GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

SENIOR PHASE – SOCIAL SCIENCES

GRADE 9

TERM 3 WORKBOOK GEOGRAPHY

LEARNER'S BOOK

WEEK Table of content

WEEK 1:
Introduction to the topic: Surface forces that shape the earth
Concept of weathering:
Physical weathering
Chemical weathering
Biological weathering Surface forces of the Earth

1.1 Define the following concept: **(2x1)** **(2)**
Weathering **L2**

_____

_____

_____

_____

1.2 Mention three types of Weathering **3 x 1** **3**
L1

_____

_____

_____

1.3 Briefly explain the processes of chemical weathering. **3 x 2** **6**
L3

_____

_____

_____

_____

_____

_____

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_____

_____

_____

1.4 State whether the following are **True** or **False**. Elaborate why? **(1+2)** **3**
L2

a. Plants growing on the rocks are one of the main sources of biological weathering

_____

b. Which of the following causes biological weathering? Explain. **(1+2)** **3 L2**
- Ice
- Water
- Fungi
- Heat

1.5 What is the difference between weathering and Erosion. **(1 x2)** **2 L2**

WEEK 2: Difference between weathering, erosion and deposition

2.1 Tabulate the following statement into the three processes : **Weathering, Erosion and Deposition** and only write the letters in the table during tabulation. **(1 x6)** **6 L2**

A. Water getting into cracks,freezing and breaking rocks
B. Wind blowing sand from one place to the other
C. Floods water moving soil from one location to another
D. Raindrops on some rocks making them wear down

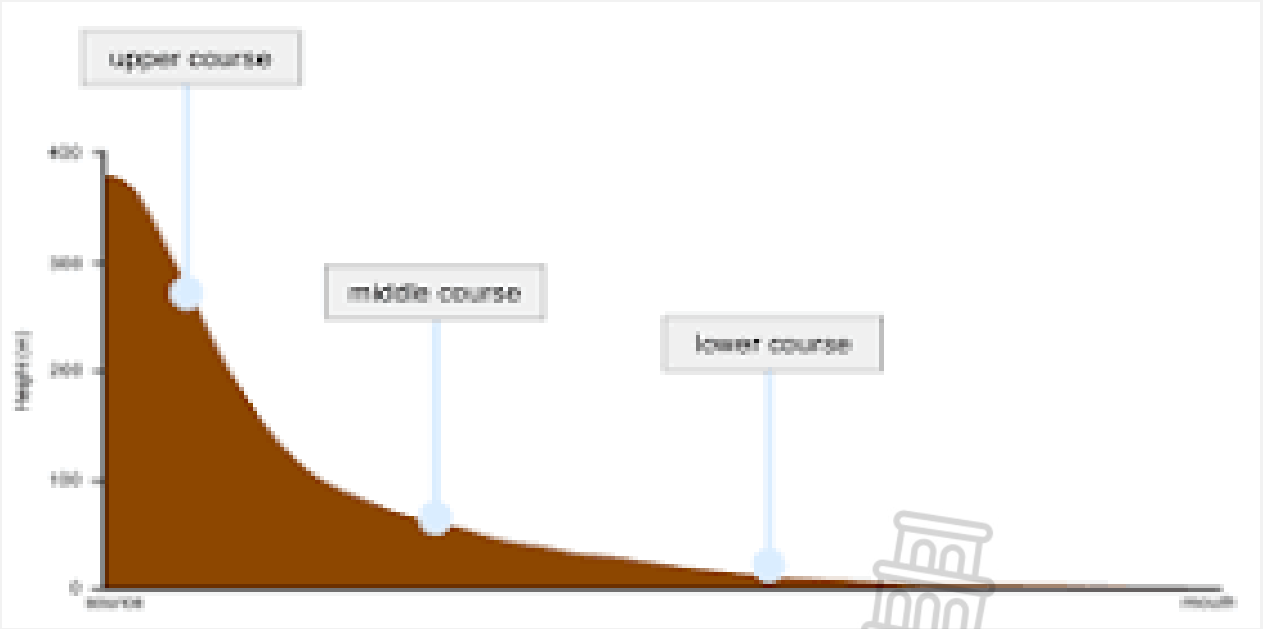
E. Rainwater carrying particles away from a hill

