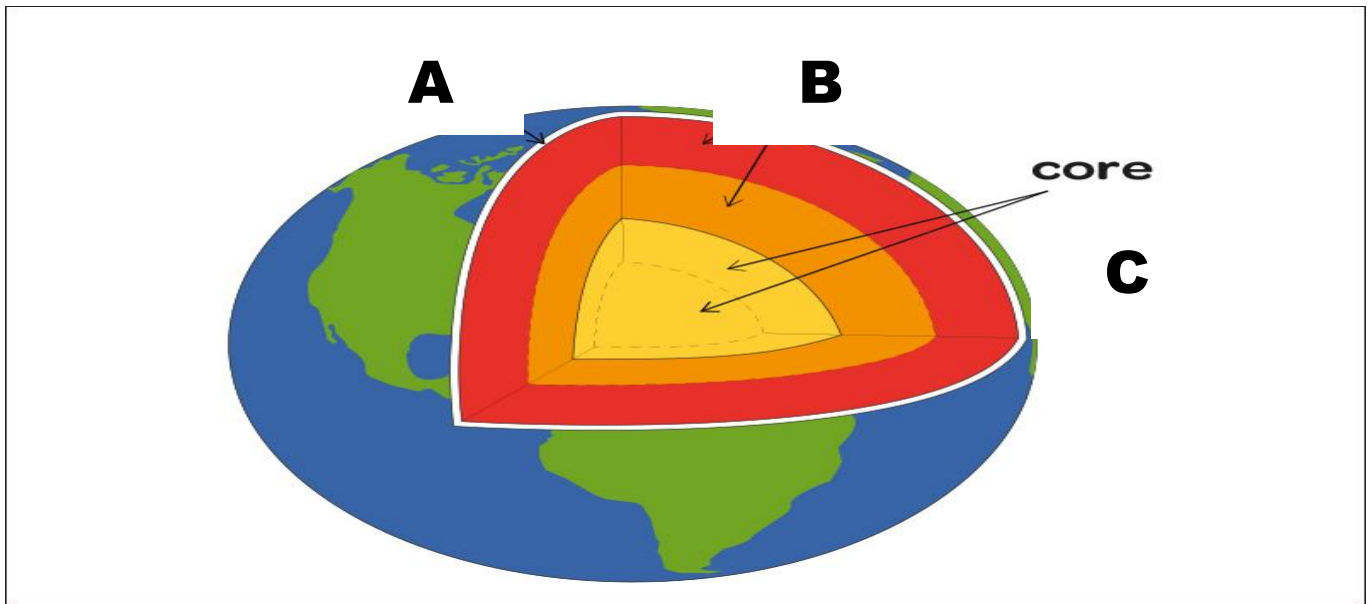


**GEOMORPHOLOGY WORKGUIDE**

1. Study the diagram below on the structure of the Earth and answer the questions that follow.



1.1 Identify the layers labelled A, B and C.

A - \_\_\_\_\_

B- \_\_\_\_\_

C- \_\_\_\_\_

1.2 In what state does material in each of the layers labelled A,B and C exist.

A- \_\_\_\_\_

B- \_\_\_\_\_

C- \_\_\_\_\_

1.3 Describe the temperature change as one moves from layer C to layer A

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1.4 The layer labelled C may be divided into two layers. Name these two layers.

i. \_\_\_\_\_

ii. \_\_\_\_\_

1.5 What is the name of the material found in layer C?

\_\_\_\_\_

1.6 State one way in which the layer labelled A is important to humans.

\_\_\_\_\_

1.7 The crust is the outer layer of the Earth and it consists of a comparatively low density, brittle material varying between 5 km and 50 km thick. How is it possible that the crust varies between 5 km and 50 km thickness.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

1.8 Explain the following terms .

a) Sial- \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b) Sima- \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c) Viscous - \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

d) Geoid –Shape- \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Answer the following questions based on Rock types.

2.1 Which gas is a common element found in rocks ?

\_\_\_\_\_

2.2 Complete the table below

<b>NO.</b>	<b>Rock Type</b>	<b>Characteristics</b>
2.2.1		No layers
2.2.2		Smooth rounded surface / has layers
2.2.3	Igneous	
2.2.4		Hard / fine crystals / original rock had layers
2.2.5	Metamorphic	
2.2.6		Hard/ Cooled down slowly
2.2.7		Used by sculptors and in ornamental buildings
2.2.8	Igneous	
2.2.9		Formed by remains of small animals
2.2.10	Sedimentary	



3. Answer the following questions based on igneous sedimentary and metamorphic rocks.

3.1 Explain how igneous rocks are created

3.2	

Give three characteristics of igneous rocks .

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

3.3 Why are igneous rocks so difficult to erode?

---

---

---

3.4 A large part of South Africa is made from igneous rock. This region remains higher than the rest of the landscape. What is this higher section called?  
( **Hint:** It separates coastal areas from inland areas)

---

---

3.5 Why would igneous rocks appear dark in colour ?

---

---

---

3.6 What crystal sizes are found in igneous rocks ? ( Hint : These crystals have not been eroded or changed. Erosion would smooth crystal sizes and heat or pressure would change their size & shape.)

---

---

3.7 Why are many semi-precious metals and minerals found in igneous rocks

---

---

3.8 Hawaii has many volcanoes. The lava from these volcanoes cools and forms thick, dark rocks called basalt . Over time, these rocks erode into a dark , fertile soil.

3.8.1 Why is the soil found near volcanoes so fertile? \_\_\_\_\_

---

---

3.8.2 How does this explain why people choose to live near volcanoes ?

---

---

---

3.9 List three ways in which humans use igneous rocks in everyday life.

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_

3.10 Most sedimentary rocks are found in areas where there used to be large inland seas or lakes . Explain why this is so.

---

---

---

---

4. Answer the following questions based on the rock cycle.

4.1 What is a rock cycle ? \_\_\_\_\_

---

---

4.2 What do we call rocks that were formed as a result of volcanic activity?

---

---

4.3 Differentiate between magma and lava.

---

---

---

4.4 Name two elements that can erode or break rocks into pieces.

i. \_\_\_\_\_

ii. \_\_\_\_\_

4.5 Name the small pieces of rock that can be carried and dropped by these two elements during erosion.

---

4.6 What happens to these pieces of rock after a long time ?

---

---

---

4.7 Name two things that happen when the Earth's tectonic plates move around.

i. 

---

---

ii. 

---

---

5. Answer the following questions based on intrusive igneous activity

5.1 What is the difference between a mesa and a butte (Draw diagrams to explain)

---

---

---

---

**Diagrams :**

<b>MESA</b>	<b>BUTTE</b>