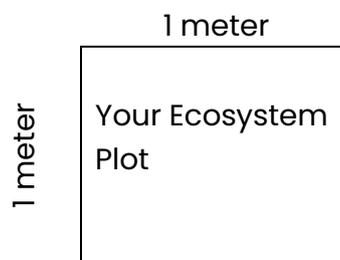


NATURAL SCIENCE AND TECHNOLOGY**FORMAL ASSESSMENT PRACTICAL TASK****GRADE 8****TERM 1
MARKS (30)****Instructions:**

- Read the task carefully before you attempt to answer the questions.
- When collecting a leaf or flower specimen, two examples are enough.
- Do not touch or harm any animal, including insects, spiders and other living organisms in your study area.
- Look at the Appendixes for more information on different ecosystems.
- This practical task consists of
 - Activity 1: Research Phase
 - Activity 2: Writing a report.
- Make a front cover for your report. Your front cover should include the following information
 - Name and surname
 - Grade and class
 - Name of your two Green Careers
- Once you've conducted your research, answer Questions 1 to 17 of the project question on an exam pad. Add your Project Cover.

Activity 1: Investigate an ecosystem in your school grounds or your garden

1. Choose an ecosystem on your school grounds or in your garden. It can be a sports field, the area around a tap, fishpond, school garden or a compost heap.
2. Measure a plot that you would like to study and secure the corners with pegs. The plots size can vary from 1 meter (1 m x 1m) to 10 meters by 10 meters (10 m x 10 m)



3. Identify what type of ecosystem your study area classifies as.

4. Focus your investigation on the main living (biotic) organisms and non-living (abiotic) elements in your ecosystem. Do some research as to what plants and animals live in this type of ecosystem and how they interact with each other.
5. Study your ecosystem carefully and make notes in your workbook. Sit in your study area and observe and make notes of everything that you see.
- 6) List and describe each of the abiotic factors in your ecosystem. For a period of one week, observe and record the following observations in a **table** each day:
 - a) The amount of sunlight during the day. Is there full sun, half sunlight or complete shade? (3)
 - b) Water: is there any source of water in the area, such as a stream or a tap? Has it rained? (2)
 - c) Wind: describe the wind. Is it strong or gentle? Is your ecosystem protected from or exposed to wind? (2)
 - d) Temperature: use the thermometer to measure the temperature and record it in your table. (3)
 - e) Soil type: describe the colour of the soil. Is it sandy, clayey or loamy? Is it dark or light? (2)
 - f) Slope: Is it light or dark?

	Monday	Tuesday	Wednesday	Thursday	Friday
Sunlight					
Water					
Wind					
Temperature					
Soil Type					
Slope					

- 7) Describe how the abiotic factors of the ecosystem affect the plants and animals. Think about the behaviour of the organisms and their structure. (5)

- 8) Name, count and describe the plants and animals (biotic factors) in your ecosystem. Use a field guide to help you identify the plants and animals. Record your answers in a table like the one below. (8)

Learners:				
Complete the final version of the Task				
Plants	Animals			
	Herbivore	Carnivore	Omnivore	Decomposers

- 9) Describe the relationships (such as feeding relationships) that also make up the biotic factors in the ecosystem. (5)
- 10)
- Identify the human interference in the area, for example litter, pathways, or evidence of plants that have been cut down. (2)
 - Describe the effect of human interference on your ecosystem. (2)
- 11) Study a small sample of soil from your ecosystem with a hand lens.
- Identify any remains of plants or animal in the soil (2)
 - Is the soil suitable for plant growth? Give a reason for your answer (2)

Activity 2: Write a report on your findings

- Make a Cover Page for your report that includes the following information
 - Your Name and Surname
 - Grade and Class
 - Study area location
 - Type of ecosystem
 - Date of observations
 - Read the questions below carefully. Answer the questions on your exam pad or as instructed by your teacher.
 - Make sure that you number your questions correctly & Submit your findings in a report format.
1. Use your textbook and dictionary to define the following terms
- Ecosystem
 - Biotic
 - Abiotic

- d) Investigate
- e) Observation
- f) Herbivore
- g) Carnivore
- h) Omnivore
- i) Food web
- j) Biodiversity
- k) Threat
- l) Urban ecosystem

2. What type of ecosystem did you investigate? (1)

3. Name the location of your ecosystem. (1)

4. List and describe each of the abiotic factors in your ecosystem. For a period of one week, observe and record the following observations in a **table** each day: (12)

