UNIVERSITY OF CAMBRIDGE INTERNATIONAL EX
International General Certificate of Secondary Educati

GLOBAL PERSPECTIVES

Paper 3

INSERT (Resource Booklet)

1 hour 15 minutes

READ THESE INSTRUCTIONS FIRST

This Insert contains Source 1. The time spent reading this Source is allowed for within the examination.

This document consists of **3** printed pages and **1** blank page.

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Source 1

Global Gadgets M

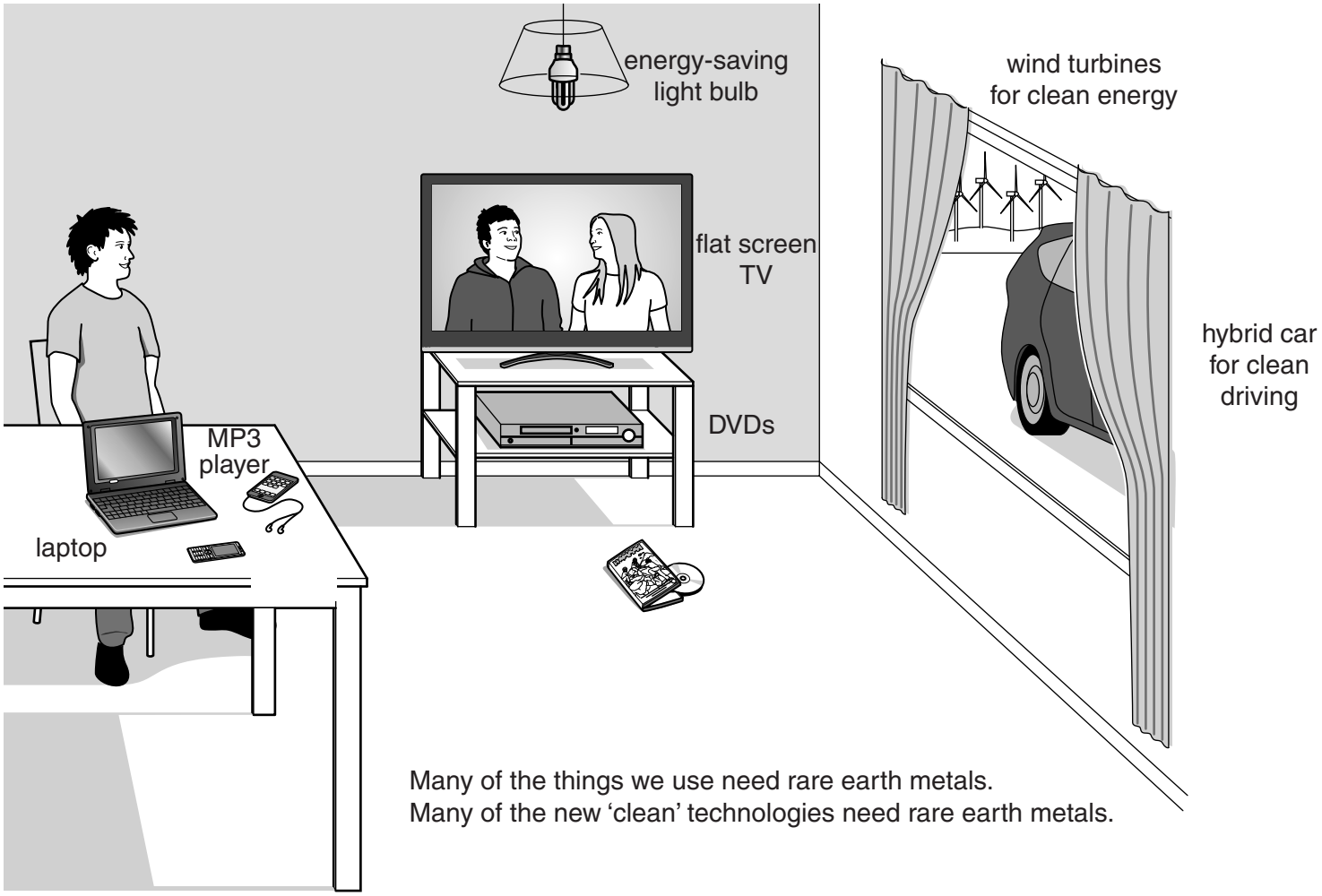
We must act now to save our gadg

What are rare earth metals?

Rare earth metals are a group of heavy metals. They include cerium, erbium, neodymium, lanthanum, europium and terbium.

What are rare earth metals used for?

Uses of rare earth metals include: batteries, electronics, defence technology (such as night vision goggles, guided missiles and armoured vehicles), clean technology (such as recycling and renewable energy) and medical technology. Rare earth metals make very small gadgets (e.g. MP3 players, mobile phones) possible – without rare earth metals your phone would be the size of a brick.



Many of the things we use need rare earth metals.
Many of the new 'clean' technologies need rare earth metals.

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What is the problem?

There is a global shortage of rare earth metals. In 2010, China produc
December 2010, Chinese industries needed most of the rare earth me
that there weren't enough for high-tech industries in Japan, the US, Eu

Furthermore in 2010, 134,000 tonnes of rare earth metals were used
mined. By 2015, global demand for rare earth metals is expected to b
needs new sources of rare earth metals. Or we'll have to do without ou

Where can rare earth metals be found?

Rare earth metals are not really rare. They can be found in:

Australia
Brazil
Greenland
India
Kenya
Madagascar
Malawi
Malaysia
Russia
South Africa
United States

So, no problem then?

Yes, actually. Rare earth metals are difficult to extract from rocks. These rocks also normally contain uranium, which is radioactive. Because of this, mining rare earth metals has a serious environmental impact and leaves thousands of tonnes of radioactive waste, which must be stored somewhere. Also, mining in remote places like Greenland will completely change the traditional way of life, killing animals and turning hunters into miners. But without rare earth metals **our** way of life will be threatened, so we need more rare earth metal mines in more countries.

Online responses to the magazine article

Professor_Karl_Schmidt

I was horrified by your article on rare earth metals. As I see it, there is a shortage of rare earth metals and they are also harmful to mine, so we should restrict their use. We must minimise the damage we do. One consequence of this will be fewer gadgets – but we can keep gadgets for longer and reduce the number we own. We don't need a phone *and* a music player *and* a camera, we can just put our music and photos on the phone. Medical technology and clean technology are more important than gadgets and guns, so this is where we should use a limited supply of rare earth metals.

DKP_Narayan

Losing a traditional way of life is not so bad. Until modernisation came, life expectancy in Greenland was 35 and people were desperately poor. So the introduction of modern industries and ways of life can only benefit these people.

green_crusader

Recycling all the old gadgets we have piling up in our homes might solve the problem.

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