



pLatform for INnovation in Natural science onlinE education

## Didactic Unit (DU)/Lesson plan

### Vertebrates and Invertebrates

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## OVERALL DESCRIPTION

Sections	Description
<b>1. Topic/DU Title</b>	Vertebrates and invertebrates
<b>2. Brief description of the DU</b>	<p>In this unit students will learn to classify animals into groups based on specific characteristics, distinguishing between vertebrates and invertebrates, and between warm-blooded and cold-blooded animals, providing examples</p> <p>The DU include three phases on the following topics:</p> <ol style="list-style-type: none"> <li>1. Vertebrates</li> <li>2. Invertebrates</li> <li>3. Do I know how to distribute organisms?</li> </ol>
<b>3. Beneficiaries</b>	age 8 – 10
<b>4. Total hours</b>	4 hours
<b>5. Situation problem / reality or authentic task</b>	<p>Can all animals be classified as vertebrates and invertebrates, cold-blooded and warm-blooded?</p> <p>What are the characteristics used to classify animals?</p>
<b>6. Aim/s</b>	Using examples from different groups of living organisms, learn to compare and contrast the external features and behaviours of these major groups of living organisms. Identify and group vertebrates and invertebrates.
<b>7. Subjects</b>	Science, IT, Language
<b>8. Expected results</b>	Students will be able to differentiate between invertebrates and vertebrates, name their key characteristics and classify animals based on these characteristics. They will distinguish between warm-blooded and cold-blooded animals and the characteristics of these groups, they will give at least a few examples of animal groups living in the immediate environment.

## WORKPLAN

[illegible]

	<p>have used to distinguish them.</p> <p>The teacher summarises the characteristics of cold-blooded and warm-blooded. Next, sort the animals into vertebrate groups (birds, mammals, reptiles, fish, and amphibians) using the same cards.</p> <p><b>Worksheet 1</b></p> <p>Students work in groups of five to search the internet for material on one of the two groups: warm-blooded (birds, mammals) or cold-blooded (amphibians, reptiles, fish)</p>		<p>Identify the primary characteristics of vertebrates and classifies them into vertebrate groupings.</p> <p>Find information on the internet and complete the worksheet.</p> <p>Present structured information using the 'Expert group' method.</p>	<p>Be able to classify animals into vertebrate groups.</p> <p>Be able to select the correct information and present it to classmates.</p> <p>Be able to communicate information about an animal in an appropriate manner, and to critically evaluate the information they hear (compare, analyse, etc.)</p>	<p>Together in the classroom, the class discusses the specific characteristics of different vertebrates.</p> <p>Collaborating in groups of five, find information about a specific animal and organise it. Present the information using the 'Expert group' method.</p>	<p>(annexed)</p> <p><a href="#">Cooperative Learning strategies</a></p> <p>Worksheet 3 Classifying vertebrates (annexed)</p>			
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	<p>based on the criteria provided, and then provide examples of organisms.</p> <p><b>Worksheet 2</b></p> <p>Each group member gives the other groups a presentation of the information they have gathered (using the ‘Expert group’ method (see Cooperative Learning Strategies)</p> <p>Students finish a self-assessment activity.</p> <p><b>Worksheet 3</b></p>		<p>Assess the knowledge of the classification of vertebrates.</p>						
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<b>Lesson 2.</b>  Invertebrates	<p>The teacher introduces the invertebrates in the animal kingdom, characteristic features and provides examples of animals belonging to it.</p> <p><b>Video 3</b></p> <p>Students are given statements about invertebrate groups (worms, molluscs, insects, arachnids) to put them in the appropriate group. Optionally work in pairs or alone.</p> <p><b>Worksheet 4</b></p> <p>Students complete a task by grouping animals and</p>	Science, Language	<p>Name the external features of invertebrates.</p> <p>Assigns animal-related statements to the appropriate animal group (lifestyle, diet, habitat, etc.)</p> <p>Evaluate their understanding of invertebrate classification.</p>	<p>Be able to critically assess the information presented.</p> <p>Be able to attribute animal-related claims based on information from the teacher or personal experience.</p> <p>Be able to classify animals into invertebrate groups.</p>	<p>Directive, interactive lesson and collaborative learning (pupils can choose if they want to learn in pairs or alone).</p> <p>During the discussion, pupils respond to the teacher's questions regarding the material they have heard.</p> <p>Complete the task independently.</p> <p>Complete the task independently.</p>	<p>Information from the internet, posters, photos.</p> <p>Video 3 YouTube video from Little School <a href="#">Invertebrates or Animals without Backbone</a></p> <p>Worksheet 4 Cut and glue (annexed)</p> <p>Worksheet 5 Sorting invertebrates (annexed)</p> <p>Worksheet 6 Invertebrate animals – true or false (annexed)</p>	Classroom, interactive board or screen	<p>Identify groups of invertebrates by naming their characteristics. (Worksheet 4 and 5)</p> <p>Identify true and false statements about invertebrates. (Worksheet 6).</p>	1 hour
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	identifying the correct statements about invertebrates. <b>Worksheet 5</b> <b>Worksheet 6</b>								
<b>Lesson 3.</b>  Do I know how to distribute organisms?	<p>The teacher asks targeted questions about animal groups, classifications of groups, etc. based on the video they have watched.</p> <p><b>Video 4</b></p> <p>After watching the video, students respond to the teacher's questions about a specific animal</p>	Science	<p>Compare and contrast characteristics of vertebrates and invertebrates.</p> <p>Identify and differentiate between invertebrate and vertebrate animals.</p> <p>Identify the group of animals they have chosen and name the</p>	<p>Be able to identify and define a vertebrate and an invertebrate.</p> <p>Be able to classify animals as a vertebrate or an invertebrate.</p> <p>Be able to specify the features of grouping.</p> <p>Be able to understand the</p>	<p>Students answer the teacher's questions, providing knowledge to back up their responses.</p> <p>Complete the task independently and put the new knowledge to use.</p> <p>Frontally present information.</p>	<p>Video 4 YouTube video from Happy Learning English <a href="#">THE ANIMAL KINGDOM. VERTEBRATE SAND INVERTEBRATES</a></p> <p>Worksheet 7 Identify vertebrates and invertebrates (annexed)</p>	Classroom, computer, interactive board or projector.	<p>Explain the terms invertebrates and vertebrates. Give examples of vertebrates and invertebrates. Correctly classifies vertebrates and invertebrates and assigns them to the correct groups. (Worksheet 7).</p>	1 hour

