

# INSPIRING YOUNG PEOPLE IN STEM

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iCeGS

# Introduction

- Project Team
  - iCeGS: [www.derby.ac.uk/icegs](http://www.derby.ac.uk/icegs)
  - CEI: <http://www2.warwick.ac.uk/fac/soc/cei/>
  - Isinglass Consultancy
- Aims
  - Reflect on what influences young people?
  - Explore resources to support learning providers
  - Identify key facts from Action Programme 8

# Why inspire young people in STEM?

- Employer skills shortages and skills gaps
  - Sir Gareth Roberts (2002) '*Set for Success: The supply of people with science, technology, engineering and mathematics skills*'. Described the difficulties faced by employers in recruiting suitably qualified scientists and engineers, and corresponding implications for future UK competitiveness. It highlighted '*poor experiences of science and engineering education among students generally, coupled with a negative image of, and inadequate information about, careers arising from the study of science and engineering.*'
  - Business prefers STEM according to CBI report (Emerging Stronger, 2009)

# Why promote STEM skills?

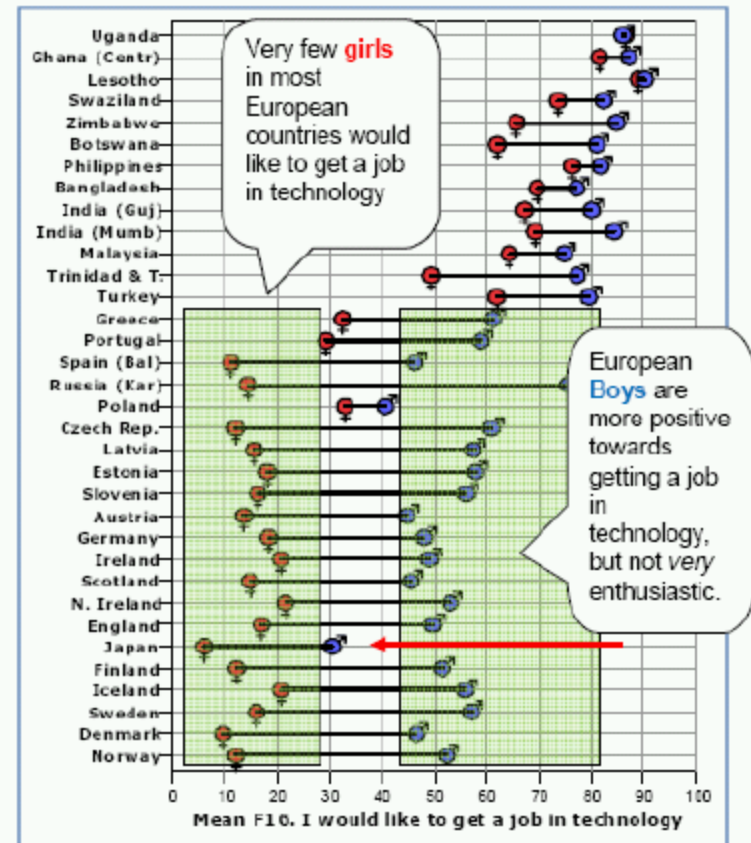
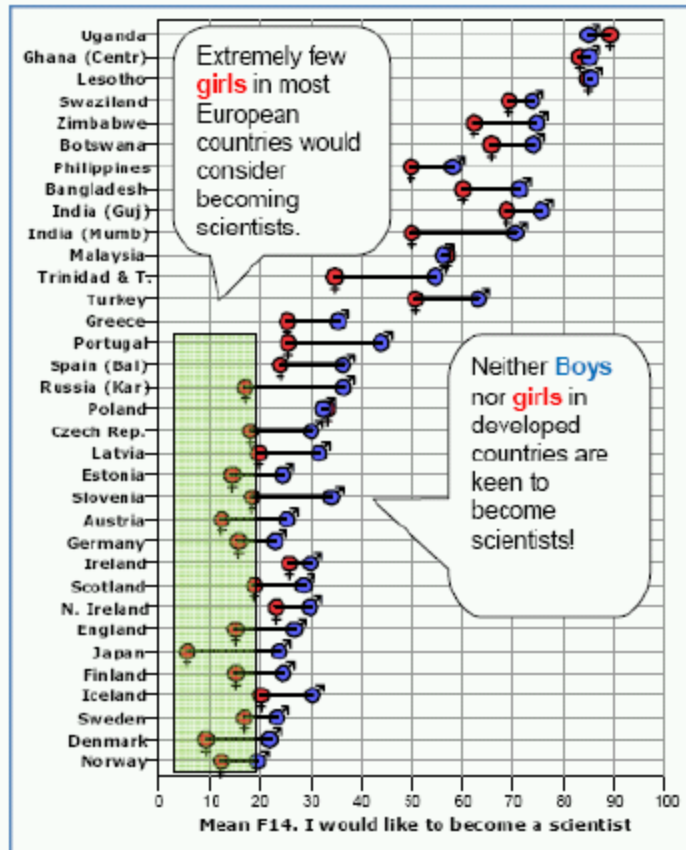
- Environmental issues and climate change
- Cameron confirming greenhouse gas target emissions to 50% of 1990 levels by 2025

