Following the Scent

How a snake tracks prey it cannot see

ZOO.8.5 "Describe how snakes use chemosensory to locate and track prey."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each action the snake takes to collect or check chemical clues. Number the underlined actions in the order they help the snake follow the mouse.

A Trail Through the Weeds

1. At dusk, a corn snake slips beneath a fallen fence while a mouse runs ahead through weeds. The mouse leaves tiny amounts of chemicals on grass and soil as it moves. The snake does not need to see the mouse to detect this trail. It repeatedly flicks its forked tongue into the air and across nearby surfaces. Each tip picks up chemical particles, much as a damp brush picks up dust. When the tongue returns, the tips touch openings in the roof of the snake's mouth. These flicks gather samples from places the snake cannot inspect with its eyes.

2. Inside the mouth, the vomeronasal organ detects chemicals delivered by the tongue. Nerve signals from this organ help the snake recognize signs of prey and respond to changes along a trail. The snake can also smell through its nostrils, but tongue flicking delivers samples directly to the vomeronasal organ. Suppose the mouse crosses a patch of bare dirt and turns beside a log. The corn snake flicks its tongue while moving toward the log, testing whether the mouse's chemical trace continues there. A trail can guide the search even after the mouse disappears into thick grass.

3. At the log, the snake finds two possible paths. Chemicals reach both tips of its forked tongue, but the samples may differ if one side is closer to the mouse's trail. The snake can change direction, flick again, and check whether it still detects the trace. One flick does not provide a perfect map: wind, rain, and other animals can scatter or cover chemical traces. Repeated sampling helps the snake follow the trail around obstacles and toward the mouse. If the trail fades, the snake may search nearby rather than move straight ahead.

2 ANSWER WITH EVIDENCE

Use the passage

1. How does the corn snake collect chemical clues after the mouse moves out of sight?

2. How do the chemicals collected by the tongue help the snake respond to the mouse's trail?

3. At the log, how could the snake use its forked tongue and repeated flicks to choose a path?

4. If rain scatters the chemical trace, how might the snake's search change? Explain why.

3 YOUR TURN

Your own words

Create a prey-tracking scene with a different prey animal and obstacle from those in the passage. In four to five sentences, describe the prey's path, how a snake uses chemical clues to search, and one condition that could make the trail hard to follow.

ANSWER KEY

Following the Scent

PART 1 · READ AND MARK

Underline each action the snake takes to collect or check chemical clues. Number the underlined actions in the order they help the snake follow the mouse. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How does the corn snake collect chemical clues after the mouse moves out of sight?	**It flicks its forked tongue into the air and across surfaces, picking up chemical particles left by the mouse.**
2	How do the chemicals collected by the tongue help the snake respond to the mouse's trail?	**The tongue delivers them to the vomeronasal organ, which detects them and sends nerve signals that help the snake recognize and follow signs of prey.**
3	At the log, how could the snake use its forked tongue and repeated flicks to choose a path?	**Samples from the two tongue tips may differ near the trail. The snake can turn, flick again, and check whether it still detects the mouse's trace.**
4	If rain scatters the chemical trace, how might the snake's search change? Explain why.	**It may search nearby instead of moving straight ahead because rain can make the trail harder to detect.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

A slug crawls across a garden path and disappears beneath a flowerpot. A garter snake flicks its forked tongue near the pot, collecting chemicals left along the slug's route. Samples delivered to its vomeronasal organ help the snake search around the pot instead of heading across the garden. If heavy rain washes away the trail, the snake may need to search a wider area.

Accept responses that connect tongue flicking, chemical detection, and a change in the snake's search direction. Students need not claim that one tongue flick identifies an exact location.