F. Muddy water being transported by fast moving river

G. Transported material built-up at river mouth

Weathering	Erosion	Deposition

2.2



A. Where is deposition taking place in the diagram **(1X1) 1**

L1

_____

_____

B. What feature can we find in the upper course **(1X1) 1**

L1

_____

_____

C. How is the erosional flow in the middle course (1X1) 1 L1

_____

_____

D. Is the profile concave or convex? (1X1) 1 L1

_____

_____

E. Explain the longitudinal profile of a river. (2X2) 4 L2

_____

_____

_____

_____

_____

2.3 Study the Diagrams below and answer the Questions that follow:

A

B

A. Between the two diagrams, which one shows gravitational erosion. 1x1 1 L1

_____

_____

B.What do you think is happening in disgram A **1X2** **2**

L2

_____

_____

_____

2.4 How can human cause erosion **2 x2** **4**

L3

_____

_____

_____

_____

_____

2.5

a. What do we call this process on the diagram **1 x1** **1**

b. Where is it occuring on the longitudinal profile of a river **1 x1** **1**

c. Does erosion take place on the outside or inside bank ? **1 x1** **1**

d. Where is an oxbow taking place in this process **1 x1** **1**

L1

a. _____ 1x1 1 L1

_____

_____

b. _____ 1x1 1 L1

_____

_____

c. _____ 1x1 1 L1

_____

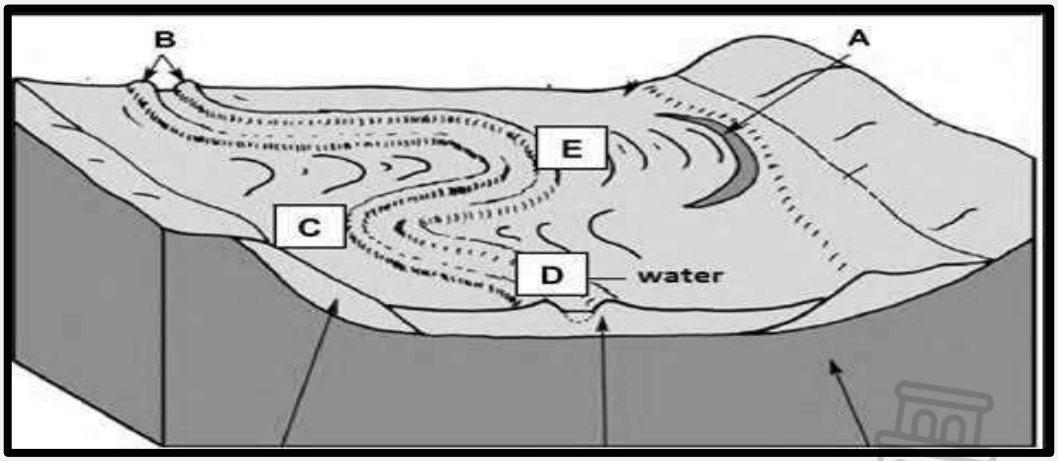
_____

d. _____ 1x1 1 L1

_____

_____

2.6 Study the diagram below and use the options provided to answer the questions below:



Levee, oxbow lake, delta, meander, erosion, deposition, neck, lower course, upper

2.5.1 **A** is a feature that forms when a loop is cut off from the bend of a river. 1x1 1 L1

