



Snake Sense Scents Game

Snakes and humans have a lot of things in common. We both have eyes to see the world, mouths to eat our meals, and nostrils to breathe and smell the air.

Snakes also have things we don't, like a special, super-charged smell sensor called the **Jacobson's organ** that "smells" chemicals gathered by their forked tongue, helping them hunt. We may not have a working Jacobson's organ, or a forked tongue, but we do have two nostrils. See if you can use your sense of smell to hunt like a snake.

Materials

Four cotton balls

Ziploc bag

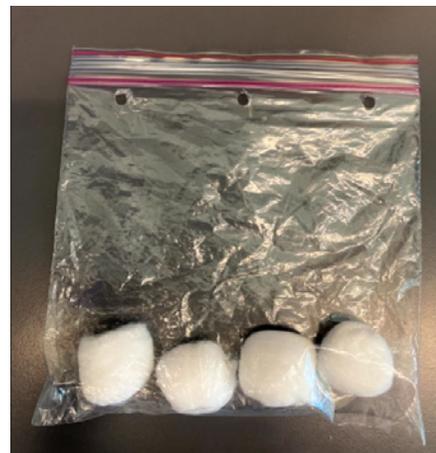
Single hole punch

Peppermint extract (peppermint is a distinctive scent that works well for this activity, however, you can also use any extract you have on hand.)

2 or more people to play

Prepare the game

1. **Punch** three holes into the top of your Ziploc bag under the zipper
2. **Put** two drops of extract onto each cotton ball
3. **Place** the cotton balls into the Ziploc bag
4. **Seal** Ziploc bag tightly, checking the seal twice
5. **Play** the game!



Directions

1. Choose one person to be the mouse. Everyone else is a snake.
2. The snakes either can close their eyes or leave the room for about 30 seconds.
3. While the snakes are gone, the mouse takes the Ziploc bag with cotton balls and peppermint extract and hides it somewhere in the room (remember that the peppermint smell has to still be detectable by the snakes! That means the mouse should not bury the bag too far under anything.)
4. When the mouse is done hiding, the snakes can open their eyes, or come back into the room. The snakes will try to find the hidden bag using just their sense of smell!
5. *Challenge:* Try a different extract. Is it easier or harder to find vanilla, root beer, or cinnamon? Why do you think that is? What would it be like to sense the world mainly through your sense of smell?

Learn more: the Jacobson's organ

Snakes have a special, super-charged smell sensor called the **Jacobson's organ**. It sits right above the roof of a snake's mouth. When a snake flicks its forked tongue, it gathers chemicals from the air. The Jacobson's organ can then "smell" these chemicals when the snake brings its tongue back into its mouth.

Snakes also have a forked tongue. The fork gives their tongue two separate sides that sense the direction a scent is coming from. This helps them hunt and find mates. We have a similar ability with our ears.

Try this: Find a friend or family member to be your sound maker. With your eyes closed, ask your friend to clap, snap, or make a funny sound. Listen carefully: Are you able to tell where that sound came from? With your eyes still closed, point to where you think your friend is standing while they are making the sound. Open your eyes. Did you guess correctly?

Any animal with two ears can tell what direction a sound is coming from because the sound is reaching one of your ears slightly faster than the other. Your brain can take that information and figure out the direction of the sound based on the ear that heard the sound first. It's the same thing with a snake's forked tongue: If the smell of a mouse is stronger for the right fork, a snake knows that the mouse must be to the right.