



Herts for Learning Ltd is a not for profit company owned by Hertfordshire schools and the local authority. Providing improvement and business services, it is dedicated to improving standards of education in Hertfordshire and beyond.

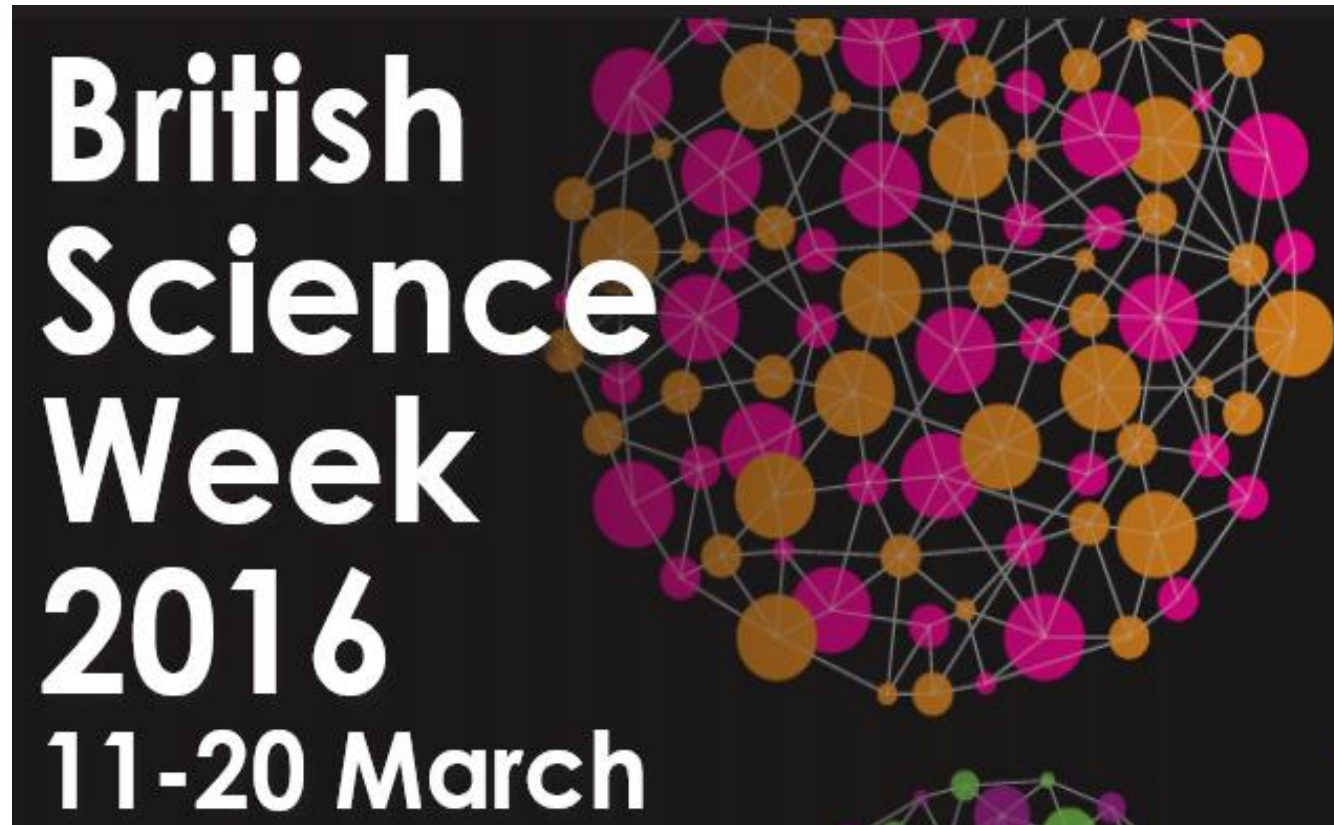


The Language Experiment

Bringing together
STEM & MFL



<https://www.britishscienceweek.org>



What is 'The Language Experiment'?

- Teaching and Learning activities that are cross-curricular and draw from Science, Technology, Engineering and Maths curriculum content
- Delivered through the medium of a foreign language

Rationale

- Girls and uptake of STEM subjects
- Boys and uptake of languages
- Gender socialization
- Cultural narratives reinforcing societal norms (#distractinglysexy)
- Languages as a career attribute

Hasn't this been done before?

