

NGSS Correlations

Pressure Pullers SC-300

Elementary

K-ESS2-1

Students can use and share observations of local weather conditions to describe patterns over time. Students can apply knowledge gained from the Pressure Pullers demonstration to understand the power of Air pressure and its effects on weather. (See Lesson Ideas)

K-ESS3-2

Students can ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. Students can apply knowledge gained from the Pressure Pullers demonstration to understand the power of Air pressure and how Air Pressure is a factor in forecasting weather.

3-ESS2-1

Students can represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. Students can apply knowledge gained from the Pressure Pullers demonstration to understand the power of Air pressure and its effects on weather/seasons. (See Lesson Ideas)

Middle School

MS-PS2-2

Students can use the Pressure Pullers to plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

MS-ESS2-6

Students can use the Pressure Pullers to develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determines regional climates. (See Lesson Ideas)

High School

HS-ESS2-4

Students can apply knowledge gained from the Pressure Pullers demonstration (See Lesson Ideas), to use a model to describe how variations in the flow of energy into and out of Earth systems results in changes in climate.

3-PS2-1

Students can use the Pressure Pullers in a plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

5-ESS2-1

Students can develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. Students can apply knowledge gained from the Pressure Pullers demonstration to understand the power of Air pressure and how it interacts on Earth. (See Lesson Ideas)

Suggested Science Idea(s)

K-ESS2-1,
K-ESS3-2,
2-PS1-2,
3-ESS2-1,
3-PS2-1,
5-ESS2-1,
MS-PS2-2,
MS-ESS2-6,
and
HS-ESS2-4

The Pressure Pullers will help students to feel the power of air pressure. Use it to teach students the 'truths' about air pressure, 'There is no suction!' Students can calculate based on the area of the cup and the standard air pressure to calculate how much force is required to pull the cups apart.

Common Units of Force and Pressure

1 atmosphere = 760 millimeters of mercury (Hg)
= 1.013×10^5 pascals
= 14.70 pounds per square inch
1 torr = 1 millimeter of mercury (Hg)

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