– Hans van der Loo, BP.

<http://www.educationandemployers.org/research/askforce-research-conference-2010/video-views-and-perspectives/hans-van-der-loo>

# ROSE Study : Relevance Of Science Education

## POSSIBLE RECRUITMENT TO SCIENCE, ENGINEERING AND TECHNOLOGY?

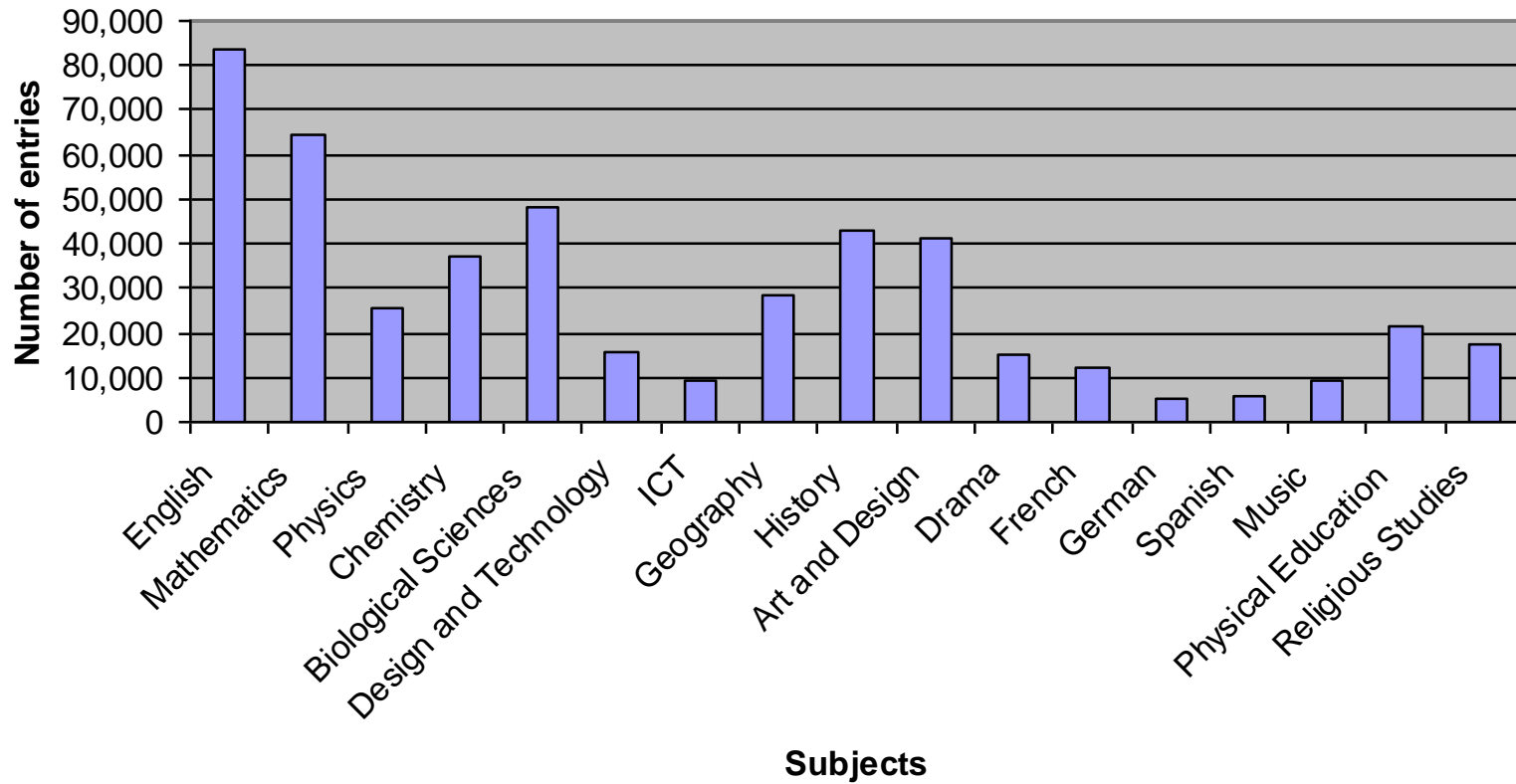


# Subjects taken at A level

	Total Entries	Males	%	Females	%
All subjects	757,697	349,029	46%	408,668	54%
English	83,649	26,111	31%	57,538	69%
Mathematics	64,519	38,410	60%	26,109	40%
Physics	25,620	19,994	78%	5626	22%
Chemistry	37,141	19,160	52%	17,981	48%
Biological Sciences	47,978	20,510	43%	27,468	57%
Design and Technology	15,445	8,860	57%	6585	43%
ICT	9,111	5,728	63%	3383	37%
Geography	28,450	15,533	55%	12,917	45%
History	42,842	21,451	50%	21,391	50%
Art and Design	41,112	12,015	29%	29,097	71%
Drama	15,298	4,820	32%	10,478	68%
French	12,231	3,960	32%	8271	68%
German	5,119	2,041	40%	3078	60%
Spanish	6,089	1,968	32%	4121	68%
Music	9,019	5,461	61%	3558	39%
Physical Education	21,609	12,766	59%	8843	41%
Religious Studies	17,488	5,854	33%	11,634	67%

Source: SFR 2009-2010 [A Level] Additional tables [http://www.dcsf.gov.uk/rsgateway/DB/SFR/s000909/SFR012010\\_AdditionalTables\\_8-17\\_Final.xls](http://www.dcsf.gov.uk/rsgateway/DB/SFR/s000909/SFR012010_AdditionalTables_8-17_Final.xls)

### A level entries, 2009/10



# So what does inspire young people?



# Influences are diverse

- Extrinsic factors
  - family, geography, media, school, peer group, culture
- Intrinsic factors
  - Vocational reasoning, skills, outlook, experiences
- Summary: [iCeGS One North East Report](#)

# Inspiring STEM in schools

- Enrichment and enhancement
  - e.g. [Crest Awards](#)
- STEM partnership activity
  - e.g. Education Business Partnerships
  - e.g. [STEM Ambassadors](#)
- Labour Market Information
  - e.g. [Futuremorph](#)
- Careers Tools and Resources
  - e.g. [Cegnet](#) and [STEM Choices pack](#)

Future Morph: become someone - Windows Internet Explorer provided by University of Derby

http://www.futuremorph.org/

Future Morph: become someone

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**future**

Hello. Welcome to Future Morph. This website is designed to show you just some of the amazing and unexpected places that studying science, technology, engineering and maths can take you. Think of this as your basecamp, your launchpad, the door is open come on in and explore.

