



SUBJECT and GRADE	GEOGRAPHY – GRADE 12	
TERM 1	Week 2 Lesson 2	
TOPIC	TROPICAL CYCLONES	
AIMS OF LESSON	<i>To strengthen your knowledge, understanding and interpretation of tropical cyclones and its impact.</i>	
RESOURCES	Paper based resources	Digital resources
	<ul style="list-style-type: none"> Lesson on page 2 Learner task on page 3-5 Textbook: Tropical cyclones 	<ul style="list-style-type: none"> https://www.youtube.com/watch?v=LIXVikDkyTg https://www.youtube.com/watch?v=z67_cpQZIZo https://www.youtube.com/watch?v=NEFG7YcIDcl
INTRODUCTION	You should know from previous grades/current grade/previous lessons <ul style="list-style-type: none"> Grade 11 Global air circulation - Easterlies. 	
CONCEPTS AND SKILLS	You must know: <ul style="list-style-type: none"> General characteristics of tropical cyclones. Areas where tropical cyclones are found Conditions needed for their formation Stages of development and related weather conditions Weather patterns associated with tropical cyclones Impact of tropical cyclones Reading and interpreting satellite images and synoptic weather maps 	You must be able to: <ul style="list-style-type: none"> apply knowledge and concepts on various geographic sources. read and interpret graphs, diagram synoptic weather maps and satellite images. answer data response questions. write a paragraph.
ACTIVITIES/ASSESSMENT	<ul style="list-style-type: none"> Activity to the lesson is on pages 3-5 Additional activities in your textbook 	
CONSOLIDATION	You must study these topics by asking key Geographic questions such as: What and where is it? What does it look like? How does it differ? Why does it differ? How the impact can be managed	
VALUES	Awareness of destruction caused by tropical cyclones in regions of the world and the struggle some countries have to manage them .	

TROPICAL CYCLONES

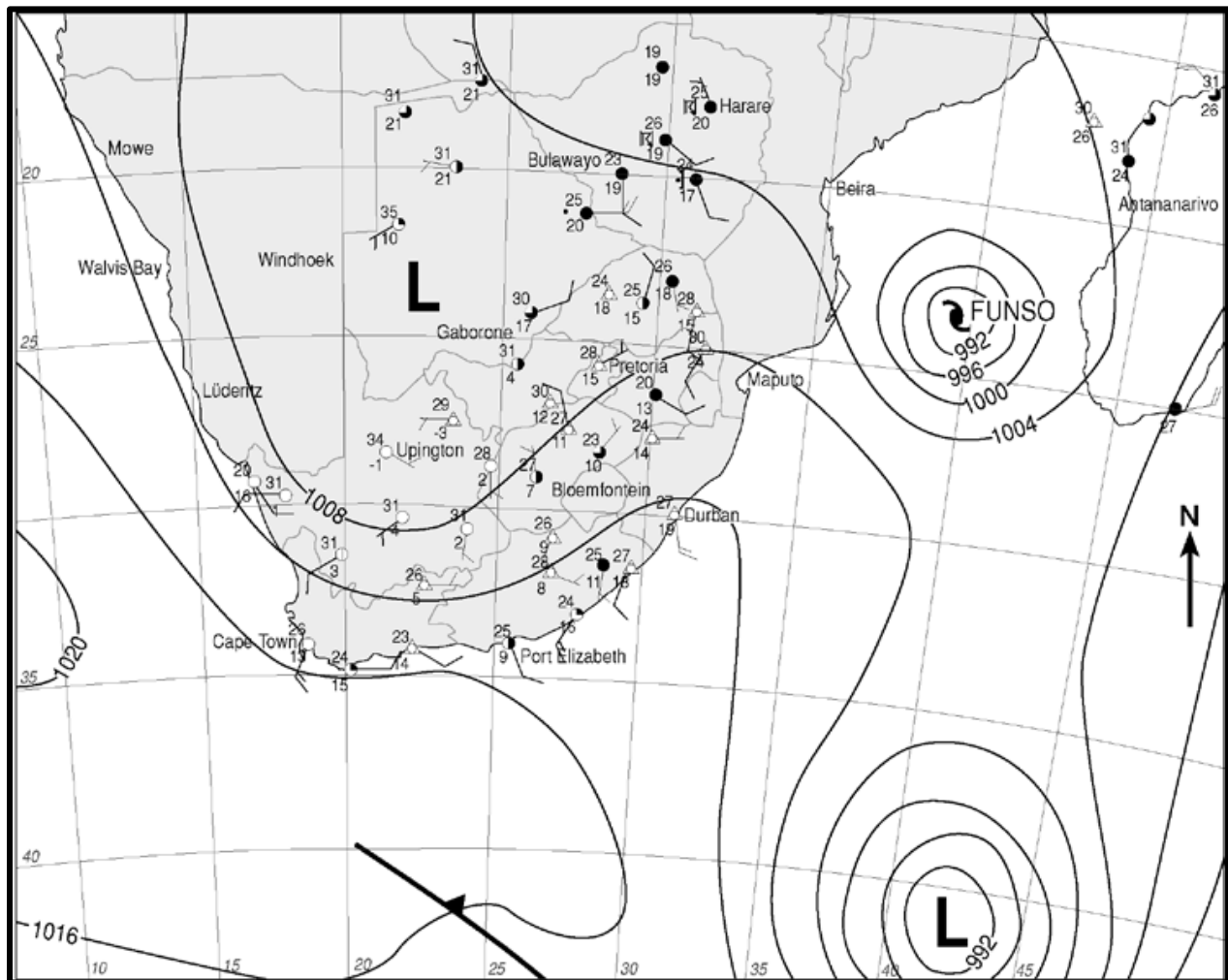
General characteristics (What does it look like?)	Where are tropical cyclones found?	Weather patterns	
<ul style="list-style-type: none"> • Intense low pressures. • Named in alphabetical order. • Forms in tropical regions, over tropical oceans, further than 5° of Equator (Coriolus force) • During late summer or autumn. • Move from EAST to WEST. AWAY from the equator. Turns EAST at 30°. • Causes destruction by hurricane force winds, storm surges and heavy rainfall. 	<p style="text-align: center;">Atlantic and Northern Pacific Ocean Indian Ocean & Southwestern Pacific Ocean</p>		
What is the negative impact?	Strategies (How managed?)	Conditions for formation	
<ul style="list-style-type: none"> • Infrastructure: Roads/bridges/pipelines • Economy: Business/crops/costs • Social: Deaths/property damaged • Environment: Erosion/water polluted 	<ul style="list-style-type: none"> • Good weather forecasts. • Keep public informed by tracking storm • Early warning systems. • Medical- and rescue services on alert. • Build houses with strong materials. • Evacuation routes and procedures • Avoid crossing strongly flowing 	<ul style="list-style-type: none"> • Sea temperature of at least 26°C • High humidity • Unstable air • Little surface friction • Light variable winds • Air pressure below 950hPa • Air divergence in upper levels 	
How do tropical cyclones develop? (Development stages)			
<p>1. Formative stage Air pressure above 1 000 hPa.</p>	<p>2. Immature stage Air pressure below below 1 000 hPa.</p>	<p>3. Mature stage Air pressure far below 1 000 hPa.</p>	<p>4. Degenerating stage Air pressure rises above 1 000 hPa.</p>

