ABINGDON SCIENCE PARTNERSHIP

1. Planet Earth

Edexcel GCSE Astronomy Course

1.1 Know that the shape of the Earth is an oblate spheroid

Tasks:

Look up an online or dictionary definition of the term ‘oblate spheroid’ and write down what it means.

Sketch a diagram showing the difference between the Earth’s polar and equatorial diameters

Learn the definition of oblate spheroid - add it to your revision notes or list of astronomy technical words and phrases

https://www.universetoday.com/15055/diameter-of-earth/amp/

1.2 Be able to use information about the mean diameter of the Earth (13 000 km)

Try some calculation challenges using the mean diameter of the Earth

(d = 13 000km)

1. Calculate the Earth's circumference using πd
2. Calculate the surface area of the Earth using $4\pi(d/2)^2$
3. Calculate the volume of the Earth using $4/3(\pi(d/2)^3)$
4. Search online to find the mean distance from the Earth to the Moon and calculate how many Earth diameters would fit into this distance
5. Search online for the diameter of the Moon and calculate the ratio of Moon to Earth diameters

1.3 Understand the Earth’s major internal divisions and their features:

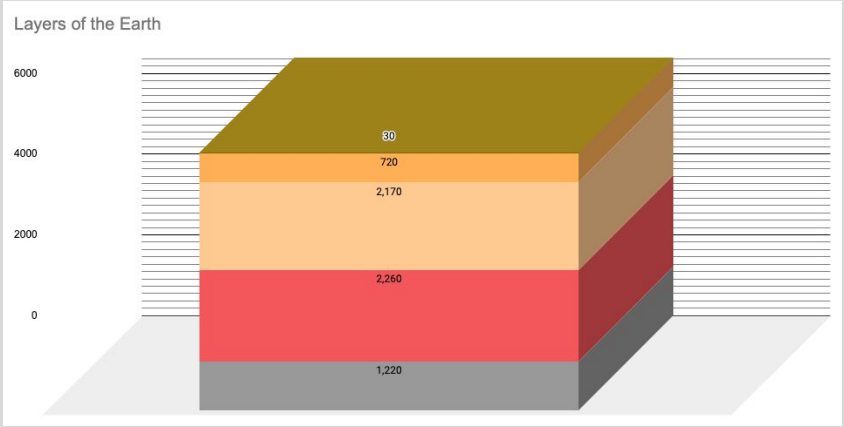
a crust

b mantle

c outer core

d inner core

Structure of the Earth	
	Thickness(km)
Crust	30
Upper Mantle	720
Lower Mantle	2,170
Outer core	2,260
Inner Core	1,220
Radius:	6400



1.4 Be able to use the latitude and longitude co-ordinate system
1.5 Be able to use the major divisions of the Earth's surface as astronomical reference points, including:

a Equator
b Tropic of Cancer
c Tropic of Capricorn
d Arctic Circle
e Antarctic Circle
f Prime Meridian
g North Pole
h South Pole

Point A has Latitude 32^0 and Longitude 0^0

What are the co-ordinates of Point B?

Look up the definitions of the geographical reference lines and points above and mark them on this diagram if you can.

1.6 Understand the effects of the Earth's atmosphere on astronomical observations, including sky colour, skyglow (light pollution) and 'twinkling' (seeing)

1. Why is the sky blue? Watch this: https://www.youtube.com/watch?v=yRvy7p8agJ8

   And learn the short answer here for exam questions:

   https://www.rmg.co.uk/discover/explore/why-is-the-sky-blue

2. What is skyglow and what causes light pollution? All the definitions you need are here - write them down in your notes https://www.darksky.org/light-pollution/ (this is a useful way to classify levels of light pollution https://astrobackyard.com/the-bortle-scale/)
3. What causes stars to twinkle and affects 'seeing'? This link gives a detailed explanation which will be useful when you do observing projects. For exam questions just write down and learn the definition in the first sentence and be able to explain why it is a problem (see the second sentence) https://www.skyatnightmagazine.com/advice/what-is-astronomical-seeing/ You also need to know about the Antoniadi scale given here: http://www.astrodictionary.chevinside.com/seeingscale.htm