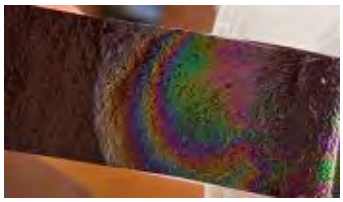
Create Iridescent Art

***Iridescence* is when colors appear to change when viewed at different angles. Create a colorful iridescent bookmark using nail polish and water!**



Materials Needed:

Black construction paper or cardstock, scissors, clear nail polish, shallow tray, water, paper towels.

Instructions:

Caution: Do this activity in a well-ventilated area.

Step 1: Prepare your materials. Cut a piece of black paper about 6 inches (15 cm) long by 2 inches (5 cm) wide. Fill a shallow tray with water.

Step 2: Slide the black paper into the tray. Make sure it's completely under water.

Step 3: Use the brush to drip one drop of nail polish onto the surface of the water. The polish will spread out on the surface of the water.

Step 4: Hold one end of the paper and carefully lift it out of the water. The film of nail polish will stick to the paper. Look at the paper. Do you see any colors?

Step 5: Lay your paper on a paper towel to dry. Once dry, you can use it as a bookmark, or cut up your paper to use in making other crafts.

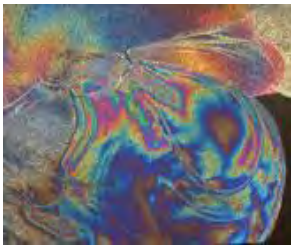


Image: Colors of Nature.

Make more iridescent artworks. Try different techniques: dip the paper into the water instead of submerging it, drip the nail polish from higher up or lower down, or use different colors of paper!

Activity adapted from National Informal STEM Education Network:
www.nisenet.org/catalog/programs/exploring_materials_-_thin_films_nanodays_2011

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Iridescence in Science and Art

Iridescence is when colors appear to change when viewed at different angles. One kind of iridescence is caused by *thin film interference*. A transparent film, such as clear nail polish, spreads out into a super-thin layer, about as thin as a soap bubble. The film is slightly thicker in some places and thinner in others. The film reflects light differently depending on how thick it is, so you see different colors.

White light is made up of all wavelengths, or colors, of light. When white light hits a thin film, some of the light is reflected from the front of the film, and some travels through it and is reflected from the back.

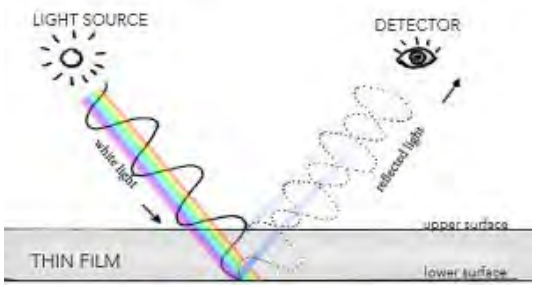


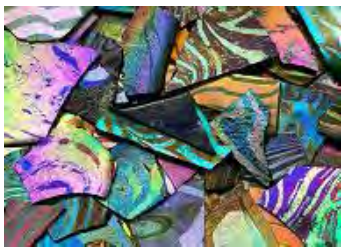
Image: Colors of Nature.

Wavelengths that are in sync, hitting both the front and back of the film, are reflected back to your eyes as bright colors. Different wavelengths are in sync at different parts of the film, depending on its thickness. This creates iridescent colors that appear to change depending on the angle of observation.

A fly's wings. *Image: Ekaterina Shevstova/Colors of Nature.*

Many natural objects have iridescent colors. Bird feathers, insect wings, and shells all have thin layers that create iridescent colors. Some plants and animals use iridescence to attract pollinators or mates. For example, many wasps and flies have iridescent wing patterns specific to each species.

Artists use iridescence to create sparkling rainbow colors in their artworks. For thousands of years, they have used naturally iridescent objects such as peacock feathers and abalone shells in their art. Today, some artists use special coatings or materials to create iridescent effects.



Tiffany glass. Image: Queens Museum.

Look around you to find more iridescent objects!

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