Science and maths have global impact. Explore the stories placed on hotspots around the globe to find out where your future could lead you. [Link](#)

The future is up for grabs, where might you fit? Explore jobs and careers with My Future Finder [Link](#)

**What might you be? - game**

What will you be in the future? Explore how the things you enjoy link to jobs involving science and maths with this fun quiz. [Link](#)

**Are you a film-maker? Planet Scisast**

**Ceri's career profile**

I'm currently finishing the second year of my PhD at Manchester University looking at respiratory disease basically studying mucus for a living and how the properties of that change. [Link](#)

**See where they can take you**

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**Did you know?**

Bamboo is the fastest growing woody plant in the world: you can almost see it grow at around a metre in a day.

BBC »  
Bamboo Living Homes »

RSS

BBC Science Daily scenta

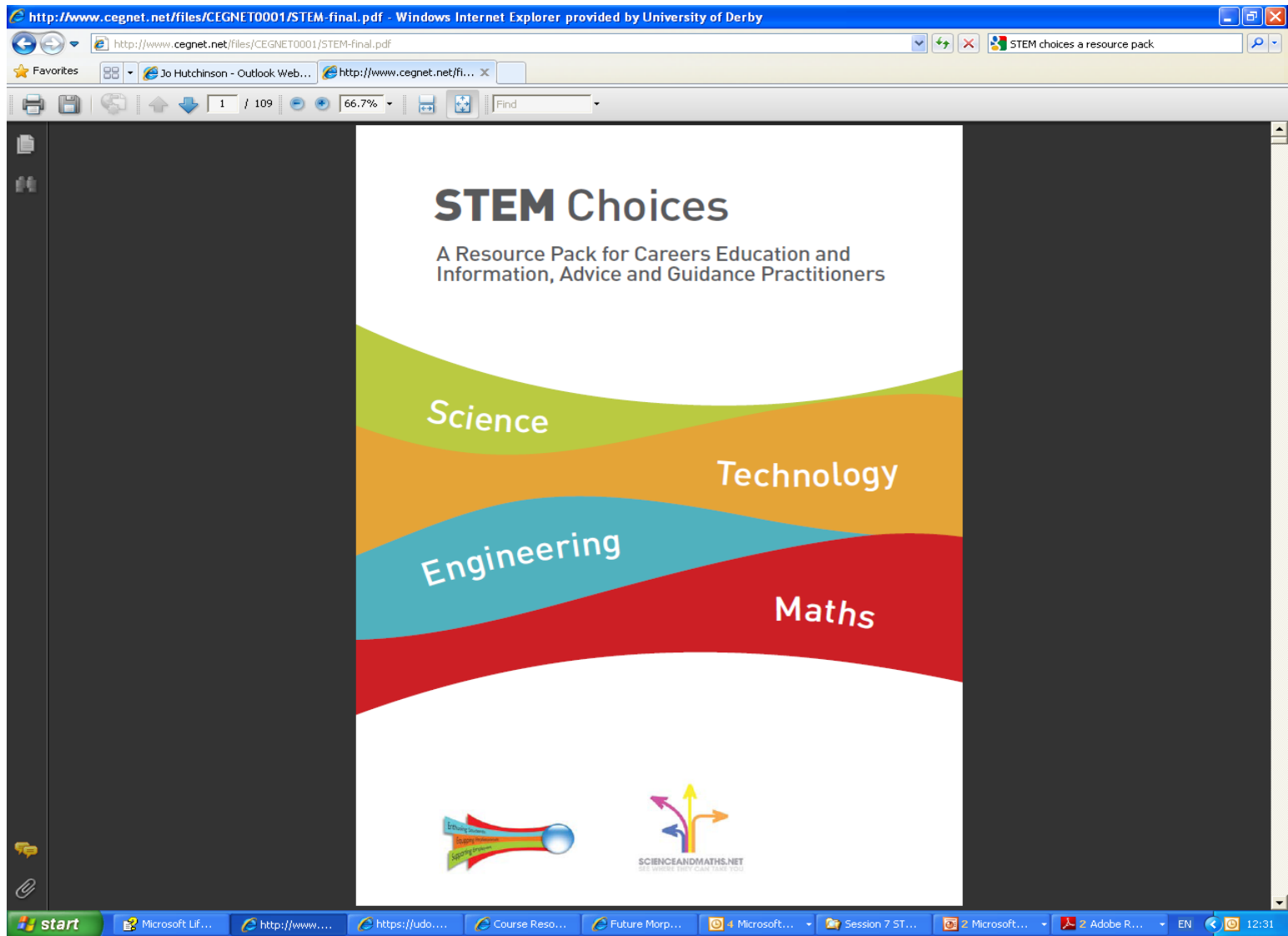
**1. CO2 drop 'smaller than expected'**

Carbon emissions fell in 2009 due to the recession - but not by as much as predicted, suggesting the fast upward trend will soon be resumed.

**2. 1,000mph car project 'on track'**

The UK project attempting to make a 1,000mph car says its funding is

start Microsoft Lf... Report on S... https://udo... Course Reso... Future Morp... 4 Microsoft... Session 7 ST... 2 Microsoft... Adobe R... EN 12:25



# CONTENTS

## 1. Introduction

1

The importance of STEM and the contribution of careers education and IAG

## 2. CEIAG Professionals' Guide

2

- Current and Future Trends
- The International Perspective

## 3. Learning Routes and Pathways

3

Keeping future options open by choosing a STEM learning route

## 4. Equality and Diversity

4

Promoting STEM learning routes and careers in a positive way to encourage under represented groups to see the benefits of STEM options

## 5. Where's the Money?

5

Illustrating the earning potential of STEM careers

## 6. Making Presentations

6

Using key facts to show the impact of STEM in dealing with today's challenges; group work ideas

## 7. Industry Focus

7

Spotlight on key STEM industries, including case studies

## 8. Organising STEM Events

8

Stimulating activities, with links to organisations who deliver inspiring projects

