



# Finding Your Way!



*Raccoon Creek Explorers Activity # 4*

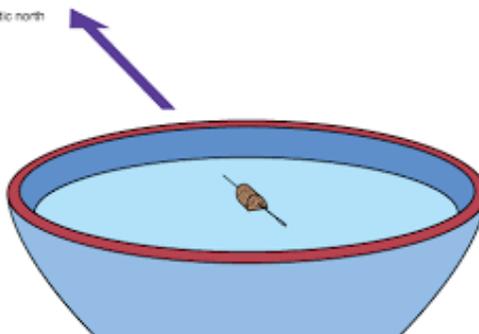
## Supplies:

- Sewing needle 2 inches long
- A bowl of water
- Pliers
- Refrigerator magnet or bar magnet
- A flat piece of a cork (not plastic)
- Scissors

**Note: Ask parent or guardian for help! Sewing needles are sharp**

**Time: 30 minutes**

magnetic north



## Vocabulary:

**Compass:** Navigational instrument for finding directions.

**Cardinal Directions:** The four main points on a compass. The four points are North, South, East and West.

**Magnetism:** A physical phenomenon produced by the motion of electric charge, resulting in attractive and repulsive forces between objects.





## **Background:**

**Ask any explorer what items they bring with them when they go into the wild and they will always say a good compass. What makes a compass so important? The answer is simple. It helps you from getting lost. If you do end up getting lost while in the wild, a compass will be the item to help you find your way. It might even save your life! Compasses use the Earth's magnetism to help with navigation.**

**Compasses have been around for more than 2000 years. The first natural compass was made of Lodestone, a stone that is naturally magnetized. The first compass was invented in China during the Han dynasty between 20 BC - 20 AD. It was used for navigation during the Song dynasty around 960. Compasses came in many forms, such as the dry compass, bearing compass, and liquid compass. A dry compass is a freely pivoting needle on a pin in a box covered with glass. A bearing compass is a magnetic compass mounted that takes the bearings of an object by aligning with them. A liquid compass is a magnetized needle that is wet to protect it against wobble. We will be making a compass that is similar to some of the first compasses ever made! Many great explorers throughout history have used compasses to map out new unknown land's.**

**The goal of the activity is to learn how to make and use a compass and understand why a compass is such an important tool.**



## **Let's Start!**

- 1.) Fill the bowl halfway with water and put it to the side.**
- 2.) If the cork is not a flat circle in shape, use scissors to cut the cork into shape. Ask a parent or guardian to help cut the cork into the correct shape. The cork should be  $\frac{1}{4}$  inch thick.**
- 3.) Magnetize the sewing needle by rubbing a magnet along the needle in one direction only at least 6 times. You can do it more. Remember needles are sharp!**
- 4.) Use pliers to put the needle inside on the cork. Push the needle in one end of the cork and out the other. The needle should have both ends sticking out of the cork. This magnetized needle in the cork is the "compass."**
- 5.) Place the "compass" you made into the bowl half-filled with water. The "compass" should float.**
- 6.) Watch the "compass" move and try to align itself with the magnetic field. It should point north.**
- 7.) Move the "compass" to different locations in your house and watch it move. The needle should always move to point north!**



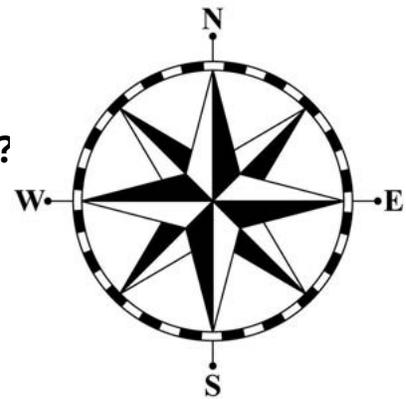
**Reflect:**

**How does the magnet magnetize the sewing needle?**

**Why does the needle point North?**

**How does a compass help you in the wild?**

**What if you place a magnet near the compass?**



**Apply:**

**Where would it be a good idea to bring a compass? Name Three places.**

**Will the needle ever point south? (this is a trick question! Think about magnetic poles and where you live.)**

**How does magnetism play a role with the direction a compass points?**

**What is "true north?"**

**Can you name a modern-day compass?**





### **Wrap-up Statement:**

**You can use what you have learned about compasses to be safe when you go for a hike or go camping. A compass is important because, without it, you might risk your safety and become lost.**

**Explorers always have their trusty compass. Since you are a Raccoon Creek Explorer, you can use your skills to help your friends not get lost and discover new things in your own backyard! Remember to keep exploring!**

***Thanks, everyone for exploring with us! We would love to see photos of the compass you made for this activity! You can send any photos you took to us at [raccooncreekpartnership@gmail.com](mailto:raccooncreekpartnership@gmail.com). Keep on exploring! We release 1-3 new activities on the first Monday of every month! Check out our other activities on our website!***