- c) The amount of sunlight during the day. Is there full sun, half sunlight or complete shade? (2)
- d) Water: is there any source of water in the area, such as a stream or a tap? Has it rained? (2)
- e) Wind: describe the wind. Is it strong or gentle? Is your ecosystem protected from or exposed to wind? (2)
- f) Temperature: use the thermometer to measure the temperature and record it in your table. (2)
- g) Soil type: describe the colour of the soil. Is it sandy, clayey or loamy? Is it dark or light? (2)
- h) Slope: Is it light or dark? (2)

	Monday	Tuesday	Wednesday	Thursday	Friday
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8. Name, count and describe the plants and animals (biotic factors) in your ecosystem. Use a field guide to help you identify the plants and animals. Record your answers in a table like the one below. (8)

Learners:				
Complete the final version of the Task				
Plants	Animals			
	Herbivore	Carnivore	Omnivore	Decomposers

9. Describe the relationships (such as feeding relationships) that also make up the biotic factors in the ecosystem. (5)
10. Draw a food chain of your ecosystem. Include herbivores, carnivores, scavengers or decomposers. (4)
11. Evaluate your ecosystem's biodiversity. Is your ecosystem biodiverse? Provide a reason for your answer. (2)
12. Suggest two ways to increase the biodiversity of your ecosystem. (2)
13. a) Identify the human interference in the area, for example litter, pathways, or evidence of plants that have been cut down. (2)
b) Describe the effect of human interference on your ecosystem. (2)
14. Identify two possible threats to your ecosystem. (2)
15. Provide two possible solutions to overcome these threats. (2)
16. How do these identified threats affect the biodiversity of your ecosystem? (1)
17. Why is biodiversity within an ecosystem important? (1)

TOTAL [50 X 0.60 = 30 marks]

Appendix A: Examples of organisms in your ecosystem.

