

---

# Scents and Sensibilities

A Primary Practical Investigation from  
The Association for the Study of Animal Behaviour

---

Jessica Mitchell (Liverpool John Moores University)

---



**A game exploring  
the use of smell in  
animal social  
interactions**



---

## Introduction

As humans we are “visual” animals - this means we rely on our eyesight. We use sight to recognise the defining features of our friends and family members and are very good at remembering what people look like, especially their faces. However other animals do not use visual cues and instead use other senses to recognise their family and friends. Today we will look at an animal called the banded mongoose and we will learn about how it communicates with its friends and family.....

## Background for teachers

The game can be used with pupils in both Key Stage 1 and 2. Identifying animals in KS1 and working scientifically to explore the world around them, to find out how animals survive and depend on each other. At Key Stage 2 pupils should learn about the work of naturalists and animal behaviourists and how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. This game also helps pupils appreciate how different senses are used in animal communication. The introductory information can be used by teachers to set up the activity and introduce the banded mongoose. This game would ideally run after the pupils have learned about the five senses (sight, sound, taste, touch and smell) and these could be re-capped in the introduction.

As humans we are “visual” animals - this means we rely on our eyesight. We use sight to recognise the defining features of our friends and family members and are very good at remembering what people look like, especially their faces. However other animals do not use visual cues and instead use other senses to recognise their family and friends. In this game pupils will be introduced to the banded mongoose – an animal which uses its sense of smell to recognise each other. The class will then play a game to test how good they are at using smell to identify each other. Finally, they will look at other senses that are important to the communication and recognition of other animals.



The game has been designed for an entire class to play at once and will require a bit of space and students need to move around. Teachers should expect the pupils to struggle to find their group-mates by smell but this is entirely the point of the game. Once they have had about ten minutes to find the rest of their group by smell the teacher can call their

---

attention back and ask them to use their eyesight to identify their group members which should be much easier. This then allows reflection about which senses are most important to different species and leads into the final part of the activity where we think about which animals use different senses and why.

## The banded mongoose – (use PowerPoint slides to accompany this introduction)

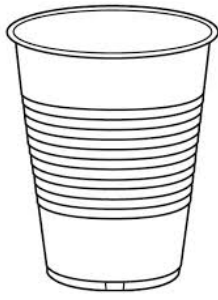
Banded mongooses are about the size of a small cat and are related to meerkats (pupils should be familiar with the meerkat). They live across Africa in big social groups known as packs which usually contain about 30 individuals. These tend to be family members (related individuals) including baby individuals called pups.

Packs live in defined areas called territories and they don't like other packs coming into their territories as these new individuals could steal their food and kill their babies. When packs meet they can be fight with each other and cause nasty injuries so it is best to avoid animals that are not from your own group. However, within packs banded mongooses are very kind to each other, they are known as "cooperative" animals because they help each other in several ways. Animals from the same group look after pups together and don't only feed their own babies.



Banded mongooses also look out for danger and will warn other group members by making a warning call which sounds a bit like a very squeaky dog bark! So it is important for banded mongooses to know who is who in their groups but also to look out for individuals from other groups who might want to fight or steal their food. But.... How do they do this when they all look the same?

Time for class to put hands up and answer this question. Hopefully some pupils will identify smell but if they do not the teacher can coax this out of them by talking about other animals they might recognise such as dogs and rabbits who often sniff each other.



### Examples of items to use as scent tubes

## Resources

- Falcon tubes or plastic/paper cup (1 per child)
- Cotton wool balls
- Essential oils or food flavouring (3-4 very different scents)
- Nail varnish (3-4 very different colours)



## Making a scent tube

- Pupils will be asked to find their group-mates by using only their sense of smell, this means each child needs to have a scent tube.
- Each tube or cup needs to contain a cotton wool ball scented by an essential oil, or food flavouring, the bottom of the tube then needs to be painted with a dot of nail varnish in a colour that corresponds to the oil used (for example green for tea tree oil, red for rose oil etc.). If plastic cups are used they can be covered with cling film (add holes) and tape on.
- To create the groups there needs to be 3-4 different scents distributed across the whole class.
- Pupils should have no need to ever touch the cotton wool and thus oil should never come into contact with their skin. However, it is recommended that pupils wash their hands after the game.
- If using falcon tubes the lid can be securely closed and the oil scent should last for several months.