- Lots of CLIL examples already available
- Aim to build a STEM corpus bringing together activities that cover each strand
- Draw on the language and rituals of STEM subjects
- Emphasise structures that are highly transferable
- Contribute to the building of pupil spontaneous talk repertoire

SLN in Hertfordshire

Completion date	SLN 1	SLN 2	SLN 3	SLN 4	SLN 5
Xmas break	Year 3 Science	Year 4 Science	Year 5 Science	Year 6 Science	Year 7 BP Science
	Year 4 Technology	Year 5 Technology	Year 6 Technology	Year 7 BP Technology	Year 3 Technology
Easter break	Year 5 Engineering	Year 6 Engineering	Year 7 BP Engineering	Year 3 Engineering	Year 4 Engineering
	Year 6 Maths	Year 7 BP Maths	Year 3 Maths	Year 4 Maths	Year 5 Maths
May half-term	Year 7 STEM STARTER	Year 3 STEM STARTER	Year 4 STEM STARTER	Year 5 STEM STARTER	Year 6 STEM STARTER
Summer break	SCIENCE FAIR				

Overview of this workshop

1. Insight into approach of investigating language and rituals of subject-specialisms
2. How investigative processes in Science can promote construction of spontaneous talk repertoire
3. How MFL enhances whole-school curriculum (from STEM to STEAM)
4. Useful links
5. Whizz, pops and bangs!

1. Subject-specific language and rituals

- What are the key themes or 'big ideas'?
- How are these broken down?
- What are the key subject processes (rituals)?
- What is high-frequency language for the subject?
- Deconstruct subject-specialisms to construct a framework for our project!

MFL: Medium for Learning

**My Science
Book**



**Mon cahier
d'expériences**



**Mein
Versuchsheft**



**Mi
cuaderno de
experimentos**



2. Investigative Processes

1. Question/Hypothesis
2. Resources (What you will need)
3. Method
4. *Fair Test (What you will keep the same)*
5. *Variables (What are you going to change?)*
6. *Prediction (What do you think will happen?)*
7. Results
8. Conclusion

What do you want to find out? #1

Je veux savoir si ...

... le blanc est une couleur.

Voici ma question:

- Le blanc est une couleur?
- Est-ce que le blanc est une couleur?
- Le blanc, est-il une couleur?

What do you think you know? #1a

Je pense que ...

...le blanc est une couleur.

...le blanc n'est pas une couleur.

Je vais faire une expérience pour savoir.

Voici mon hypothèse.

Voilà (mon hypothèse).

Voici ce que je pense ...

Voilà ce que je pense!

What do I need? #2

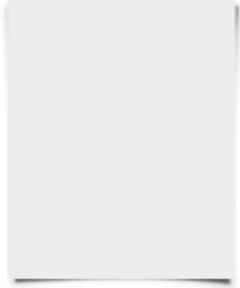
Qu'est-ce qu'il faut?

- **Il me faut / Il nous faut.**
- **Il me faudra?**

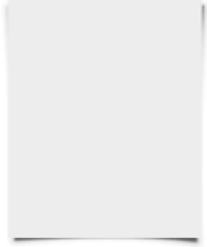
No to
non-verbal
responses!

D'accord!

IL NOUS FAUT ...

du papier blanc ☐		de l'eau ☐	
une lampe de poche ☐		un plat ☐	
un miroir ☐		On a tout!	

IL NOUS FAUT ...



On
a tout!

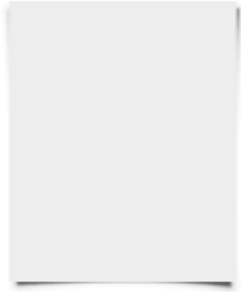
- Match words to pictures
- Give gap-fill prompts
- Find the words in the dictionary/glossary
- Label the pictures to create a list of the required equipment in 'Le cahier d'expériences'.

IL NOUS FAUT ...

du papier blanc ☐		de l'eau ☐	
une lampe de poche ☐		un plat ☐	
un miroir ☐		On a tout!	

IL NOUS FAUT ...





Voilà!



Voilà!

Voilà!

On a
tout!



Voilà!

Voilà!