_____

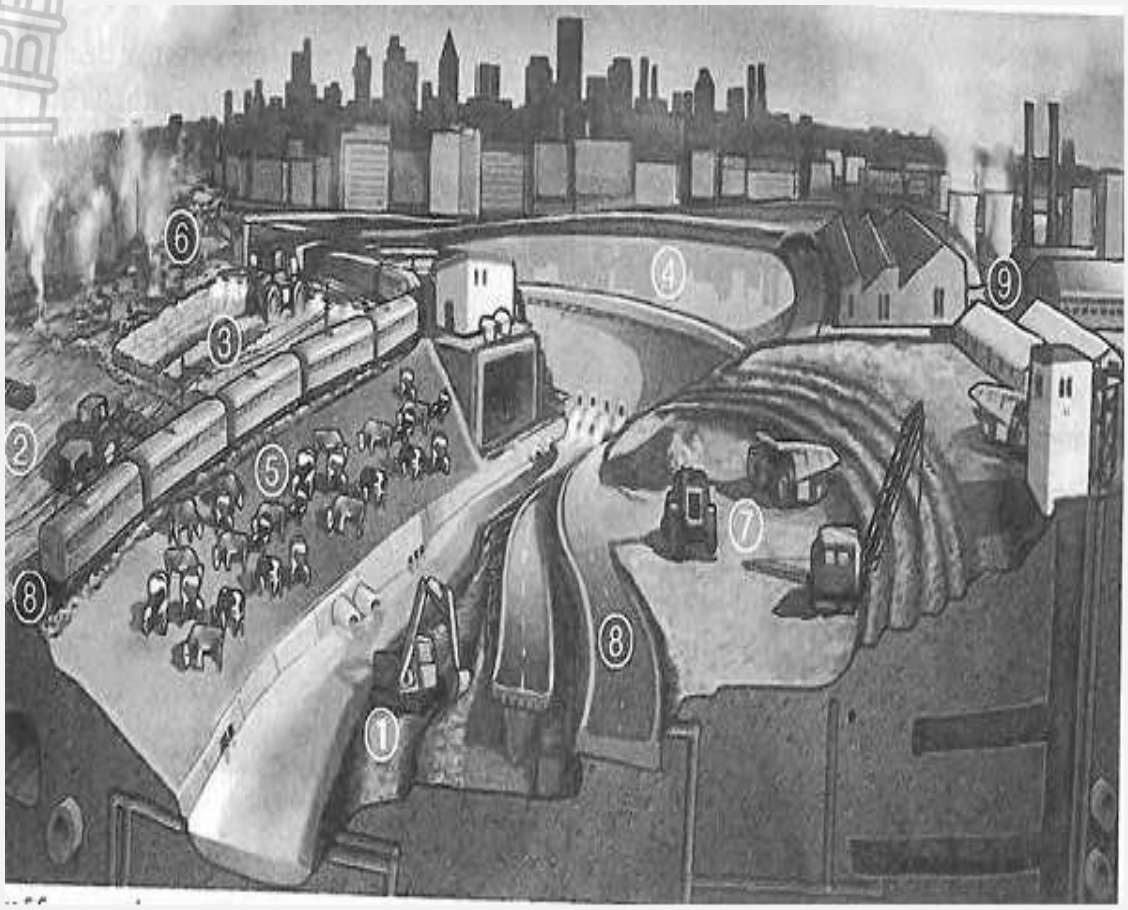
_____

_____

2.5.2	**B** develops when gravel and silt accumulates on the banks of a river resulting in the bank being raised. _____ _____ _____	1x1	1 L1
2.5.3	Flat land next to the river and is sometimes flooded is called **C**. _____ _____ _____	1x1	1 L1
2.5.4	This occurs on the outer bend of a river where the water flow the fastest. _____ _____ _____	1x1	1 L1
2.5.5	The pattern of the river at **E** is a _____ _____ _____	1x1	1 L1
2.5.6	In which stage of the river is this pattern found? _____ _____ _____	1x1	1 L1

Week 3 - IMPACT OF HUMAN ACTIVITIES ON WEATHERING

Refer to the diagram below and answer the questions set:



3.1 State whether the following statements are **TRUE** or **FALSE**

3.1.1	Most of the activities from the above diagram are human activities resulting to weathering. _____ _____	1x1	(1) L1
3.1.2	In number 2 natural vegetation have been removed and soil is exposed to erosion. _____ _____	1x1	(1) L1
3.1.3	Breeding of cattle in a confined space is good practise. _____ _____	1x1	(1) L1

3.1.4 Number 8 have no impact on weathering. **1x1** **(1)** **L1**

_____

_____

3.1.5 There is no impact of human activity number Three (3) there is no impact of human activity in the water. **1x1** **(1)** **L1**

_____

_____

3.2. Refer to Figure 3.1 and in a sentence/one word explain what is happening in the following numbers:

3.2.1 2 **1x2** **(2)** **L2**

_____

_____

_____

_____

_____

3.2.2 3 **1x2** **(2)** **L2**

_____

_____

_____

_____

_____

3.2.3 5 **1x2** **(2)** **L2**

_____

_____

_____

_____

_____

3.2.4 8 **1x2** **(2)** **L2**

_____

_____

3.2.5 **9** **1x2** **(2)** **L2**

3.3 Suggest what can be done in the following numbers to reduce the human impact on weathering.

3.3.1 **3** **1x2** **(2)** **L3**

3.3.2 **5** **1x2** **(2)** **L2**

3.3.3 **9** **1x2** **(2)** **L2**

WEEK 4

Rivers: Features of erosion and deposition along a river course:
- **Waterfalls and rapids**
- **Gorges and canyons**

4.1 Refer to the waterfall picture below and answer the questions that follow:

https://www.sa-venues.com/attractionsmpl/mac-mac-falls.php.

