

Picking Up Rainbows

Usually rainbows are found after rainstorms or in a water fountain's spray, but can rainbows be found on paper? Try this fun experiment and see if you can pick up some rainbows!

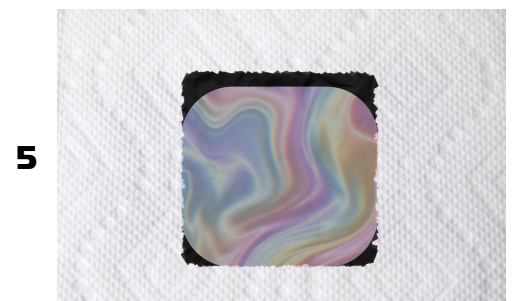
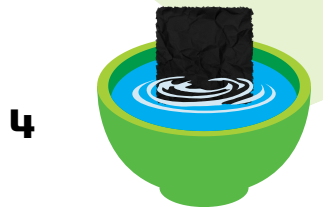
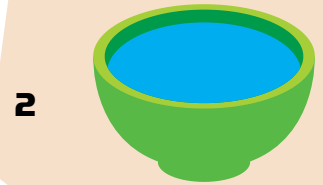
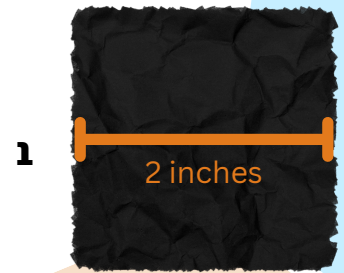


Materials:

- Bowl
- Clear Nail Polish
- Paper Towels
- Water
- Black Construction Paper
- Ruler (optional)

Procedure:

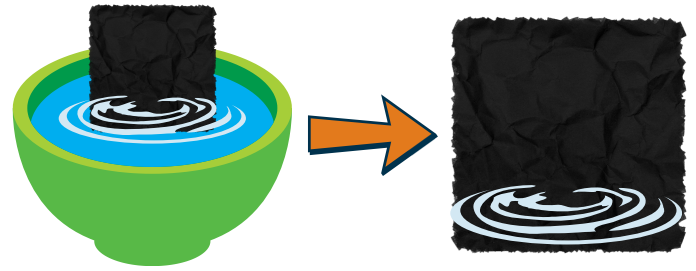
1. Cut the construction paper into small squares (about 2 inches by 2 inches).
2. Fill the bowl with water.
3. Drop one drop of clear nail polish into the bowl of water.
4. Wait just a few seconds and then dip the black construction paper into the water where the nail polish drop is.
5. Pull the black construction paper out of the water and lay it on the paper towel to dry.



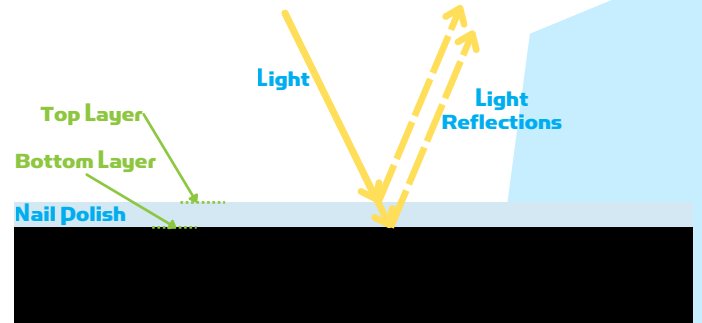
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WHAT'S HAPPENING?

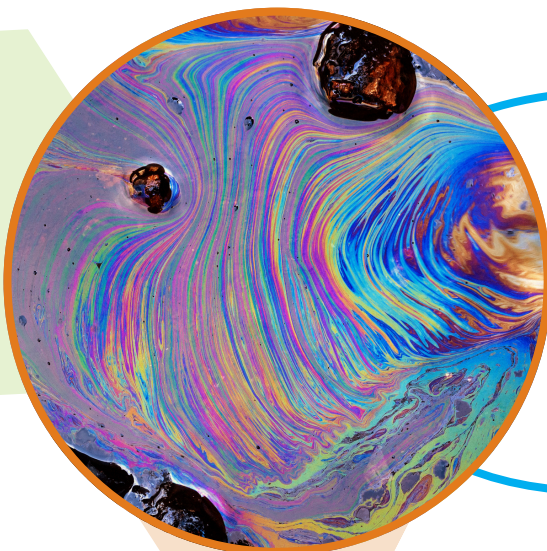
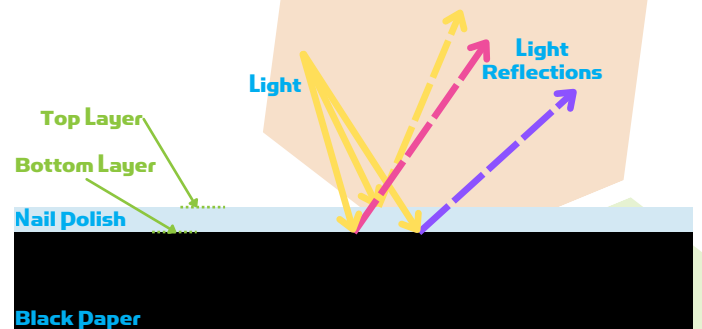
When the black paper is dipped into the water with the nail polish, the nail polish sticks to the black paper. After the paper dries, there is a film, or thin layer, of nail polish left on the paper.



This causes something called thin film interference. The thin layer of nail polish on top of the black paper causes light to reflect differently. Light waves reflect off of the top layer of nail polish and the bottom layer of nail polish.



When the light waves reflect off of the top and bottom layers of nail polish, they can interfere with each other and cause some colors to show and cause some colors to hide at the same time. This is how you see different colors shining off the black paper.



DID YOU KNOW?

Physicists and **engineers** study everything about thin film interference. If you liked this activity, maybe physics or engineering is for you!