

# **IEC**

# **English for Science**

## **Teacher's Resource Kit**

## **Teacher's Resource Kit EFS 1.3**

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The voltage was stepped up in equal values and kept at the new value for equal times.

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The pressure fell rapidly but then appeared to stabilise. It then dropped dramatically, levelled off and then rose sharply.

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There was a gradual, but consistent rise throughout the experiment.

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The pressure was increased by equal amounts each time and then kept constant for the test time. It was only at the highest pressure that we saw a very slight drop which indicated a leak.

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Initially the temperature rose rapidly. After a short time the rise began to slow down until the temperature stabilised at about 87°C. After the test the valve was opened and the pressure dropped almost immediately to zero.

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The pressure fell slightly over the test period.

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The current cycled between a maximum and minimum value.

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## **Teacher's Resource Kit EFS 2.5**

### USE OF ENGLISH EXAMINATION SYLLABUS

#### AIMS AND OBJECTIVES

This syllabus aims to foster the development of students' English language skills in order to equip them for tertiary education and/or employment.

The examination will test the ability of candidates to understand and use English as might be required in tertiary education and/or future employment. It will test the ability of candidates to:

- (i) understand and interpret spoken English as it might be encountered in academic or vocational situations;
- (ii) write clear, concise and grammatical English in an appropriate style;
- (iii) demonstrate both global and detailed understanding of a variety of written texts;
- (iv) understand and use spoken English for practical communication;
- (v) integrate reading, writing and study skills in the pursuance of task-based/problem-solving activities.

## Teacher's Resource Kit EFS 3.1

Read the passage below. Can you and your partner find a scientific word to match each letter of the alphabet. See which pair can find them first.

So why study science? Well, for one thing, it is mentally stimulating, and for another, it opens up many different further study or job opportunities. Which science is the best to study? This is a matter of personal taste. I couldn't stand the idea of dissecting anything so biology was out for me. I studied chemistry and physics at HKCEE but I only continued with physics at A-level. I didn't fancy the idea of trying to learn all the terms in organic chemistry, so although inorganic chemistry sort of interested me, I decided not to do it.

Doing physics at A-level was a good foundation for studying engineering at university. The mechanics we did at A-level was very good, as was atomic physics. Until I did A-level physics, I thought a photon was something to do with Star Trek and quantum mechanics a car manufacturing organisation.

Even though I dropped chemistry and biology, some of what I learnt has stayed with me. When I was at university, I studied mining which has a lot to do with hydro-carbons. Part of the course was about soft rock mining and one of the most controversial soft rocks mined is "yellow cake" or uranium. It was also necessary to perform experiments to investigate the various stresses and strains on different materials. One of the fundamental pieces of equipment for measuring strain is a strain gauge, which is a form of whetstone bridge.

Every time I have a cup of coffee I put sugar in it. It sparks memories of learning the different sugars, sucrose and fructose, etc. I was never very good at names, which was another reason for abandoning biology. After all who can remember words like triglycerides. I never thought I would be able to remember or regurgitate those very long Latin names of parts of plants.

One of the things about studying science at the time I did was the introduction of different measurement units. Calories became joules, degrees Celcius became degrees Kelvin so that everything could be related easily.

I suppose lasting memories of science lessons at school mainly revolve around failed experiments in classes. Dipping the litmus paper into the solution expecting it to turn red and watching it turn green, firing table tennis balls out of a tube to measure velocities and hitting the teacher with them. I guess it was fortunate that we did not do any experiments with radioactivity. We left experiments on the wonders of the nucleus to real scientists.

Now my cross with science is limited to an occasional x-ray, discussing zoology with my children - it's a dog, it's a bird - observing the yeast react with the other ingredients to make bread rise and, in the last half an hour, trying to remember what Young's modulus is all about. Ah well, it doesn't matter as I have managed to get all 26 letters of the alphabet covered now.

**Teacher's Resource Kit EFS 3.1 (cont...)**

Have you found them?

