LESSON M-03 · MIDDLE SCHOOL BRIDGE LESSONS (6–8)

Layers of the Atmosphere

MIDDLE SCHOOL (6–8)

Name _____ Date _____ Class / Period _____

Up through the air layers

Earth's air is wrapped around the planet in layers. The higher you go, the thinner the air gets, and the temperature changes from layer to layer. Let's fly up through them.

Mission goal: find where the first layer ends, then fly through every layer.

1 LOOK

OBSERVE BEFORE YOU TOUCH A CONTROL

Where does the first layer end?

- You live in the lowest layer, the troposphere. It is where clouds and weather happen, and the air gets colder as you climb.
- Jet airliners cruise near the top of this layer, at about 10,000 metres.

Write the numbers shown in the sim in the blanks above, then record what you notice:

2 PREDICT

COMMIT TO A HYPOTHESIS FIRST

Prediction 1. In Earth's real air, how high up does the temperature stop getting colder? Mark the range you expect.

Hint: Heights here are in metres. 1,000 metres is one kilometre. Aim for a band about 4,000 m wide.

My prediction (circle or fill in): _____ to _____

Because...

3 EXPERIMENT

CHANGE ONE VARIABLE AT A TIME

Step 1. Press **[Space]** to light the engine and **[Z]** for full throttle. When the engine runs out, press **[Space]** again to drop the empty part and light the next one. Climb past _____ kilometres and watch the Height. Then press **[X]** to cut the engine.

Trial	What I changed	What I measured / saw	Matched my prediction?
1			Yes · No · Partly
2			Yes · No · Partly

3			Yes · No · Partly

4 EXPLAIN

CLAIM · EVIDENCE · REASONING

Claim — What did you find out? (answer the mission goal in one sentence)

Evidence — Which numbers or observations from the sim support your claim?

Reasoning — Which science idea connects your evidence to your claim?

Self-check: □ I made a prediction before experimenting □ I used numbers from the sim □ I explained *why*, not just *what*