	<p>or common characteristics of a group of animals.</p> <p>By responding to questions, students review their understanding of vertebrates and invertebrates as well as animal groupings (fish, amphibians, mammals, reptiles, birds, etc.).</p> <p>Students learn characteristics about vertebrates and invertebrates.</p> <p>Students do the activity independently.</p> <p><b>Worksheet 7</b></p> <p>Students choose one of</p>		<p>most important features.</p>	<p>characteristics and examples of vertebrate and invertebrate animals.</p> <p>Be able to present structured information concisely.</p>						
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	<p>the 6 animals to complete the activity and present to their classmates what they have written about that animal.</p> <p>Students listen to information from a friend and fill up their own sheet (if necessary).</p>								
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\*Setting: organisation of classroom space (physical and virtual) functional to the activity, provision of resources (technological and others), management of resources.

FISH

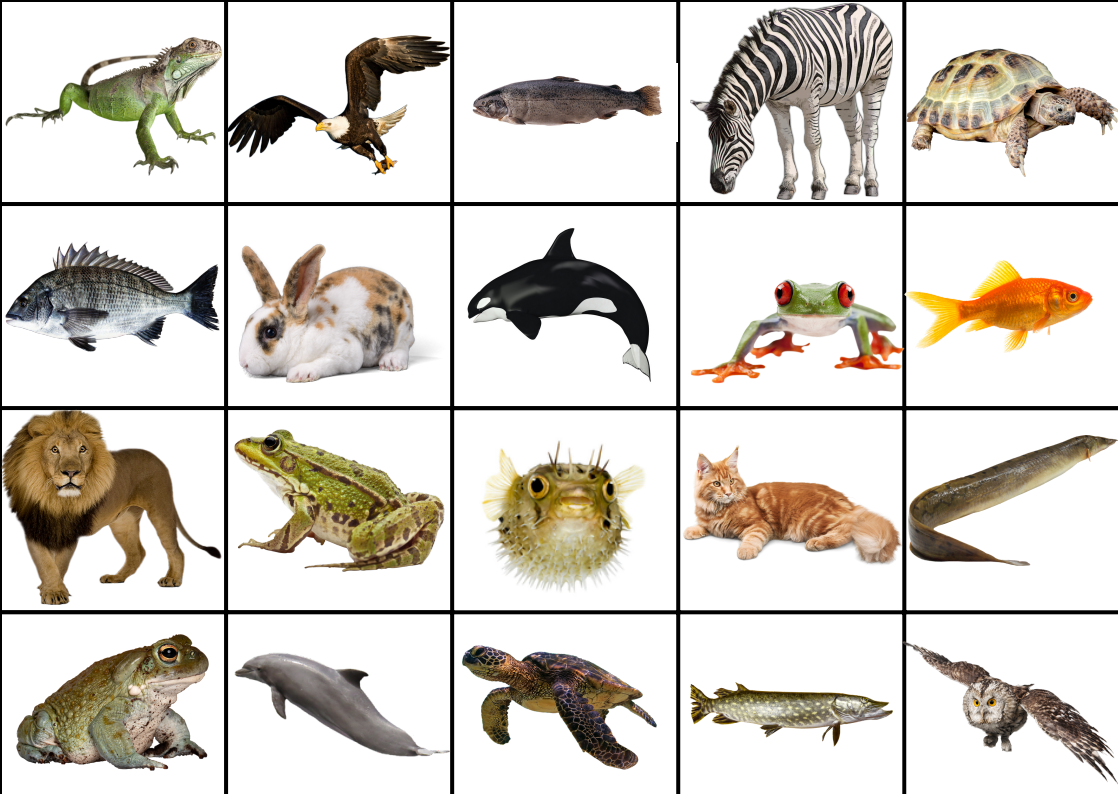
MAMMALS

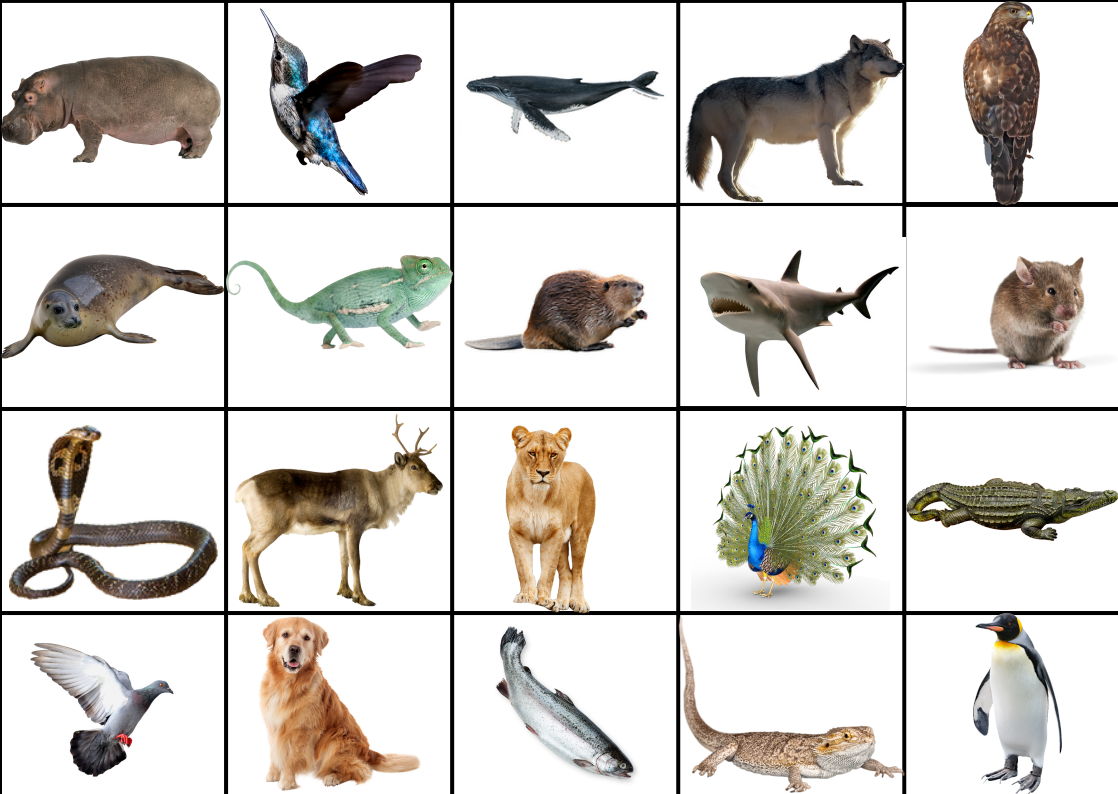
BIRDS

REPTILES

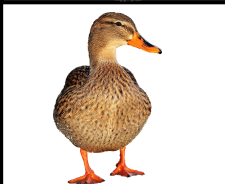
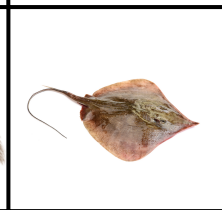
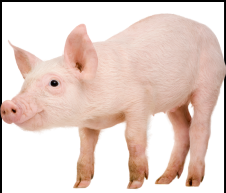
AMPHIBIANS

**Vertebrate animals**










**NAME:** \_\_\_\_\_

# VERTEBRATES

# ANIMALS



**WRITE  
THE MOST  
IMPORTANT INFORMATION  
AND GIVE EXAMPLES  
OF VERTEBRATES  
ANIMALS**



**A GROUP OF ORGANISMS**

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# ANIMAL HABITAT



**NUTRITION**



## ANIMAL APPEARANCE

# DISTRIBUTION OF ANIMALS

## REPRODUCTION METHOD

# ADAPTATION TO THE ENVIRONMENT

## ANIMAL

[illegible]

# CLASSIFYING VERTEBRATES

Put each animal in the correct box.

