



宏文学校
HONGWEN SCHOOL
—— 上海浦东校区 ——

English for Science

Project introduction



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Background

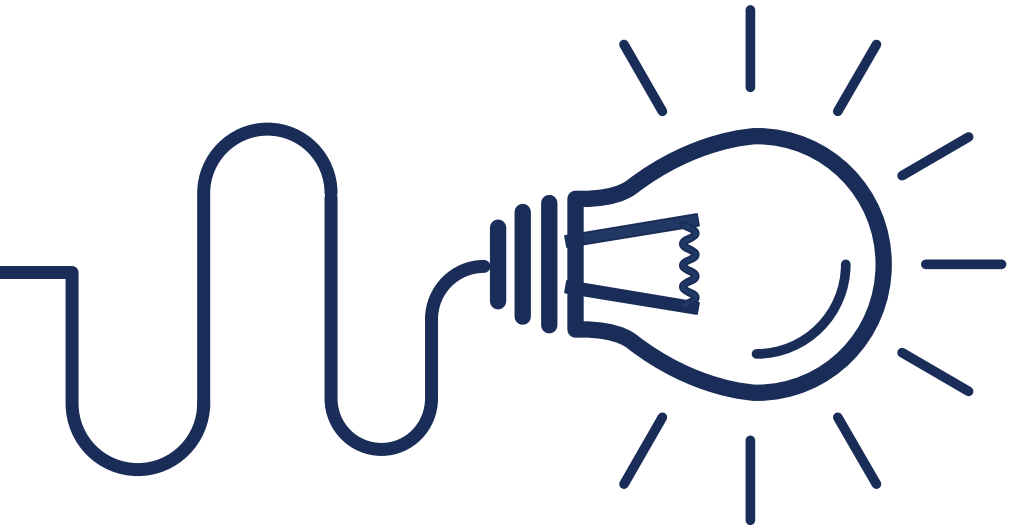


1.English language is currently the most important language in the world and English is used as the international language of science.

2.The requirement of English is absolute when taking the IGCSE courses. Science subject competency alone is not enough. Learners must be able to master and communicate their scientific capability through reading, listening, writing, and speaking in English.

3.Currently, there is a considerable portion of grade 9 Shanghai Hongwen high school science learners with limited proficiency in English.

Purpose



- 1** To help Chinese learners that are weak in English, reduce their obstacles when they are learning science in IGCSE courses.
- 2** To develop EFS teaching tools that consists of three vocabulary booklets (Biology Chemistry and Physics) and one EFS exercise booklet:

Preparations



1. Project schedule

Monday:
16:20-17:20

2. Student selection

- 1) At the start of the semester.
- 2) Subject teachers.

3. EFS words selection

- 1) Each week.
- 2) Subject teachers.
- 3) General science .