## 9. Where To Find More Information

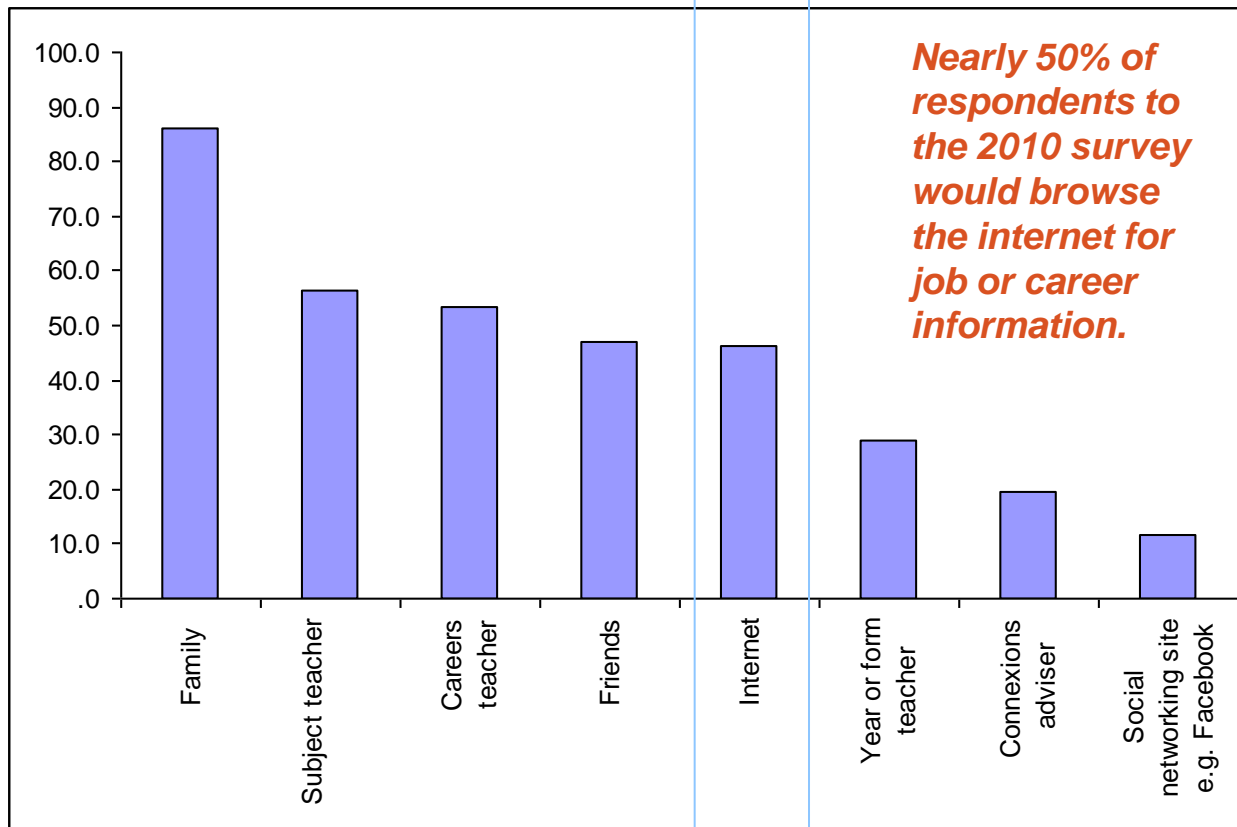
9

Sources of references and websites, including Sector Skills Councils, and finding out about your local area

## 10. STEM Supply and Demand Research

10

# 2010: Who would young people ask?



Source: STEM survey 2010: Who would you ask for information about jobs or careers? n=1137

# What careers information do young people get?

- Young people's experience of careers teaching is 'patchy'
  - Youth Cohort Study (2009/10): at age 17 discussed staying on,
    - 87% of young people discussed this with a parent
    - 45% with subject teachers,
    - 41% with a Connexions PA and
    - 47% a careers adviser in school.
  - i.e. Patchy even before the current Education Bill

# Tools to support schools

- National STEM Centre
  - <http://www.nationalstemcentre.org.uk/>
- STEM Planner
  - <http://www.iwebsolutions.co.uk/wip/StemWheel/Main.html>



# Further information and resources

- Views of young people
  - See STEM iCeGS Occasional Paper
    - [http://www.derby.ac.uk/files/icegs\\_stem\\_careers\\_awareness\\_timelines.pdf](http://www.derby.ac.uk/files/icegs_stem_careers_awareness_timelines.pdf)
- View of STEM professionals
  - See Gatsby report
    - <http://www.nationalstemcentre.org.uk/res/documents/page/STEM%20CAREERS%20REVIEW%20NOV%202010.pdf>

# What are the issues with STEM participation?

- View of schools and teachers
  - See STEM Careers Timeline report
    - [http://www2.warwick.ac.uk/fac/soc/cei/stem\\_careers/approvedpdfsnakes\\_laddersreport\\_v6\\_lr1.pdf](http://www2.warwick.ac.uk/fac/soc/cei/stem_careers/approvedpdfsnakes_laddersreport_v6_lr1.pdf)

# Final Comment

*The current economic situation has raised the stakes: skills policy could be the key factor which determines how and when the UK economy recovers and grows.*

House of Commons Innovation,  
Universities, Science and Skills  
Committee, 2009

## CONTACT

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