The Method #3

- Je vais / on va
- Je dois / on doit
- Ce que je vais faire, c'est

Labelling of diagram.

TL – English card match.

Gap-fill text.

TL reading to diagrammatic output.

- reinforces conjugated forms of high-frequency verbs
- bolt on infinitives for ease of manipulation
- verb tool-kit
- can be reproduced in diagrammatic form

Mettez les étapes dans le bon ordre



- a. **éclairer** la partie du miroir sous l'eau
- b. **remplir** le plat d'eau
- c. **tenir** le papier devant le plat
- d. **placer** le miroir dans le plat

Results #7

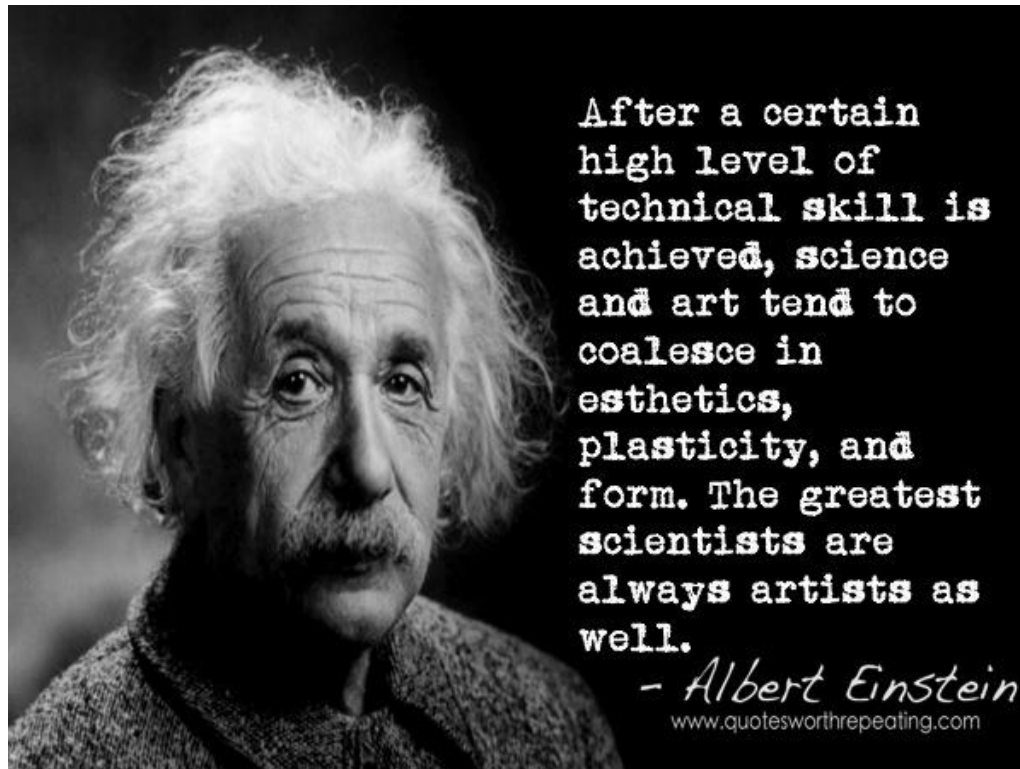
- **Je vois**
- **J'ai vu**
- **Voici** les résultats.
- **Voilà** mes observations.

Conclusion #8

J'ai découvert que ...

- a. Le blanc n'est pas une couleur
- b. Le blanc est une couleur
- c. Le blanc est composé de toutes les couleurs
- d. J'aime les arcs-en-ciel

You can't have one without the other!



