

🔧 Climate Control Lab

Name: _____

Date: _____

Class: _____

My level: ☐ 🗺️ Explorer ☐ 🔍 Investigator ☐ 🏆 Legend

Mission: Why is London warmer in winter than Indianapolis, even though it is farther north? Why is Quito cool even though it sits on the Equator? Control latitude, elevation, and oceans to discover what shapes climate.

Big question: What factors shape the climate of a place?

★

Warm-up: Weather vs. climate

Weather or climate?

"It is raining today."

"Indiana has cold winters."

Key vocabulary	
Climate	The usual weather of a place over many years.
Elevation	Height above sea level.
Ocean current	A stream of warm or cold water in the ocean.
Gulf Stream	A warm current that flows from the Gulf of Mexico toward Europe.

1

Box 1
Latitude test

In the simulator: Try at least 6 different settings.

What happens to the average temperature as latitude increases?

☐ It decreases ☐ It increases ☐ It doesn't change

2

Box 2
Elevation: Quito

In the simulator: Test the Quito preset.

Quito is on the Equator. Why isn't it hot?

☐ Its high elevation makes it cooler ☐ It is near the ocean ☐ It has a cold current

3

Box 3
Oceans: London vs. Indianapolis

In the simulator: Test the London and Indianapolis presets.

What did you notice?

Record

Record the summer vs. winter gap for each city.

City	Gap (°F)
London (coast, warm current)	
Indianapolis (inland)	

4 Box 4

Find every zone

In the simulator: Create a Tropical, a Polar, and a Highland climate.

What did you notice?

5 Box 5

Explain a climate (CER)

Why are London's winters milder than Indianapolis's, even though London is farther north?

Claim

Evidence from the lab

Reasoning

6 Box 6

Legend: design a city 🏆 Legend only

Design a city with mild temperatures all year. What latitude, elevation, and ocean settings would you choose? Explain using your lab results.

Exit ticket: answer the big question in your own words

What factors shape the climate of a place?

Completion code:

Shown on the last screen of the simulator.