

# LOOKING AT THE "BIG PICTURE"

## EXPLORING MURALS IN UPTOWN WHITTIER

Exploration is at the center of this Local Resource Guide! Through investigations and scavenger hunts, you will explore the chemistry behind **murals** (paintings or other work applied directly to a wall).

When planning a mural, there are lots of questions to ask yourself: Where will it be located? What is the weather in this location? What type of surface will house the mural? What materials will last the longest against the elements (sun, rain, wind, etc.)? With this Local Resource Guide, we will focus specifically on murals that are painted which makes us ask: *Does it matter the type of paint we use?*



### COLOR CHEMISTRY



If you've been to an art supply or home improvement store, you probably noticed there are many different types of paint. There are oil-based, latex, and acrylic paints, as well as paints for interior (inside) surfaces and exterior (outside) surfaces. Muralists often recommend acrylic paint for outdoor murals. *But why?* This has to do with the chemicals used to make acrylic paint.

Acrylic is a type of **polymer** (chain of molecules) that is both stretchy and does not quickly fade in the sun. Acrylic is even used in nail polish for durable and colorful manicures! Meanwhile, latex paint is less durable and better suited for indoor, flat surfaces.

### ACTIVITY 1: SCAVENGER HUNT!

*Have you ever noticed how many murals there are in Uptown?* The pictures included in this Local Resource Guide are of murals located around Uptown Whittier. With adult supervision, we encourage you to walk (or bike or drive) around the area and enjoy these artistic expressions. For an added bit of fun, see if you can identify the murals below (we have only shown a portion of the art piece).

As you discover the murals around Uptown, think about the following: (1) Is the mural paint cracking? (2) Are the mural's colors bright or faded? (3) Where is the mural located? (4) What do you think the mural is painted with?



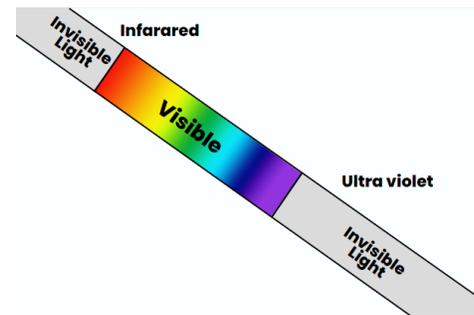
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### ACTIVITY 2: EXPLORING PHOTODEGRADATION

**Photodegradation** is the fading of colors caused by sunlight. You might have seen this happen already, when fabrics or objects have faded after being in the sun for a long time. *But why does this happen?* Sunlight (also known as solar radiation) contains visible light, ultraviolet (UV) and infrared radiation. These three components of sunlight have different wavelengths (see picture). Shorter wavelengths carry more energy and can even break chemical bonds!



Because of the higher energy of UV light, the chemical bonds that hold the material together can break, making the paint crack and peel. UV light can also break the bonds in the pigments, which will make them lose their color and fade. Acrylic paints resist both of these issues, and some even have sunscreen added in to help maintain color over time. Latex paints and watercolors will fade and degrade quicker.

**Testing time!** You can explore photodegradation of paint at home. You will need two pieces of paper and watercolor paints (though other paints can work, just not as well). You will paint your own murals on paper and put one of them out in the sun. What will happen?

Step 1: Decide what you want to draw and what colors you will use.

Step 2: Create two copies of the same painting with your watercolors (or as close to the same as possible). You can also ask an adult to take a picture of your paintings for reference.

Step 2: Write your **hypothesis** (what you think is going to happen and WHY you think that way).



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Step 3: Once your paintings have dried, leave one painting inside (away from windows) and one painting outside in the sun. Leave the painting outside for about a week and **observe** (watch) how it changes.

What did you observe? Did the sun-exposed painting fade? If so, did all colors fade equally? What do you think would happen if you put a sunscreen layer over your painting - will this change the photodegradation time?



#### EXTENSIONS

If you liked this activity, and we hope you did, consider one of the following extensions. Los Angeles boasts a large number of murals, some as tall as buildings! Consider taking [this driving tour](#) to find some of them (or just looking at the interactive map). Or, you can watch this episode of [MyWhittierTV](#) (10 minutes) and learn more about the many art pieces displayed to the public around town.