DOES IT HAVE SCALES?

NO

YES

CAN IT FLY?

IS IT BORN ON LAND?

YES

NO

DOES IT HAVE FUR  
OR HAIR?

YES

NO

YES

NO



MAMMAL



FISH



AMPHIBIAN



BIRD



REPTILE

# ARACHNIDS

# MOLLUSCS

# WORMS

# INSECTS

Cut and glue into the appropriate pages.

They contain the larvae of certain parasites in fish, birds, mammals and humans.

Lives range from a few months to decades.

There are more than a million species worldwide.

It has nervous, digestive, reproductive and digestive systems, and rarely a circulatory system.

There are both parasitic and free-living species.

Some have separate sexes. There are viviparous.

They spread human and animal diseases and parasites.

The body can range from a few millimetres to more than 20 metres in length and consists of a head, torso and legs.

Most reproduce by fertilised eggs.

Overfishing is driving some species to extinction, and many are listed in the International Red Data Book.

Some have separate sexes, while others are hermaphrodites.

Some have 3 developmental stages: egg, larva, adult; others have 4 developmental stages: egg, larva, pupa, adult.

They mostly live on land, just only a few in the water.

They are eaten by many fish, animals, and birds; certain species are edible.

Distributed almost worldwide, there are more than 100,000 species.



Cut and glue into the appropriate pages.

They carry pollen, participate in the soil water cycle and produce honey, wax and other products.

It often develops with metamorphosis with intermediate hosts.

They are soft-bodied.

Some have venom glands, others have spider glands. Predators, eat insects.

Many of them are plant pests.

Widespread worldwide.

Body is 0.1 mm-17 cm long. Consists of cephalothorax and abdomen. 4 pairs of walking legs.

The body is flat, cylindrical, elongated, and bilaterally symmetrical. The body wall is made up of a muscular and skin sac.

The circulatory system is well developed. The heart is mostly tubular.

It lives in soil, water, fungi, plants, animals and human bodies.

They live on land, in freshwater and in the sea.

They breathe through the lungs or trachea; some breathe through both lungs and trachea.

They live on land and in fresh waters.

Cut and glue into the appropriate pages.

REPRESENTATIVES:

Stick insects,  
ladybirds, large  
white, bees,  
mosquitoes, flies,  
moths, moths,  
ladybirds,  
dragonflies.

REPRESENTATIVES:  
Earthworms, ascarids,  
toxocara, tunicates,  
trichinae..

REPRESENTATIVES:  
Squid, octopus, snails,  
slugs, mussels, clams,  
mussels, oysters.

REPRESENTATIVES:  
Scorpions, ticks, and  
spiders.



INSECTS

ARACHNIDS

MOLLUSKS

WORMS

CRUSTACEANS

**Invertebrate animals**



# Invertebrate Animals

## TRUE or FALSE?



Read each statement given below.  
Think carefully and circle TRUE or FALSE.

1	An invertebrate is an animal without a backbone.	True	False
2	Invertebrate animals do not have a skeleton.	True	False
3	Invertebrate animals are the largest group on the planet.	True	False
4	Octopus and squid are molluscs.	True	False
5	Starfish have no spines.	True	False
6	Corals and jellyfish are invertebrate animals.	True	False
7	Birds are invertebrate animals.	True	False
8	Invertebrates live all over the planet.	True	False
9	Invertebrates are cold blooded animals.	True	False
10	The majority of living animals are invertebrates.	True	False

IDENTIFY

VERTEBRATES AND INVERTEBRATES

Remember differences between vertebrates and invertebrates. Choose six animals from the list below. Then write its name and whether it is a vertebrate or invertebrate. Write which group the animal belongs to and two important features why you classify it in a particular group. There is one example.

hamsterbutterflysnakejellyfishfrogspiderbearlion

crocodileeagleturtleelephantcat-snailwhaletiger

Animal	Vertibrate/ Invertibrate	Group	Two important features
Turtle	Vertibrate	Reptile	They lay eggs. They have a backbone.