

# Topic: Air Pressure

## Teacher Information

### Time Allowance

40-50 min.

### Background

In this lesson, students will learn about how atmospheric pressure decreases as altitude increases. This decrease in pressure makes it more difficult for the body to absorb oxygen. This can result in hypoxia and even death.

In this lesson, the students will graph the atmospheric pressure at different altitudes to show that pressure decreases as altitude increases.

### Materials:

Graph paper

Pencil

Ruler

Student Sheets

### Extensions:

Have students build their own barometers.

## Topic: The Thinning Atmosphere

### Student Information

Have you ever read the directions on a box of cake mix? There are special instructions for high-altitude baking. Has anyone who visited the Rocky Mountains told how hard it was to breathe there? Have you ever wondered why pilots who fly in high-flying planes wear breathing masks? In higher altitudes, reduced air pressure makes it harder for oxygen to reach the lungs and brain. Breathing in the mountains causes difficulties as the body adjusts to lower levels of oxygen. In more extreme situations, such as flying an airplane at high elevations, it's more serious.

### Procedure

Using the data in the table below, create a line graph showing the atmospheric pressure at different altitudes. Remember to give your graph a title and to label each axis (including units).

Altitude (feet)	Pressure (inches of Mercury)	Altitude (feet)	Pressure (inches of Mercury)
0	29.92	18,000	14.94
1,000	28.86	19,000	14.33
2,000	27.82	20,000	13.74
3,000	26.82	25,000	11.10
4,000	25.84	30,000	8.89
5,000	24.89	35,000	7.04
6,000	23.98	40,000	5.54
7,000	23.09	45,000	4.35
8,000	22.22	50,000	3.43
9,000	21.38	55,000	2.69
10,000	20.57	60,000	2.12
11,000	19.79	65,000	1.67
12,000	19.02	70,000	1.31
13,000	18.29	75,000	1.03
14,000	17.57	80,000	0.81
15,000	16.88	85,000	0.64
16,000	16.21	90,000	0.50
17,000	15.56	95,000	0.32

