



Shenandoah Valley  
**DISCOVERY  
MUSEUM**

Open Mon.-Sat. 9-5 Sun. 1-5  
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### Earth's Atmosphere or Thank Goodness for the Space Blanket!

Our sun is certainly the beginning of the story of earth's weather since its heat reaches us from 150 million kilometers away. But our actual weather is all generated in the atmosphere, that thick blanket of air that surrounds our planet. What's this cushion made of and how important is it to us? Let's take a look.

The air we breathe is actually mostly nitrogen and oxygen with a little carbon dioxide and other gases.

The atmosphere reaches 600 miles above the earth and has several layers. The layer closest to the earth's surface is the troposphere and is about 6 miles thick.

Without these thick layers of air we'd be burnt to a crisp each day and frozen into human popsicles every night.

The atmosphere weighs about 6 million billion tons. Yep. All those little molecules of nitrogen and oxygen that are too small to see with your eyes actually weigh a lot when they're all added up.

All this weight is called air pressure. You're not squashed flat by it because it pushes in all directions at once including from the inside of your body to the outside.



#### **Try this experiment:**

Fill a glass jar with water as full as possible. Cover it with a piece of cardboard. Place one hand on the cardboard and carefully flip the jar over. What do you expect will happen? Does the water fall out of the jar? If it does not, what could be pushing up on the cardboard hard enough to keep the water in the jar?