

MAMMALS

Answer Key: Grades 7–8 Lesson Extensions

Notes:

- This answer key should be used as a guide for basic responses to the questions and instructions found in the Grades 7–8 Lesson Extensions. The children should be encouraged to go the extra mile and make their science journals beautiful and exceptionally well done.
- Encourage the children to avoid plagiarism of the lesson text when forming their written answers.
- There are two types of answers provided in this Answer Key:

Sample answer: Most questions are open ended, so the children’s answers will not match the provided text exactly or include everything provided in the sample answer. However, some answers should match more closely (for example, vocabulary word definitions, copied charts, etc.).

Answers will vary: This is used when there will be great variation in the children’s answers, which may be due in part to a lesson having more information provided than another lesson. Refer to the text in the lesson to check these answers.

Lesson 1

Instruction #2: *In your science journal, write a paragraph explaining how sound is transferred through the ear, using the vocabulary words (which are in bold italics). In your paragraph, underline the vocabulary words.*

Sample answer:

Sound waves enter through the ***external ear*** and pass through the ***ear canal***. The sound waves then hit the ***eardrum***, which is a piece of thin tissue, causing the eardrum to vibrate. The vibrating eardrum passes the sound waves to the three bones (called the ***malleus***, ***incus***, and ***stapes***) in the ***middle ear*** which conduct the sound. Lastly, the sound waves move into the ***inner ear*** where they hit the ***cochlea***. This organ is filled with liquid and has nerves that sense vibrations and convert them into electrical impulses, and these impulses are interpreted as sound by the brain. The ***semicircular canals*** and the ***vestibule***, also found in the inner ear, help us with balance.

Lesson 2

Instruction #1: *Read each section and, in your science journal, answer the questions at the bottom of this page.*

Questions and sample answers:

1. *Explain the difference between the uteri found in mammals that have litters and those that typically have one baby (like that in humans).*

Mammals that give birth to litters carry their fetuses (babies) in uterine horns, which look more like tubed sections. In mammals that typically give birth to one baby (such as humans), there is one whole uterus in which the baby grows.

2. ***Critical Thinking:*** *Why do you think it makes sense for mammals that have litters to have their fetuses grow in uterine horns?*

Their uterine horns are especially designed to carry multiple fetuses. The uterine horns appear to have more room and individual space.

Instruction #2: *In your science journal, define the vocabulary words (which are in bold italics).*

Sample answer:

In utero: within the uterus

Uterine horns: tube-like sections of the uterus where babies grow in animals with litters

Embryology: the study of life from conception to birth

Lesson 3

Instruction #2: In your science journal, copy the sketch of the horse's hoof found in the center of this page (or draw your own).

Sample answer:



Instruction #3: List 2–3 bullet points for each section of the hoof—outside, inside, and underneath.

Sample answers:

Outside the Hoof: (only 2–3 bullet points needed)

- The visible outer part of the hoof is the hoof wall.
- The hoof wall is made of keratin and grows continuously.
- People who take care of horses trim the hoof wall.
- The hoof wall acts as a protective barrier to the inside of the horse's hoof.
- The hoof wall functions as a shock absorber.
- The part where the top of the hoof meets the hairline is called the coronet.
- The coronet is where the hoof wall grows.

Inside the Hoof: (only 2–3 bullet points needed)

- The last bone in the tip of the horse's toe is the largest and is called the coffin bone.
- The hoof surrounds the coffin bone.
- Behind the coffin bone towards the back of the hoof is the digital cushion.
- The digital cushion is made up of cartilage and acts as a cushion by absorbing shock.

Under the Hoof: (only 2–3 bullet points needed)

- The sole dips inward, so it doesn't usually touch the ground.
- The sole protects the inside of the hoof and is made of keratin.
- The keratin on the sole is a bit softer and more easily worn down.
- There is a line at the tip of the sole called the white line.
- The white line is an area where the sole connects to the hoof wall.

- Caretakers of horses will keep a close eye on the white line because if the white line becomes infected, it could cause separation between the sole and the hoof wall.
- The V-shaped structure of the underpart of the hoof is called the frog.
- The frog is strong and thick, and it protects the digital cushion found inside the hoof.
- Inside the frog are sensitive nerves that help the horse sense the surface it's standing on.

