



Pika Detectives: Evaluating AI Science Claims

Student Activity Sheet

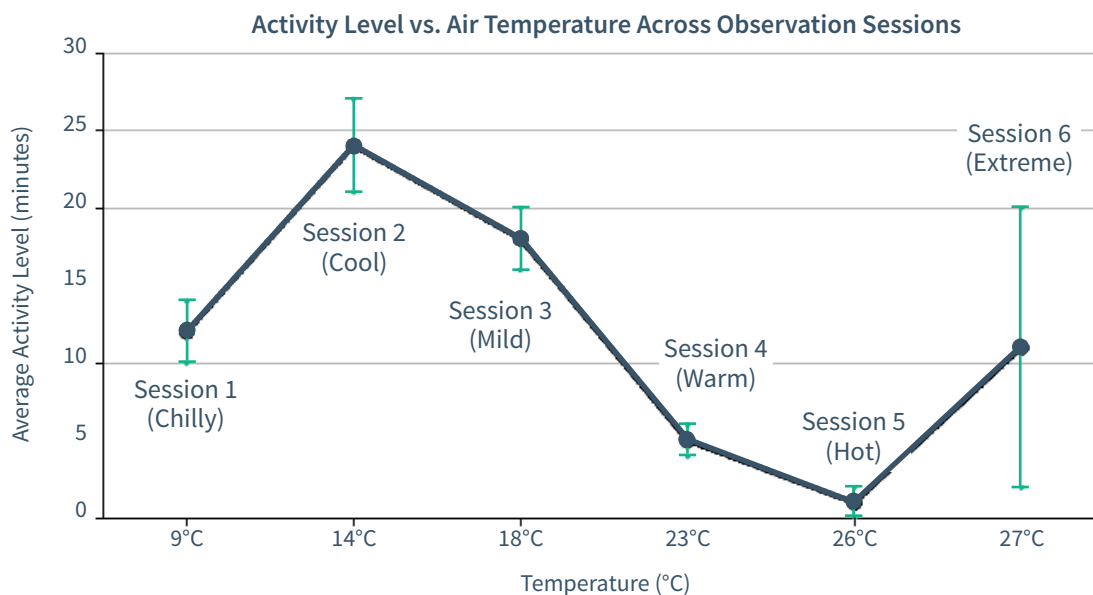
PHENOMENA: How does a change in temperature affect pika behavior?

- **The Study:** Researchers observed 42 different pikas during the summer. They recorded the average (mean) number of minutes each pika spent outside on top of the rocks during a 60-minute time period at different temperatures.
- **In the data table,** the “**Variation Range**” tracks the full range of time that the pikas in the study were active out on the surface of the rocky talus. For example, this means that for Session 1, some pikas were active for as long as 10 minutes, while others were active for as long as 14 minutes — with the average being 12 minutes as shown in the “**Average Activity Level**” column of the table.

Observation Session	Air Temperature	Average Activity Level (Minutes per Hour)	Variation Range (Low to High)
Session 1 (Chilly morning)	9°C	12 min	10 to 14 min
Session 2 (Cool morning)	14°C	24 min	21 to 27 min
Session 3 (Mild morning)	18°C	18 min	16 to 20 min
Session 4 (Warm afternoon)	23°C	5 min	4 to 6 min
Session 5 (Hot afternoon)	26°C	1 min	0 to 2 min
Session 6 (Extreme heat)	27°C	11 min	2 to 20 min

Source: Adapted from Colorado alpine ecosystem research.

- **In the graph,** the variation range of pika activity is indicated by the green bars marked for each session:





AI DATA INTERPRETATION STATEMENT

Below is an interpretation of the data table and graph that was created using AI.

The data shows that pikas are successfully changing their daily schedules to survive rising alpine temperatures. A clear pattern in the data shows that pikas are most active during the cooler parts of the day, with activity peaking at 24 minutes when it is a mild 14°C.

However, when the heat becomes extreme, pikas know exactly how to handle it. Because above-ground activity jumps from 1 minute up to 11 minutes when the temperature rises from 26°C to 27°C, the data shows that pikas have learned to safely tolerate temperatures up to 27°C whenever they need to collect food.

DIRECTIONS ▶ Read the AI Data interpretation statement closely. Then annotate it, using the symbols below. Use the data table and graph on the previous page as your evidence.

☐ **Circle** a claim that is supported by the data.

☐ **Star** a pattern you see in the data.

☐ **Underline** a claim that goes beyond the data.

☐ **Box** any anomaly that the AI overlooked or needs to explain.

(An anomaly is something that is different or inconsistent. Look for something in the data that doesn't fit the regular pattern.)

Use the space below to explain your thinking.

1. One claim that is supported by the data:

2. One claim that should be questioned or revised:

3. One real pattern in the data:

4. One anomaly or unexpected point that needs explanation:



5. Revised Interpretation: Based on the data, graph, and your analysis of the AI interpretation, write a stronger interpretation of the data. Your revised interpretation should:

- describe the main pattern in the data
- address the anomaly or unexpected data point
- avoid claims that go beyond what the data support

6. Read the following, then answer the questions below.

Where do pikas live?

Pikas live in the alpine tundra, a cold, windy, and rocky place high in the mountains above the treeline. Snow and ice stay on the ground for 6-8 months out of the year. Other animals, such as marmots and ptarmigans, also live in this environment. Some plants like grasses and flowers can grow, though slowly. All these plants and animals have special adaptations to survive these alpine conditions. For example, alpine plants tend to have deeper roots since there is less water available. Ptarmigans have white feathers in the winter and brown feathers in the summer for camouflage.

Higher up, the land is even rockier, steeper, and colder, with only a few lichens and mosses growing. If pikas tried to move to higher elevations due to the cooler temperatures, they most likely would not survive these even harsher conditions.

How does a warming environment affect pika populations? What might this mean for other animals and plants in an alpine environment? Explain your thinking based on what you know about alpine environments.

Adapted from the Science & Technology Advancement Center (STAC).