4.1. Choose the term in brackets to make sentences correct by underlining

4.1.1	(**Erosion / Deposition)** is the primary geological process responsible for the formation of waterfalls	**1x1**	**(1)** **L2**
4.1.2	**(Resistant and less resistant rock layers/ Decreased precipitation)** is/ are the factor/s plays a crucial role in the formation of waterfalls	**1x1**	**(1)** **L2**
4.1.3	In the formation of waterfalls, **(Igneous/ Sedimentary)** rock layer typically erodes more slowly and forms the waterfall's resistant cap	**1x1**	**(1)** **L2**
4.1.4	Basin or pool of water at the base of a waterfall, created by the erosional action of the falling water**(Plunge pool/ Lagoon)**	**1x1**	**(1)** **L2**

4.1.5	**(Hanging /Retreat)** waterfall formed by the gradual retreat of a waterfall upstream due to erosion	**1x1**	**(1)** **L2**

4.2

Refer to the rapid picture below and answer the questions that follow:

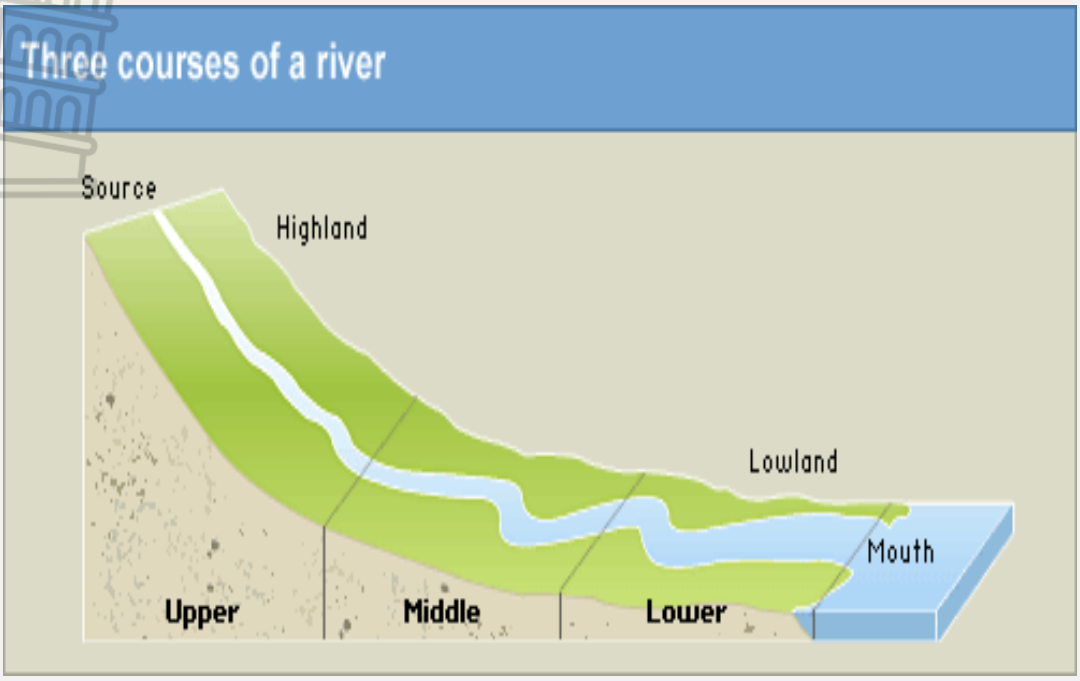
https://www.backpackers-south africa.co.za/info/businesses/28172/images/bottom_images/1.jpg

4.2 Choose the term in brackets to make sentences correct by underlining

4.2.1	**(Steep gradient or slope/Slow water flow)**is the primary factor contributing to the formation of rapids in a river.	**1x1**	**(1)** **L2**
4.2.2	**(Stagnant and still/ Fast-moving with turbulent sections)** describes the characteristic flow of water in rapids.	**1x1**	**(1)** **L2**
4.2.3	**(Gravel/ Bedrock)** is the type of riverbed material is often associated with the creation of rapids.	**1x1**	**(1)** **L2**
4.2.4	**(Exciting and challenging paddling experiences/ Slow, leisurely paddling)** is the main reason kayakers and whitewater enthusiasts are drawn to rapids.	**1x1**	**(1)** **L2**
4.2.5	**(Swirlpool/ White water)** term is used to describe the turbulent, aerated water that often characterizes rapids.	**1x1**	**(1)** **L2**