Lesson 4

Instruction #2: In your science journal, define the vocabulary words (which are in bold italics).

Sample answer:

Prehension: the act of grasping something

Mastication: chewing

Digesta: the name of food after it's been swallowed

Esophagus: a muscular tube leading to the stomach from the back of the mouth

Monogastric: one stomach (found in humans, cats, dogs, pigs, and others)

Gastric juices: enzymes and stomach acid that help break down food and kill off bacteria

Pseudo-ruminant: a classification term for animals that primarily eat forage and roughage but do not have rumens or four-chambered stomachs

Roughage: food high in fiber

Instruction #3: In your science journal, answer the questions.

Questions and sample answers:

1. *How do pseudo-ruminants depend on microorganisms for digestion?*

Microorganisms help break down the strong cellulose found in fiber. Pseudo-ruminants could not otherwise break down cellulose.

2. **Critical Thinking:** *Nutritionists say it is important for you to chew your food properly when eating. Why do you think this is the case?*

Chewing is part of the digestive process. The teeth and saliva in your mouth work together to break down food both physically and chemically. The enzymes in saliva break down food and convert molecules into substances needed for better digestion.

Lesson 5

Instruction #2: In your science journal, list 5–7 facts about sloths that you found most interesting.

Answers will vary: Bullet points should reflect information found in the extension lesson.

Instruction #3: Present what you learned to a family member or draw a picture based on one of the scenes from the text.

Answers will vary: The child will have either presented the information to a family member or drawn a picture of a sloth in his or her science journal.

Lesson 6

Instruction #1: Read each section. In your science journal, write at least two bullet points for each topic.

Answers will vary: There should be at least two bullet points under each of these headings: WESTERN GORILLA, DAILY LIFE OF ORANGUTANS, and OLD AND NEW WORLD MONKEYS. Each point should reflect information found in the extension lesson.

Instruction #2: In your science journal, compose a short written work about something that inspired you from the primates lesson. Be creative! This could be a snippet from a travel brochure, an informative paragraph, a persuasive article about how to keep gorilla habitats safe, a poem, etc.

Answers will vary: The child's science journal should show a creative presentation of information about primates (for example, a snippet from a travel brochure, an informative paragraph, a persuasive article about how to keep gorilla habitats safe, a poem, etc.).