4. Teaching materials

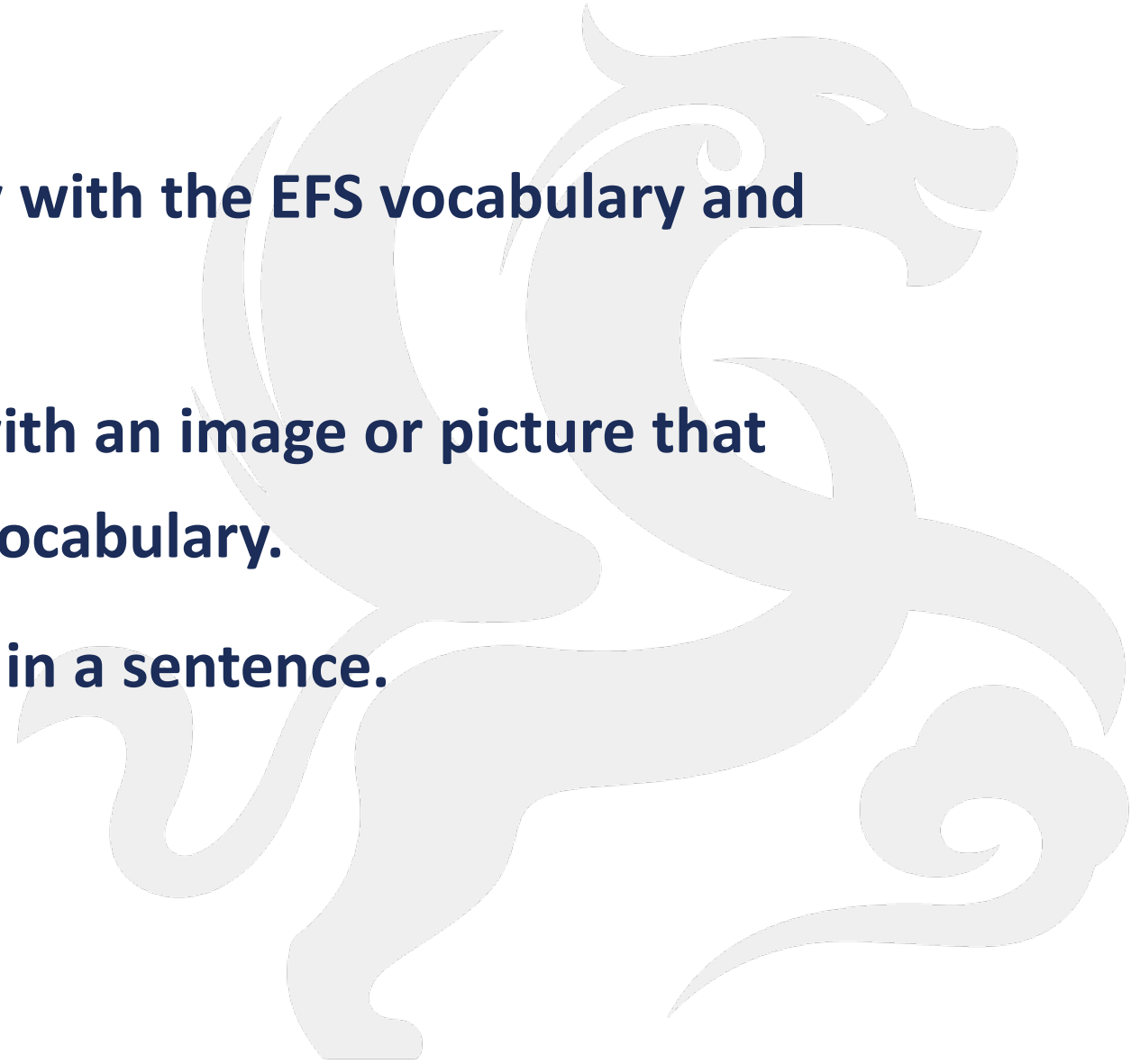
- 1) Image materials.
- 2) Worksheets

How to teach




A new lesson

- 1. Match mandarin vocabulary with the EFS vocabulary and the English definition.**
- 2. Match the EFS vocabulary with an image or picture that describe the meaning of the vocabulary.**
- 3. Make use of the vocabulary in a sentence.**









How to teach



English for Science  Monday Feb 28, 2022


Images & Word & Meaning list Name: _____ Class: _____

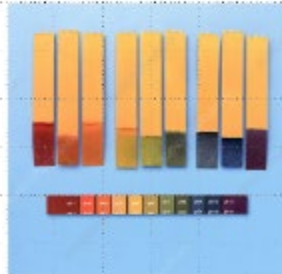
Images	English Meaning	Chinese Meaning	Vocabulary
	To make a liquid weaker by adding water or another liquid to it.	稀释	combustion
	A process in which a substance reacts with oxygen to give heat and light.	爆炸	explosion
	The hot gas that water changes into when it boils.	时间间隔	time interval
	A substance that changes color to indicate the presence of some ion or substance.	蒸气	steam
	The amount of time between two given points in time.	指示剂	indicator
	A violent (剧烈的) release of energy caused by a chemical or nuclear reaction.	稀释	dilute

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Step 1



List of Vocabularies 




English word:
 ✓ indicator
 ✓ /ˈɪndɪkəteɪ(r)/
Mandarin word:
 ✓ 指示剂

English meaning:
 ✓ A substance that changes color to indicate the presence of some ion or substance.

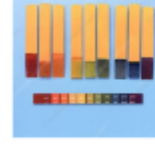
Step 2



English for Science  Monday Feb 28, 2022

Activity #1 Name: _____ Class: _____


EFS Vocabulary #1: _____ Mandarin #1: _____



English definition #1/ 英文释义: _____

Sentence #1/ 造句: _____

EFS Vocabulary #2: _____ Mandarin #2: _____



English definition #2/ 英文释义: _____

Sentence #2/ 造句: _____

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Step 3

How to teach



A review lesson(After every two new lessons)

- 1.Cross-word puzzle.**
- 2.Find-the-word puzzle.**
- 3.Match the pronunciation with pictures.**
- 4.Online quiz game.**



How to teach



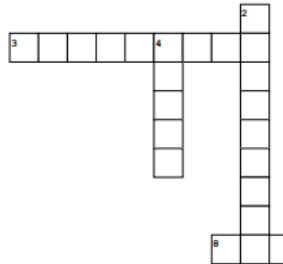
EFS-0307, 2022

E	F	F	E	R	V
T	L	A	X	O	T
I	U	N	R	V	U
M	B	R	O	E	T
E	R	O	T	X	N
I	I	P	A	P	A
N	C	A	C	L	C
T	A	D	I	O	I
E	N	I	D	S	F
R	T	L	N	I	I
V	C	U	I	O	N
A	T	T	M	N	G
L	T	E	R	N	I
N	L	U	R	S	S

