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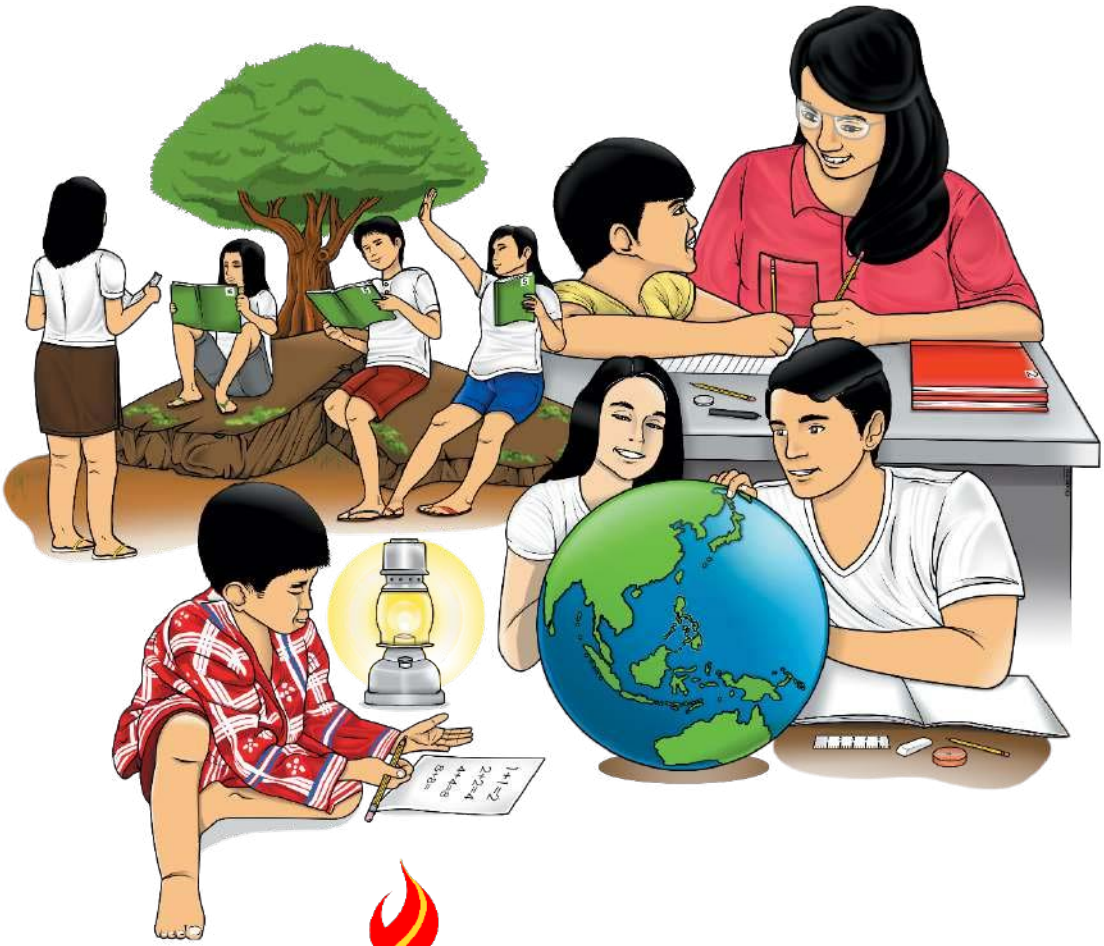
DepED
DEPARTMENT OF EDUCATION

Science

Quarter 2 – Module 5
Animals: Characteristics of Invertebrates



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6

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Introductory Message

This Self- Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises and discussion are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide your step by step as you discover and understand the lesson prepared for you.

Pre- test are are provided to measure your prior knowledge on lesson on each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator on your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self –check your learning. Answer key are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Note to the teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home- based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module do not hesitate to consult your facilitator.

Thank you.

The following are the parts of this module that will help you finish your tasks. Read the following descriptions below to better understand each part.

What I Need to Know

This part will be your guide to learn in the specific lessons specifically your skills and competencies.

What I Know

This contains a 10-item pre-test that will check what you already know.

What's In

In this section, you will be given review questions or exercises that connect your previous lesson to the new one.

What's New

It is in this part that the new lesson will be introduced to you in different ways: a story, a poem, a problem opener, an activity, or a situation.

What is It

This portion will give you the topic, information and concepts as a brief discussion for you to learn. You will also be given specific instructions on how to go about the lesson.

What's More

This provides you questions and exercises to help you deepen your understanding and find practical applications of the concept.

