

612-1310 (15-110) Fire Syringe

Introduction

Turn on the Boyle's Law with this explosive demonstration. As air compresses, the temperature increases - and combustible material bursts into flames. Fire syringes have been in use throughout the ages as a way to create a spark. There's evidence they were invented independently in Asia and Europe. The idea must have seemed miraculous to primitive people, who could now create a hot coal with just a thrust of a plunger inside a tube. Cooked food, a bonfire for warmth and safety - civilization itself! The reasoning behind this miracle took a few centuries to follow. A British physicist, Robert Boyle, discovered the relationship between gas, pressure and temperature. In effect, compressing air into a smaller volume increases the temperature. Thus the fire syringe is a classic example of Boyle's Law.



The kit includes an aluminum piston, Lexan[®] plastic piston chamber and two custom O-rings. By crumpling a small amount of tissue paper in the bottom of the plastic chamber, you can create a tiny fire. Insert the aluminum piston inside the tube and plunge it downward to compress the air inside. If you turn out the lights, you'll see a quick burst of flame that will burn until the oxygen inside is consumed. The fire syringe can lead to a discussion of adiabatic compression (rapid compression that raises air temperature) in Diesel engines, or as a discussion of the resourcefulness of ancient people.

Safety:

- **Wear safety glasses**
- **Use only under adult supervision**
- **Do not use any materials in the cylinder except for small mounts of tissue paper. Severe personal injury could result!**

How to use:

1. Put on safety goggles.
2. Drop bits of tissue paper inside the tube.
3. Insert the aluminum piston. Hold the unit flat on a non-slip surface.
4. Strike piston downward with considerable force and await a spark.
5. You may need to practice and to turn out the lights.

Warranty and Parts:

We replace all defective or missing parts free of charge. Additional replacement parts may be ordered. We accept MasterCard, Visa, checks and School P.O.s. All products warranted to be free from defect for 90 days. Does not apply to accident, misuse or normal wear and tear. Intended for children 13 years of age and up. This item is not a toy. It may contain small parts that can be choking hazards. Adult supervision is required.