Summary Table - Crooke's Radiometer

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Phenomenon: Crooke's Radiomater

Guiding question: How does energy transfer cause motion in the Crooke's radiometer?

Driving Question Board - Add new View others

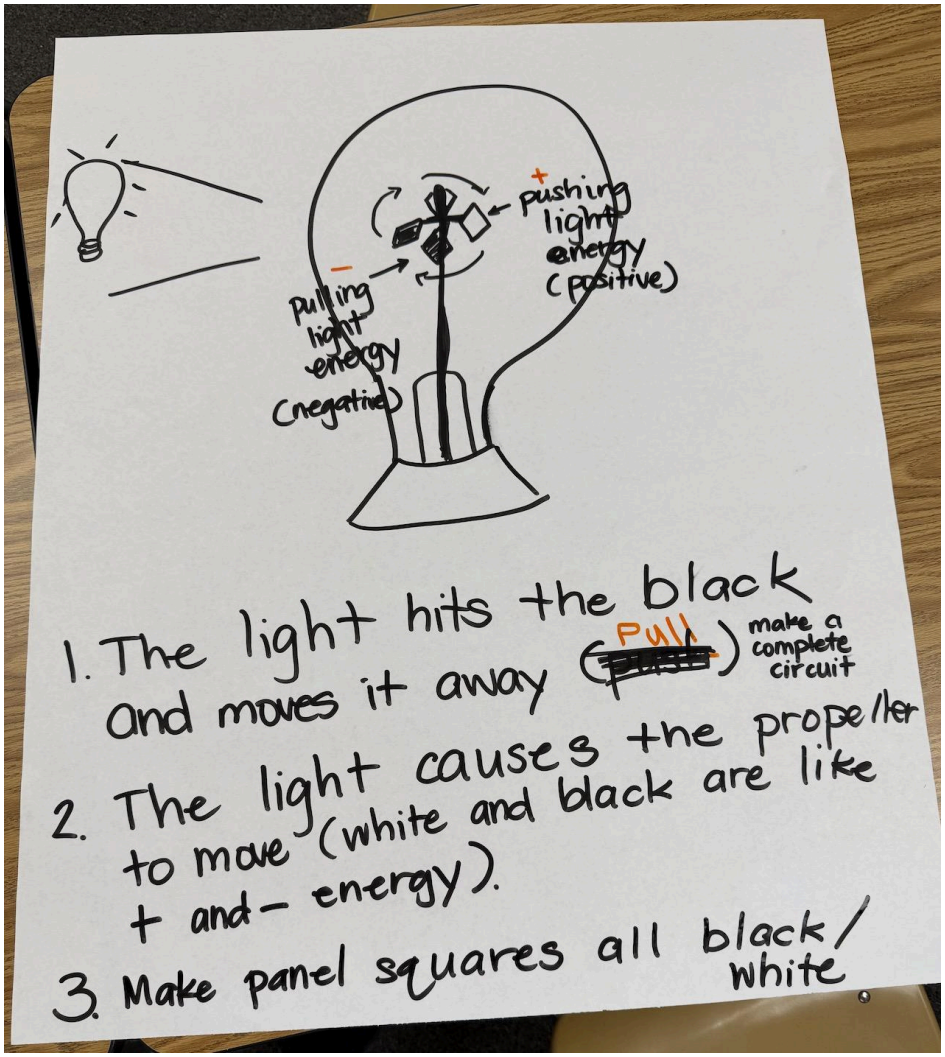
Initial Model Final Model

Supporting phenomenon	Link to work	What we did	What we figured out	How does this connect to the phenomenon
Hand-powered flashlight	Link	We created a model of the hand powered flashlight to create light	The hand crank created an electrical charge with the rotation of the magnet which was transferred to the light bulb through the copper wire causing the light to go on. When we completed the circuit with the switch, sound was made with the cranking of the gears. Heat was created with the motion of the magnet moving/spinning.	
Black and white paper	Link	We took the temp of the black and white paper using a thermo camera and thermo gun to measure the temp.	The black was hotter (113 degrees and the white was cooler 97 degrees) Dark colors are hotter and light colors are cooler.	The black and white will absorb and deflect energy
Balloon on warm bottle	Link	We put a balloon on the top of the water bottle and placed it in the cold water and then placed it in the warm water	The hot water caused the particles to move faster and filled balloon. With the cold water, particles moved slower and deflated the balloon.	Particles move faster when heated.

The snake heater	Link	We cut paper into a spiral and balanced it on a nail attached to a dowel in a pile of clay.	The spiral moved as the heat rose from the candles' flames. It was spinning in a clockwise direction.	The movement of the air particles went faster causing the paper to spin.
Cooling the Crooke's radiometer	Link	We sprayed the Crooke's radiometer with cold air compressor (upside down canister)	Cooling the Crooke's radiometer caused the radiometer to spin counterclockwise	Cold air causes the radiometer to move in the opposite direction.

