The Frog: A Living Indicator of Environmental Health

Reading Worksheet — Level F | tahricteaches.com

Frogs are amphibians — animals that can **survive** both in water and on land. There are more than 7,000 known species living on every continent except Antarctica, from cold mountain streams to **tropical** rainforests. Despite their great variety, all frogs share three key features: smooth, permeable skin, powerful hind legs for jumping, and a dramatic two-stage life **cycle**.

The frog's life **cycle** begins in the water. A female frog lays hundreds of eggs in a pond or slow stream. When the eggs hatch, tiny tadpoles emerge — gill-breathing larvae with long tails but no legs. Over several weeks, the tadpoles undergo metamorphosis: they develop four legs, grow **lungs** for breathing air, and gradually **absorb** their own tail until it disappears entirely. The fully formed frog then climbs out of the water and begins its life on land.

The frog's most remarkable feature is its skin. Unlike most animals, frogs do not drink water through their mouths. Instead, they **absorb moisture** directly through their thin, permeable skin, so they must always live in **moist** places. Any **pollution** in the water or soil passes straight into the frog's body. This is why scientists use frog populations as a living indicator of environmental health — a sick frog population almost always signals a sick ecosystem.

Frogs also play a vital role in ecosystems. As predators, they consume vast numbers of insects — including mosquitoes and crop pests — providing natural **protection** for humans and farms. Some species produce powerful **poison** from their skin glands to defend against predators. In **tropical** rainforests, poison dart frogs carry toxins deadly enough to kill large animals. As prey, frogs feed snakes, birds, and fish, making them an essential link in the food chain.

Despite their resilience, frogs are now among the most threatened animal groups on Earth. Scientists estimate that more than a third of all frog species face extinction. The main causes are habitat destruction, water **pollution**, a deadly fungal disease, and climate change — which disrupts the rainfall and **moisture** frogs depend on to **survive**. Because their permeable skin makes them so sensitive to environmental changes, a declining frog population is often the earliest warning that a wider ecosystem is under threat.

A. Vocabulary

1. survive ____	a. the act of keeping something or someone safe from harm or danger
2. tropical ____	b. to take in liquid or another substance through a surface
3. cycle ____	c. slightly wet; not completely dry
4. lung ____	d. to continue to live, especially in difficult or dangerous conditions
5. absorb ____	e. relating to the hot, wet regions of the world near the equator
6. moisture ____	f. a series of events that happen again and again in the same order
7. moist ____	g. one of the two organs inside the chest used for breathing air
8. pollution ____	h. small amounts of water present in the air or on a surface
9. protection ____	i. harmful substances released into the natural environment
10. poison ____	j. a substance that causes illness or death when it enters the body

B. True or False

1. Frogs are amphibians that can survive on land and in water. ____
2. Frogs are found on every continent in the world, including Antarctica. ____
3. The frog's life cycle begins on land, not in water. ____
4. Tadpoles breathe using gills before they grow lungs. ____
5. Frogs drink water by swallowing it through their mouths. ____
6. A frog absorbs moisture directly through its skin. ____
7. Frogs eat insects, helping to protect farms and crops. ____
8. All frog species produce poison from their skin glands. ____
9. Water pollution enters a frog's body quickly because of its permeable skin. ____

C. Fill in the Blanks

Word Bank: pollution, cycle, survive, moist, tropical

1. All frogs share a two-stage life _____, starting in the water and ending on land.

2. Frogs must live in _____ environments because their skin absorbs water directly.

3. Any _____ in the water or soil passes straight into a frog's body through its skin.

4. In _____ rainforests, frogs play a critical role in controlling insect populations.

5. More than a third of all frog species may not _____ due to habitat loss and climate change.

D. Comprehension Questions

1. What is an amphibian, and what three features do all frogs share?
2. Describe the frog's life cycle from egg to adult.
3. Why do frogs need to live in moist environments, and why does this make them vulnerable to pollution?
4. Explain two ways frogs help keep ecosystems in balance.
5. What are the main threats facing frogs today, and why is a declining frog population a warning sign for humans?

E. Discussion Questions

1. Scientists call frogs 'indicator species' — their health reflects the health of the wider environment. Can you think of other animals that might act as environmental indicators?
2. Some frog species produce powerful toxins. How do you think researchers have studied and used these substances? What are the possible benefits and risks?
3. Imagine a world without frogs. How might their disappearance affect farming, medicine, and other areas of human life?

Answer Key

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A. Vocabulary: 1-d, 2-e, 3-f, 4-g, 5-b, 6-h, 7-c, 8-i, 9-a, 10-j

B. True/False: 1-T, 2-F, 3-F, 4-T, 5-F, 6-T, 7-T, 8-F, 9-T

C. Fill Blanks: 1-cycle, 2-moist, 3-pollution, 4-tropical, 5-survive

D. Comprehension:

1. An amphibian is an animal that can live both in water and on land. All frogs share smooth permeable skin, powerful hind legs, and a two-stage life cycle.
2. A female frog lays eggs in water, which hatch into gill-breathing tadpoles with tails. Over several weeks, the tadpoles develop four legs and lungs, absorb their tail, and emerge as adult frogs.
3. Frogs must stay moist because they absorb water through their permeable skin. This also means any pollution in their habitat enters their body directly, making them highly sensitive to environmental contamination.
4. As predators, frogs eat vast numbers of insects including crop pests, protecting farms and humans. As prey, they provide food for snakes, birds, and fish, forming an essential link in the food chain.
5. The main threats are habitat loss, water pollution, a deadly fungal disease, and climate change. A declining frog population is a warning sign because their permeable skin makes them among the first animals affected by environmental damage, signaling wider ecosystem problems.

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