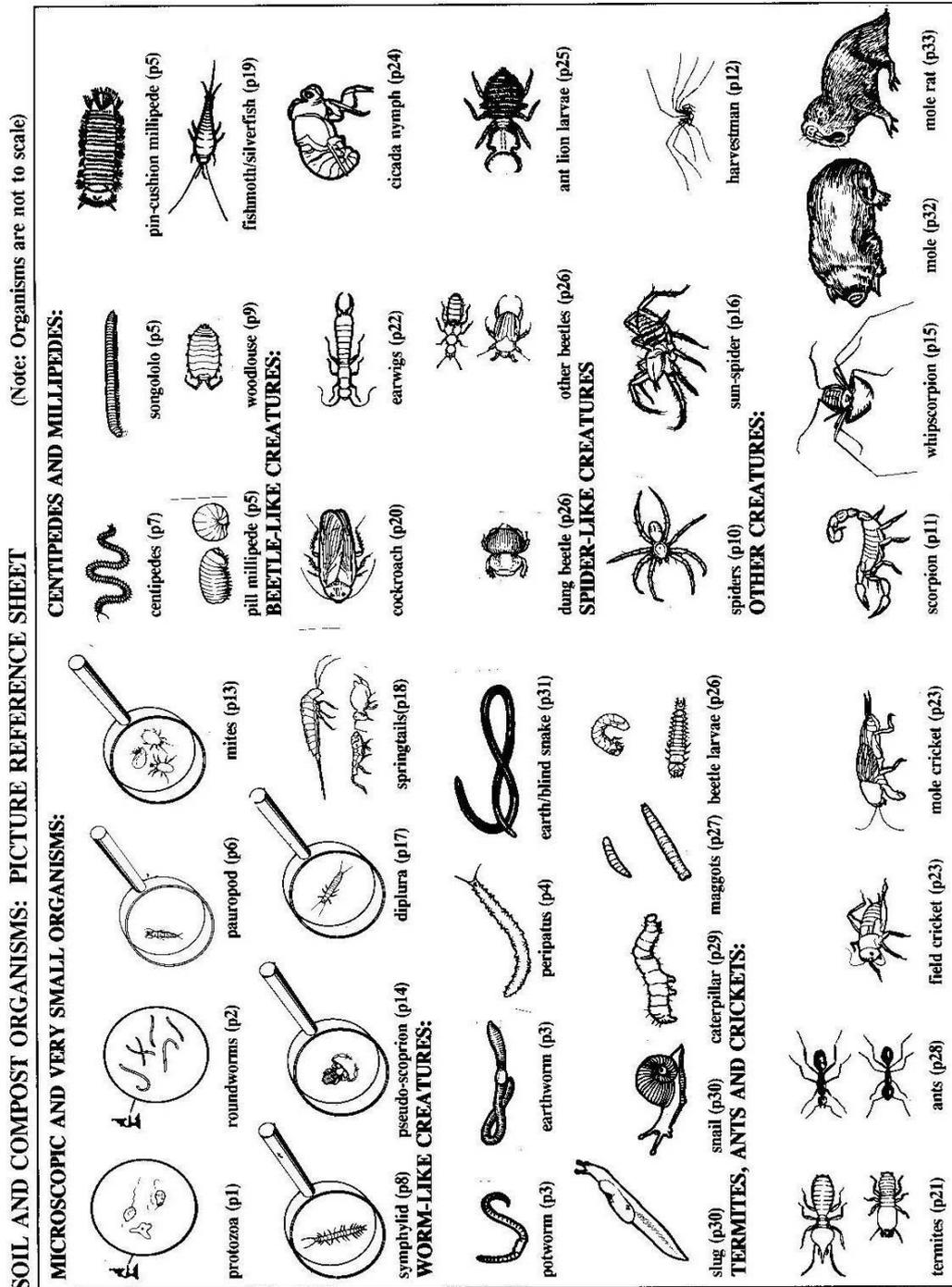


Figure 1: Soil and Compost Organisms - Available at:

https://docs.google.com/document/d/1CxpNMP9h_NmdycFByWTfEd7fjp4vXIBP/edit?usp=sharing&ouid=104214709973770054707&rtpof=true&sd=true

Appendix B – Food Chains (Question 10)

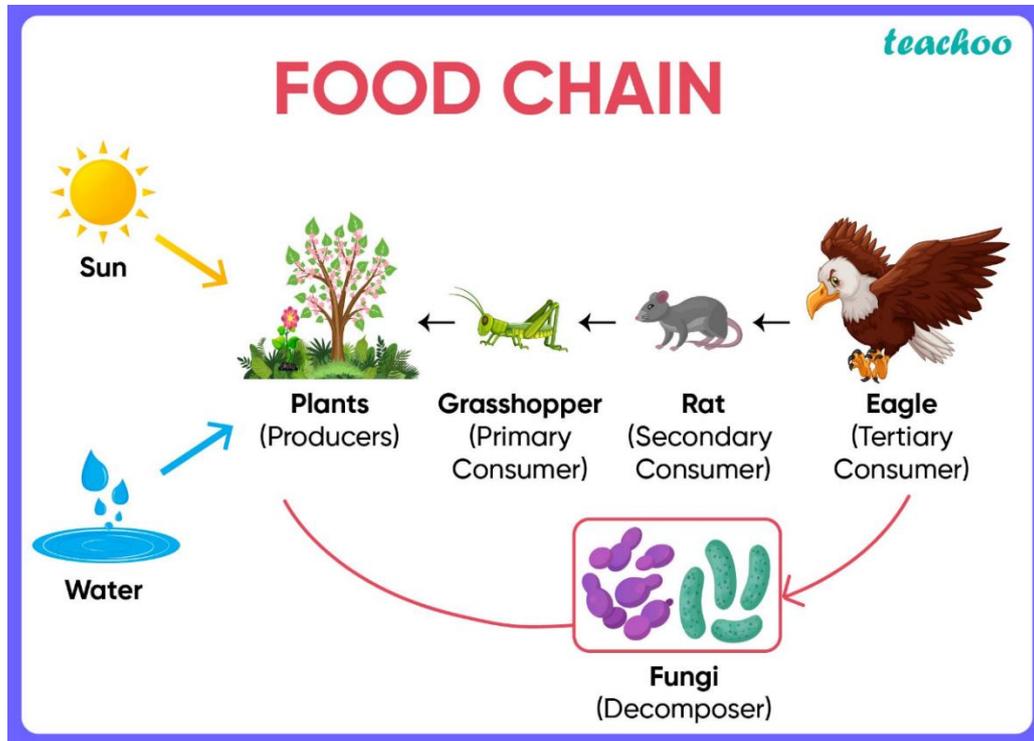


Figure 5: Food web Images available at: <https://www.teachoo.com/12932/3534/Question-2/category/Case-Based-Questions/>