Play this puzzle

EFS-Cros

English for Science

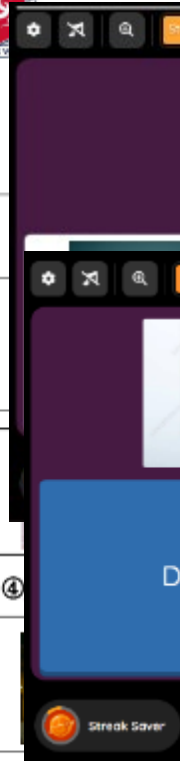


Across

- 3. A violent release of energy caused by a chemical nuclear reaction.
- 6. A substance that reduces the effects of friction helping two surfaces move past each other more easily.
- 7. A substance dissolved in water. Shown as (aq) in a chemical equation
- 8. An insoluble solid that is formed in a solution during a chemical reaction.
- 9. A process in which a substance reacts with oxygen to give heat and light.

Match the pronunciation with image

	1st	2nd	3rd	4th	5th	6th
Number of images						
① _____	② _____	③ _____	④ _____			
⑦ _____	⑧ _____	⑨ _____	⑩ _____	11 _____	12 _____	




Student
Student

Outcomes




Students' progress

English for Science  Monday Feb 28, 2022

Activity #1 Name: George Class: _____

EFS Vocabulary #1: indicator Mandarin #1: 指示剂


English definition #1 (英文释义):
A substance that changes color to indicate the presence of some ion or substance.



Sentence #1 (造句):
The indicator shows the pH value.


EFS Vocabulary #2: apparatus Mandarin #2: 仪器

English definition #2 (英文释义):
An equipment designed to serve a specific function.



Sentence #2 (造句):
There are apparatuses in the lab.


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English for Science  Monday Feb 28, 2022

Activity #1 Name: Tom Class: 9B

EFS Vocabulary #1: indicator Mandarin #1: _____


English definition #1 (英文释义):
A substance that changes color to indicate the presence of some ion of substance.



Sentence #1 (造句):
We use indicator for some science.

EFS Vocabulary #2: apparatus Mandarin #2: _____

English definition #2 (英文释义):
An equipment designed to serve a specific function.



Sentence #2 (造句):
We use apparatus in lab.

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Outcomes



EFS vocabulary booklet

EFS Vocabulary	Piktoris	Mandarin	English
Age		年龄	the number of years that someone has lived or is expected to live
Use		用途	a particular way of using something, or a purpose or plan for using it
Rate		速度	the distance or amount covered, used or produced, in a particular period of time
Area		地区	a particular part of a country, city, or organization
Interest		兴趣	wishes, pleasures, or hobbies that someone likes to do in their spare time
Material		材料	something that is used for making things, especially clothes
Region		地区	part of a country, such as a county or a particular part of a country
Condition		状况	a particular state or condition of someone or something
Style		风格	a particular way of doing something, or a particular way of behaving or acting
Stylish		时尚	attractive, attractive, and having a modern style
Look		外表	the appearance of someone or something
View		风景	the way that something looks from a particular place
Water source		水源	the place where water comes from, such as a reservoir
Wash		清洗	to clean or make clean by rubbing with water or soap
Wash		清洗	to clean or make clean by rubbing with water or soap
Wash		清洗	to clean or make clean by rubbing with water or soap
Care		照顾	to look after someone or something
Area		地区	a particular part of a country, city, or organization
Rate		速度	the distance or amount covered, used or produced, in a particular period of time
Use		用途	a particular way of using something, or a purpose or plan for using it

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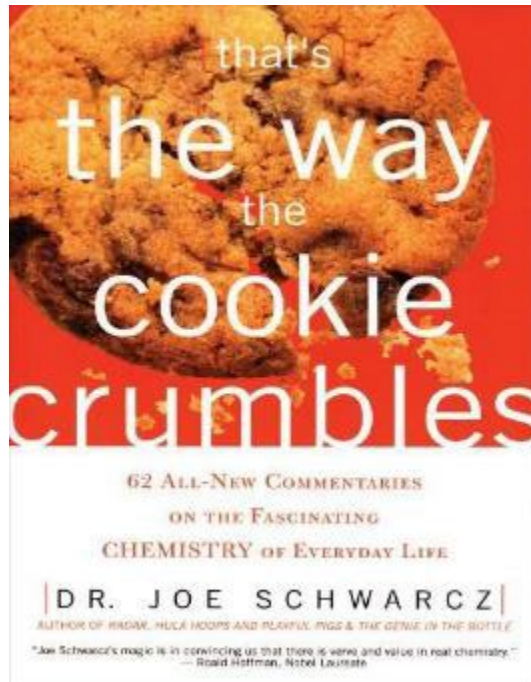
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Future work



