

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.

Checkpoint! 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?

.....

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

.....

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

.....

Challenge:

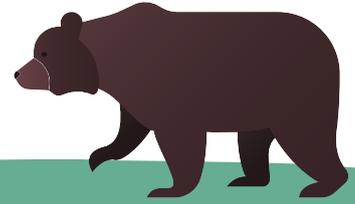
Go on a Smell Safari!

You will need: Access to different rooms in your home, a selection of pens, a sheet of plain paper

1. Take a **walk around your home** and see what you can **smell** in each room.
2. Make a **note** of the **smells** and **where** they are.
3. **Draw** something to **represent** each **smell** on your **map** of your home.
4. See if a family member (or someone else who can help you) can **use your map** to **find the smells** in each room.



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



Questions to think about

What **types** of **smells** did you find in your house? 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?**

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!**