Glenn Samaai

LEARNER TASK 1



You must be able to apply your content knowledge of tropical cyclones on synoptic weather maps. The information on page 2 will be of assistance to you to answer this application of your knowledge of tropical cyclones on synoptic weather maps.



Via Afrika

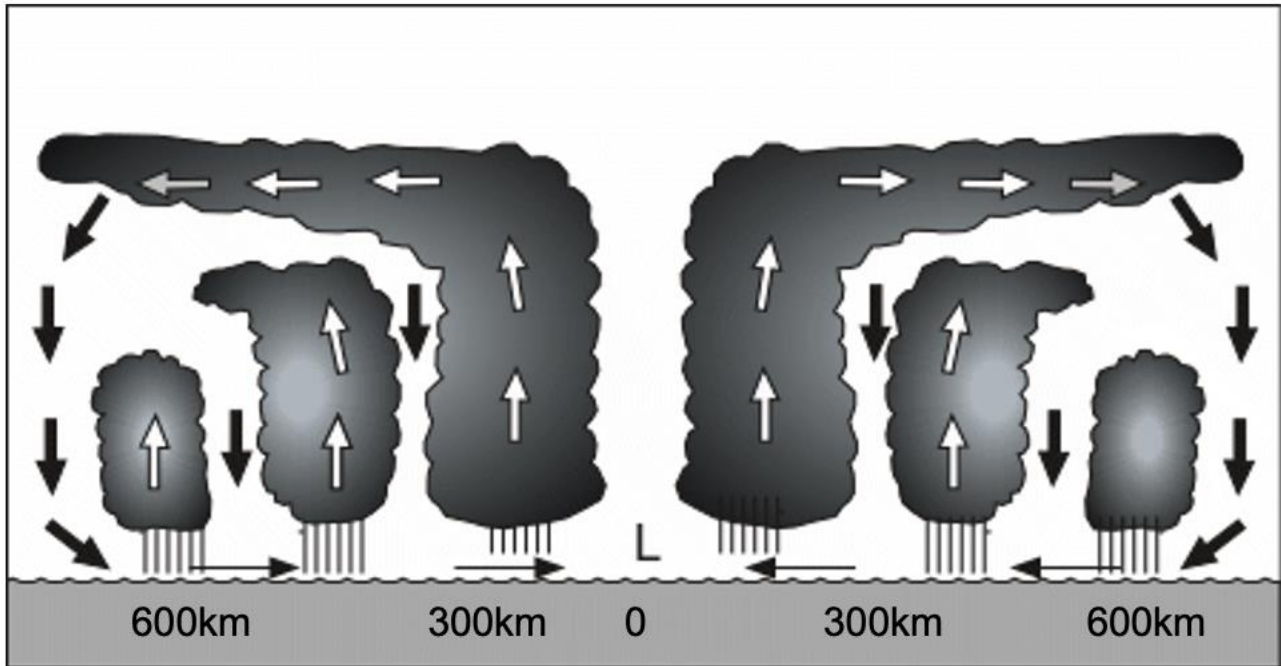
The questions are based on the synoptic weather map of 25 January 2015

