

# Tutor support material

## May 2008

Entry Level

Edexcel Entry Level Certificate in  
Science (8938)

Unit 12: Exploring the Earth and  
Space

Edexcel, a Pearson company, is the UK's largest awarding body offering academic and vocational qualifications and testing to more than 25,000 schools, colleges, employers and other places of learning here and in over 100 countries worldwide. Our qualifications include GCSE, AS and A Level, GNVQ, NVQ and the BTEC suite of vocational qualifications from entry level to BTEC Higher National Diplomas and Foundation Degrees.

We deliver 9.4 million exam scripts each year, with over 3.8 million marked onscreen in 2006. As part of Pearson, Edexcel has been able to invest in cutting-edge technology that has revolutionised the examinations system, this includes the ability to provide detailed performance data to teachers.

*References to third party material made in this specification are made in good faith. Edexcel does not endorse, approve or accept responsibility for the content of materials, which may be subject to change, or any opinions expressed therein. (Material may include textbooks, journals, magazines and other publications and websites.)*

Authorised by Roger Beard  
Prepared by Sarah Harrison

All the material in this publication is copyright  
© Edexcel Limited 2008

# Contents

---

Introduction	1
Worksheets for Unit 12: Exploring the Earth and Space	3



# Introduction

---

This *tutor support material* accompanies the Edexcel Entry Level Certificate in Science specification and has been designed to help teachers prepare for first teaching of the qualification.

This document is for *Unit 12: Exploring the Earth and Space*, and includes worksheets to aid the teaching of this unit.

Additional documents are available for all other units within the Edexcel Entry Level Certificate in Science. There is also a *Teacher's guide* document available on the Edexcel website, which gives more information on specialist language, assessment of practical skills and information on *How Science Works*.

Attention is drawn to the need for safe practice when students carry out laboratory experiments or observe demonstrations. Centres are responsible for the overall risk assessment of experimental work undertaken by students. Reference must be made to COSHH regulations and any specific local education authority restrictions.

Relevant advice can be obtained from the following publications.

- *CLEAPSS Laboratory Handbook* (available from CLEAPSS School Science Service, website [www.cleapss.org.uk](http://www.cleapss.org.uk))
- *Control of Substances Hazardous to Health Regulations* (HSE, 2005) ISBN 0717629813
- *Hazcards* (2004 update available from CLEAPSS School Science Service)
- *Topics in Safety, Third Edition* (ASE January, 2001) ISBN 0863573169



**Worksheets for**

**Unit 12: Exploring the Earth and**

**Space**



## Planets in the solar system — 1



The table shows the distance of the planets from the sun and their size.

This includes Pluto, a dwarf planet.

Planet	Distance from sun (km)	Diameter (km)
Earth	150 000 000	12 800
Jupiter	778 000 000	143 000
Mars	228 000 000	6 800
Mercury	57 900 000	4 880
Neptune	4 500 000 000	49 500
Pluto	5 910 000 000	2 270
Saturn	1 490 000 000	121 000
Uranus	2 870 000 000	51 100
Venus	108 000 000	12 100

## Planets in the solar system — 2

List the planets in order of their distance from the sun in the table below.

Start with the closest planet to the sun.

Planet	Distance from sun (km)

