

Teacher Prep

Each group will need a gravity simulator during class. Follow these steps to create gravity simulators:

Step 1:

Place stretchy fabric over the top of the sturdy container so that some material is hanging over the sides of the container.



Step 2:

Stretch the piece of elastic around the circumference of the top of the container to hold the stretchy fabric in place.



Step 3:

Pull on the edges of the stretchy fabric so that the fabric is smooth across the opening of the container, like a drum.



Step 4:

Use a ruler to make grid marks on the material that is stretched across the opening of the container. The lines make it easier to see when the fabric is changing shape.



Steps to Create Youtube Videos

Create two Youtube videos to teach the public about how gravity affects different objects in space. Follow the steps to create your video!

Step 1: Practice Using the Gravity Simulator

In the videos, your group will use a gravity simulator. Your group should practice using the simulator so you are comfortable before you film your videos.

- Practice making different sized objects move past, around and toward each other on the gravity simulator.
- Notice that larger objects make the fabric curve more than smaller objects.
- Notice that the more the fabric curves, the more it changes the way that nearby objects move.
- To represent super massive objects in the center of the gravity simulator, you can add extra mass by placing more than one object in the center.

Step 2: Preparing Video Topics

Your group will answer a question in each video. Read through each question so you know what each of your videos will be about.

- What happens when one massive object is near a smaller object in space? Like a black hole is near a smaller object like star?
- What happens when two large objects are near each other in space?

Step 3: Create a Script For Each Video

For each script, include the following components:

- Attention grabber - You need to get the attention of your audience at the beginning of your video. Try sharing an exciting fact, asking the audience a question, or even telling a gravity joke! Be creative!
- Read the question - Make sure your audience knows what they are supposed to be learning from your video!
- Show gravity simulator - You should include a demonstration that helps answer the question and uses your gravity simulator.
- Summary - Make sure you explain what is happening in the gravity simulator and why it is happening.

Plan your scripts on the next pages.

Lesson: Exploring Our Universe

Script 1:

Attention grabber:

Question we're answering:

What we need to do with the gravity simulator:

Summary of what our gravity simulator will be showing:

Other Notes:

Lesson: Exploring Our Universe

Script 2:

Attention Grabber:

Question we're answering:

What we need to do with the gravity simulator:

Summary of what our gravity simulator will be showing:

Other Notes:

Step 4: Make your Youtube video

- Set up a tablet or smartphone to record. You can use books or other school supplies to create a makeshift stand or take turns holding your device for the recording.
- Record your video! Use your scripts to make sure you include all of the necessary parts. But, don't stare down at your script the whole time!
- Watch your video. Did you forget anything? Did your gravity simulator demo work as planned? You may have to record your video more than once.
- Repeat for your second video.