

# BOOKMARK MAGIC WITH THE CUBAN BLACKBIRD!

**You will need a parent or trusted adult to help you with this activity!**

The Cuban Blackbird looks black. But when the sunlight hits it at different angles, colors of purple and blue are revealed. That's the magic of **iridescence**! When something changes color as you look at it from different angles or when the light hits it just right. You've probably seen it in shiny bubbles or butterfly wings.

Animals use it to blend in or attract pollinators or mates!

And guess what? You can create your own iridescent bookmark using super simple materials. Just like the glossy feathers of the Cuban Blackbird, your bookmark will shimmer and shine as you move it in the light.

Here is a list of **materials** you will need:

- paper

We recommend using black card stock because iridescence shows up best on dark colors. But you can use any kind of paper as long as it's thick enough to go in water and doesn't have a shiny or slippery coating.

- print out of feather below
- clear nail polish
- shallow container
- scissors
- paper towel





Feather to trace or cut out

1. Print and cut out the feather above.
2. Place the paper feather you just cut out on top of your colored paper. Cut around it to make another feather in the same shape.
3. You now have your feather bookmark!
3. Fill your shallow container with water until it's about half an inch deep.
4. Carefully place one end of your black paper into the water, slowly sliding it in until the whole paper is underwater.
5. Drop just one drop of clear nail polish onto the surface of the water above the paper. Be careful—too much nail polish can mess up the effect!
6. Let the nail polish spread out and form a thin layer on the water's surface. This is where the magic happens!
7. Slowly lift the black paper out of the water dragging it against the layer of nail polish. Let any excess water drip off.

The nail polish will dry quickly on top of the water. If it does, it will create a film that won't stick to the paper. If the nail polish does create a dry film on top, simply scoop it off and try again more quickly!
8. Lay flat on the paper towel and leave to dry.

# TIME TO EXPERIMENT!



Let's dig deeper and find out what colours and textures show iridescence best.

But first make some predictions...

What do you think will happen?

Then test it and see if you were right!

Try using different types of paper—rough, smooth, shiny, or colorful.

Will it change the way the magic shows up?

Got other liquids at home? Try dropping them on the water instead of nail polish (**ask an adult first!**).

Which ones make that shiny, rainbow look? Which ones don't?



## THE SCIENCE BEHIND THE MAGIC

When your bookmark dries check it out in different lights and from different angles. You'll see a shiny, rainbow-like layer on top. Remember that the Cuban Blackbird might look all black at first (like your bookmark), but when the sunlight hits it just right, its feathers flash with purple or blue colors. That shiny look is called iridescence.



But here's the cool science part: those colors aren't from pigment like paint or markers. They come from the way light reflects off tiny layers in the bird's feathers. The light bounces around and interferes with itself, showing different colors depending on the angle you're looking from and depending on how thick those feather layers are.

In your bookmark, the clear nail polish forms a super thin film on the surface of the water. As you drag your paper through it, that film sticks to the paper. But the film isn't all the same thickness—some parts are thinner or thicker than others. That's what causes the light to reflect in different ways, creating the rainbow-like, iridescent effect.