**Art without
engineering is
dreaming.
Engineering
without art is
calculating.**

- Steven Roberts

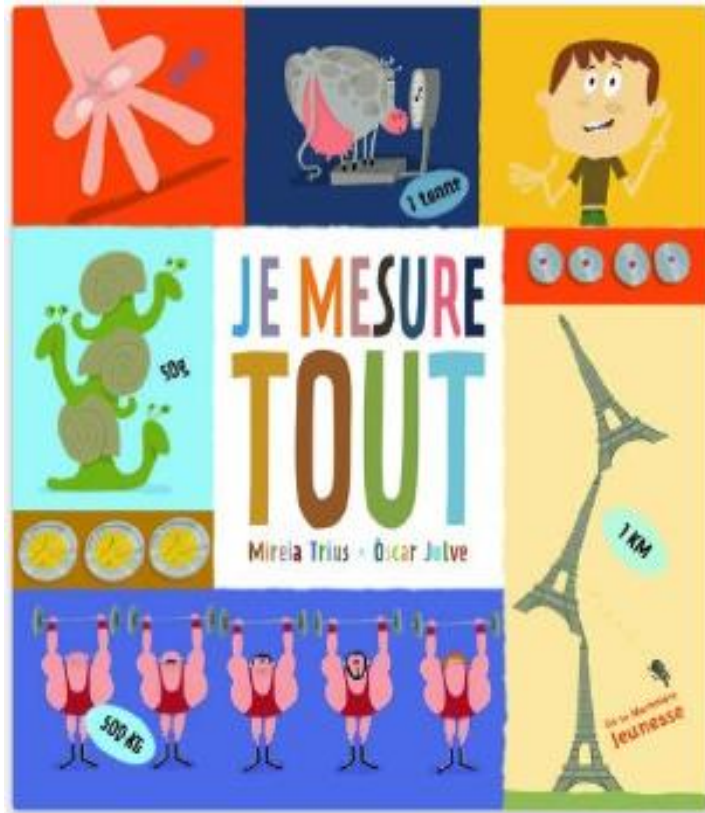
Building up a head of STEAM

- Science
- Technology
- Engineering
- Arts
- Maths

Compiling a book list to accompany project activities.

Curating a list of cultural references including scientists, inventors, mathematicians etc.

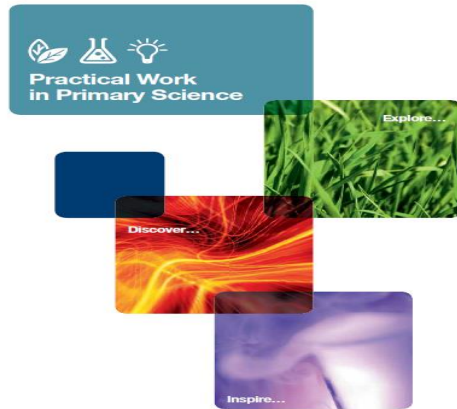
What happens when teachers talk



Did you know

... that many Y7 students
can't measure quickly
accurately in millimetres?

... and that D&T teachers
often create 'jigs' to get
around this problem?



Peace at last: Sound

Introduction

This activity uses a story about all the sounds that keep Mr Bear awake at night to introduce a problem for the children to solve. They identify loud and quiet sounds and find ways to stop sounds from entering their ears. The activity gives young children the opportunity to carry out a simple investigation with a degree of independence.

Lesson organisation

The practical activity is carried out in groups of six. Three children in each group will be the testers, covering their ears with each object in turn. The other three will together make the sound of Mrs Bear snoring. When each tester has evaluated all the objects the children swap roles and repeat the procedure.

Equipment and materials

- A selection of suitable items for covering the ears (1 of each per group) e.g. small cushions or bath sponges, hats with ear flaps, ear muffs, headphones, coats with hoods. Children may also want to suggest items.

Technical notes and safety

- 1 Warn children that it is dangerous to put objects into their ears (except for ear plugs which are made for this). Do not have small objects, which children might use in this way, available during the activity.
- 2 Children should only cover their own ears not each others.
- 3 Be aware of children who have any hearing impairment and may have difficulty in participating fully in this activity.

Procedure

- a Read the story *Peace at Last* by Jill Murphy. Encourage children to join in with the sounds. Discuss pleasant and unpleasant sounds and times when the children are noisy and when they want peace and quiet.
- b Talk about what Mr Bear does to try and find peace e.g. moving from room to room, covering his head with the pillow.
- c Ask the children what they can do if a loud sound is bothering them. Suggestions are likely to include various ways of covering the ears.
- d Tell the children that Mr Bear would prefer to sleep comfortably in his own bed so he needs something to put over his ears so he is not disturbed by Mrs Bear's snoring. Explain that they are going to test some different ways of covering their ears so they can tell Mr Bear a way which is best for keeping the sound out. Show the children a collection of objects and materials. Is there anything easily accessible that the children would also like to test?

