

PBS

The Solar System



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Research



Goal: Help kids understand how gravity and air affect movement through hands-on play.

Setup: Simple interactive stations where kids weigh themselves, pump air, and watch things move.

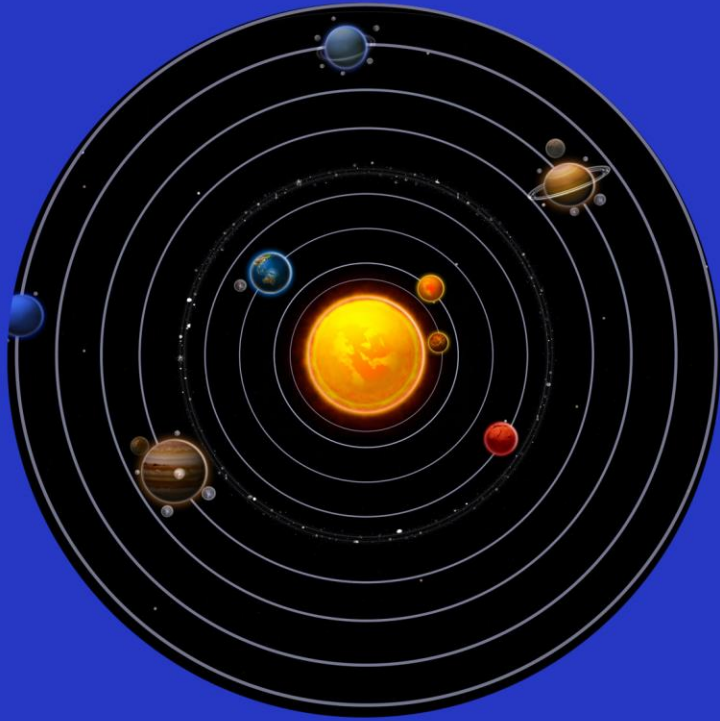
Ages: 4 - 8 years old



Concept Overview

Kids explore how gravity, air, and shape make things move using hands-on science experiments.

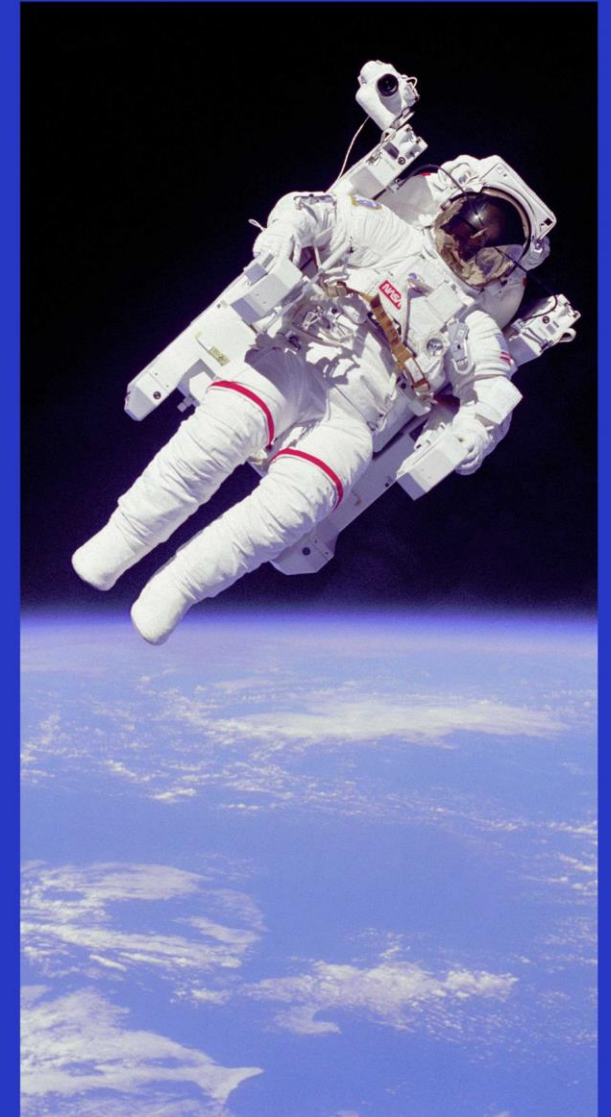
Story Board



Solar System Weight Calculator



Jet Learns About Space



Air Pressure and Wind

Solar System Weight Scale

**Why Do I Weigh Different on
Other Planets?**

- Planets have different gravity
- Big planets pull harder
- Small planets pull softer

