**DEMO with Balloons:**

* Weighing inflated balloon to show air does have mass
* Put jar top down into water → air takes up space inside jar → water doesnt get in → air does take up space
  + Gas is compressible → put jar down lower → smaller volume → increased pressure

* Balloon in jar inflate
  + Volume decreases in the jar outside of balloon → pressure there increase → the more the balloon is inflated, the more the pressure acts on the balloon and preventing it from being inflated in the jar

* Drink water with one straw in water and one straw outside and see what happens

* Fill jar with water, put plastic sheet on top, turn jar upside down → sheet doesn’t fall →pressure

* Bottle with one hole → nothing happens
* Bottle with two holes → water comes out (air comes in one hole, water comes out the other hole (air comes out too)
* Bottle with two holes with caps open → water comes out of both holes with different trajectories (more pressure on the bottom)
* Empty soda can over bunsen burner, and then put it in ice water → it automatically shrinks because of Charles Law. Put it in ice water when notice the popping and gas coming out (water left in can is boiling). Air in can when hot is replaced by the boiling vapor. Since the can is open, the pressure is the same as it is relieved by the steam coming out.
  + When in ice water, water vapor condenses, can becomes empty (created a vacuum) → inside can, the pressure is zero → the atmospheric pressure pushes on the can → shrinking it.

* How does the yellow balloon fill the whole flask → boil the water inside the flask, then put in ice water → water vapor becomes water again → zero pressure → atmospheric pressure pushes inside the flask → balloon gets sucked in and fills the flask