

Blychau Dirgelwch! Mystery Boxes!

Mystery Boxes
Make your own



1. The mystery box challenge – explore the nature of science

<https://www.scienceinschool.org/article/2022/mystery-box-challenge/>

2. Video – What's in the box?

<https://youtu.be/hud8SPCcfu0>

3. Suggested lesson plan

[SMG-Academy-Mystery-Boxes.pdf \(sciencemuseumgroup.org.uk\)](https://www.sciencemuseumgroup.org.uk/SMG-Academy-Mystery-Boxes.pdf)

<https://learning.sciencemuseumgroup.org.uk/wp-content/uploads/2020/04/SMG-Academy-Mystery-Boxes.pdf>



Cyfleoedd ar gyfer codi ymwybyddiaeth gyrfaedd Opportunities for careers awareness raising

Collecting ambient energy

Collecting ambient energy | Case Study | Neon - Brilliant inspiration (neonfutures.org.uk)

Philex is an electrical engineer working in ecological friendly electronics, collecting energy from thin air!

Licence to drive

Licence to drive | Case Study | Neon - Brilliant inspiration (neonfutures.org.uk)

After finishing school, Josh Brough decided he wanted to earn and learn at the same time. He took an apprenticeship with Siemens and now works on the electronic and electrical devices that help drive rollercoasters!

Charged up | Case Study | Neon - Brilliant inspiration (neonfutures.org.uk)

Cars and road vehicles are responsible for almost a quarter of greenhouse gas emissions in the UK in 2012 and Steve Large hopes to make a dent in this figure working as an engineer to create electric car charging points.

<https://www.prospects.ac.uk/job-profiles/electrical-engineer>

The screenshot shows the PROSPECTS website interface. At the top, there's a navigation bar with the PROSPECTS logo and a rainbow flag icon. Below it, there are tabs for 'Jobs and work experience', 'Postgraduate study', 'Careers advice', and 'Applying for university'. On the right, there are links for 'Post a job', 'Log in', and 'Register'. The main content area features a large image of hands working on electrical wiring. Overlaid on this image is the text 'Job profile' and 'Electrical engineer'. Below this, there are two buttons: 'View all engineering and manufacturing vacancies' and 'Add to favourites'. To the right of the main image, there's a sidebar titled 'On this profile' with a list of links: 'Responsibilities', 'Salary', 'Qualifications', 'Skills', 'Career prospects', and 'Related jobs and courses'. Below this list is a yellow box with a lightbulb icon and the text 'See how well you match this job profile and over 400 others. Try Career Planner'. The bottom section of the page contains text about relevant industry experience and a list of sectors where electrical equipment is used.

PROSPECTS

Jobs and work experience Postgraduate study Careers advice Applying for university

Log in Register

Recently Viewed

Job profile

Electrical engineer

View all engineering and manufacturing vacancies

Add to favourites

On this profile

- Responsibilities
- Salary
- Qualifications
- Skills
- Career prospects
- Related jobs and courses

See how well you match this job profile and over 400 others. Try Career Planner

Relevant industry experience and an accredited degree can significantly increase your chances of getting a job as an electrical engineer

As an electrical engineer, you'll design, develop and maintain electrical systems and components to required specifications. Your work will focus on:

- economy
- quality
- reliability
- safety
- sustainability.

The electrical equipment that you'll design and manufacture is used across many sectors, including:

- the building industry and services, including lighting, heating and ventilation
- transportation and transport networks
- manufacturing and construction
- production and distribution of power
- renewable energy.



[Primary | Energising Futures](#)

Primary

Science teaching and learning materials for UK pupils aged 4–11 linked to the curriculum, with accessible resources to bring science to life through real-world challenges and careers links.

[Careers connections | Energising Futures](#)

<https://energisingfutures.co.uk/>

ENERGISING FUTURES

Search for...

Primary

Secondary

Ultimate STEM Challenge 2023/24

Collections

Careers connections

Green Skills Unlocked

Primary

Science teaching and learning materials for UK pupils aged 4–11 linked to the curriculum, with accessible resources to bring science to life through real-world challenges and careers links.

272 results

Primary

Secondary

75

STEM

Volunteering session: Teacher guide

Get involved with the STEM volunteering scheme and invite a volunteer into your school. Careers education is all about showing young people different paths to success and the variety of options available.

PDF

Download

Primary

75

Spooky Halloween science quiz

Bring science alive with Halloween-themed quiz. With spectacular questions and ghoulish fun facts, there is something for the whole class to enjoy!

PowerPoint

Download

Primary

75

Celebrating black scientists poster (primary)

Use this 2 page poster to inspire primary pupils with the work of black scientists across past and present day.

PDF

Download

Primary

98

Fashion fixers challenge: Primary

This real-world challenge dives into the world of fast fashion and its environmental impact. The perfect range of activities for engaging pupils in conversations around sustainability science and the choices we make every day.

5 resources

View Lesson

Primary

98

Super scientist: Nzambi Motee

Learn how this Kanyan material engineer and inventor, used her knowledge of materials to recycle plastic into building bricks, and help her community at the same time!

4 resources

View Lesson

Primary

98

Nzambi Motee life story quiz

Ten-question quiz about the life, career and achievements of material engineer, inventor and super scientist Nzambi Motee, for use with the life story sheet.

PDF

Download

Primary

98

Nzambi Motee: A world without plastic activity sheet

Pupils develop science and creativity skills as they identify everyday plastic objects, suggest alternative materials and write creatively about a world without plastic.