Weigh



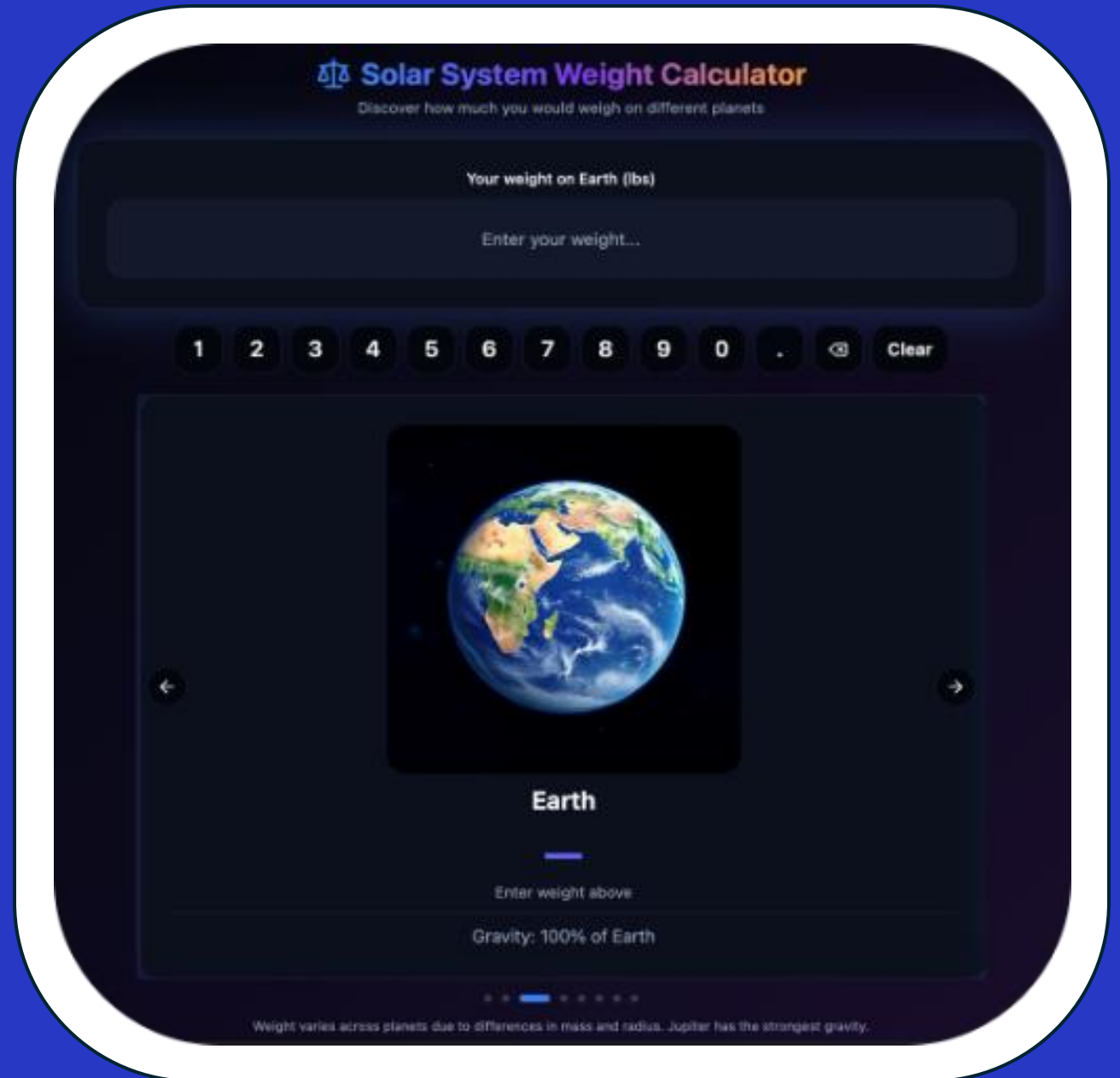
Yourself



What Is Gravity?