What I Have Learned

This includes a short fill-in the blanks summary of the topic. It is in this part that helps you generalize your understanding of the concepts.

What I Can Do

This section includes an activity or exercises that will help you apply your knowledge into real-life situations.

Assessment

This is composed of a 10-item exercise for you to develop your mastery of the topic and to assess if you have attained the learning competency.

Additional Activities

This part will be the last activity for you to enhance your skill of the lesson learned. It gives you step by step instructions to follow.

Now that you know the content of this module, you are now ready to do take the following tasks of the module. Do not worry because you can always ask for assistance of your parents, guardians, siblings and teachers. You will be guided along the way. You are not alone in taking the challenge.

Remember to answer the given exercises in a separate sheet of paper. When you are done, kindly return it to your teacher to check and evaluate your level of competency.
Goodluck and God Bless!

What I Need to Know

This module was designed and written with you in mind. It is here to help you master the lesson about animals. The scope of this module is used in many different learning situations. The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using.

This module is about:

- Describing the distinguishing characteristics of each group of invertebrates
- Classifying each group of invertebrates
- Listing examples of each group of

invertebrates After going through this module,

you are expected to:

- Describe the distinguishing characteristics of each group of invertebrates
- Classify each group of invertebrates
- List examples of each group of invertebrates

What I Know

Directions: Choose the letter of the best answer. Write your answer on a separate sheet.

1. Which of these groups of animals is invertebrate?
   a. nematodes, annelids, and platyhelminthes
   b. crustaceans, amphibians, and mollusks
   c. mollusks, insects, and mammals
   d. reptiles, fishes, and birds

2. Which group of invertebrates is divided into segments with a ringed appearance?
   a. Sponges
   b. Echinoderms
   c. Cnidarians
   d. Annelids

3. To what subgroup of arthropods do invertebrates with four pairs of legs belong?
   a. echinoderms
   b. crustaceans
   c. arachnids
   d. nematodes

4. Which group of animals is invertebrate?
   a. butterfly, mosquito, fly, grasshopper
   b. bird, dog, chicken, cat, ant
   c. fish, spider, snake, butterfly
   d. all of the above

5. Animals like clams, jellyfish, butterfly and grasshopper are examples of_____.
   a. invertebrates
   b. vertebrates
   c. mammals
   d. amphibians

6. Mollusks, sponges, echinoderms, and nematodes are classified as _____.
    a. invertebrates
    b. vertebrates
    c. mammals
    d. amphibians

7. Which group of animals is invertebrate?
    a. frog, mosquito, cat, grasshopper
    b. bird, dog, chicken, cat, ant
    c. fish, spider, snake, dog
    d. earthworm, snail, bee, bug

8. What do we call the animals which do not have bone structure or backbone?
    a. vertebrates
    b. invertebrates
    c. poriferans
    d. cnidarians

9. Snail, butterfly, bee, and clam are examples of invertebrates. This means that these animals possess this distinguishing characteristic.
    a. presence of backbone
    b. absence of backbone
    c. lack of cranium
    d. presence of cranium

10. What are the distinguishing characteristics of invertebrates that differ from vertebrates aside from the absence of backbone?
    a. Invertebrates are mostly stronger and bigger than vertebrates.
    b. Invertebrates are mostly smaller and weaker than vertebrates.
    c. Invertebrates are complex compared to those vertebrates.
    d. Invertebrates do not have segmented bodies.

Lesson Characteristics of Invertebrates

You have learned that animals can be divided into two groups – **vertebrates** and **invertebrates.** Both of these can be divided into smaller groups. Invertebrates can be divided into smaller **groups** or **phyla.**

In this lesson you will be able to identify the different types of invertebrates and their distinguishing characteristics.

What's In

Directions: Identify each statement whether TRUE or FALSE. Write your answer in your Science journal.

_____ 1. Mammals are warm-blooded animals that are born alive.

_____ 2. Reptiles are cold-blooded vertebrates that are hatched from egg.

_____3. Vertebrates have no economic importance to our environment.

_____4. There is a significant relationship between vertebrates and invertebrates.

_____5. Invertebrate animals are important to human beings.

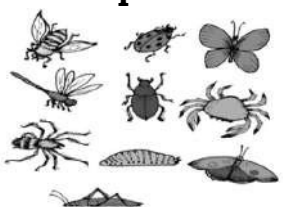
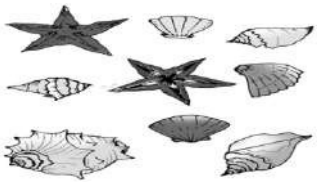
What's New