PDF

Download

Primary

98

The story of Nzambi Motee presentation

Use this presentation to find out about the life, career and achievements of material engineer, inventor and super scientist Nzambi Motee.

PowerPoint

Download

Primary

98

Nzambi Motee life story sheet

Single information sheet describing the life, career and achievements of material engineer, inventor and super scientist Nzambi Motee.

PDF

Download

Primary

98

Science in stories: Three Little Pigs: Architects in training

Learn about the different properties of materials through the popular children's story 'The Three Little Pigs'.

5 resources

View Lesson

Primary

98

Three Little Pigs: Architects in training (properties of materials)

An interactive presentation that uses the unique sequel to the well-known traditional tale, to teach about the properties of materials in an engaging new way!

PowerPoint

Download

Primary

98

Choosing materials activity sheet

Use this activity sheet, part of the Science in stories: Three Little Pigs lesson, to record ideas about the best materials to use for each part of a house.

PDF

Download

Previous

1 of 10

Next



[Resources | Primary](#)

Mae adnoddau dysgu STEM yn gartref i gasgliad cynhwysfawr o dros 14,000 o adnoddau addysg STEM digidol sydd ar gael am ddim, sy'n sicr o ansawdd i helpu addysgwyr i ysbrydoli pobl ifanc am STEM.

Promoting STEM careers



[Downloadable STEM careers posters and flyers](#)



[Video collection promoting STEM careers](#)



[Career profiles and interviews with STEM professionals](#)



[Measuring the impact of your career activities](#)

Primary STEM Careers

Whether you're looking for classroom resources, STEM Ambassador support or enrichment activities, there are plenty of ways you can inspire your pupils by embedding careers learning into your school.



Why teach careers?

Resources to support you with the research around why careers education is important to begin at primary school.



Careers education support

Ideas and support for embedding careers learning into your school.



STEM Ambassadors

Bring the world of STEM careers to life by inviting a STEM Ambassador into your school or college.

Curriculum linked resources

[Primary STEM Careers](#) [STEM careers resources](#)

<https://www.stem.org.uk/primary/resources/stem-careers>

STEM Learning resources house a comprehensive collection of over 14,000 freely available, quality-assured digital STEM education resources to help educators inspire young people about STEM.

<https://www.stem.org.uk/primary>



[Resources - Primary Science Teaching Trust](#)

Why primary science?

Research shows that children's interest in and identity with science is shaped before they leave primary school.

While not all children will follow a science career, science literacy will influence their lives daily: for example, in managing their health, and understanding issues such as climate change. Good science teaching in primary schools is therefore of vital importance to the wellbeing of children, their communities and nations.

<https://pstt.org.uk/unique-resources/a-scientist-just-like-me/>

[A Scientist Just Like Me - Primary Science Teaching Trust](#)

Introducing children to a diverse range of scientists and people who work in science-related jobs.

A Scientist Just Like Me is designed to raise awareness of diversity in science-related jobs and to provide illustrated examples of a wide range of science-based careers. It consists of a series of short slideshows, each one 'telling the story' of a particular scientist or person working in a science-related job. The slideshows are intended to be used as discussion prompts, guided by a teacher. They can be used in different ways and for different purposes, for example:

- to show children an example of someone from a particular ethnic background working in a science job
- to challenge gender stereotypes about science jobs
- as part of a science topic that relates to the work of the scientist
- as stand-alone fifteen-minute discussion activities
- with a small group or the whole class, or in a whole school assembly



Romodels | Role models

You can't be what you don't see...

Many children only imagine the roles in their day to day lives, not all the exciting possibilities in an ever-changing world. Career aspirations of students have frozen in the past twenty years whilst the economy has changed rapidly.

Stereotypes reduce a child's ability to dream...

By age 6, research shows that children further reduce their dreams for themselves due to stereotypes regarding gender, race/ethnicity, neurodiversity, or physical ability.

Late and limited exposure reduces opportunities

Children are frequently encouraged to explore career possibilities too late in their academic life, often in 'one off' events, with the careers they are exposed to limited to those that are 'traditional' in nature, led by professionals who do not 'look like' or 'sound like' them

<https://www.romodels.org/>



Ni allwch fod yr hyn nad ydych yn ei weld

Mae rhaglen Romodels yn mynd â dysgwyr ar daith o archwilio gyrfaedd a hunanddarganfod.

Mae rhaglen Romodels wedi'i chynllunio i godi dyheadau a hunanhyder dysgwyr a gwella hyder athrawon i gynnwys gyrfaedd yn eu gwersi.



Modelau Rôl go iawn

Does dim rhaid i ysgolion ddatblygu gwybodaeth ddiwydiannol ddofn, gyda'n gilydd gallwn baratoi dysgwyr ar gyfer y dyfodol.



Heriau wedi'u teilwra i'r dysgwyr

Gall athrawon ganolbwyntio llai ar gynllunio a mwy ar bersonoli.

Trwy borth dysgu dwyieithog ar-lein rhaglen Romodels, mae athrawon yn cefnogi dysgwyr i ddatblygu fforddau newydd i



Gallwn i fod fel hyn

Gall dysgwyr weld eu hunain yn y rôl yn y dyfodol.

- Mae dysgwyr yn meithrin gwytnwch a hunangred trwy gymryd rhan mewn addysg gyrfaedd.