

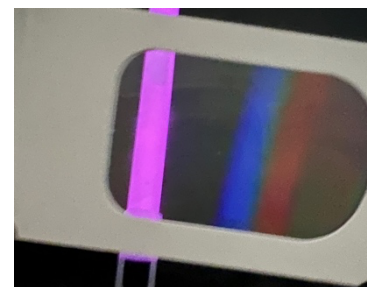
Tape Art

Learning Objectives

- Investigate and compare how thickness can change the colors of light seen through a polarizer
- Observe and describe color components of light

Background

Light is composed of packets of energy called photons which behave both as particles and waves. This dual nature of light is a quantum property.



When light travels from one medium to another (or a medium of different thickness) the photons change their direction (i.e. refract) similar to a wave changing direction. The change can polarize the light. Polarized sunglasses are an example of how polarization is used to reduce glare.

Investigation

Allow students to use an index card or cardstock to draw a design.

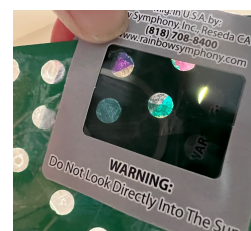
Use scissors to cut out the design, leaving an opening in the card. Students can also use a hole punch to make openings.



Place a strip of clear packing tape across one side (i.e. covering the opening) to provide a base for the smaller strips of tape. Note: clear plastic wrap can also be the base.

Turn the card over so the sticky side is face up.

Cut varying lengths of tape and place them randomly over the packing tape creating a pattern with varying uniformity and thickness.



Place the card between two polarizing filters. Have a partner rotate one of the filters as it is being viewed through the first filter. If desired add more tape to change the design colors.