Nocturnal Animals

Learning aims:

- Understand the different sleep cycles of animals
- Understand the benefits of being nocturnal
- Learn which animals are nocturnal and how they adapt to their surroundings at night
- Explore your own senses to see whether you could survive being nocturnal

Activity 1: Language

There are 3 main types of sleep cycle in animals, they are:
Diurnal - awake during the day.
Nocturnal - awake at night time.
Crepuscular - most active at dawn and dusk.

Did you know that not all owls are nocturnal? As a general rule, their eyes will give an indication to the time of day that you might see them. Owls with yellow eyes are diurnal, owls with orange eyes are crepuscular, and black eyes indicate nocturnal owls. The barn owl however, is an example of when the rule doesn't work - they are crepuscular but have dark eyes.

Task: Search for pictures of different owl species and ask your class to categorise them based on their eye colour.

Activity 2: Why come out at night?

Ask your class to think about whether they would like to come out at night time or not. List all of their reasons in yes and no columns and address each point. Some might say that they wouldn't because it's scary. However, believe it or not, there are actually fewer predatory animals out at night, so it is safer for smaller animals such as mice and hedgehogs.
Other animals might come out at night because there is more food available, less competition for that food because there are fewer species awake, it's cooler at night time, or because it's easier to sneak around and avoid predators that are awake.

Activity 3: Super Senses

Give each member of your class an outline or photograph of a nocturnal animal (we recommend a badger, hedgehog or bat) and a pen. They will be labelling the features of the animal that help them be successful at night.

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Ask your class to call out each of the 5 senses that we have and ask them how they work for us (i.e. what is good about having this sense, how do we respond to triggers/stimuli, would we be as successful if we were to lose any of these senses?). Now compare our senses to those of the animal. Discussion points could include:

- Ears - a lot of nocturnal animals have smaller ears so that they don't get cold, but they are positioned high on their heads to that they can listen out all around their body for predators.
- Eyes - many nocturnal animals have eyesight as good as ours in the dark, which isn't very good! Instead, they compensate with other senses to help them navigate in the dark. Some nocturnal predators such as foxes and house cats have a reflective cluster of cells at the back of their eye which shine brightly when hit by the light. This helps them to see even better in the dark when hunting.
- Nose - most nocturnal animals have an incredible sense of smell as their main guide in the night. They can sniff out food or prey animals, marks left by other animals of the same species, and detect predators standing nearby. Did you know, if you want to view nocturnal animals at night, you should always stand downwind. If the animal smells you, it will most likely hide until you have left.
- Taste - similar to humans, but can include "tasting" scents of other animals.
- Touch - nocturnal mammals are often covered in whiskers which act as extra-sensitive motion detectors. They are able to feel tiny vibrations in the ground and air which could signal danger. Whiskers also help them to navigate in the dark by brushing against objects which they might bump into or trip over.
- Sixth sense (bats only) - bats have a communication technique called echolocation. They use a series of high pitched squeaks and clicks that bounce off of their surroundings and back to their large ears. This helps them build a "picture" of their environment and hunt their prey in complete darkness.

Ask you students to label the senses on their picture of the animal.
Additional activity: Challenge your class to design their own "super animal" using what they now know about senses of nocturnal creatures.

Activity 4: Nocturnal or Not?
Find some images of different British animals, a good mixture of nocturnal and diurnal/crepuscular species. Ask your class to sort them into two piles: nocturnal and not nocturnal. Challenge them to think about features the animal has that might indicate a nocturnal animal (go back to senses and adaptations learning). Go through the answers with the whole class.

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Activity 5: Get crafty
Give each student 2 pieces of A4 paper and some coloured pens/pencils. Their challenge is to draw a woodland in the daytime, and then again at nighttime. They should include as many nocturnal and diurnal species as they can remember.
Hint: For younger students you can print out a template of a woodland to reduce the amount they have to draw. You could even do this as a class picture on larger sheets.

Extra Information:
Here is a list of some different nocturnal species you could talk about or include in your activities:

- Owls
- Hedgehog
- Fox
- Moths (many, but not all! Some moths fly in the day)
- Bats
- Badger
- Polecat
- Glow worms
- Wood mouse
- Dormouse
- Vole (mostly nocturnal)
- Shrew (mostly nocturnal)
- Chafers
- Stag beetle
- Nightingale
- Deer
- Otters (will basically come out any time of the day or night but are generally regarded as nocturnal)
- Toads
- Newts
- Common frog