



## STEAM: A is for Art

### Seeing Colour: DIY Watercolours



#### Colour Perception and Cones

Did you know that we all see colours a little differently from one another? You may look at an apple and say it is red, but your red and my red may be slightly different than each other's.

You may be thinking, how is this possible? Let me explain the science behind how our eyes see colour. It really is down to how our eyes sense light. Light is made up of many different waves – the shortest wave gives us the colour violet and the longest gives us the colour red.

Behind our eyes we have cells that react to light. These cells are called **cones**. Most of us will have three kinds of cones – **small, medium and large** ones and these will pick up different wavelengths of light. The large cones will pick up the long waves, and the small cones the shorter waves.

Did you know that when light hits the small cones we see blue, when it hits the medium cones we see green, and with the large cones we see red?

Some people have only two types of cones behind their eyes and these people are called **colour-blind** because they perceive colours slightly different than most people.

What's even stranger again, is that our brains see colour too! We learn colour by association. For example when we are young, if someone were to say to us look at that orange fish. We then associate that colour and similar colours to that specific orange that we were shown.

Do you want to test how well you see colour? Check out this fun video: [Test how you see colour](#).

Great, now that you understand how we see colours differently, let's make our own water colour paints and create some colourful art!

#### Materials

- Baking soda
- Vinegar
- Cornstarch
- Corn syrup or Glucose syrup
- Mixing bowl
- Whisk
- Food colouring
- Ice cube tray

#### Experiment

##### Step One:

Add 1 cup of baking soda to your bowl. Slowly pour over  $\frac{3}{4}$  cup of vinegar. Don't add it all at once as it will fizz over. Once the bubbling stops, whisk both ingredients together. Now add 2 tablespoons of corn syrup or glucose syrup to the bowl. Add in one cup of corn-starch. Whisk until well combined.

##### Step Two:

Pour the mixture into your ice cube tray. Select your food colouring and put a few drops of colouring onto the tip of a teaspoon or on a popsicle stick. Mix a different colour into each cube. Remember that you can combine your colours to make new ones.

##### Step Three:

Once mixed, allow them to dry. This will normally happen overnight, but it can take up to 2 days. Once dry, add water to your paintbrush and make some art!





## STEAM: A is for Art

### Collage Art

#### Collage and Artistic Movements

Have you ever made a picture by glueing something to paper, maybe from an old magazine or with other crafts you have around the house? Well, this style of art is called **collage art**. Did you know that 'collage' means 'to glue' and this artistic movement began around 1910?

Collage art can be made from almost anything including wood, paper, photographs, or even 3D objects.

You may have heard of Pablo Picasso. He is one of the artists credited with first using collage and you can view his art on this link: [Picasso Art](#).

Picasso was well-known for using **Cubism**, this is a style of art that can be recognised by broken and deconstructed pictures. Because of how Picasso like to pull pictures apart, using collage meant that he could do this more easily, and what was more exciting, was that this art could be 3D rather than flat.

Another type of artists who used collage were **Dadaist** artists. **Dada** was an art form that used more average materials in their collages like lolly wrappers, magazine clippings, tickets and anything that they could find. One of the main focuses of a Dadaist was to remake fantasy figures.



### Materials

- Canvas/paper/wood
- Paint
- Brushes
- Collage material (you can use anything that you find lying around the house. Magazines are a super easy place to start!)
- Glue

Finally, another art form that uses collage is called **Surrealism**. **Surrealists** use their subconscious to create their pictures, or in other words, they create art without actively thinking about it. These collages are often made with paper, photos and paint.

Now that you know how collages can be used to make art, let's make our own!

### Experiment

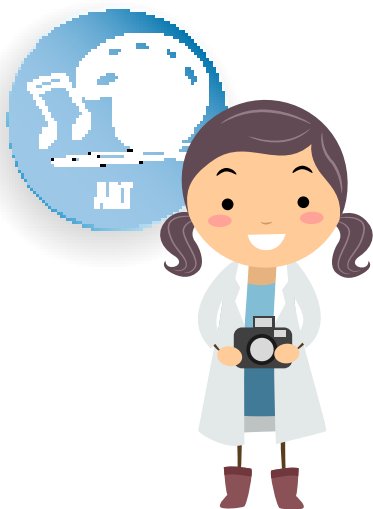
#### Step One:

Decide what you want your picture to look like, or what story you want it to tell. Collect your collage materials and place them around your canvas. Take your time deciding how you want it to look before you glue them! You may want to paint a background picture first and only have a small portion of your art in collage.

#### Step Two:

Apply the glue and your materials to the canvas and admire your collage art.

For a simple, yet effective idea, check out this sample. Remember you can use the outline of any picture you want [Sample Collage Idea](#).





## STEAM: A is for Art

### String Art: Using lines in art

#### String Art: A Brief history

Have you ever heard of string art? Yes, it really is a thing and yes, it is exactly as it sounds – making art from string.

The first person to really make string art popular was an English lady called **Mary Everest Boole**. Mary is the first person known to have created curves out of straight lines using string and she developed this to help teach kids mathematics in the 19th century.

Ever since Mary's discovery, string art has developed over time. It was most popular during the 1960's when American artist **John Eichinger** created string art kits for people to make for their homes. This became so popular that by the 1970s many American homes had string art on their walls!

Today there are a number of artists who have created famous pieces of string art. One of the most famous artists is **Gabriel Dawe** who created his infamous **Plexus** collection. To see his amazing string art, check out his website that showcases all of his creations [Gabriel Dawe Art](#).

What's more, you can even watch the making of string art with this video [Making String Art](#).

Great, let's get started and create our own string art!



## Materials

- Small tacks/nails (alternatively you could use drawing pins)
- A wooden board/thick card (or anything laying around the house that can be used as your canvas)
- Hammer
- Colored string or wool
- Pencils
- String Art templates (these can be found online at places like [www.decorhomeideas.com/string-art-patterns/](http://www.decorhomeideas.com/string-art-patterns/))

## Experiment

### Step One:

First you must choose what your piece of art will look like. Do you want it to make a picture or is it going to be random? If you want to make a picture, pencil the outline of this onto your wooden board.

### Step Two:

Take your tacks or nails and hammer these in about 1cm apart along the outline of your image. Leave them risen enough that you can tie multiple knots around them. Or else hammer in your nails randomly. If you have decided to use one of the templates, hammer through the templates to your board and tear away the template once you have completed the picture.

### Step Three:

Take your coloured string or wool and now loop it around each nail and pull it taut. Go over the nails as many times as you like and in different patterns until you have reached the desired depth of colour and texture. Once you have completed a section or your picture, tie off the string on one of your nails.

How does your image look? The awesome thing about string art is that you can make it as easy or complicated as you like!

