



**MAKE ART  
ANYWAY.**

ART ACTIVITY  
INSTRUCTIONS:

**IRIDESCENCE  
PROJECT**

@ARTSCORPS

#MAKEARTANYWAY

# IRIDESCENCE PROJECT

**Disciplines:** Visual Arts  
Science

**Duration:** 30 minutes

**Age Range:** Ages 8 - Adult

**Creator:** Jiéyì Ludden

**Contact:**  
integration@artscorps.org

**Materials:**  
Clear Nail Polish

Bowl/Container of Water  
(The water should be about 2 inches deep. A wider container works.)

Paper of any kind  
- Construction Paper  
- Paper Bags  
- Cardstock  
- Printer/Notebook Paper

Something to color with  
(Silver Sharpie is my favorite)  
- Crayons  
- Markers  
- Colored Pencils  
- Paint

## **Vocabulary:**

Iridescence  
Experiment  
Reflection  
Refraction  
Nanometer  
Thin Film  
Hypothesis

## **Learning Goals**

- You will learn to experiment like an artist and like a scientist.
- You will learn about the science of refraction.
- You will learn how to create iridescent thin films and apply them to the surface of drawings.

## **Activity Opening:**

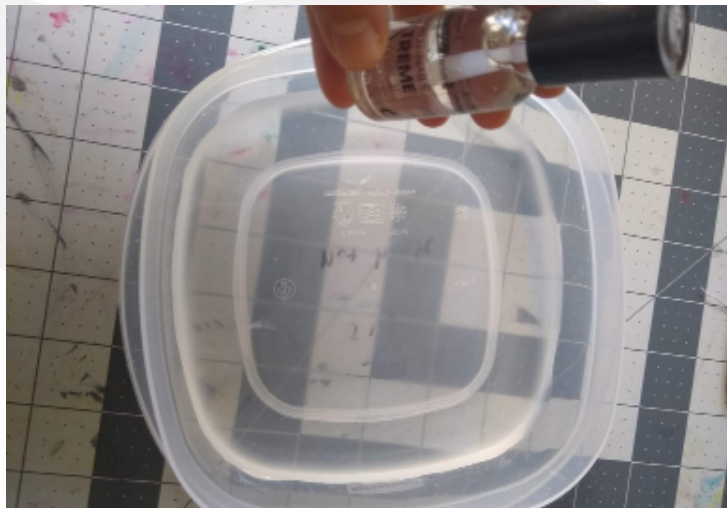
We are going to **experiment** (try different things to see what happens) using a variety of paper and coloring materials to see what outcomes we like the most.

When we **experiment** to figure out how stuff works, we are acting like a scientist. Artists experiment too to find the right techniques for their practices.

One big question we are exploring today is can clear things have color? What's your **hypothesis**? (That means a guess based on what you know.)

## **Steps/Instructions: Part I**

1. Find a bowl or container that can hold 1-2 inches of water.



2. Put your bowl and clear nail polish to the side while you prepare your paper.
  3. We're going to be dipping our paper, so we want to make sure it will fit.
- Cut the paper to a size that will fit into your container of water.

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4. Start drawing on your papers. You can draw any kinds of shapes and words you want. You might want to draw squiggly designs, or a monster, or write your name. It's up to you.
5. Try using different kinds of paper: notebook paper, cardboard, paper bag, printer paper, construction paper, card stock – whatever you have available.
6. Play with different kinds of coloring tools.
  - How is a marker (like a washable crayola marker) different from colored pencil or crayon?
  - What do you notice when you use different materials and tools?

**Here are some of my drawings:**



- What do you think might happen when you dip the paper in the water?
  - Will marker color stay on the page?
  - What about crayon or colored pencil?
7. In the next step, we are going to put a drop of nail polish onto the surface of the water.



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- What do you think will happen to the nail polish?
- Will it stay in one place or will it spread out?
- How do you think it will stick to the paper?
- What will it look like on the paper after we've dipped it?



8. Let one drop of nail polish fall onto the water. You can gently shake the container until the nail polish spreads out into a thin film.
9. Take your paper and carefully push the edge of the paper along the side of the container.



