SA1B17 Inspiring Young People in STEM: Resources and diversity

Share your resources for practical activities.

STEM LEARNING ONLINE CPD APR 05, 2018 04:45PM

ANONYMOUS MAY 02, 2018 12:35AM

Solargraph pinhole camera

Looks fun and educational plus teaches patience

Video on Solargraph pinhole camera creation | STEM

How to make a pinhole camera for your class in a few minutes which can take a 6 month image of the sun crossing the sky. A cheap and simple way to introduce students to the solar system, light, recycling, history of science, ICT and photographyhttps://www.youtube.com/watch?v=wtZOWEB_wcI&feature=youtu.be

STEM

ANONYMOUS MAY 02, 2018 12:34AM

Saltmarsh benefits

Colleagues have used this activity on many science festivals with great effect

Love your saltmarsh activity

'Love your saltmarsh' is an activity about the benefits we get from nature and making difficult choices about coastal management. When there is no saltmarsh and mudflat in front of a LEGO® town, participants discover that they spend more of their chocolate coins to build and maintain a higher sea wall.

STEM

ANONYMOUS MAY 01, 2018 12:09AM

Science escape room

Really engaging way to present scientific ideas to young people.

https://www.stem.org.uk/uxfbj7

by School Escape Rooms

Our Science escape is a great immersive experience for all participants. All of our escape boxs are based around National Curriculum subjects that are brought to life by our immersive challenges. The challenges will be found in one of our escape boxes, which on first sight looks like any other locked wooden box. This is until the escape challenge starts and where the inquiry based learning starts.

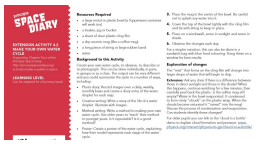
The Box will be situated in a school hall or classroom, where the students will be introduced to their challenge. In the room will be all the equipment and information such as keys, padlocks, codes and riddles that they will need to escape. Combined with this the students, will have a set time to complete their challenge leading to an immersive real life game experience.

ANONYMOUS APR 29, 2018 12:43AM

Water Cycle

Simple way to demonstrate the water cycle with easy t o obtain equipment. MS

Make Your Own Water Cycle - Principia Space Diary



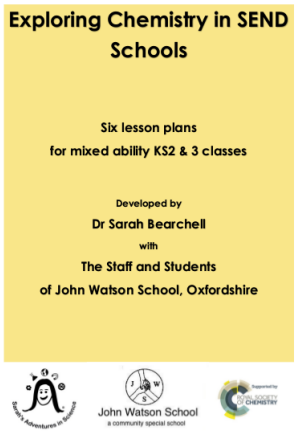
Extension Activity 4.2 This extension activity supports Make a Splash: Activity 4.2 in Chapter Four. Tricky concepts like evaporation and condensation are so much easier to understand when you can watch them first-hand. This activity involves a simple experiment which will help student follow and record the water cycle.

PRINCIPIA SPACE DIARY

ANONYMOUS APR 28, 2018 11:25PM

Exploring Chemistry in SEND Schools

Great to see a resource that is inclusive of SEND students.



Exploring%20Chemistry%20in%20SEND%20Schools.pdf

PDF document

STEM.ORG.UK

ANONYMOUS APR 28, 2018 11:21PM

Kitchen Concoctions

Great ideas that use the relevant context of food. MS

KitchenConcoctions%20full.pdf

STEM.ORG.UK

ANONYMOUS APR 26, 2018 11:33AM

California Academy of Sciences

The California Academy of Sciences is a science museum-and scientific and educational institution-located in San Francisco's Golden Gate Park.

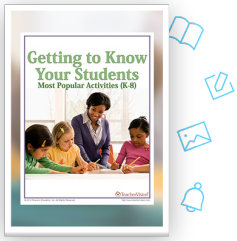
CALIFORNIA ACADEMY OF SCIENCES

ANONYMOUS APR 26, 2018 11:32AM

TeacherVision

Lesson plans, strategies for K-12

Teaching Resources & Strategies for K-12 - TeacherVision



We've got over 16,000 worksheets for you to print and start using right away! All grades & subjects Tons of holidays & themes Cross-curricular, themed bundles Graphic organizers Explore Worksheets

TEACHERVISION

ANONYMOUS APR 26, 2018 11:27AM

ANONYMOUS APR 26, 2018 07:59AM

I have seen Scratch used within classrooms to visually engage programming language and online community. Suitable for both Primary and High School Students. Scratch, users create their own interactive stories, games and animations, then share and discuss their creations with one another.

Scratch - Imagine, Program, Share

Scratch is a free programming language and online community where you can create your own interactive stories, games, and animations.

