

Pressure Experiment Lab Worksheet

Definitions

- A **force** is something that causes a body to move, like a push or a pull.
It has a magnitude and a direction.
Its units are pounds (lbs) in the English system or Newtons (N) in the metric system.
- **Pressure** is the amount of force acting on an area: $P = \frac{F}{A}$

Your hypothesis: _____

Lab

Stretch a sheet of paper between two hands, and hold. Press the force sensor against the top of the middle of the paper, increasing the force until the paper tears. Record the maximum measured force from the LEGO EV3 in the table, below.

Change to the smaller area on a new sheet of paper, and repeat the process above with the smaller area on the force sensor. Record the force needed to break the paper.

Area	Radius (cm)	Area (cm ²)	Force (N)	Pressure = Force/Area
(none)				
large	1.0 cm			
small	0.5 cm			

Pressure Rating

What is the maximum pressure that the napkin can safely sustain?

Based on your collected data, what do you feel is the *most* pressure the napkin can safely hold without breaking? A pressure *below* the value at which the napkin breaks should be selected. A pressure that is 50% of the maximum pressure is a safe value.

Question

What was one possible source of error in the experiment?