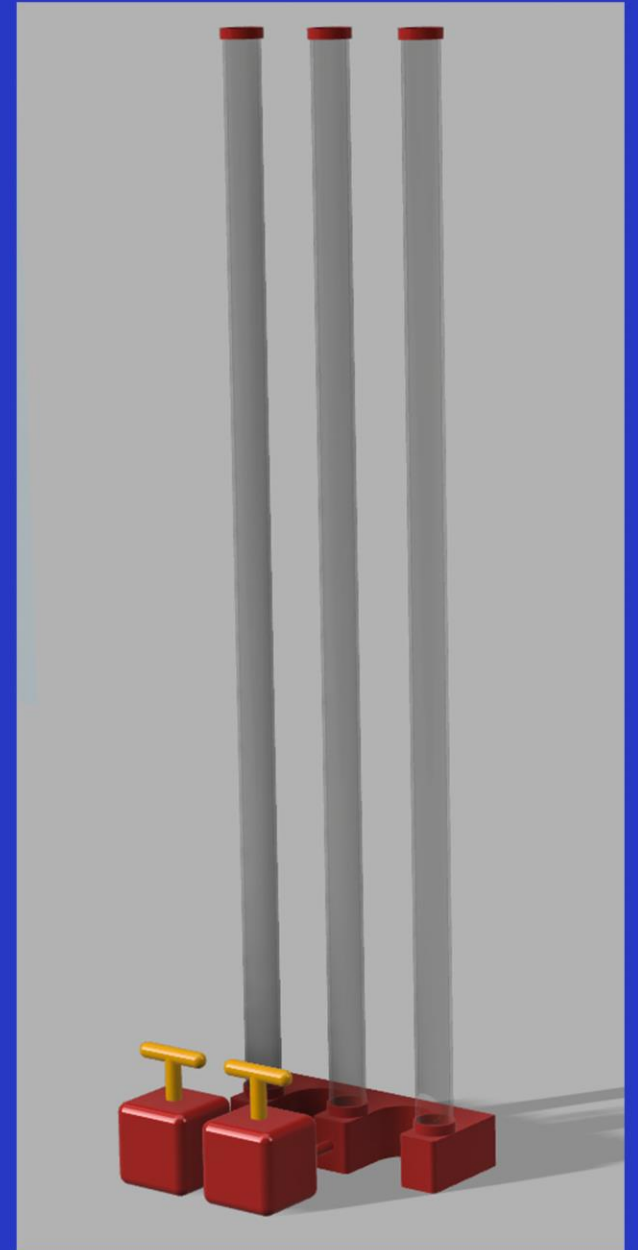
Gravity Is a Pull

- Gravity pulls things down
- More gravity = heavier
- Less gravity = lighter



Pressurized Tube

**Air can push things up.
When you pump air into the tube,
pressure builds.
The pressure pushes the rocket or
balloon upward.**



What Is Air Pressure?



Air Is Everywhere

- Air presses on things
- Pumped air presses harder
- Harder push = more motion

Air Can Push Things!

- Air takes up space
- Pumping air builds pressure
- Pressure makes the rocket go up

Vertical Wind Tunnel

How Air Moves Around Objects

- **Smooth shapes move better**
- **Flat shapes fall slower**
- **Air pushes up and around**

How Do Things Fly?

- **Air can hold things up**
- **Shape matters**
- **Light and wide objects stay up longer**



Mural

This mural is a fun, kid-friendly poster that teaches science using bright space characters and colorful panels. It explains how gravity is different on each planet, how air pressure pushes things from high to low pressure, and how wind tunnels use moving air to show how objects fly—all set against a starry outer-space background.

The Solar System

How A Wind Tunnel Works

1. Big fans blow air through the tunnel.
2. The air flows around an object model.
3. This shows how the object acts in flight.



Planets have different gravity because some are big and heavy and some are small and light. Big planets pull you down more, and small planets pull you down less, so you'd weigh different amounts on each one!

How Air Pressure Moves Things In A Tube

1. Air takes up space and pushes on things.
2. When we squeeze air, it pushes harder.
3. Air wants to move from high pressure to low pressure.
4. If something is in the way... it gets pushed!
5. The bigger the pressure difference, the stronger the push



Atmosphere Mural

The mural shows the layers of Earth's atmosphere, from the ground to outer space.

