

# CAN CRASH

## HARMONY PBL LEVEL II PROJECT



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### Introduction and Materials

**A**tmospheric pressure is pressure caused by the weight of the atmosphere placed on any part of surface of the earth. At sea level it has a mean value of about 1 atm but reduces with increasing altitude. Here, we will study this using soda cans, a hot plate, tongs, a turkey baster, and a large bowl.

### How Does It Work?

The steps are:

- First- heat up the hot plate (or stove); while the hot plate is heating up fill up about  $\frac{1}{4}$  of the cans with water.
- Second- put the cans on the hot plate (or stove).
- Third- wait until the water in the cans starts to boil and steam up, while you wait prepare the bowl (or container) by filling it with water (preferably cold).

- Forth- when the water in the cans starts to steam, use the tongs to put the can into the bowl (or container) that's filled with water (preferably cold).

### What's Going On?

When I heat up the can the gas would be pushed out of the can causing the molecules in the can to expand. This demonstrates the Charles Law, where gas would expand, once it is heated for a while. But when I put the can into the water where it is cooler that the temperature of the can, it would cause the molecule to shrink, which results to can crash.

### Safety Precautions:

Wear your safety glasses and using hot plates safely.