MIT

ANONYMOUS APR 24, 2018 08:13PM

Dark Matter Day

My organisation hosted an event as part of this last yest - the linked resources on this page could still be useful if planning a similar themed event.
https://www.darkmatterday.com/

Tom Dack

ANONYMOUS APR 24, 2018 08:11PM

Lego Mindstorms Educational Curriculum

Lego Mindstorms are a great tool for introducing robotics and coding to young people, and my organisation owns a number of the educational sets. Lego themselves provide a curriculum online which can be used to teach groups how to code using the mindstorms systems: https://education.lego.com/en-gb/secondary/intro/c/ev3-everyone-can-code

Tom Dack

ANONYMOUS APR 24, 2018 08:09PM

Ada Lovelace Day

My organisation runs a day long activity to teach school children how to code using arduinos and a block based language, ardublock. The day is themed around using the arduino microcontrollers to repair broken systems on a space craft to Mars. The microcontrollers can then be put into the context of the control systems used in the on site facilties.
Tom Dack

ANONYMOUS APR 23, 2018 07:25PM

I've been using the Blooodhound SSC resources at various points this year while teaching GCSE Maths resit. There are other topics as well as Maths

ANONYMOUS APR 23, 2018 03:27AM

Book of practical experiments.Always handy to have a physical resource for reference when running an event.Can help fully the gaps of you activities are over too fast.This can be used to supplement and keep the interest of the children.

ANONYMOUS APR 23, 2018 03:25AM

Practical science experiments on magnets and and electricity always popular with children.generally easy to set up is hands on not a lot of setting up required.Tends to generate plenty of discussion on the practical used of electromagnets

ANONYMOUS APR 23, 2018 03:21AM

Chameleons bubbles

Interesting concept for the chemists using a biology based experiments on enzyme and an example of how interlinked the sciences are for the young audience.

ANONYMOUS APR 22, 2018 03:46PM

Genome Games

This resource from Citizen Science looks like fun. Although it is designed for 11 to 14 year old students, my year 13 biology students (aged 16/17/18) will love this. I imagine the questions generated will lead to much discussion and debate.
Lynette Brown

Genome Games | STEM
Produced as part of the Citizen Science project, these materials allow students to explore issues around human genetics using familiar game contexts. Suitable for students aged 11-16, the materials utilise activites similar to Pictionary, Taboo and Consequences to introduce a variety of issues.

STEM

ANONYMOUS APR 22, 2018 03:39PM

Supporting Student Writing in Human Evolution topic

We have a focus on supporting student writing. I like this activity as it gives the students choice of style of writing. The word limit is great as it forces students to be concise in their writing.
Lynette Brown

Evolution | STEM

Published by the Wellcome Trust, the 'Big Picture' explores issues around biology and medicine. Why does Darwinian evolution raise controversy when, say, quantum mechanics scarcely registers on the public consciousness? This issue of 'Big Picture' looks at the theory of evolution, the evidence that supports it, unanswered questions and the history of public reaction.

STEM

ANONYMOUS APR 22, 2018 03:39PM

Human Evolution

I am currently teaching year 13 students human evolution. This short video clip on the evolution of the Y chromosome is great. Short, concise and tells it all.
Lynette Brown

Evolution of the Y chromosome | STEM

How did the human Y chromosome become so small relative to its X counterpart? This animation depicts the 300-million-year odyssey of the sex chromosomes that began when the proto X and Y were an identical pair. Used with permission from the Howard Hughes Medical Institute, Copyright (2001). All rights reserved.

STEM

ANONYMOUS APR 19, 2018 03:05PM

Sneeze & Disease Practical

Great, simple activity to explain the spread of diseases and would lead nicely into discussion about hygiene and the need to control it in industry.
Nick Bryan

Sneeze Zone | STEM

Using spray water bottles, students can test the range of a single simulated sneeze and its potential to infect people. The activity goes on to demonstrate the impact of covering the nose and mouth with a hand or tissue to highlight the importance of respiratory hygiene in preventing the spread of infection.

STEM

I love the look of this activity, will definitely try it with my high school students. It will appeal to them and they will love trying to "sneeze on each other" Lynette Brown (NZ)
—ANONYMOUS

ANONYMOUS APR 19, 2018 03:02PM

Gel electrophoresis practical

A practical kit and guide for using gel electrophoresis to separate proteins, which is a crucial analytical tool in the biotech industry. It's great that the kit will allow students to get to grips with a technique that they wouldn't normally learn at school!
Nick Bryan

Biotechnology

This resource, from the Association for Science Education (ASE), provides two stimulating activities for students to explore protein electrophoresis: proteins in seeds and proteins in fish. Proteins in seeds: A multicultural context - are there different proteins in different seeds such as lentils in dahl and wheat?

STEM

Another activity which appeals to me as a teacher of senior biology. I will try to get our local Crown Research Institute to let us use their electrophoresis kits - or seek funding to buy our own. Lynette Brown (NZ) —ANONYMOUS

ANONYMOUS APR 19, 2018 02:58PM

Biotechnology Resource Collection

Really interesting collection of practical activities for introducing concepts involved in the biotechnology industry, such as fermentation, microbial growth and the actions of enzymes. Suitable for ages 14 upwards.
Nick Bryan

Biotechnology practical archive | STEM

A cluster of practical activities for students to explore biotechnology involving viability of yeast, fruit juice production, milk products, fungal inhibition and microbial growth curves.

