

## Feeling the Pressure?

Venus and Earth are about the same size, mass, and density but the amount of atmospheric pressure on the two planets is very different! Venus has about 90 times more atmosphere than the Earth. All those gases press down on the surface; the amount of pressure crushed even reinforced robotic landers! The intense pressure on Venus is caused by its very, very dense atmosphere which is made up mainly of carbon dioxide. Thick clouds of sulfuric dioxide acid completely cover the planet.

In this activity, you and your child will compare the amount of atmospheric pressure between Earth and Venus using bags of sand!

### What You Need:

- ❖ 1- 5 pound bag of sand labeled "Venus" and securely sealed
- ❖ 1- ¼ pound bag of sand labeled "Earth" and securely sealed
- ❖ 2 Styrofoam cups



### What to Do:

- ❖ Place a Styrofoam cup on the floor
- ❖ With the help of an adult have your child hold the "Venus" bag over the cup and release/drop it onto the cup
- ❖ Discuss what has happened to the Styrofoam cup
- ❖ Place the other Styrofoam cup on the floor
- ❖ Have your child hold the "Earth" bag over the cup and release/drop it onto the cup
- ❖ Discuss what has happened to the Styrofoam cup

### Parent Prompts:

What happened to the cup under the pressure of the "Venus atmosphere"? Why was the cup crushed? (the amount of pressure was too heavy for the cup to withstand)

What happened to the cup under the pressure of "Earth's atmosphere"? (the weight - or pressure - of the "atmosphere" was not enough to crush the cup. The Earth's atmosphere does put pressure on everything at its surface, but Earth's atmospheric pressure is less than the atmospheric pressure on Venus.)

Which planet has more atmospheric pressure? Why? (Venus; the atmosphere is heavy due to its thickness)