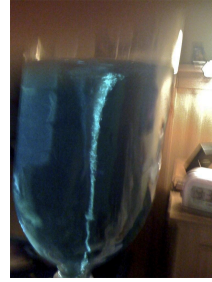


# TORNADOES



Directions for making your own tornado in a bottle:

## What you'll need:

- Water
- A clear bottle or jar with a lid (that won't leak). Not too large of a bottle because you have to hold it firmly in your hands.
- Glitter or food coloring
- Dish washing liquid

## Instructions:

1. Fill the plastic bottle with water until it reaches around three quarters full.
2. Add a small drop of dish-washing liquid.
3. Sprinkle in a few pinches of glitter (this will make your tornado easier to see). Or add a couple drops of food coloring of your choice.
4. Put the lid on tightly.
5. Turn the bottle upside down and hold it by the neck. Quickly spin the bottle in a circular motion for a few seconds. Stop and look inside to see if you can see a mini tornado forming in the water. You might need to try it a few times before you get it working properly.

Once you have created your TORNADO IN A BOTTLE, do a bit of research online.

How would you explain VORTEX to someone who has no idea about tornados?

You can "SEE" the vortex in your bottle if it is spinning correctly.


## Science explained!

Research VORTEX and try to form one in your bottle, then explain the process to someone in your family.

1. Where else might you have noticed a VORTEX around your house?  
Think of places where water drains.
2. Research tornadoes in our state of OKLAHOMA. Statistics can be found here:  
<https://www.weather.gov/oun/tornadodata-ok-monthlyannual>  
See if you can find the number of tornadoes that were in Oklahoma in 2019.  
And, which month had the most tornadoes in 2019?

**Then, talk with your family about a safe place in your house so everyone can be prepared when a tornado comes through our area.**

3. Look at the statistics for tornadoes in the month of May in Oklahoma. Make a prediction as to how many tornadoes you think Oklahoma will have in May this year. Check back on the website in June to see how close you were in your prediction.

ANSWERS ARE ON THE NEXT PAGE, but DON'T PEAK !  
Do your own research and check to see if you're correct.

## ANSWERS:

1. What is the science behind the tornado in a bottle:

### VORTEX

#### What's happening?

Spinning the bottle in a circular motion creates a water **vortex** that looks like a mini tornado. The water is rapidly spinning around the center of the vortex due to centripetal force (an inward force directing an object or fluid such as water towards the center of its circular path). Vortexes found in nature include tornadoes, hurricanes and waterspouts (a tornado that forms over water).

<https://www.sciencekids.co.nz/experiments/makeatornado.html>

2. Oklahoma's tornado season:

<https://www.weather.gov/oun/tornadodata-ok-monthlyannual>

**Oklahoma had 149 tornados in 2019 with 105 being in the month of May.**