4.3 **5x1** **(5)** **L2**

Study the sketch and Complete the table below



https://www.juntadeandalucia.es/averroes/centros-tic/04005442/helvia/aula/archivos/repositorio/0/69/html/course_of_a_river1.gif

Upper Course of the river	
Shape of the valley	
Width of the valley	
Erosion or deposition	
Features formed	

4.4 Study the pictures below of a waterfall and rapid and answer the questions below

https://live.staticflickr.com/3100/2418532676_d61fe88069_b.jpg

https://www.clarens.co.za/wp-content/uploads/2021/03/white-river-rafting.jpg

4.4.1 How do rapids differ from waterfalls? **2x2** **(4)** **L3**

_____

_____

_____

_____

_____

_____

_____

4.4.2 What is the significance of waterfalls and rapids in shaping the Earth's surface? **1x2** **(2)** **L3**

_____

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_____

4.4.3 What are the primary erosional processes involved in the formation of waterfalls? **2x1** **(2)** **L2**

_____

_____

_____

_____

4.4.4 What recreational activities can be enjoyed at waterfalls and rapids? **2x1** **(2)** **L1**

_____

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4.4.5 Discuss the environmental impact of human activities, such as dam construction and deforestation, on the formation and sustainability of waterfalls in natural landscapes. **2x2** **(4)** **L3**

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4.4.6 Imagine you are a geologist tasked with studying a newly discovered waterfall. What geological and environmental factors would you investigate to understand its formation and long-term stability? **2x2** **4** **L3**

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4.5 Study the following picture of Blyderiver Canyon and anser the questions below:

https://images.rove.me/w_1920,q_85/mwn0ns5wmxutgysx5y4m/south-africa-blyde-river-canyon.jpg

4.5.1 What is the primary agent responsible for the formation of canyons and gorges? **1x1** **(1)** **L1**

_____

_____

_____

4.5.2 How might climatic factors, such as changes in precipitation patterns and temperature over geological time scales, influence the formation and evolution of canyons? **1x2** **(2)** **L3**

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_____

4.5.3 How does the underlying rock type affect the formation and characteristics of canyons? **1x2** **(2)** **L3**

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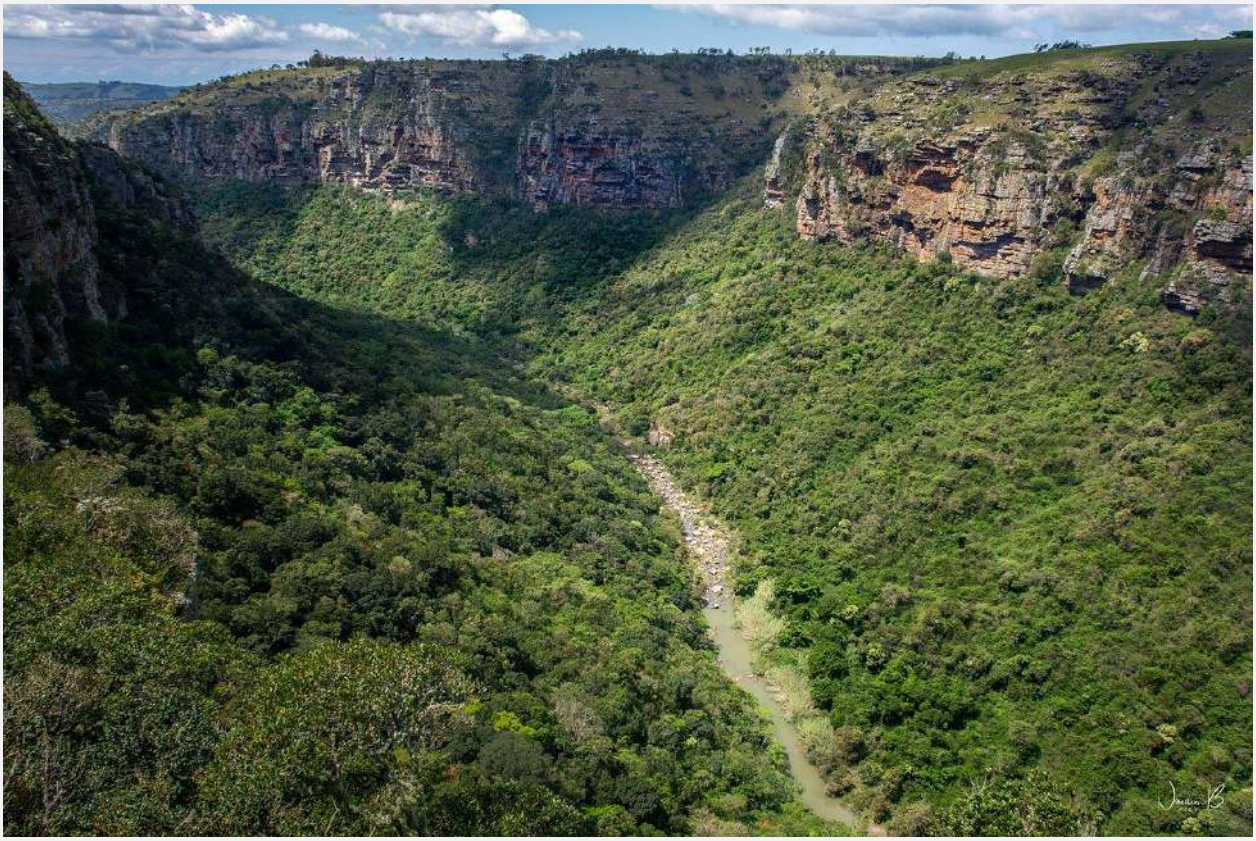
4.6

