

Air and the Atmosphere

READ ALOUD PASSAGE

You already know that air is real, that it takes up space, and that it has weight. All the air surrounding the whole Earth forms one giant layer called the atmosphere, held close to the planet by gravity. Without gravity pulling on it, that air would simply drift off into space.

This is a big part of why the moon has almost no atmosphere of its own. The moon is much smaller than Earth, so its gravity is weaker. That weaker gravity is not strong enough to hold gases near the surface, so any air the moon may have once had drifted away into space long ago and never came back.

Scientists often describe Earth as being made of four connected parts. The geosphere is the solid rock and soil that makes up the planet's surface. The hydrosphere includes the oceans, lakes, and rivers. The atmosphere is the blanket of air surrounding everything else. And the biosphere is every living thing on Earth, along with the way all those living things interact with the other three parts.

Astronauts have to carry their own air supply once they travel past the atmosphere, since there is almost no air in outer space for them to breathe. Down here on the surface, we breathe the atmosphere without a second thought, and Earth's gravity has held onto that air for billions of years.

Activity 1: Sentence Scramble

These words are mixed up. Put them in order to make a sentence. Start with a capital letter and end with a period.

1. the / rivers, / lakes / hydrosphere / the / and / oceans, / includes

2. why / this / is / no / the / moon / own / exactly / its / atmosphere / has / of

3. is / is / weaker / much / gravity / Earth, / the / so / than / moon / smaller / its

Activity 2: Because, But, So

Finish the sentence two ways. After because, tell why. After but, tell something different or surprising.

The moon has no air **because**

The moon has no air, **but**

Science Mad Lib

Fold the page on the dashed line so the story is hidden. Write a word for each blank. Then unfold the page, copy your words into the story, and read it aloud.

1 _____
A name

2 _____
A plural noun

3 _____
An adjective

4 _____
A plural noun

5 _____
A noun

FOLD HERE

THE STORY

Astronaut 1 packed air tanks and a bag of 2. "Space has almost no air, so I have to bring my own," they said. From the window, Earth looked 3, wrapped in a thin layer of air called the atmosphere. Earth's gravity holds that air close. The Moon's gravity is too weak to hold much at all. Somewhere far below, a group of 4 was having breakfast. "I already miss Earth's 5 of air," said 1.