As air is pumped, the toy rocket and balloon travel upward through these layers, showing how air changes as you go higher.



Exosphere

Thermosphere

Mesosphere

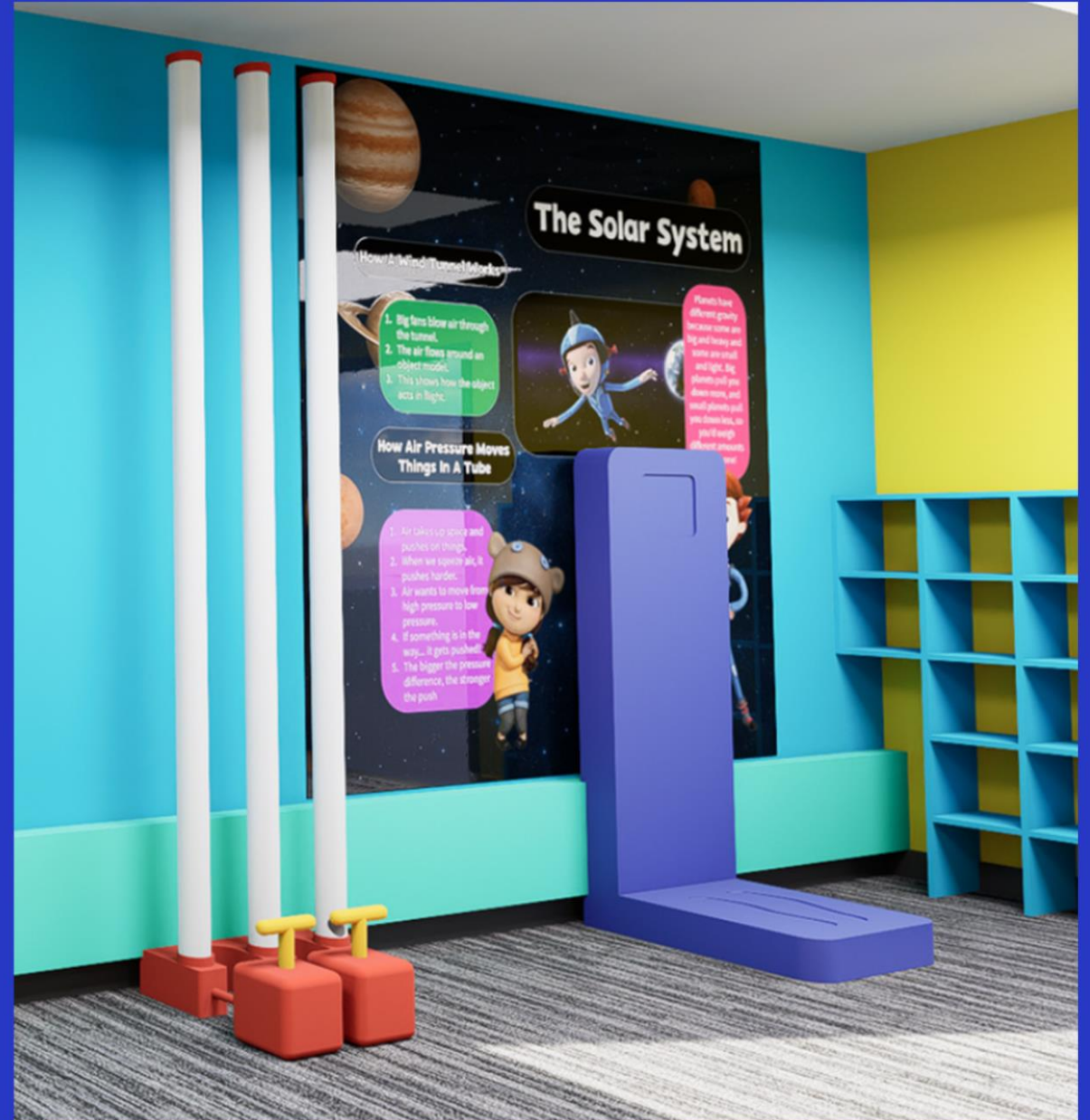
Stratosphere

Troposphere

Exhibit Location

The scale and pressurized tube are placed in the corner of the room.

This creates a safe, clear space for kids to gather, explore, and take turns.





**Thank
You!**