A= \_\_\_\_\_

N= \_\_\_\_\_

B= \_\_\_\_\_

O= \_\_\_\_\_

C= \_\_\_\_\_

P= \_\_\_\_\_

D= \_\_\_\_\_

Q= \_\_\_\_\_

E= \_\_\_\_\_

R= \_\_\_\_\_

F= \_\_\_\_\_

S= \_\_\_\_\_

G= \_\_\_\_\_

T= \_\_\_\_\_

H= \_\_\_\_\_

U= \_\_\_\_\_

I= \_\_\_\_\_

V= \_\_\_\_\_

J= \_\_\_\_\_

W= \_\_\_\_\_

K= \_\_\_\_\_

X= \_\_\_\_\_

L= \_\_\_\_\_

Y= \_\_\_\_\_

M= \_\_\_\_\_

Z= \_\_\_\_\_

## Teacher's Resource Kit 3.2 Jigsaw Reading

Work with your partner to complete your text.

### Text A

A thriving subterranean world of (1a) \_\_\_\_\_ creatures has been discovered by (2a) \_\_\_\_\_ scientists drilling more than 4,000 metres below the surface of the (3a) \_\_\_\_\_ Ocean.

The find, which has set a record for the deepest living (4a) \_\_\_\_\_, has increased the possibility that similar (5a) \_\_\_\_\_ could be alive deep inside planets.

Core samples, taken during drilling 750 metres under the seabed, 3,500 metres below the ocean surface, have revealed life forms cut off from the rest of the natural world for millions of years. Scientists said the (6a) \_\_\_\_\_ show it is possible for life to survive under extreme conditions where pressures are 400 times (7a) \_\_\_\_\_ than at sea level and where temperatures can reach 170 degrees Celsius. Other scientists have previously found huge (8a) \_\_\_\_\_ animals, called pogonophora, on the seabed near underwater (9a) \_\_\_\_\_.

John Parkes, Professor of Geo-microbiology at Bristol University, said the discovery of (10a) \_\_\_\_\_ living at such enormous depths has overturned (11a) \_\_\_\_\_ ideas about life on Earth. He said: "This is a big (12a) \_\_\_\_\_ leap because the idea of life being confined to the surface of our planet has been shown to be incorrect."

One of the most surprising (13a) \_\_\_\_\_ of the discovery is that the deeper the scientists drilled, the more bacteria they found.

The scientists are confident the bacteria are not dangerous because they have never evolved to infect humans or other animals. (14a) \_\_\_\_\_ research shows they have a distinct genetic identity and, although clearly related to surface bacteria, they possess unique (15a) \_\_\_\_\_ such as resistance to high temperatures and pressures.

## Teacher's Resource Kit 3.2 Jigsaw Reading (cont...)

Work with your partner to complete your text.

### Text B

A thriving subterranean world of microscopic creatures has been discovered by British scientists drilling more than (1b) \_\_\_\_\_ metres below the surface of the Atlantic Ocean.

The find, which has set a record for the deepest living organisms, has increased the possibility that similar microbes could be alive deep inside planets.

(2b) \_\_\_\_\_ samples, taken during drilling (3b) \_\_\_\_\_ metres under the seabed, (4b) \_\_\_\_\_ metres below the ocean surface, have revealed life forms cut off from the rest of the natural world for (5b) \_\_\_\_\_ of years. Scientists said the bacteria show it is possible for life to survive under extreme conditions where (6b) \_\_\_\_\_ are (7b) \_\_\_\_\_ times greater than at sea level and where (8b) \_\_\_\_\_ can reach (9b) \_\_\_\_\_ degrees Celsius. Other scientists have previously found huge wormlike animals, called pogonophora, on the seabed near underwater volcanoes.

John Parkes, Professor of (10b) \_\_\_\_\_ at Bristol University, said the discovery of microbes living at such (11b) \_\_\_\_\_ depths has overturned conventional ideas about life on Earth. He said: "This is a big conceptual leap because the idea of life being (12b) \_\_\_\_\_ to the surface of our planet has been shown to be incorrect."

One of the most surprising aspects of the discovery is that the deeper the scientists drilled, the more bacteria they found.

The scientists are confident the bacteria are not (13b) \_\_\_\_\_ because they have never evolved to infect humans or other animals. Preliminary research shows they have a distinct genetic identity and, although (14b) \_\_\_\_\_ related to surface bacteria, they possess unique properties such as (15b) \_\_\_\_\_ to high temperatures and pressures.