Study the following picture of Oribi Gorge and answer the questions below:



https://dynamic-media-cdn.tripadvisor.com/media/photo-o/15/6e/96/56/we-have-just-returned.jpg?w=1200&h=-1&s=1

4.6.1 What are the primary geological processes responsible for the formation of gorges? **2x2** **(4)** **L2**

_____

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4.6.2 Differentiate between a V-shaped valley and a gorge. **2x2** **(4)** **L3**

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4.6.3 How can human activities, such as mining and urban development, impact the formation and preservation of gorges in natural landscapes? **2x2** **(4)** **L2**

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Week 5: Rivers: Features of erosion and deposition along river course: Meanders and Oxbow lakes

5.1 Define the following concepts. **1x2** **2** **L2**

a. Meander

_____

_____

_____

_____

b. Oxbow lake **1x2** **2** **L2**

_____

_____

_____

_____

5.2 Label the below diagram that shows features of river erosion and deposition. **10x1**

L1

https://th.bing.com/th/id/OIP.hUr1KxJhuxgP2fCWpe-u0QAAAA?pid=ImgDet&rs

_____

1._____

2._____

3._____

4._____

5._____

6._____

7._____

8._____

9._____

10._____

5.3 Explain how does meanders form.

_____ 2x2 4
_____ L3
_____
_____
_____

5.4 In which stage of the river do you find meander and waterfall?

Meander_____ 2x1 2
_____ L1
_____

Waterfall_____
_____
_____

Week 6: Rivers: Features of erosion and deposition along river course: Levees and Delta

6.1 Define the following concepts.

a. Delta 1x2 2
_____ L2
_____
_____

b. Levee 1x2 2
_____ L2
_____
_____

6.2 In which stage of the river do you find Delta and Levee? 2x1 2
_____ L1

Delta_____
_____

Levee_____
_____

6.3	Explain similarities between Delta and Levee.	2x2	4 L3

_____

_____

_____

_____

_____

6.4	What is the difference between a meander and delta?	2x2	4 L2

_____

_____

_____

_____

_____

_____

6.5	Give **Three** (3) Disadvantages of living around around of Deltas.	3x2	6 L2

_____

_____

_____

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_____

_____

_____

WEEK 7

The impact of people on soil erosion

- **Human contributions to erosion through agriculture, construction, and mining**
  Agriculture as a contributor to erosion

7.1	**Human contributions to erosion through agriculture, construction, and mining**		
7.1.1	Soil erosion is the wearing or removal of topsoil. **(True/ False)**	**(1x1)**	**(1)** **L1**

7.1.2 **Refer to the pictures below to identify how the human activities impact on soil erosion** **(5x1)** **(5)**

L1

7.1.2.1 _____

7.1.2.2 _____

7.1.2.3 _____

7.1.2.4 _____

7.1.2.5 _____

7.1.3 List any 2 effects of soil erosion **(2X1)** **(2)**

_____ **L1**

_____

_____

_____

_____

_____

7.2 **Case study:** Agriculture as a contributor to erosion

Read the following case study and answer the questions that follow.