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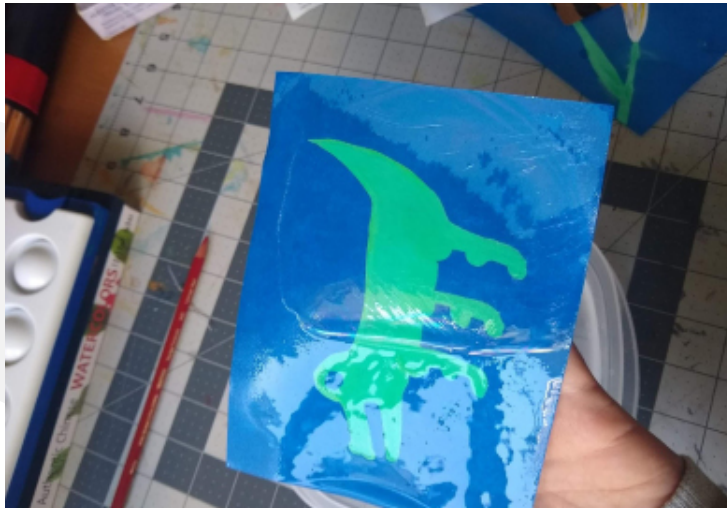
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10. Slide the paper under the thin film from the nail polish.



11. Scoop the film up so that it sits on the surface of your paper.



12. Repeat this special dipping process for each of your drawings and put them aside for 20-30 minutes or until dry.

13. You may want to add more nail polish to the water after you've done 2 or 3 dips but be careful because the layer of nail polish needs to be super thin. You are creating a "**thin film**."

14. After they dry, look at your creations!

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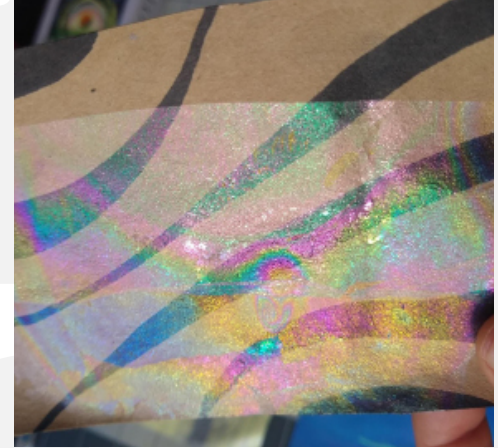
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Here are a few of mine:



11. Scoop the film up so that it sits on the surface of your paper. What did you notice during our experiment? Which pieces do you like the most? Why?

## **Activity Closing: Science Facts About Light, Color, and Iridescence**

- The name of the rainbow like shimmer we made from our thin film (dropping nail polish onto a surface) is called iridescence.
- Iridescent thin films show up in lots of places like the inside of some seashells and in oil spills on the surface of water.

## **Why do we see color when we use clear nail polish?**

The clear nail polish was able to show rainbow-like colors because the thin film we created was the same thickness range as light, which is very thin. Light thickness is measured in waves because light travels in waves. Those waves are measured from the highest point to the lowest point. These measurements are so small that they have to be measured in **nanometers**. To give you an idea of how small a **nanometer** is, a sheet of paper is about 100,000 nanometers thick.

Did you know that light contains all colors? A rainbow is sunlight that has been bent by the rain. When light passes through the thin film of clear nail polish and bounces back, the light bends through the film like light bending through the rain when making a rainbow. This bending of light is called **refraction**. When we see color, what we are seeing is a particular wavelength of light.

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## Some Other Ways to Experiment with Nail Polish and Water:

**Experiment** with different techniques for making films and apply them to a surface like you did when you made a thin film of clear nail polish and applied it to the surface of your paper.

You can make a thin film with a single drop of colored nail polish on the surface of water. You can use more than one color. Try making circles inside circles by pouring one color, and then another color inside. After you pour your colors, you can use something like a toothpick to move the colored nail polish, like making parallel lines across. You can dip paper or plastic or other materials the same way we did our iridescent thin films. This technique is called **water marbling**.

**CLICK HERE TO WATCH THE VIDEO  
VERSION OF THIS LESSON.**



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