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Links to great literature



Non-fiction (scientific text)

I - PIGMENTATION DE LA PEAU ET CAPACITE A BRONZER

Le rayonnement UV émis par le soleil affecte la peau, mais avec des effets très variables d'une personne à l'autre (voir tableau).

Types de peau					
Type de peau	Cheveux	Carnation	Taches de rousseur	Réaction au soleil	Capacité à bronzer
I	roux ou blonds	très claire	+ + +	brûle systématiquement	ne bronze jamais
II	blonds	claire	+ +	brûle souvent	bronze légèrement
III	blonds ou châains	de claire à moyenne	+ à 0	brûle parfois	bronze graduellement
IV	bruns	olivâtre	0	brûle rarement	bronze facilement
V	bruns à noirs	foncée	0	brûle rarement	bronze intensément
VI	noirs	très foncée	0	ne brûle jamais	bronze intensément

STEAM AMBASSADOR:

Da Vinci activities



- Helicopters
- Parachutes
- Self-propelling carts
- Ideal city
- Diving suits (float/sink)?
- Make your own art folder
- DA VINCI DAY!

Internet resources: French

<http://www.superkimy.com>



More Internet resources: French

<http://www.lesdebrouillards.com>



Internet resources: German

<http://www.kids-and-science.de/>



The screenshot shows the homepage of the 'kids and science' website. The header features the logo 'kids and science' with a globe and molecular structure, a search bar, and navigation links: 'Startseite', 'Kontakt', and 'Impressum'. A left sidebar contains buttons for 'Experimente für Kinder', 'Wie funktioniert's?', 'Kinderfragen', 'Natur und Umwelt', 'Newsletter', 'Links', 'Facebook', 'Google+', 'Über "Kids and Science"', 'Für Lehrer', and a 'shop' button. The main content area includes a welcome message from Andreas Tillmann, three featured experiment articles with images and descriptions, and a 'Gecheck't' seal.

kids and science Startseite

Suche

[Startseite](#) [Kontakt](#) [Impressum](#)

Experimente für Kinder

Wie funktioniert's?

Kinderfragen

Natur und Umwelt

Newsletter

Links

Facebook

Google+

Über "Kids and Science"

Für Lehrer

shop

Willkommen bei "Kids and Science"

Im neuen [Forscherladen](#) finden Sie tolle Experimentierideen, physikalische Spielereien, Lernspielzeug, jede Menge Technik für Kids und Laborausstattung für junge Forscher - Schauen Sie mal vorbei! Viele Produktneuheiten warten auf Sie!

Ihr Andreas Tillmann.

Einen Flaschentornado selber machen - mit einem Adapter

Einen Tornado in der Flasche selber machen - so geht es!

Rubrik: Experimente für Kinder, Startseite [\[mehr\]](#)

Licht erzeugen: von der Glühlampe zur Leuchtdiode

Künstliches Licht lässt sich auf verschiedene Arten erzeugen: ein kleiner Überblick.

Rubrik: Wie funktioniert's?, Startseite [\[mehr\]](#)

Warum sehen nasse Oberflächen dunkler aus als trockene?

Wasser ist farblos, aber nasser Sand, nasse Kleidung, nasse Haare - sie sehen alle dunkel aus. Warum?

Rubrik: Kinderfragen, Startseite [\[mehr\]](#)

Gecheck't
Das Netz für Kids

Investigating question forms

- Was ist ein Meteoroid?
- Was bedeuten die Punkte auf einem Marienkäfer?
- Kann man essen oder trinken, wenn wir einen Kopfstand machen?
- Wie funktionieren Suchmaschinen im Internet?
- Wie wechselt ein Chamäleon seine Farbe?
- Wie bildet sich ein Tornado?
- Wie entsteht Schnee?
- Wie wird Papier produziert?
- Warum werden angeschnittene Äpfel braun?
- Warum ist Schnee weiß und nicht durchsichtig?
- Why is ice cold and not hot?
- Why is Mrs Kennedy nice and not nasty?

French and German

<http://www.fondation-lamap.org>



<http://www.sonnentaler.net>



Internet resources: Spanish

<http://www.experciencia.com>



Experimentos por Edad ▼

Experimentos por Temática ▼

Experimentos con... ▼

Whizz, Pops and Bangs!



For further information and updates:

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