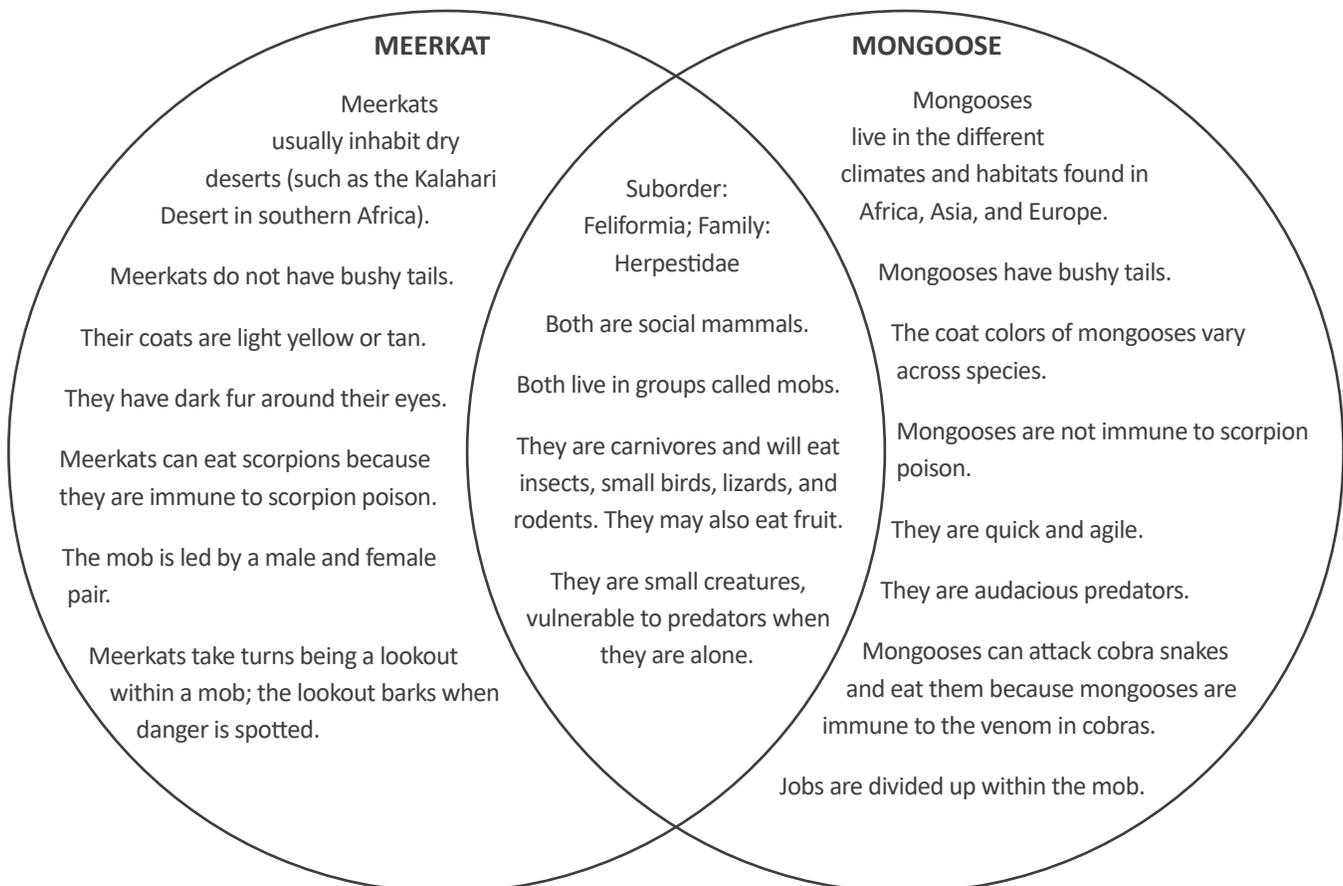
Lesson 7

Instruction #2: In your science journal, create a Venn diagram to compare and contrast meerkats and mongooses.

Sample answer:

The Venn diagram should have two partially overlapping circles. One circle should be labeled MEERKAT, and the other circle should be labeled MONGOOSE. The overlapped section includes information true for both meerkats and mongooses.

Lesson 7 Venn Diagram



Instruction #3: In your science journal, write 3–5 bullet points of things you learned about hyenas.

Sample answer:

Hyenas: (only 3–5 bullet points needed)

- Hyenas may appear to look more like dogs, but they are more closely related to cats.
- Suborder: Feliformia; Family: Hyaenidae
- There are four species of hyenas: spotted, brown, striped, and the aardwolf. (Some scientists classify only three species of hyenas, with the aardwolf being in the same family but not a hyena.)
- Hyenas live in Africa.
- Hyena habitats match their diet.
- Female hyenas outrank males among spotted hyenas.
- Only the spotted hyenas make the characteristic human-sounding laugh.
- Hyenas are known as scavenger carnivores, but they are very capable of successfully hunting wildebeest, antelope, and many other smaller mammals, fish, and reptiles.
- Hyenas are not wasteful, even eating bones and hooves.
- Hyenas have powerful jaws.
- Aardwolves are insectivores (unlike other hyenas); they dine on termites, eating about 30,000 termites each night.

Lesson 8

Instruction #2: Copy the taxonomical chart into your science journal.

Sample answer: Refer to “Lesson 8 Extension” on page 84 to check the taxonomical chart.

Instruction #3: Read about the three canine species below. Then teach one or more people in your family what you learned.

Answers will vary: The child will have taught a family member about the three canine species presented in the extension lesson.

Lesson 9

Instruction #2: In your science journal, **do one or both** of the following assignments:

- a. Copy the diagram of the placental mammal embryo and the shelled embryo.

Sample answer: Refer to “Lesson 9 Extension” on page 96 to check the diagram of both embryos.

- b. Write definitions for each term labeled on the egg diagrams. (*Note:* You may refer to Lesson 2 or your science wall for help with the words placenta and uterus.)