Which is the biggest planet? \_\_\_\_\_

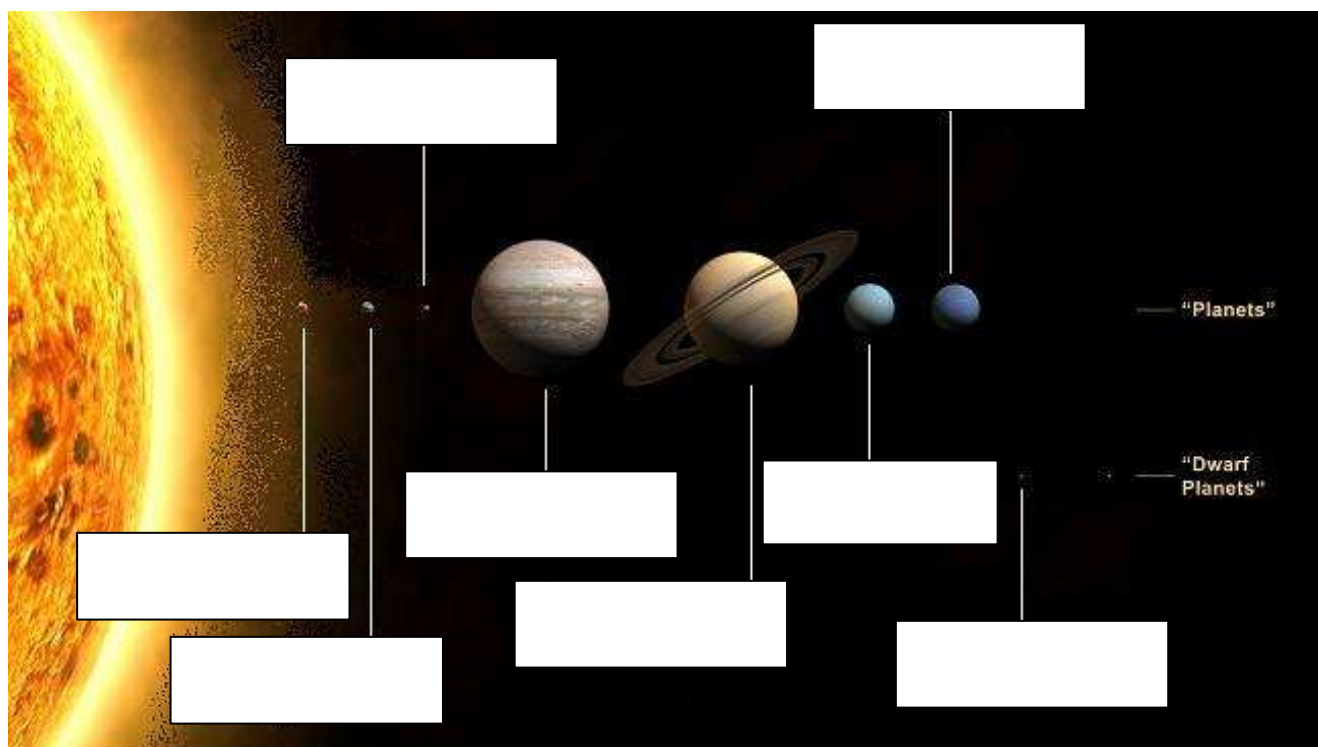
Which is the smallest planet? \_\_\_\_\_

## The solar system

The planets and the sun make up our solar system.

The planets go round the sun.

The **force of gravity** from the sun pulls planets towards it as they go round the sun.



Write the names of the planets on the diagram.

Use the completed table from the page *Planets in the solar system* to help you put them in the correct order.

The Earth is a planet.

The Earth is pulled towards the \_\_\_\_\_ as it goes round it.

The Earth goes round the sun in 1 year.

How many days is this? \_\_\_\_\_ days.

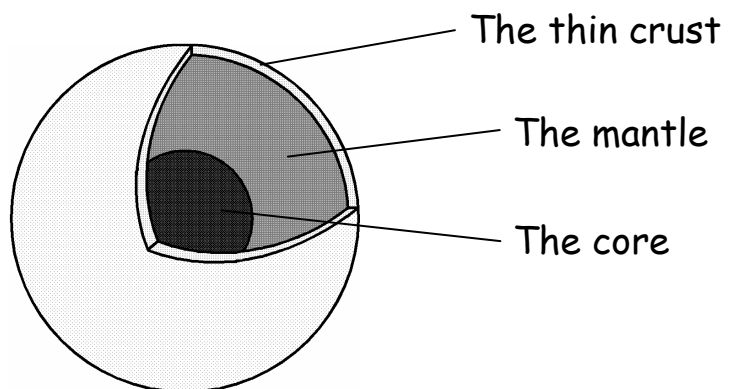
## Inside the Earth - 1

The Earth has three main parts

- a hot **core**, much of it molten.
- a **mantle** of hot rock around the core.
- a **thin crust** of solid rock.



The Earth



Parts of the Earth

We can easily study the rocks on the Earth's surface.

These rocks are affected by the weather in the atmosphere that surrounds the Earth.

When people dig deep mines, or drill into the Earth, they only go down a little way into the crust.