The main source of livelihood of the people in the Denku Region in Ethiopia is agriculture. The major source of crops grown in the area include tef (the staple grain of Ethiopia), haricot beans and maize.
However, in recent years, because of soil erosion that has reached a chronic level, agricultural production has declined significantly. The people in this area say that because of a decline in agriculture due to soil erosion, they have had to reduce the numbers of daily meals as well as the quantity of food per meal.

[Source: Via Afrika, Social Sciences, Grade 9, page 179]

7.2.1 Explain the meaning of the term soil erosion. **(1x2)** **(1)** **L2**

Removal of soil by forces of erosion such as running water and wind ✓✓

7.2.2. Name ONE way soil erosion has disadvantaged the people living in the Denku Region of Ethiopia **(1x1)** **(1)** **L1**

_____

_____

_____

_____

7.2.3 Mention any **Four (4)** bad farming practices that can cause soil erosion. **4x1** **(4)** **L1**

_____

_____

_____

_____

_____

_____

_____

7.2.4 Write a paragraph to discuss how better practices can be introduced to help the small-scale farmer. **(4x2)** **(8)** **L3**

a. **Reduce soil erosion.**

_____

_____

_____

b. **Improve Agricultural production.**

WEEK 8

Case study: Agriculture as a contributor to erosion

8. Study **Figure 8A** below on Soil erosion in the Ithala Game Reserve in KwaZulu Natal. The area in the foreground used to be covered in thick soil, next to a small stream. Then answer the questions that follow:

An example of soil erosion in KwaZulu-Natal.

Source from Platinum; Social Science Grade 9 p.78

8.1 Define the following concepts: **(4x1) L2**

8.1.1 Monoculture:

_____

_____

_____

_____

8.1.2 Crop rotation:

_____

_____

_____

_____

8.1.3 Overstocking:

_____

_____

_____

_____

8.1.4 Over-grazing:

_____

_____

_____

_____

8.2 Refer to source 8A and answer the questions that follow:

8.2.1 Identify **THREE** (3) clues from the source that indicate whether the soil was removed by wind or water erosion. (3x1) L1

_____

_____

_____

_____

_____

_____

8.2.2	Explain why do you think soil erosion is a serious environmental issue in Ithala Game Reserve?	**(1x2)**	**L2**

_____

_____

_____

_____

_____

8.2.3	The area shown on the photograph was used for cattle. Explain **THREE** reasons that could have contributed to soil erosion.	**(3x2)**	**L2**

_____

_____

_____

_____

_____

_____

_____

8.2.4	Write a paragraph to explain how using farm machines could have contributed to soil erosion, when this area was a farm.	**4x2**	**8** **L3**

_____

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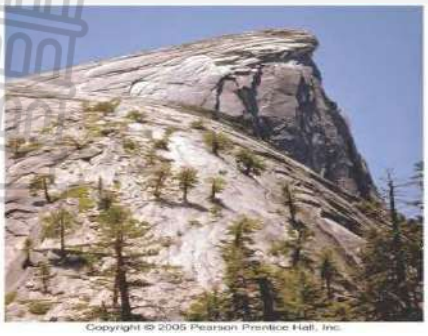
_____

WEEK 9: Revision & consolidation

9.1 Refer to the pictures below and answer the question set:



A **B** **C**

9.1.1	Identify different types of mechanical weathering from pictures labeled **A** to **C** _____ **_A.**_____ _____ **_B.**_____ _____ **_C.**_____	**3x1**	**(3)L 1**
9.2	Look at the pictures labelled **A – E** below. For each picture state whether it causes physical, chemical or biological weathering.	5x1	(5) L1

