

## Bats through the seasons

Flying uses up a huge amount of energy, so bats need lots of food. In the UK there just aren't enough insects flying for bats to be active all of the year, so they need a way of saving energy when food is short.

If you are unwell and feel hot, your parent or guardian may use a thermometer to take your temperature. Even if your temperature has changed by only two or three degrees they will probably keep you inside in the warm until you are feeling better and back to normal. They might even decide you need to see a Doctor as high temperatures can sometimes be the result of a more serious infection.

Bats are very different. Instead of a change in temperature being a bad thing, it is the method bats deliberately use to save energy at times when they aren't able to find enough food. Dropping their temperature to a low level is known as going into torpor; they may even do this in summer if food is short.



**How many babies can you see in this pipistrelle maternity roost?**

### Bats in summer

Mother bats need a safe warm place to have their babies, preferably near to good feeding sites. Large groups of mother bats may move into their maternity roost in spring, but even amongst hundreds of others, each mother will recognise her own baby by its voice and smell.

Unlike most mammals, bats make no nest. Instead, the mother herself provides warmth and protection. As soon as the baby is born, it crawls through her fur, seeking the nipple under her armpit, so the mother's wing is folded round the baby as it feeds. The baby hangs n tightly with its tiny curved milk teeth and depends on its mother's milk for several weeks. It can hang up from birth as its strong feet and thumbs are nearly as big as its mother's!

When the young can fly and catch their own insect food, all the bats leave the maternity roost. Female bats often return to the same summer roost year after year, so it is important these roosts are protected.

#### Baby bat facts

- Most bats only have one baby in a year, and not every year
- Babies of UK bats are born without fur and eyes still closed
- Fingers and wings of newborn bats are not fully developed
- A baby walks and climbs well before it can fly
- Young bats start to groom themselves when they are vey small
- Baby bats start to fly and catch food from 3-4 weeks old

## Bats in winter

In winter, British bats hibernate and at these times everything in their body works very slowly, so little energy is used and the food they have stored as fat is only used up gradually. Hibernating bats should never be disturbed.

### What is the temperature of a bat?

- An active bat normally has a temperature of about 38°-40°C.
- Different species prefer different temperatures to hibernate, and may move several times during the winter, matching their temperature to the site. This will usually be between 1° and 12°C.
- During the day, even in summer, a bat may lower its temperature to 20°C in its day roost.
- When it flies, a bat's temperature rises to about 42°C.

### Do all bats hibernate?

All bats in the UK belong to one of two bat families, the Horseshoes or the Vespers.

These are the only two out of 18 bat families in the world known to be true hibernators, though some

others do sometimes go into torpor. Our bats can only survive here because they are able to hibernate in the winter when there are few insects flying.

### Safe hibernation

Safe hibernation sites are important to bats. They need to be cool, humid and undisturbed, so bats can drop their temperature to save energy. Many of these sites are also used in autumn for swarming, bat meeting places for mating and possibly exchanging information.

Such places must be kept safe, but knowing which places are used and which are most important to bats is often difficult. Whilst Horseshoe bats hang up in caves, and can be seen more readily, most of those using underground sites, including Natterer's, whiskered, Daubenton's, Brandt's and brown long-eared bats, tuck themselves deep into tiny cracks and crevices and are very hard to find.

Small groups of specially licensed batworkers make regular visits to known hibernation sites each winter, and are always on the lookout for other suitable places to explore.



Wintering colony of Lesser Horseshoe bats

### Sites that bats may use as winter roosts

- Natural caves
- Disused railway tunnels
- Bridges
- Cellars
- Ice-houses
- Derelict buildings
- Castles
- Old forts
- Disused mines
- Culverts