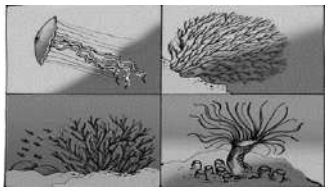
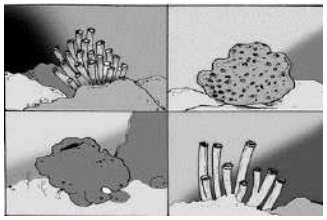
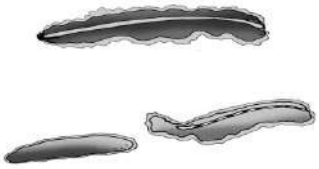
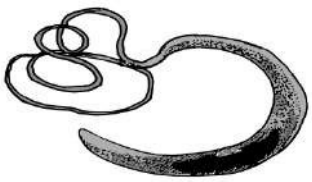
Study the picture below. Can you list down the animals found in the picture? What are they? How do they differ from vertebrates?

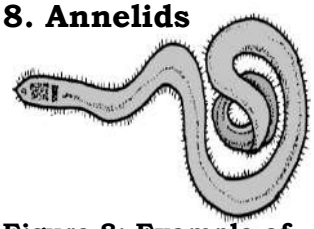
What Is It

Invertebrates are animals without backbone (Vertebral Column). Invertebrates are simple animals because they don't have backbones. Its body parts and functions are simpler compared to those of the vertebrates.

The 8 Main Groups of Invertebrates

GROUPS OF INVERTEBRATE ANIMALS	EXAMPLES	CHARACTERISTICS
1. Arthropods  **Figure 1: Example of Arthropods**	crabs, scorpions, insects, spiders, millipedes, centipedes, barnacles	- have segmented bodies and tough skeleton with jointed appendages and hardened outer skeleton - the largest group in the animal kingdom which can be further classified based on the number of pair of legs. The following are: 1. Class Crustacean – five or more pairs of legs 2. Class Insecta – three pairs of legs 3. Class Arachnida – four pairs of legs 4. Class Chilopoda – one pair of legs per segment 5. Class Diplopoda – two pairs of legs per segment
2. Mollusks  **Figure 2: Example of Mollusks**	snails, clams, squids, octopus	-are soft-bodied animals with shells inside or outside their bodies called exoskeleton

3. Echinoderms  **Figure 3: Example of Echinoderms**	sea stars, brittle stars, sea urchins, sea cucumber	-marine animals with spiny endoskeleton -have a water vascular system, tube feet and radial symmetry as adults.
4.Poriferans  **Figure 4: Example of Porifirans**	sponges	-are pore-bearing animals which attach themselves to rocks or sea floor
5.Cnidarians  **Figure 5: Example of Cnidarians**	jellyfish, corals, anemones, hydra	-are hollow-intestined animals -they have one body opening and most have two-layer cells
6. Platyhelminthes  **Figure 6: Example of Cnidarians**	flatworms, flukes, tapeworms	-are flattened, elongated wormlike animals
7. Nematodes  **Figure 7: Example of Cnidarians**	ascaris, vinegar eels, hookworms, pinworms	-are elongated, unsegmented wormlike or threadlike animals -are free living or parasites of humans, plants and animals.

8. Annelids  **Figure 8: Example of Annelids**	earthworms, leeches, lugworms	-are elongated, wormlike animals with externally evident segmentation, ringed animals -they have body segments that allow for specialization of tissues and for efficient movement.

What's More

A. Directions: Give at least two examples of the following invertebrates. Write your answer in your Science journal.

1. Arthropods _____ _____

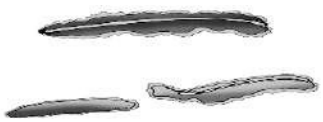
2. Mollusks _____ _____

3. Echinoderms _____ _____

4. Sponges _____ _____

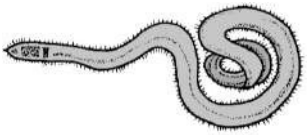
B. To which group of invertebrates, the following animals belong:

5.  _____

6.  _____

7.  _____

8. _____



What I Have Learned

Directions: Complete the paragraph below by supplying the missing words. Write your answer in your Science journal.

I learned that ….

Invertebrates are animals without_____. Invertebrates can be classified into smaller groups. Each of which has certain characteristics. Invertebrates include porifera, _,_____ _____, _____,_____,_____, _____, and_____.

What I Can Do

Directions: Read carefully and answer correctly the exercises below. Write your answer in your Science journal.

