

611-1825 (25-120) Rotating Candle Apparatus



Warranty and Parts:

We replace all defective or missing parts free of charge. Additional replacement parts may be ordered toll-free. 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 or small parts that can be choking hazards. Adult supervision is required.

Curriculum Fit: Rotational Inertia, Deformation by Central Forces, Centrifugal Force, Centripetal Force.

Description:

Light the 2 candles and slide the chimneys down into their supports. Next, gently spin the apparatus around. The flames move inward instead of outward.

Procedure:

This demonstrator provides a distinctive way to discuss centrifugal force. Normally, when a rotating platform is made to spin, we expect that objects attached to the platform experience an inertial force which pushes them away from the center of the platform. An example of this would be taking a turn while in a car. This is not what appears to happen to the flames on our Rotating Candle Apparatus. Instead, the flames quickly tip inward toward the center! The demonstrator is also used to discuss the density of air as it varies with temperature. The

demonstrator consists of an aluminum platform attached to a shaft via a bearing. The shaft is mounted to a large tripod base.

Discussion: As the air inside the cylinders is more dense than the candle flame, the air moves towards the outside, forcing the flame to move inward.

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611-1810 Bobber Centripetal Force Paradox: Similar to the rotating candle experiment, this illustrates centripetal force in a way that "goes against the grain". Ask your students what they expect the floats to do when the platform on which they sit is spun. Our two floats serve as buoyant pendulums inside transparent jars filled with water. Since they are buoyant, they move in the same direction as the accelerating force - which is toward the axis of rotation, or toward the center. Includes tripod base with rod; two sturdy plastic jars with caps; bobber with cord; instructions.

614-0701 Cylindrical Spectroscope This device is made of optical glass. The optical glass has been carefully machined into a compound prism and convergent lens. Spectrums of many different kinds can be seen through this spectroscope.

654-0010 Refracting Telescope Kit Set of 10- Experiment with each element of a simple 16-power refracting telescope and see how the lenses work when put together without using an optical bench. Galileo's first telescopes lacked precision and clarity. Nevertheless, he made astonishing discoveries with his crude instruments. This simple lab enables students to build a telescope that is similar to Galileo's. Use the telescope and see how it is similar to a pinhole camera. Materials to make 10 telescopes are provided.

MOD-1 Hands on Optics: Laser Challenges-Students learn about lasers and explore the law of reflection using mirrors and protractors. They learn to carefully measure light and predict its behavior through a variety of challenges.

MOD-2 Hands on Optics: Kaleidoscope Adventures- Students explore multiple reflections and symmetry using mirrors. They will learn some of the unusual properties of periscopes and will build their own kaleidoscopes.