



# Crystal Growing

Earth and Environmental Science



# Introduction

We are interested in crystal growing because we want to learn more about how crystals form and grow. Also we want to know what shapes and sizes they can grow into. In addition, want to know what materials crystals grow best on. Lastly we want to know how long it will take to grow. Crystal growing is super interesting to us and we are excited to see what will happen.

# Research Question & Hypothesis/Prediction

Background Research: Here are some interesting facts on crystals and how to grow them. Crystals only form when a liquid cools and hardens. Next all crystals grow in many different shape and sizes. Crystals are not flexible so they can't bend. If you want to make your crystals bigger you can add more borax. When putting the item in the jar you have to make sure that the item does not touch the sides. Also the item has to fit in the jar. To conclude this is some information about crystals.

Question: Do the crystals grow better on a popsicle stick or a straw or pipe cleaner or a metal screw?

Hypothesis: If we change the item we grow the crystals on then we will see what grow on the best. We think it will grow best on a straw.

Variables: Here are variables that I can control the surface that the crystal grows on (wood or plastic), the location, the temperature of the water, the amount of borax, and how much dye and the amount of water.

The variables that we can't control are what shape they grow into and if the color will change the crystals.

# Results

Started on December 22, 2021 10 :00 am.  
Ended on December 23,2021. The borax will not mix with the liquid if it is not hot enough. Crystals stopped growing 1 day later.

Started: December 22 2021	Time: 10:00am	The crystals started to grow on the straw and the popsicle stick.
Finished: December 23, 2021	Time: 8:00 am	The crystals stopped growing a day later because the liquid get cold.

# Procedures

## Materials

- Popsicle stick
- Straw
- Metal screw
- Pipe cleaner.
- Yarn or string
  
- Pencils or wooden skewers
- Scissors
- 4 glasses or plastic container
- A large container
- Permanent marker
- Borax
- Food coloring
- Liquid measuring cup
- Tablespoon
- Heat safe mixing bowl

# Steps

1. Gather the 4 glasses and label them 1,2,3,4 with masking tape and a marker.
2. Get 2 cups of water and and put in 6 tablespoons in the water.
3. Mix well using a big popsicle stick. Then, microwave for 2 mins. Split the 2 cups of water equally between the 4 cups.
4. Put 1 drops of food coloring per cup.
5. Put your items in the cups.
6. Now begin your observations.

## Discussion

December 21, 2021 I realized that i did not take detailed notes along the way. So I decided to start the over the project so now I are going to take notes this time and write what I observed. This time I am going to label the jars with the color dye it has and what item it is.

# Conclusion

January 2nd ,2022

In conclusion, I think if we were to redo our science project what we do differently would be to add more borax to create bigger crystals. Also, we would want to grow the crystals on different things. We grew the crystals on a popsicle stick, pipe cleaner, straw, and screw. After we were finished growing our crystals we found out that throughout the experiment our hypothesis was different then our findings. We found out that our answer was different then our findings because we thought that the straw would grow more crystals but the pipe cleaner actually grew the most crystals. In addition, the crystals also grew on the sides of the jar.

# References

- ★ [Crystal Names - Kids' Science Experiment](#)
- ★ [Borax Crystals Science Project](#)
- ★ [Sciencing: Making Science Fun for All Ages](#)

# Notes

- ★ [Borax Crystals Science Project](#)
- ★ [Sciencing: Making Science Fun for All Ages](#)
- ★ Crystals grow better on hard surfaces.
- ★ Crystals form when molecules precipitate.
- ★ Crystals grow in geometric shapes.

Crystals can grow on many different objects.

The more borax you use in your saturated solution the bigger your crystals will get.