Draw a model of the Crooke's radiometer that answers the following question **How does light cause the radiometer to rotate?**	

Initial Model

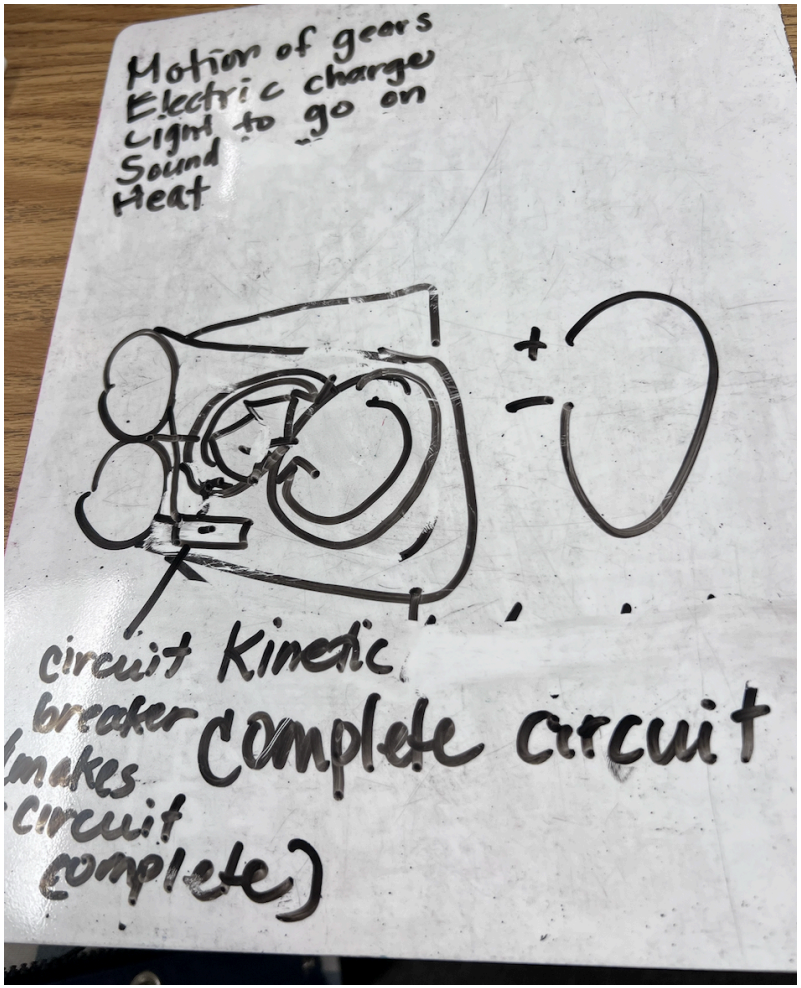


Final Model

The light hits the black metal which absorbs the light energy, reflecting off the white metal. The light creates heat energy that makes the particles move faster and causes the spindle to turn.

Hand-powered flashlight - Back to summary table

Show your work below (i.e. text, model images, questions, data etc.)

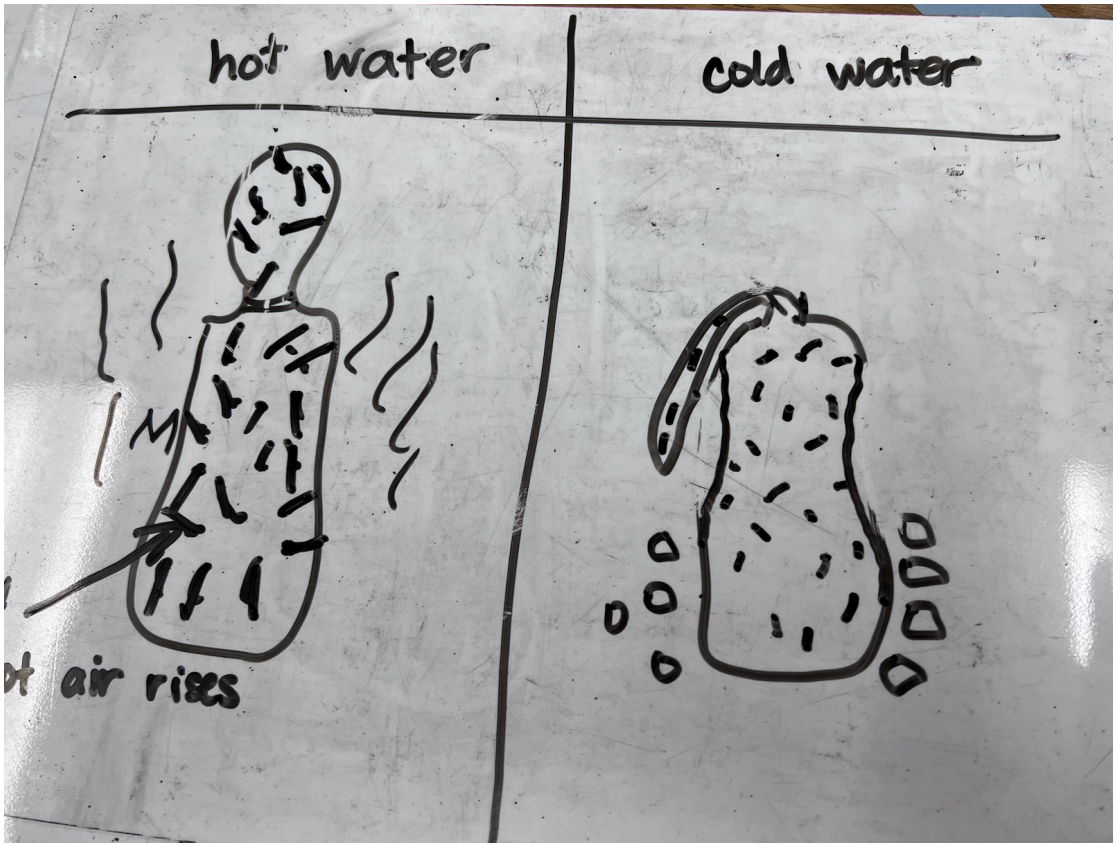


Black and white paper - Back to summary table

Show your work (i.e. text, model images, questions, data etc.)

Balloon on warm bottle - Back to summary table

Show your work (i.e. text, model images, questions, data etc.)



The spinning snake - Back to summary table

Show your work (i.e. text, model images, questions, data etc.)

Cooling the Crooke's radiometer - Back to summary table

Show your work (i.e. text, model images, questions, data etc.)

