

Grade 7 Natural Science Worksheet

Assessment Task: Biology: animal adaptation

Vertebrate groups

Part One: Names of vertebrate groups

Complete the table by adding in the name of the vertebrate group and pasting in a picture or drawing a picture of an example which represents the group.

Description	Name of group	Picture/drawing example
Have feathers, lay eggs		
Have scales, lay eggs on land		
Have hair/fur, young born alive		
Naked skin, lay eggs in water		

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Have scales, lay eggs in water		

[20 marks]

Part Two: Choose the correct option

Vertebrate bodies are specially adapted.

Complete each of the following sentences by choosing the correct option:

1. Frogs jump from place to place. Their skeletons are adapted to jumping. They have a:
 - a. long thin spine and small feet.
 - b. short strong spine and big feet.
 - c. short strong spine and small feet.

2. Birds walk and fly. To do this, their skeletons have adapted so that their forelimbs have turned into:
 - a. feathers.
 - b. wings.
 - c. a tail.

3. Vertebrates grow steadily and need strong skeletons to move. They all have:
 - a. exoskeletons.
 - b. shells.
 - c. endoskeletons.

4. Tadpoles live in a different medium to adult frogs. This means they have:
 - a. gills, legs and a tail.
 - b. fins, gills and a tail.
 - c. lungs, fins and gills.

5. Lions are carnivores that kill animals and eat meat. They have well adapted:
 - a. incisors for gnawing.
 - b. molars for grinding.
 - c. canines for tearing.

[10 marks]

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Part Three: Discuss a skeleton

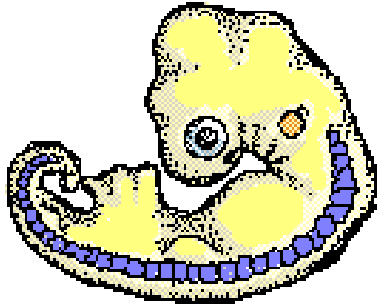


1. To which vertebrate group does the skeleton illustrated above belong? How did you know this? [4]
2. How is the skeleton illustrated above the same as your skeleton? [6]
3. How does the skeleton of this animal differ from your skeleton? [8]
4. For what means of locomotion is this skeleton adapted? [2]

[20 marks]

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Part Four: Embryo of a bird



1. This is a picture of an embryo of a bird that has not yet hatched. How do you know that it is the embryo of a vertebrate? [2]

2.



How will the animal indicated in (1) grow? How does it compare to the way the animal indicated in this question will grow? [10]

3. All animals need oxygen in order to live. How do the various vertebrate groups get their oxygen from the environment in which they live? [12]

[24 marks]

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Suggested Solutions

Question number	Possible marks	Solution
1	20	See table in Appendix of Assessment Tools.
2	10	1. b 2. b 3. c 4. a 5. c 6.
3	20	1. Fish/Pisces ✓✓ Any appropriate reason e.g. fins instead of limbs. ✓✓ [4] 2. Has a vertebral column, ✓✓ has a brain case/skull, ✓✓ has four appendages. ✓✓ [6] 3. Many more vertebrae, ✓✓ different shaped and sized skull, ✓✓ fins instead of limbs, ✓✓ a tail. ✓✓ [8] 4. Swimming. ✓✓ [2]
4	24	1. Has a vertebral column. ✓✓ [2] 2. The vertebrate (the bird) will grow steadily and continually ✓✓ because of the internal skeleton ✓✓ until it reaches its adult size. ✓✓ The skeleton grows bigger with the rest of the animal over time. ✓✓ The spider is an invertebrate with an exoskeleton. ✓✓ The exoskeleton is on the outside of the body ✓✓ and it limits the growth of the animal. ✓✓ The exoskeleton has to be shed every time the spider grows. ✓✓ The spider grows in spurts ✓ rather than continuously like the vertebrate. ✓ [10] 3. Fish – gills. ✓✓ Amphibians – gills as tadpoles, ✓✓ lungs and skin as adults. ✓✓ Reptiles – lungs. ✓✓ Birds – lungs. ✓✓ Mammals – lungs. ✓✓ [12]

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Appendix of Assessment Tools

Table to assess vertebrate groups

Description	Name of group	Picture/drawing Example
Have feathers, lay eggs.	Birds/Aves ✓✓	Any suitable picture or drawing of an example forms each group. 5 x ✓✓
Have scales, lay eggs on land.	Reptiles ✓✓	
Have hair/fur, young born alive.	Mammals ✓✓	
Naked skin, lay eggs in water.	Amphibians ✓✓	
Have scales, lay eggs in water.	Fish/Pisces ✓✓	