Sample answer:

Chorion: outermost membrane (or layer)

Embryo: early stage of a developing baby

Yolk sac: food source (bigger in shelled animals as it must sustain the baby through the whole growth period before hatching; smaller in placental mammals as it is only needed until the placenta develops)

Amnion: fluid-filled sac that covers the embryo and acts as a shock absorber

Allantois: pouch that stores waste and helps with respiration

Albumen: clear white liquid that protects the yolk and provides more nutrients to the embryo

Uterus: the womb—where a baby grows inside its mother

Placenta: an organ that is formed within the uterus during pregnancy that sustains the developing baby through the umbilical cord

Air cell: a pocket of air that provides the hatchling with air when it’s ready to hatch

Chalaza: rope-like structure that anchors the yolk

Lesson 10

Instruction #2: In your science journal, based on the information you read, write whether you think wombats, Tasmanian devils, and kangaroos are herbivores or carnivores. What features about each of these marsupials’ teeth would lead you to your conclusion?

Sample answer:

Wombats: Herbivores; the molars are designed for grinding; there is a gap between the incisors and molars (some children may be able to conclude that this indicates there are no canine teeth).

Tasmanian devils: Carnivores; teeth are designed to tear and shred.

Kangaroos: Herbivores; the molars are designed for grinding; there is also a wide gap between the front and back teeth.

Lesson 11

Instruction #2: In your science journal, list 3–4 interesting features for each mammal.

Answers will vary: Bullet points for both AARDVARKS and ARMADILLOS should reflect information found in the extension lesson.

Instruction #3: In your science journal, create a Venn diagram to compare each mammal.

Sample answer:

The Venn diagram should have two partially overlapping circles. One circle should be labeled AARDVARK, and the other circle should be labeled ARMADILLO. The overlapped section includes information true for both aardvarks and armadillos.

Lesson 12

Instruction #2: In your science journal, list one characteristic for each mammal discussed that is different from that of rodents.

Sample answer:

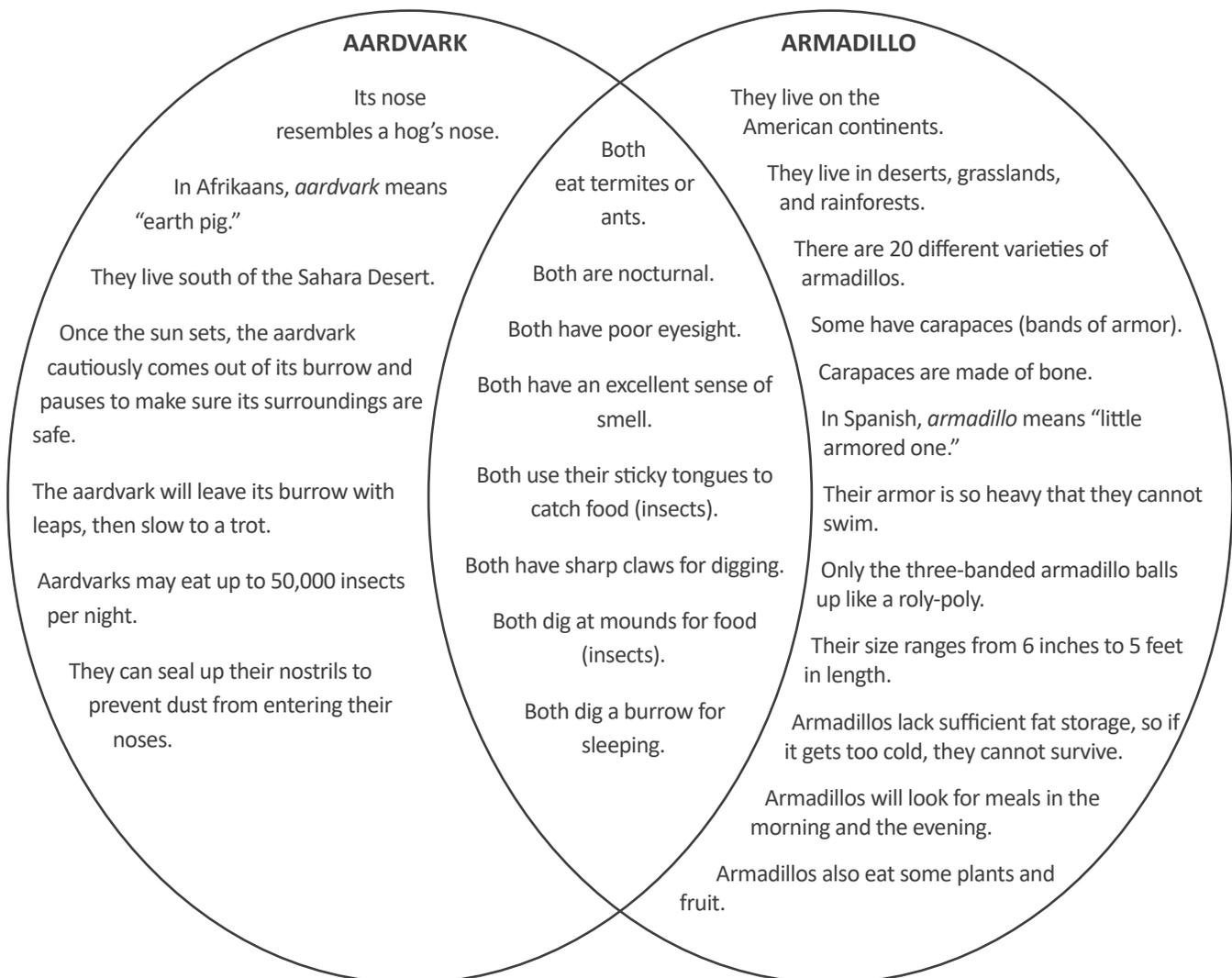
Rabbit | Hare: (only 1 bullet point needed)