A. Cross out the animals which do not belong to the group.

a.	starfish	butterfly	sea cucumber
b.	mosquito	spider	ants
c.	jellyfish	sea urchin	sponge
d.	snail	squid	tape worm
e.	leech	earthworm	crab

B. Complete the table below by supplying the missing data.

Groups	Examples	Distinguishing Characteristics
1. Porifera	_____	Pore-bearing animals
2. Cnidaria	hydras, jellyfish	_____ _____ _____
3. Platyhelminthes	_____	Flattened, elongated wormlike animals
4. _____	earthworms, leeches	Segmented wormlike animals
5. Mollusks	_____ _____ _____	Soft-bodied animals with shell inside or outside their soft body
6. Nematodes	_____ _____ _____	_____ _____ _____
7. Arthropods	_____ _____ _____	_____ _____ _____
8. Echinoderms	_____ _____ _____	Spiny-skinned animals

Assessment

Directions: Choose the letter of the best answer. Write your answer in your Science journal.

1. The largest group of invertebrates is the arthropod group. What do all arthropods have in common?
   a. They live on land and have an exoskeleton.
   b. They can fly and have jointed legs.
   c. They have segmented bodies and jointed legs.
   d. They have skeleton and segmented bodies.

2. Why do some mollusks have shells ?
   a. So they can live both on land and water
   b. To make it easier to find food
   c. this as a reason why mollusks have shell
   d. To protect their soft bodies

3. All of the following are hollow-bodied animals except _____
   a. corals
   b. oyster
   c. jellyfish
   d. sea anemones

4. All invertebrates are animals that _____
   a. have hard shells
   b. have no backbone
   c. have hollow bodies
   d. live in the ocean

5. Which of these groups of animals belong to echinoderms?
   a. bees, butterfly, mantis
   b. sand dollar, starfish, sea urchins
   c. earthworm, leeches, tapeworm
   d. spider, ticks and scorpion

6. To what subgroup of arthropods do invertebrates with four pairs of legs belong?
   a. echinoderms
   b. crustaceans
   c. arachnids
   d. insect

7. They are characterized as marine animals with spiny endoskeleton. They have water vascular system, tube feet and radial symmetry as adult. Which group of invertebrates is being described?

a. mollusks
b. echinoderms
c. cnidarians
d. annelids

8. They have no tissue, no organ, and most have no symmetry.

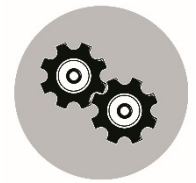
a. Sponges
b. Echinoderms
c. Cnidarians
d. Annelids

9. Which group of invertebrates is divided into segments with a ringed appearance?

a. Sponges
b. Echinoderms
c. Cnidarians
d. Annelids

10. Animals such as vertebrates and invertebrates have economic importance. They are sources of food, medicine and scientific investigations. How will you show that you care and protect these animals in their environment?

a. We don't need to strictly implement wildlife regulations.
b. We must have them lived in our houses.
c. We have to establish reserve wildlife refuge areas where birds and animals may breed without being killed by man.
d. Hunting activities must be practiced.



Additional Activities

List down at least 5 examples of invertebrate animals that can be found in your locality. Write the distinguishing characteristics of each animal and ways of protecting and caring for it.

Animal	Distinguishing Characteristics	Ways of Caring and Protecting
1		
2		
3		
4		
5		

Answer Key

Assessment 1.D 2. A 3. C 4. B 5. B 6. C 7. B 8. A 9. D 10. C **Additional Activities** Answer may vary	**What's New** -Butterfly, spider, lady bug, snail, dragonfly, worm and crab -They don't have backbones **What's More** A. 1. arthropods-crabs, scorpion, insects, spider, millipedes, centipedes, barnacles 2. Molusks-snails, clamps, squids 3. Echinoderms – sea stars, sea urchins, se cucumber 4. Porifirans – sponges B. 5. Cnidarians 6. Platyhelminthes 7. Nematodes 8. Annelids **What I Have Learned** I learned that invertebrates are animals without backbone. Invertebrates can be classified into smaller group. Each of which has certain characteristics, Invertebrates includes Arthropods, Mollusks, Echinoderm, Porifirans, Platyhelminthes, Nematoes and Annelids.	**Lesson 1:** **What I Know:** 1. A 2. D 3. C 4. A 5. A 6. A 7. D 8. B 9. B 10. B **What's In** 1. TRUE 2. TRUE 3. FALSE 4. TRUE 5. TRUE **What I Can Do:** A. a. butterfly b. spider c. sea urchin d. tapeworm e. crab B. 1. Sponges 2. Two layer cells 3. Flatworm, tape worm 4. Annelids 5. Snails, clamps, octopus 6. Vinegarel, Ascaris 7. crabs, scorpion 8. sea stars, brittle stars

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