1. Transition to comprehension passage.



Microwaved Socks, and Other Tales from the Airwaves

I look forward to my Friday mornings. That's when I spend an hour and a half conversing with the public on CJAD Radio in Montreal. The idea behind the show is for me to provide reliable scientific information, answer questions about current concerns, and attempt to clear up some of the mysteries that permeate daily life. But the show is an education for me, as well. For over twenty years, it has allowed me to monitor the pulse of the population and gain a glimpse into its psyche. I have been pleased by callers who have made unusual scientific observations, asked by those with intriguing questions, and frustrated by the occasional demonstration of scientific illiteracy. I have also come to realize that people are frustrated with numerous issues, both cerebral and emotional. And I have learned not to be surprised. Shocked, maybe—but never surprised.

"How do you wash microwaves out of socks?" one caller queried. I didn't quite know what to make of this. Obviously, though, we established that he was not worried about having tickles on some sunny microsocks, but he had heard about a device being marketed to reduce the risks of cell phone use. First of all, we need to understand that there is very little scientific evidence to suggest that cell phones are dangerous, other than to those who use them while driving. But that has not stopped the inventive marketers. They've come up with a socklike device that one places over the phone to absorb the "harmful microwaves." The instructions that come along with this gear apparently instruct the user to launder the sock regularly to "soak out the radiation." Total nonsense.

Microwaves are a form of energy, and they can indeed be absorbed by materials. After all, that's how microwave ovens work. Microwave absorbs the waves, energizing the water molecules. They move around more rapidly, and it is this motion that we sense as heat. But microwaves cannot be soaked in a substance for later release. It seems, though, that this nonsense is not restricted to scam artists who want to protect us from cell phones. A listener once called to ask how long one should allow microwaved food to stand

after cooking to "allow the microwaves to escape." Obviously, this person had been reading her microwave cookbook, which would have advised her to allow microwaved food to stand briefly before serving it. This is common practice, necessary to complete the cooking process. Contrary to what many think, microwaves do not penetrate food deeply. The exterior of the food in question is only heated, but the inside cooks through heat transfer by conduction. That's why the food must stand for a few minutes. It has nothing to do with allowing stagnant microwaves to escape.

Microwaves are not the only form of radiation causing undue concern. A terribly agitated caller was worried because after being x-rayed she was asked to take the films to her physician herself. She had heard all about exposure to x-rays being dangerous and thought that by carrying the films she was "exposing" herself.



Since the infamous date of 9/11, a number of people have asked about wearing clothes that have gone through x-ray scanners at airports. They are concerned that these items may become radioactive and pose a risk to their health. Excessive exposure to x-rays can certainly be risky, but x-rayed items do not store and reemit radiation. Unfortunately, just a mention of the word radioactive is often enough to alarm people.

A gentleman wanted to know what the safest way was to dispose of a broken compact-disc player. I didn't realize what he was getting at until he asked whether a laser was a form of radiation, which of course it is. Radiation is nothing more than the propagation of energy through space. Turn on a light and you are exposed to radiation. The caller knew that CD players use a laser, and since lasers produce radiation, there had to be some risk. The laser beam in a CD player is just a special type of light beam that poses no danger at all, and it is only emitted when the device is on. So old

CD players can be safely discarded. But old Aristotelian pictures may be a different story.

I had to address this issue when a caller asked if it was safe to burn a laminated picture in her fireplace. It turned out that she had been severely divorced and wanted no reminders of her former spouse. Burning his picture seemed appropriate, but she had heard that laminated photos were mounted on particleboard glued together with urea-formaldehyde resin. She was worried that the heat would release formaldehyde, which she had heard was toxic. Indeed, formaldehyde is a problematic substance, but the amount released in this particular combustion process would be too little to cause concern. Still, I suggested that if she was still worried, she could hang on to the picture until the next hazardous waste collection took place in her municipality. She liked that idea—she told me that "hazardous waste" was an excellent description of her former mate.

Then there was the listener who wanted to know if lighting a match was a good way to get rid of the smell of natural gas in a house. That question prompted me to launch into a lecture on a common misunderstanding about gas. Natural gas, I said, is just methane, and methane has no smell. That's why odorless compounds are added to make sure that gas leaks are readily detected. I explained that soon after a burning match could absorb small amounts of such compounds, but, I added somewhat roughly, it was not a good idea to go around striking matches in a house that could be filled with methane. It was then that the caller sheepishly informed me he knew all that, but the "natural gas" he was talking about was more likely to be found in the bathroom than in the kitchen. It was I, not he, who had jumped to the wrong conclusion. Like I said, my Friday mornings are interesting.

2. Record and study students' academic performance.

Acknowledgements



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Student-Centered, Integration of East and West, Elite Education

Thank you!

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