- They have skeletal differences.
- They have an extra set of incisors.
- Their incisors are white (not orange).
- They are strict herbivores.

Pika: (only 1 bullet point needed)

- They are strict herbivores.
- They have skeletal differences. For example, their skulls are flatter than rodent skulls.
- They have more incisors.

Lesson 11 Venn Diagram



Mammals



Ferret | Weasel | Mink: (only 1 bullet point needed)

- Their teeth match those of carnivores—they have canines.

Mole | Shrew: (only 1 bullet point needed)

- Their front teeth are pointy and sharp.
- There is no gap between their incisors and molars.

Lesser Mouse Deer: (only 1 bullet point needed)

- They are ungulates.
- They have long sharp tusks (modified canines).

Hedgehog: (only 1 bullet point needed)

- Hedgehog spines are unbarbed (compared to the barbed quills of a porcupine, a rodent).
- Hedgehog spines are about the same size and shape along their body (unlike those of the porcupine).
- Hedgehogs roll into a ball and hide as a defense rather than release their spines as porcupines do.

Lesson 13

Instruction #2: In your science journal, pick one of the bears and write an informative paragraph using what you learned in this extension lesson. Write the paragraph in such a way that it could have been used in the main lesson to teach about the bear. If desired, include a sketch of the bear.

Answers will vary: The child's paragraph should include information taken from the bullet points of ONE of the bears featured in the extension lesson.

Lesson 14

Instruction #2: Do one or both of the following assignments:

- In your science journal, list 5–7 interesting facts about marine mammals.

Answers will vary: Bullet points should reflect information about marine mammals found in the extension lesson.

- In your science journal, briefly summarize how rescue teams are able to disentangle a trapped whale, based on what you read in the case study.

Sample answer:

When whales become entangled in fishing gear, they become panicked and stressed. Because whales are very heavy, rescuing them can be very difficult. Rescuers do not want to harm themselves or further harm the whale, so they do not get into the water with the whale. Instead, they follow behind the whale in a boat. A grappling hook is used to catch and hold onto the fishing lines that are tangled up. A series of buoys are attached to prevent the whale from diving and to slow it down. Rescuers get into a small inflatable boat to catch up to the moving whale. Eventually the whale will slow down as it begins to get tired. Rescuers then use a tool attached to a pole to cut away the rope without harming the whale. Once the whale is free, the team cleans up any remaining rope to prevent another animal from getting entangled in it.