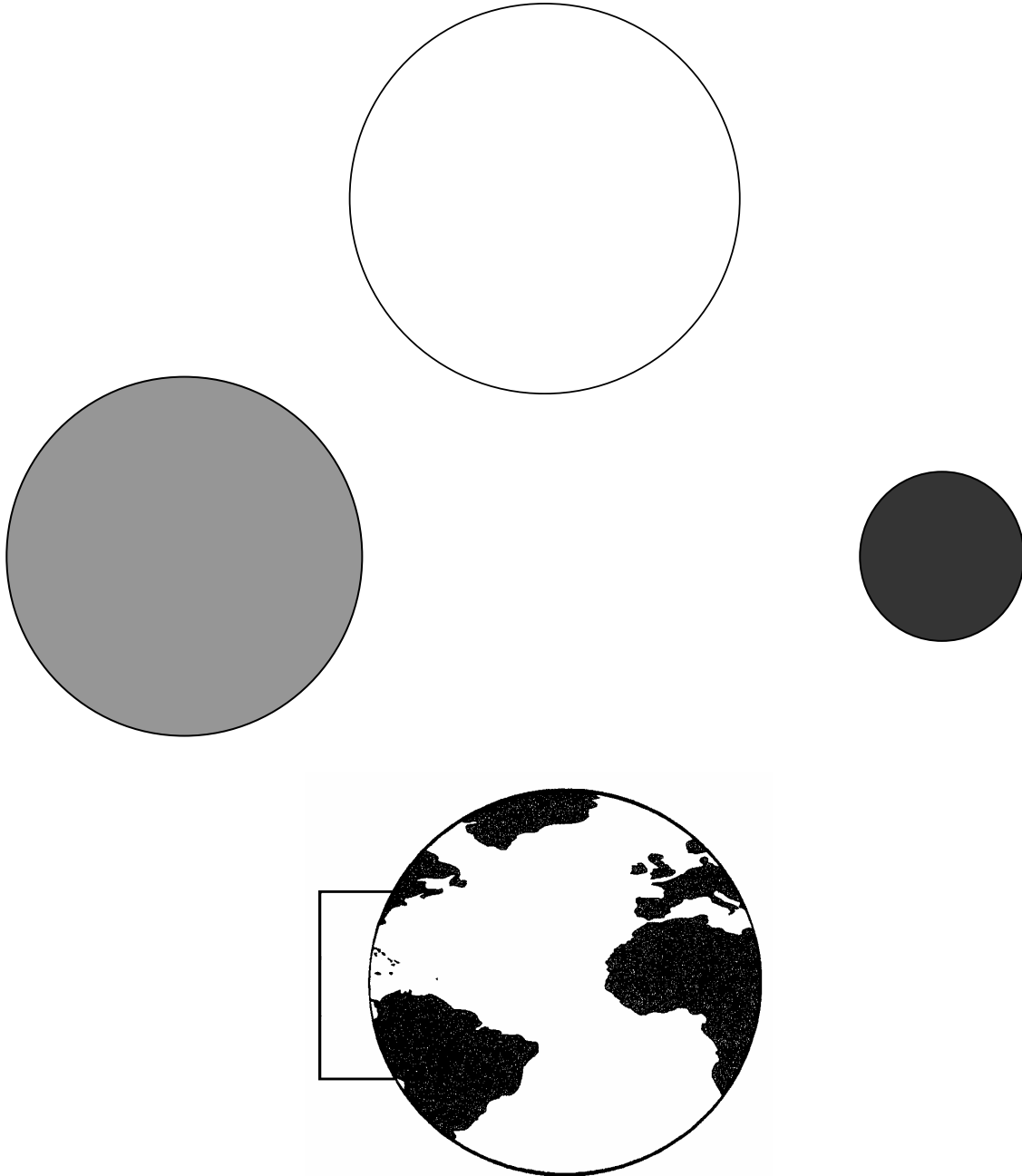
Some volcanoes reach down into the mantle.

Hot molten rock (lava) comes out of volcanoes.

Movement of the crust causes earthquakes.

## Inside the Earth - 2

Build a model of the Earth using the following parts.



**CORE**

**MANTLE**

**CRUST**

## Earthquakes and volcanoes - 1

Sometimes, parts of the Earth's surface (the crust) move.  
This can cause earthquakes.

Earthquakes are happening all the time.

Most are very small and are hardly noticed.

Some are very big and can cause loss of life and lots of damage.

Some places like Japan, or Turkey, or the western USA have more earthquakes than other places.

