# Chasing the Right Temperature

Read how a desert lizard responds to changing heat.

**ZOO.8.4** "Define what it means to be ectothermic and identify ways in which reptiles regulate their body temperature."

NAME _____ DATE _____

## 1 READ AND MARK

Read it twice

**YOUR JOB** Underline the definition of ectothermic, circle two ways the lizard gains heat, and number two different actions it takes to avoid overheating.

### A Day in the Desert

1 At sunrise, a desert spiny lizard sits beneath a creosote bush. Overnight, the air and ground cooled, and the lizard's body cooled with them. Reptiles are ectothermic: their body temperature depends largely on heat gained from or lost to their surroundings. They do make some heat through metabolism, but that heat usually cannot keep body temperature steady the way it can in birds and mammals. A cooler lizard often moves more slowly because its muscles and other body processes work less effectively at low temperatures. To become active, it must find a useful source of heat.

2 As sunlight reaches the wash, the lizard steps onto a sunlit stone and turns its side toward the rays. The stone transfers heat through contact, while sunlight warms the lizard's body directly. Once warm enough to move quickly and hunt insects, the lizard may shift between sun and shade rather than stay on the hottest rock. On a cooler morning, it could press against a rock that has already warmed in sunlight. These movements change how much heat enters its body. The lizard is not choosing a single perfect temperature for every moment; it is keeping its body within a workable range.

3 By midday, the same stone becomes dangerously hot. The lizard retreats under the bush or into a burrow, where direct sunlight cannot reach it. It may also raise its body off hot ground to reduce heat gained through contact. If its body overheats, its cells cannot function normally, and the animal can die. After the ground cools in late afternoon, it may leave shelter and bask again. Reptiles regulate temperature by changing their behavior and location, not by staying in one place and producing enough internal heat to cancel every change in the environment.

## 2 ANSWER WITH EVIDENCE

Use the passage

1. What does ectothermic mean, and why did the lizard's body cool overnight?

2. Name two ways the lizard gains heat on the sunlit stone. Explain where each source of heat comes from.

3. What are two different actions the lizard can take to avoid overheating at midday?

4. Why might the lizard shift between sun and shade after it is warm enough to hunt?

## 3 YOUR TURN

Your own words

A coastal lizard is cool after a cloudy morning. Later, the sun comes out and the ground becomes very hot. In three sentences, explain why its body temperature changes with its surroundings and describe one action it could take in each condition to regulate its temperature.

# Chasing the Right Temperature



## PART 1 · READ AND MARK

Underline the definition of ectothermic, circle two ways the lizard gains heat, and number two different actions it takes to avoid overheating. Accept any marking that follows this job and points at the right text.

## PART 2 · ANSWERS

| # | QUESTION | ANSWER |
|---|---|---|
| 1 | What does ectothermic mean, and why did the lizard's body cool overnight? | **An ectothermic animal's body temperature depends largely on heat gained from or lost to its surroundings. The lizard cooled as the air and ground cooled.** |
| 2 | Name two ways the lizard gains heat on the sunlit stone. Explain where each source of heat comes from. | **The lizard gains heat directly from sunlight and through contact with the warm stone.** |
| 3 | What are two different actions the lizard can take to avoid overheating at midday? | **It can move under the bush or into a burrow to avoid direct sun, and it can raise its body off the hot ground to reduce heat gained through contact.** |
| 4 | Why might the lizard shift between sun and shade after it is warm enough to hunt? | **Shifting between sun and shade changes how much heat enters its body, helping it stay within a workable temperature range instead of becoming too hot.** |

## PART 3 · YOUR TURN (SAMPLE ANSWER)

The coastal lizard is ectothermic, so its body temperature depends largely on heat gained from or lost to its surroundings. When the sun comes out, it could bask to warm its cool body. Once the ground becomes very hot, it could move into shade to avoid overheating.

Accept other passage-supported heat-gaining or heat-avoiding actions. In Part 3, look for a correct explanation of ectothermy and one appropriate action for each condition.