---

## The game

Once smell has been identified as a sense that mongooses may use to recognise each other the pupils can then be introduced to the game.

“Scientists know that banded mongoose can smell the differences between their family group and others. We are now going to look at how good your sense of smell is. Can you recognise your group mates through smell!”

- Each pupil is given a scent tube and asked to carefully sniff the scent. To smell like a scientist the tube needs to be opened carefully and the smell wafted on to the nose. Do not encourage pupils to put their noses into the tube! This won't be such a health and safety issue if plastic cups with cling film are used.
- Once the pupils have smelt their own scent they need to move around the room and smell each other's tubes to work out who else is in their family group.
- This should be very difficult and after 10 minutes many pupils will have not found their group mates. Stop the smelling here and ask pupils to put the lids back on their tubes and turn them over. On the bottom of the tube will be a coloured dot – now ask pupils to find the rest of their group by finding others with the same coloured dot.
- It should only take several minutes for pupils to find their group using the colour code.

### Student reflections

Now that pupils have found their group mates ask them why it was so hard for them to do that using just their sense of smell?

- Discuss how we as humans are not as reliant on smell as we are other senses like sight.
- Discuss why it might be more important for mongooses to use smell (they all look very similar, they live in dense vegetation where it is difficult to see each other). Mongoose do also use sound to communicate and can recognise each other's calls so this could be discussed if a pupil identifies this area.
- Discuss that sense are important for other functions such as finding food – many animals cannot see their food so have to use other senses like sound, touch, taste and smell.

---

## Summary activity

Pupils will now have the chance to think about how different senses are important to other animals. For younger students use the power point to discuss which senses the Sharks/ moles/ bees and eagles use.

Older pupils can complete the worksheet which shows pictures of different animals and where they live. Pupils need to work out which sense these animals are most likely to use and draw an arrow to this sense, advanced learners can also explain why they picked this sense. In both tasks there can be a short feedback session where pupils explain why they picked each sense.

### Example answers for summary activity

#### Shark – taste

- lives in water and can taste blood from more than 100m away! This helps them find food even when the water is cloudy or their prey are too far away to see.
- Pupils may also pick smell which is correct – sharks use smell to recognise each other and detect changes in the ocean currents.

#### Mole – sound

- These animals move around in complete darkness but can use sound to guide them. Moles feel the vibrations of sound through the ground.
- Pupils may think of touch with the mole example which is technically correct as these animals pick up sound vibrations through the earth – teachers may elaborate on this if they are confident in explaining sound waves.

#### Honey bees – touch

- Honey bees can communicate directions to flowers by dancing very close to their colony mates – the movements tell the other bees how far away and in what direction the flowers are!
- Sight is also important to bees as they can see in ultra-violet so they can see lots of lovely patterns on flowers that we cannot.

#### Snake Eagle – sight

- Like most birds of prey Eagles have amazing eyesight to help them see the mice and snakes they want to eat and also to help them work out where they are when they are flying over large distances.



**The ASAB Education Committee would like to thank Jessica Mitchell (Liverpool John Moores University) @JessMitch15 for developing this resource and for all the banded mongoose photographs. Naomi Latham and Evie Bentley for their time in checking and trialling this activity. Please email the ASAB Education Officer with any comments or for further support.**

**[behaviour@cardiff.ac.uk](mailto:behaviour@cardiff.ac.uk)**

**@ASABeducation**

**More free resources can be found on our website [www.asab.org/education](http://www.asab.org/education)**

