanics | contextualises |
| P | Phenomena | experiences |

does it work

generic
learning
outcomes



does it work?



“All the experiments were so amazing, I wish I could watch them all over again!”

- Year 6 pupil

“You made such a big impact on the pupils. Your presence was definitely good for physics and for science in general.”

- Headmaster

does it work

2004

WISE Excellence Award

Welsh Woman of the Year (Science and Technology)

2005

IOP Young Professional Physicist of the Year

2006

Laureate EU Descartes Communication Prize

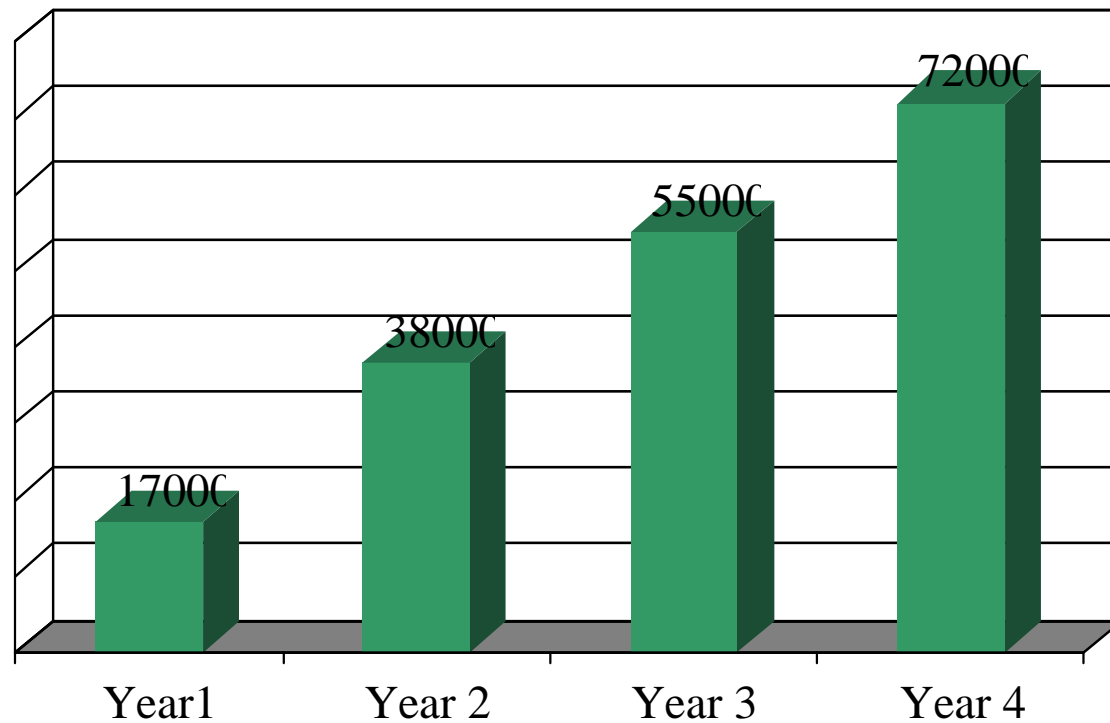
2007

Institute of Acoustics Public Engagement Award

2008

UKRC Woman of Outstanding Achievement

Audience numbe



March 2008 - 12,817 people and 86 shows!

March 2009 - 13996 and 74 shows!

the challenges



No core funding - job security or overheads



Content defined by sponsors



Subsidised competition



Wales vs England



Too many ideas..!

the challenges



Draw on other expertise – external professionals



Presenting standards – videoing



LAMDA



BIG

vision



To be the UK's leading science outreach company



To obtain sponsorship to help schools who can't pay



To have at least five regional offices



To be reaching 250,000 students a year, and offering Welsh shows



To attract the best science communicators



To set up more international projects - FP7 framework

science made simple

Huw James

Becky Davies



science made simple