



Latitude & Longitude Flight School

Mission: Welcome to flight school! Your plane only understands latitude and longitude. Read coordinates on the map, fly to six missions, and discover a surprising connection between Indianapolis and Spain.

Big question: How do latitude and longitude help us locate any place on Earth?

★ Warm-up: Air traces

Trace in the air with your finger.

A line of latitude ✓ **Side to side (like a ladder's rungs: "latitude is flat-itude").**

A line of longitude ✓ **Up and down (long lines from pole to pole).**

Key vocabulary

Latitude	Distance north or south of the Equator, in degrees.
Longitude	Distance east or west of the Prime Meridian, in degrees.
Equator	0° latitude; divides north and south.
Prime Meridian	0° longitude; runs through Greenwich, England.
Hemisphere	Half of Earth.

1 Box 1

Read the map

In the simulator: Tap the map at least 3 times and read the coordinates.

Which line is the red line across the middle of the map?

☐ The Equator (0° latitude) ☐ The Prime Meridian ☐ The Tropic of Cancer

✓ **The Equator (0° latitude)**

2 Box 2

First flights

In the simulator: Complete the first two missions.

What did you notice?

3 Box 3

All missions

In the simulator: Complete all six flight missions.

What did you notice?

Flight log

Write the coordinates of each place (round to the nearest degree).

Place	Latitude	Longitude
Madrid		
Buenos Aires		

4 Box 4

Hemispheres

Which hemispheres is each city in?

Sort: Indianapolis · Buenos Aires · Rome · Mexico City · Oslo

Northern + Western	Southern + Western	Northern + Eastern
Indianapolis Mexico City	Buenos Aires	Rome Oslo

5 Box 5

Same latitude, different place

Madrid and Indianapolis are both near 40°N. What does that tell you?

- ☐ They are the same distance from the Equator ☐ They are the same distance from the Prime Meridian
☐ They have the same time zone
☒ They are the same distance from the Equator

6 Box 6

Explain to a new pilot

Explain to a new pilot how to find a place using coordinates.

Latitude

Look for: Explains latitude; at least 10 words

Longitude

Look for: Explains longitude; at least 10 words

Example

Look for: a number from the simulator; at least 8 words

7 Box 7

Legend: the mystery city Legend only

Oslo is at 60°N, farther north than all of Canada's big cities, yet its winters are milder than many of them. Predict why, then check it in the Climate Lab sim.

Look for: Mentions oceans or currents; at least 20 words



Exit ticket: answer the big question in your own words

How do latitude and longitude help us locate any place on Earth?

Look for: Latitude lines run east-west and measure distance north or south of the Equator (0°). Longitude lines run north-south and measure distance east or west of the Prime Meridian (0°).

Coordinates are written latitude first: Indianapolis is about 40°N, 86°W.

Completion codes

Students see a code like **ABC-I3** when they finish. The first part must match below. The letter is the level (E = Explorer, I = Investigator, L = Legend), and the number at the end is how many stars they earned.

Level	Code starts with
 Explorer	6XJ-E
 Investigator	1XX-I
 Legend	H2I-L

Watch for these misconceptions

- "Latitude and longitude are the same thing." Latitude = north/south position, longitude = east/west position.
- "Places at the same latitude have the same climate." Elevation, oceans, and currents matter too.
- "South America is directly south of North America." Most of South America is east of Florida.