1. How many tropical cyclones have passed over Madagascar? (1x1) (1)
2. Give evidence from the map that Funso is a tropical cyclone in the Southern Hemisphere. (3x2) (6)
3. What is the section called where the highest wind speeds occur? (1x1) (1)
4. In what stage of development is Funso? Give a reason for your answer. (2x2) (4)
5. Describe the weather in the eye of Funso. (3x2) (6)

LEARNER TASK 2



Cross sections are a very important way of testing Geography. Make sure that you know all the labels of cross sections. You can also be asked to draw simple cross sections. Therefore you must practise to draw all diagrams regularly.



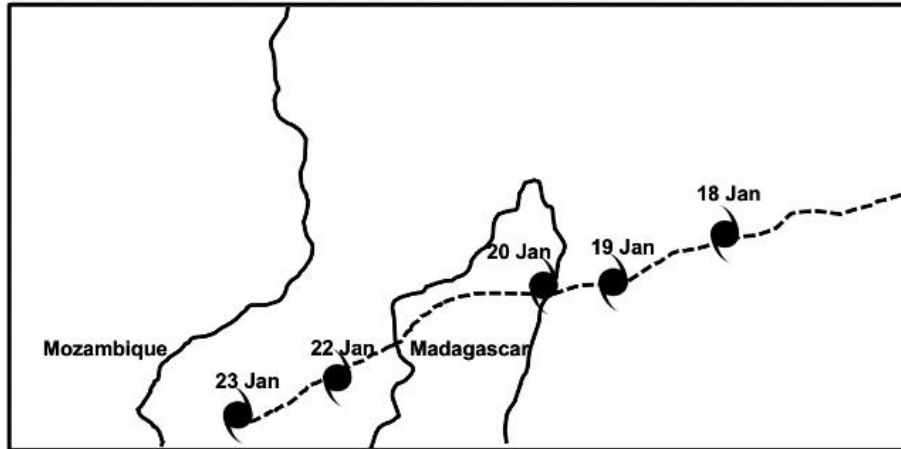
Add the following labels to the above cross section of a tropical cyclone:

- Eye
- Eyewall
- Cumulonimbus clouds
- Sinking air in the middle of the storm
- Direction of movement
- Heavy rain
- Light rain

LEARNER TASK 3



Case studies are popular ways in which content is tested in examinations. Do not regard a case study as a comprehension test. The information in case studies is used to set the scene on which the questions are based. The answers of some of the lower order questions will be found in the case study, but you will have to rely on your knowledge of tropical cyclones to answer the more challenging questions.



<https://www.youtube.com/watch?v=s6bogGg4gC0>

Tropical Storm Eloise is still raging over the Indian Ocean making her way to Madagascar. She is expected to make landfall over Madagascar tomorrow (19 January). She is expected to move into the Mozambique channel by Thursday where she is expected to strengthen again and could reach Tropical Cyclone strength just before making landfall over the southern parts of Mozambique by Saturday (23 January).

Cyclone Eloise made landfall over Mozambique on 23 January 2021. The above case study consists of the following:

- a map showing the movement of the cyclone
- a short article regarding the cyclone
- a QR code and link, showing the destruction caused cyclone Eloise.

1. In what direction is Eloise moving? (1x1) (1)
2. Why does Eloise move in this direction? (1x2) (2)
3. Why is it expected that Eloise will reach tropical cyclone strength by Thursday?(2x2) (4)
4. The following wind speeds were forecasted for the cyclone:

19 January	83 km/h
20 January	65 km/h
22 January	120 km/h
23 January	120 km/h

Explain the following:

- 4.1 The drop in wind speed between 19 and 22 January. (2x2) (4)
 - 4.2 The raise in wind speed between 20 and 23 January. (2x2) (4)
5. Scan the QR code or follow the link. In a paragraph of approximately 8 lines, describe the impact that Eloise had on Mozambique as shown in the video clip.(4x2) (8)

CONCEPTS/TERMS



- You must know the definitions of the following concepts/terms
- Definitions of terms appear in in exam questions.
- These terms are used when setting questions. You must know them in order to understand the questions
- These terms should form part of your Geography subject language

WORD BOARD

Vortex

Low pressure

Eye

Circular isobars

Active quadrant

Storm surge

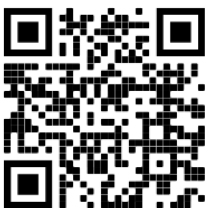
Eye wall

Coriolus force



QR CODES

Scan the QR codes below to link you with the digital resources mentioned on page 1.



Hurricanes 101
National Geographic



Tropical Cyclones
Telematics



The Science
of Hurricanes