1. What do you think it is like to live in an earthquake area?

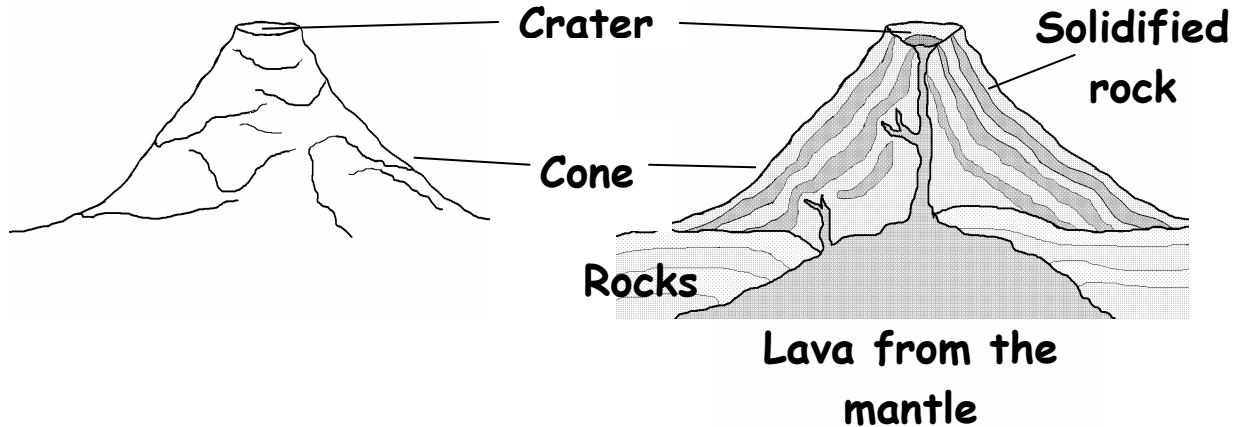
---

---

---

Cracks in the crust can let out the hot molten rock and gases from the mantle to the surface of the Earth.

This is how volcanoes are made.



What a volcano looks  
like on the outside

What a volcano looks  
like on the inside

2. Find out about some famous volcanoes.

3. What do you think it is like to live near a volcano?

---

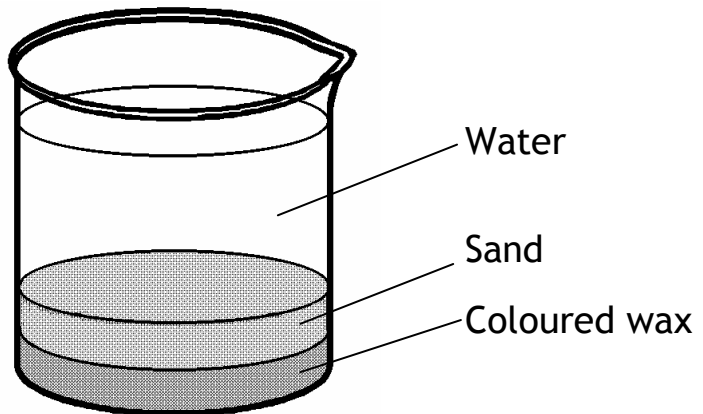
---

## Earthquakes and volcanoes - 2

You can make a model of a volcano (teacher demonstration).

### What you need

Large beaker  
Red candle wax  
Sand  
Water  
Bunsen burner  
Tripod  
Gauze



### What you do

1. Melt the candle wax and pour some into the beaker - enough to make a layer about 1 cm thick.
2. Let the wax cool to a solid.
3. Pour sand on top of the wax to form a layer about 1 cm thick.
4. Carefully pour water into the beaker to near the top.  
Let the sand settle again.
5. Heat the beaker and contents over the Bunsen burner.
6. Describe what happens and draw a picture of it.

---

---

---

---

---

---

---

What it looks like

A large empty rectangular box with a thin black border, intended for a student to draw a picture of the volcano model during the experiment.

## Wordsearch

Find these planets in the word grid.

Jupiter

Uranus

Venus

Pluto

Neptune

Saturn

Mercury

Mars

Earth

S	Y	D	H	I	Q	A	C	V	J	F	M
F	L	S	A	T	U	R	N	P	M	A	E
V	B	S	D	A	P	V	X	T	A	Q	R
W	B	P	L	G	R	I	S	U	R	D	C
R	F	H	T	R	A	E	U	G	S	J	U
J	R	C	Z	H	K	R	N	O	M	E	R
P	F	E	S	D	A	Z	E	K	N	U	Y
P	W	Q	T	P	I	L	V	U	B	R	D
L	G	T	K	I	C	B	T	M	N	A	Y
U	Y	D	A	Z	P	P	V	L	P	N	E
T	H	U	W	Q	E	U	X	M	L	U	S
O	A	J	L	N	E	B	J	H	T	S	P



**Across**

- 1 We live on this planet.
- 2 What is the name of the name of the closest planet to the sun?
- 6 The planets go around this.
- 7 This flows out of volcanoes.
- 8 The centre of the Earth.
- 9 How long does it take the Earth to go round the sun?
- 10 Which force pulls planets towards the sun?

**Down**

- 1 Movement of the Earth's crust causes them.
- 3 Hot rock that surrounds the centre of the Earth.
- 4 What is the name of the largest planet?
- 5 What is the name of the furthest planet from the sun?
- 8 What is the name of the outer surface of a planet?

May 2008

For more information on Edexcel and BTEC qualifications please contact  
Customer Services on 0870 240 9800  
or <http://enquiries.edexcel.org.uk>  
or visit our website: [www.edexcel.org.uk](http://www.edexcel.org.uk)

Edexcel Limited. Registered in England and Wales No. 4496750  
Registered Office: One90 High Holborn, London WC1V 7BH. VAT Reg No 780 0898 07

A PEARSON COMPANY

