

POP! TEACHER RESOURCE



Lesson Plan



The Four Forces of Flight

Lesson Plan for *How Do Airplanes Stay Up?*

Grade 1

Objective

To help students use a diagram to understand and explain the four forces of flight.

Things Needed

- *How Do Airplanes Stay Up?* book
- A large, clear space for playing an active game

Before the Activity

Clear space in the room for an active game. Read *How Do Airplanes Stay Up?* out loud to students.

Activity

To start, open the book to the infographic on page 21. Review the four forces of flight by asking students the following questions:

- Which force pulls things toward Earth and makes things fall down? (Answer: gravity)
- Which force helps airplanes overcome gravity and fly upward? (Answer: lift)
- Air pushes back on the airplane when it moves forward. Which force does this cause? (Answer: drag)
- Which force helps airplanes overcome drag and move forward? (Answer: thrust)

Then, have students stand in the open space in the room, facing you at the front of the room. Explain that you will read a sentence describing one of the four forces of flight. Students will raise their hand to tell you which force you are describing. Then, students should move in the direction that the force would push or pull the airplane. For instance, if the force is thrust, students should step forward. If the force is drag, students should step backward. If the force of gravity, students should sit down. If the force is lift, students should jump up.



POPBOOKSONLINE.COM

©2019 Pop!

Use the following list of sentences:

1. This force pulls things toward Earth. (**GRAVITY – students should sit down**)
2. This force helps the airplane overcome drag. (**THRUST – step forward**)
3. This force pushes things upward. (**LIFT – jump up**)
4. This force occurs when air pushes back against the airplane.
(**DRAG – step backward**)
5. This force pushes the airplane forward. (**THRUST – step forward**)
6. This force causes things to fall down. (**GRAVITY – sit down**)
7. This force happens because of the shape of an airplane’s wings. (**LIFT – jump up**)
8. This force is created by the airplane’s engines. (**THRUST – step forward**)
9. This force holds the airplane back. (**DRAG – step backward**)
10. This force helps the airplane overcome gravity. (**LIFT – jump up**)

Evaluation

Could students distinguish among the four forces of flight? Could students use the diagram in the book to help them answer the questions?

Standards

This lesson plan may be used to address the National Science Education Standards’ Content Standard B, grades K–4, and the Common Core State Standards’ reading standards for informational texts, grade 1 (RI 1.7).