STEM

Would love to try this experiment with my year 12 biology class. Not sure where I could get the enzymes from or a colormeter (in New Zealand). Lynette Brown (NZ)
—ANONYMOUS

ANONYMOUS APR 18, 2018 06:24PM

Jenni Whittle

http://www.edenproject.com/learn/for-everyone/how-to-recycle-a-milk-carton-into-a-beautiful-bird

good activity to bring up conversations about plastic waste and re-using and recycling

ANONYMOUS APR 16, 2018 02:11AM

About engineering and a little bit math. I tried to arrange project competition for grades 6 and up about constructing the most durable bridge from spaghetti. The goal was not only using and learning some concepts like density, weight per square inch and volume but also attracting their attention to the designing and planning their construction with the daily life materials.. ALI ISSIZ

GARETH_HANCOX APR 15, 2018 05:06PM

Printing in Three Dimensions

This Catalyst article looks at 3D printing, a new technology which is rapidly finding applications. Although probably too slow for mass production it is useful for producing prototypes and tailor-made items.

Printing in Three Dimensions | STEM

This Catalyst article looks at 3D printing, a new technology which is rapidly finding applications. Although probably too slow for mass production it is useful for producing prototypes and tailor-made items. In a 3D printer, layers of polymer beads are printed one on top of the other.

STEM

GARETH_HANCOX APR 15, 2018 05:03PM

3D Printing with Funky Foam

This is a simple demonstration of additive layer manufcaturing using funky foam, scissors and pritt stick glue.

3D Printing with Funky Foam | STEM

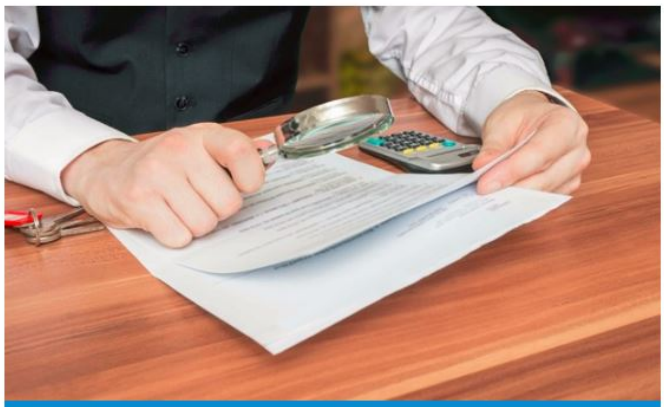
This is a simple demonstration of additive layer manufcaturing using funky foam, scissors and pritt stick glue. It is very cheap and the 2mm coloured foam can be picked up from places like Hobbycraft and The Range.

STEM

ANONYMOUS APR 14, 2018 12:03AM

IET Faraday Website - Inputs and Outputs

Automation 101 + I just have to have a reason to play with a BBC micro:bit computer!! - Tim Kiver https://faraday-secondary.theiet.org/resource-pages/what-am-i-inputs-and-outputs/



What am I? Inputs and outputs

Guess the device from a series of clues

127 views

D&T
Age range: 11-14
Duration: 0 - 29 mins
Contains: 1 Video

ANONYMOUS APR 12, 2018 07:34PM

Science Museums Mystery Boxes

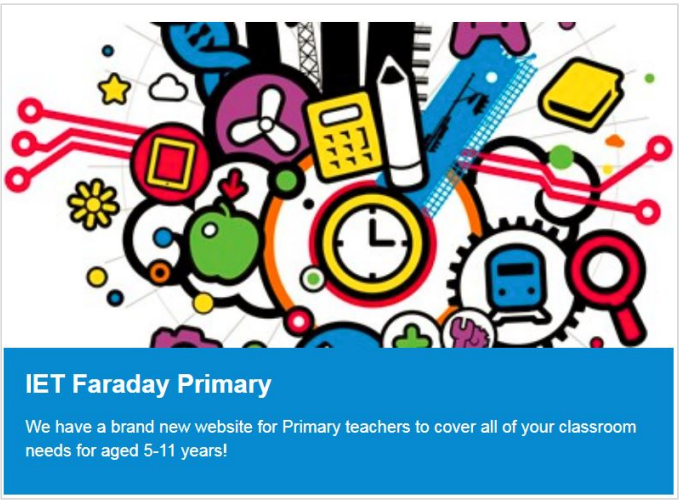
https://www.youtube.com/watch?v=hud8SPCcfu0

This is a great way to demonstrate the thought process that we often have to go through as scientists and engineers - Tim Kiver

ANONYMOUS APR 11, 2018 09:37PM

New @ IET Faraday Website

Brand new website for Primary teachers with content suitable for the 5-11 Years age group @ https://faraday-primary.theiet.org/ - Tim Kiver



STEM LEARNING ONLINE CPD APR 05, 2018 07:30PM

Marvin and Milo

Lots of ideas for activities and potential for adapting them.


MARVIN AND MILO

Over 80 "Do try this at home!" experiments featuring Marvin and Milo, the IOP's intrepid cat and dog team.

Cartoons

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PDF document
IOP.ORG

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