

MINISTRY OF EDUCATION
SECONDARY ENGAGEMENT PROGRAMME
INTEGRATED SCIENCE
GRADE 9

WEEK 10

LESSON - WORKSHEET

Answer all the questions below.

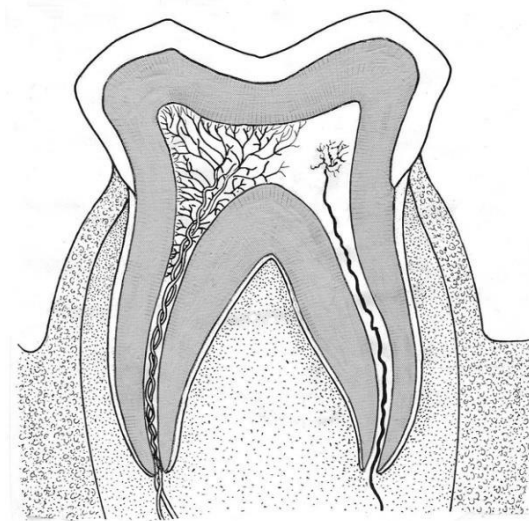
1. What is used to indicate the flow of energy in a food chain or web?
2. What happens to energy as we move from step to step in a chain or web?
3. Define the term food web.
4. What is meant by trophic levels?
5. Define autotroph.
6. The 1st trophic level consists of _____ consumers called _____.
7. Name the 2nd trophic level (both names).
8. Secondary consumers may be _____ eating meat or _____ that eat both plants and animals.
9. What is the 3rd trophic level called?
10. What is the 4th trophic level called?
11. At the 5th trophic level would be _____ consumers that eat _____ consumers.
12. Give an example of 3 detritivores. On what do they feed?
13. What organism feeds on dead plants and animals and helps recycle them?
14. Both _____ and _____ act as decomposers
15. Can an organism fill more than one trophic level --- yes or no? Give an example.
16. Discuss in your own words the differences between the energy pyramid, biomass pyramid and number pyramid.

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REVIEW

The diagram below shows the vertical section of a tooth.



1. (a) Name the parts labeled A, B, C. **3 marks**

A _____ B _____ C _____

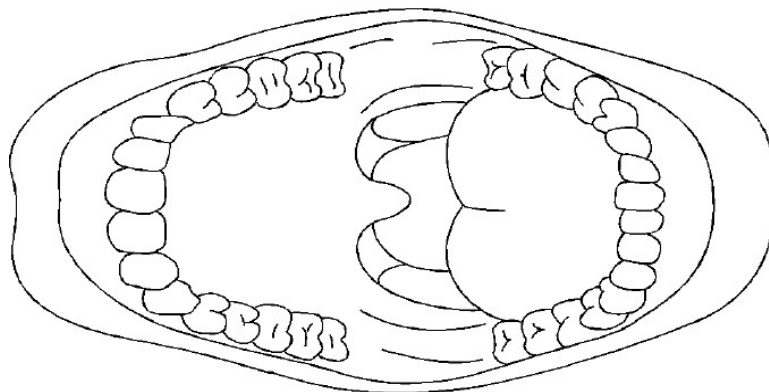
(b) (i) What is the function of the part labeled C?

2 mark

(ii) How is the structure of this tooth suited for its function?

2 marks

(iii) Study the diagram below and then write the dental formula of the organism.



(c) (i) Define the term balanced diet. **1 mark**

(ii) Identify the nutrients in a ham and cheese sandwich. **3marks**

(iii) Name the enzymes that will help to breakdown the food nutrients stated in (ii) above and state where the enzyme can be found. **3 marks**

(d) A group of students in Form 3C was given the chemicals listed in the table below, to carry out food tests. **Complete the table by putting in the food nutrient and the possible observation.** **4 marks**

| Chemicals for Testing | Food Nutrient Tested for | Observation(s) |
|-----------------------------------------------|--------------------------|----------------|
| Iodine Solution | | |
| Sodium hydroxide and Copper sulphate solution | | |

2. The table below shows the foods consumed and their consumers in a terrestrial environment.

| Food Consumed | Consumers |
|----------------------------|---------------------|
| Grass | Cows, Grasshopper |
| Lettuce | Slugs, Caterpillars |
| Cabbage | Humans, Slugs |
| Cows | Humans |
| Grasshopper | Frogs |
| Slugs, Caterpillars, frogs | Small birds |
| Small birds | Large birds |
| Large birds | Human |

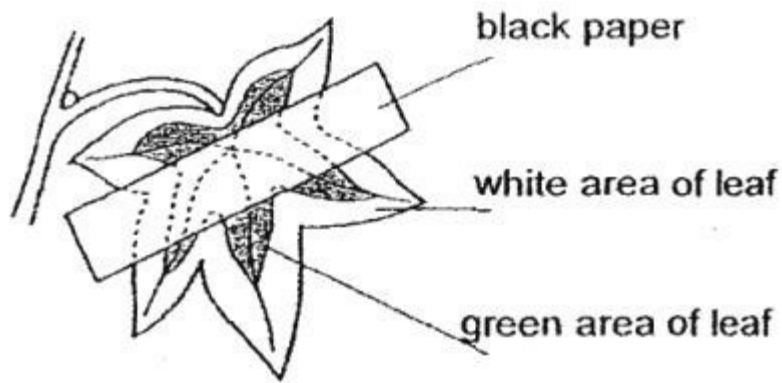
- (a) (i) Use the information in the table to construct a food web in the space below.

- (ii) From the food web drawn, write two food chains.

- (iii) Suggest what would happen to the food web if all the small birds were killed.

- (b) Students in a class are asked to carry out the following experiment to investigate photosynthesis:

- Attach a strip of foil to the upper and lower surfaces of a leaf of a potted plant, as shown in the diagram below.
- Put the plant in a sunny place.
- After a few days detach the leaf and test it for starch.



(i) List the steps involved in testing the leaf for the presence of starch.

(ii) What do you expect to see (observe)

a. on the white areas of the leaf?

b. on the green areas of the leaf?

(iii) Explain the observation made at **a and b** above.
