

# Introduction to sense: Smell

Although both humans and animals rely on their sense of smell, **animals** can often **smell much better than humans**.

All **noses** have tiny **receptor cells** called **olfactory receptors** which send **messages** to the **brain** to help us to smell.



Humans have around **6 million** olfactory receptors in their nose while dogs, for example, have up to **300 million!** So while humans can smell around 10,000 different smells, **dogs can smell many more**.

The **structure** of a dog's nose is also different to a human's. We take in and let out air (and smells!) through our nostrils, while **dogs let air out of the side vents** of their noses. This is one of the reasons why their **smelling ability is amazing**.

## Animals using their noses



**Dogs** can follow the scent of a **missing person**, they can smell when a person with **diabetes** (someone who has differing levels of sugar in their body) has **low blood sugars**, and they can smell **dangerous items** in **luggage** at the airport.

**Other animals** also use smell to **sense danger** in their environment, or to tell if there are **other animals nearby**.

Animals have **evolved** over hundreds of years so they can **use their sense of smell** effectively to keep them out of **danger**.

## Did you know...

Without **smell**, humans and animals also **cannot taste**. We need **both senses** to send messages to the brain so we can understand what we are eating and tasting. Smell helps us to know what we **can and can't eat**, as food that has gone off usually smells bad.

"I can smell food from as far as 18 miles away!!"



### What have you learnt so far?

How many **receptor cells** does a **dog's nose** have?

..... million

**How** is a dog's nose **different** to a human's nose?

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**Why** do we need a **sense of smell**?

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What happens if **humans or animals cannot smell**?

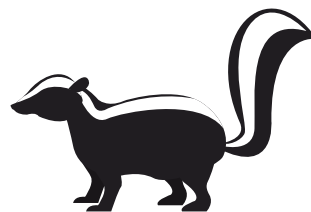
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### Did you know?



Smell is a **hedgehog's** best sense - they walk with their **noses in the air** sniffing all around them to help to **find food** and to **keep safe**.

Some animals, like **skunks**, use smell as a way to **protect themselves** - other animals leave them alone because they **smell so bad!**



## Try it at Home - Make some smelling bottles

This activity is for children ages 3-11. Young children will need help preparing the materials in the activity whilst older children can create them with very little support or even independently.

You will need: A few small containers with lids, like empty baby food jars. Some cotton balls, some spices or essential oils and a large piece of paper. Choose things that have different fragrances and don't be afraid to use some scents that don't smell very good.

1. Open the containers and put a cotton ball in each one. Add a small amount of ground spice or a few drops of essential oil on top of the cotton ball. Put the cap on and shake the container to coat the cotton ball with the scent.
2. Draw a line down the middle of the piece of paper. Draw a smile or write 'Like' on one side then draw a frown or write 'Don't Like' on the other side.
3. Place the paper in front of you, with your containers to the side.
4. Pick up the first container. Open it and hold the container near your chin and breathe in through your nose. What do you smell?
5. Put the lid back on the container. If you liked the smell, put it on the 'Like' side of the paper. If you didn't like it, put the container on the 'Don't Like' side.
6. Smell each of the other fragrances in your containers, one at a time. Put them on the paper, either on the 'Like' or 'Don't Like' side.
7. Older children can then go on to talk about which fragrances they liked/disliked and why.

**Montessori is a hands-on learning approach that supports children's creativity, curiosity, problem solving and independence. The Montessori Group is pleased to Partner with Humanimal Trust to bring you interactive learning activities found in Montessori schools worldwide.**



# Try it at Home - Make some smelling bottles

## Questions to think about

What **types** of **smells** did you use? Did you **like** all of them? If not, **why** not?

**Animals** (like bears) are far **better at smelling** than humans, **why** do you think they need such a **good sense of smell**?

How can **changes** in the **smell** of an **environment** tell you about **dangers**?

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