A B

C D

E

_____

_A._____

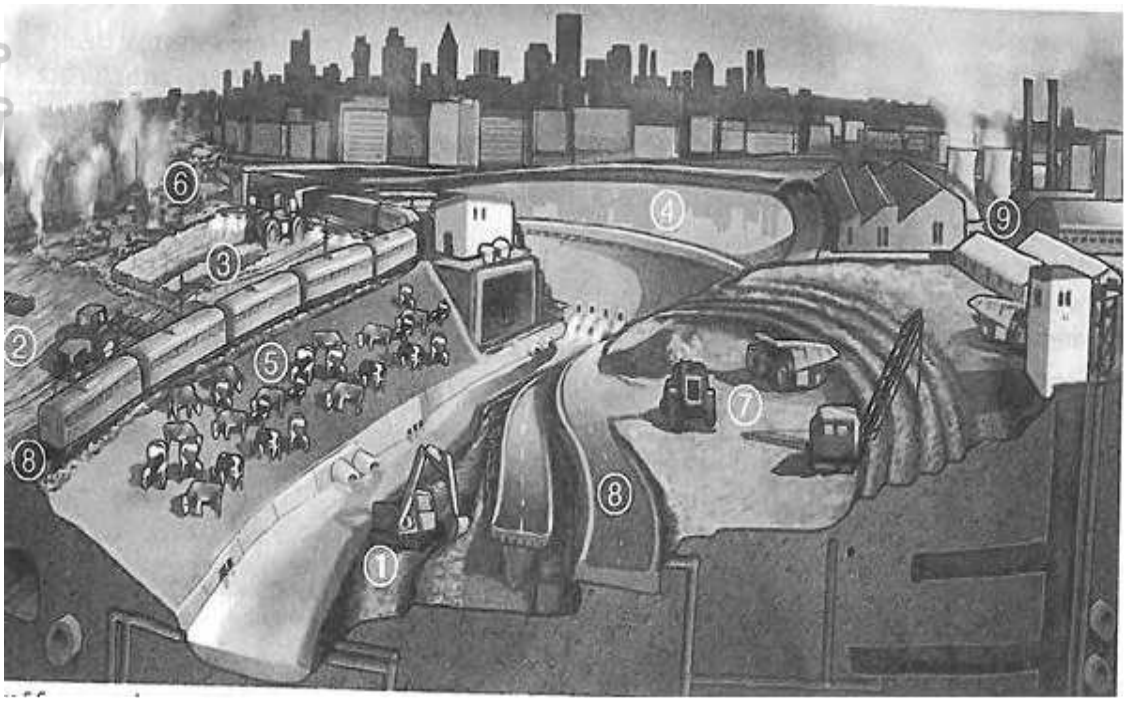
_B._____

__C._____

__D._____

__E._____

9.3 Refer to the diagram below and answer the set questions:



9.3.1 Identify **ONE** example from the diagram where each kind of weathering is taking place: **1x3** **(3)** **L1**

a. physical

_____

_____

_____

b. chemical

_____

_____

_____

c. biological

_____

_____

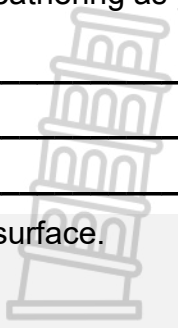
_____

9.3.2 Name **4** ways that human activities expose soil and rocks. **4x1** **(4)** **L1**

_____

_____

9.3.3	Explain in **3** ways how can exposing soil and rocks increase physical weathering?	**3x2**	**(6)** **L2**
9.3.4	Describe **ONE** way that human activities contribute to increased chemical weathering.	**1x2**	**(2)** **L2**
9.3.5	Which human activity has greatly increased biological weathering as you see from the picture?	**1x1**	**(1)** **L1**
9.3.6	**Describe** the effect of this activity (**9.3.5**) on the earth's surface.	**1x2**	**(2)** **L2**



_____

_____

9.4 Look at the pictures below labelled **A – D**. For each picture state what process has caused the weathering. **4x1** **(4)** **L1**

A

B

C

D

_____

_A._____

_B._____

__C._____

__D._____

9.5 Complete the table below

(6) L2

	Weathering	Erosion	Deposition
Definition			
Types			
Results			

3x2

10x1 (10) L2

3x2 6 L2

9.6

9.6.1 Name the most important agent of erosion. 1x1 (1) L1

_____

_____

_____

9.6.2 Name the three stages of a river? 3x1 (3) L1

_____

_____

_____

_____

_____

_____

9.6.3 Name the main process in the upper course of the river. **1x1** **(1)**
L1

_____

_____

_____

9.6.4 Explain what happens at each river stages. **3x2** **(6)**
L2

_____

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9.7 Draw 3 stages and explain how the ox bow lake is formed

Stage 1 **2x2**
L3

Stage 2 **2x2**
L3

Stage 3 **2x2**
L3