

The Yippittee!

for kids who are crazy about conservation!

Issue 4 September 2010

Buzzing Bees!



Summer days, paddling pools, warm evenings, barbecues and the smell of freshly cut grass. But there's something missing! What would summer be, without the sound of buzzing bees! You may think we're all black and yellow stripes but did you know that there are 250 different kinds of bees just in Britain. We're hard workers too – we have to visit thousands of flowers to get all the pollen and nectar we need. Mind you, life is even tougher these days – lots of bees are dying out, for all sorts of reasons – I hope you can help us – read on for some ideas on how. Hopefully you'll be buzzing with excitement by the end of it!

What Makes A Bee Buzz?

Their wings which beat so quickly – 200 times per second! That's what makes them buzz!

Bees "forage" or look for two things in flowers which they can eat – pollen and nectar. Nectar is a sugary juice they suck out with their tongues like a straw and it gives them lots of energy. Honey bees also turn the nectar from the flowers into guess what? – yes that's right, honey!

Did you know...?

All of the gardens in Britain put together would cover a bigger space than all of our nature reserves, so they're really important places where wildlife can go.

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Bumble bees use their feet to leave a scent on the flowers they have visited to let other bees know that all the nectar has been drunk already.

Did you know...?

It was once thought that if you mixed dead bees with honey and put it on someone's bald head, it would make their hair grow back!

Spot the difference



Bumble Bee



Honey Bee

In Britain there are over 250 species of bee! Most of these (about 90%) are solitary bees that live on their own, yet these are the ones people always forget about! They have all sorts of strange names like mason, miner and carpenter bee! Miner bees make long tunnels in the ground where they lay their eggs whereas carpenter bees make holes in dead wood and lay their eggs there. Cuckoo bees are like the birds with the same name. They don't make their own nests but lay their eggs inside the nests of other types of bee, so that they don't have to look after them.

Type of bee:	Where do they live?	Do they sting?	How many live together?	Do they make honey?	How many species are there in the UK?
Honey	Bee Hive	Yes - but only the worker bees do and then they die.	A colony of about 20,000 - 100,000 bees.	Yes	One
Bumble	Nest	The females can sting but hardly ever do.	A colony can contain between 50 and 400 bees.	No	24 - three more have already become extinct.
Solitary	Nest or hole in the ground	Many of them can't sting.	One - it lives on its own.	No	Approx 225



Carpenter Bee

Did you know...?
 You are more likely to see a bumble bee in cold weather because their hairy bodies keep them warm!



A colony of honey bees

A colony is a group of bees who live together and have different jobs to do.

Queen There is only one Queen. Her job is to lay as many eggs as possible to keep the colony alive. She is the first one to emerge from hibernation in the spring time and has to find as many flowers as possible to get food to build up her energy and feed the first born young - all female worker bees. They then take over the job of foraging while she concentrates on laying eggs. In the spring she can lay as many as 2500 eggs a day! She is fed on a special food called Royal Jelly which comes from the worker bees' bodies and she can live up to 5 years.

Worker These are all female bees! Their job is to collect the pollen and nectar from the flowers and feed the grubs (babies) in the hive. They cannot lay eggs themselves, only the Queen can do that.

Drone They are all males and don't do any work at all apart from the important job of mating with the queen bee so that she can lay eggs. They don't collect food from the flowers and they don't have a sting.

Hygienic These bees keep the hive clean and tidy and remove any dead bees.



A Queen Bee



Honey Comb

Some of the cells are used to put pollen in which is mainly used to feed the grubs to help them grow. Some of the cells are used to put nectar in. This is mixed up with stuff made from the bees' bodies called enzymes. They then fly over the mixture until all the water evaporates. What's left of the mixture is what we call honey! Honey gives bees energy so if bee keepers take it, they give the bees a sugary syrup to eat instead.

Inside the hive

Inside a honey bee hive are honey combs which are made out of wax from the bees' bodies. Honey combs are made up of six-sided hexagon shapes called cells, which fit together perfectly. Some of them are where the Queen lays her eggs. When they hatch a baby bee with no legs or wings, called a grub or larva emerges. When it is big enough, the workers put a lid over the cell so that the grub can pupate and turn into an adult bee.



Bee Hives

Bee Keeping

Bee keepers look after the hives where the bees live so that they can collect the honey and wax which the honey comb is made of. There weren't many people bee keeping recently but now it is becoming more and more popular and the number of bees hives in the UK has doubled since 3 years ago to 80,000.



Bee keepers wear special protective clothing in case they get stung. This is usually a white suit and a hood with a face veil and gloves.

Bee keepers use a "smoker", a special container with a fuel burning inside so that smoke is released into the hive. This is useful because it calms the bees down

before the hive is opened and it also hides any alarm signals the bees guarding the hive might let off. These signals would normally tell the bees to attack.



What can be made from bees wax?

Candles, furniture polish, soap & cosmetics.

In the olden days, before electric lights were invented, bees wax was very important because candles were made from it. They would last a long time without making too much smoke.



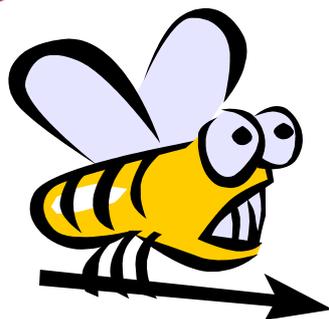
Did you know...?

To make just one tablespoon of honey, worker bees must visit about 4,000 flowers!



Did you know...?

The yellow and black colours of a bee are a warning signal to creatures to keep their distance or else get stung!



Why do bees sting?

Bees sting as a defense, but then honey bees die after they have stung. However when they sting a signal called an "alarm pheromone" is sent out to the other bees in the colony to let them know that danger is about. Then if necessary the other bees can swarm and scare the threat away.

Flower Power!

Aeroplane runways!

If you look closely at a flower you may see some very fine lines. These are like mini runways to guide the bees to the middle of the flower where they can find the pollen and nectar.



They can even see where the sun is in the sky, even on a cloudy day and use it as a kind of compass to help them find their way to a patch of flowers or back to the hive.

Eye see

Bees have funny eyes called compound eyes. It means that they see the world in a very different way to us. It would be something like looking through a kaleidoscope with a mosaic pattern.

Bees can't see the shapes of things very well, but they can see colours, apart from red. The strange thing is that even if we were both looking at the same flower the colours they would see would be different to what we would see. That's because they can see a different kind of light called UV light which makes the colours look different.



Did you know...?

A bee flies the equivalent of twice around the world to make just one jar of honey! This might mean a bee will go on 400 foraging trips and visit as many as 10,000 flowers! No wonder we call them busy bees!



Just Waggle !

Bees can't talk to each other, so how can they tell other bees when they find a good supply of nectar? Its simple for the honey bees - they just dance! As they move, the sounds they make are picked up by tiny hairs on the other bees' heads which lets them know where to go.

The Round Dance

In this dance the bees flies around in a circular patterns. It is simple form of the waggle dance and leads the bees to flowers which are near to the hive.

The Waggle Dance

The waggle dance is a more complicated dance as the bee flies around in the shape of the number 8. It is danced when the flowers are further away. Its amazing that they can tell other bees exactly which direction to go in and how long for, just by wagging! If they waggle straight upwards, it means that they must head in the direction of the sun. If they waggle to the left or right, they must fly at that same angle to the left or right of the sun. If the dance lasts a long time, it means that the flowers are a long distance away, if its shorter, they are not so far away.



Plants



& Pollination

Do you like strawberries, melons, kiwis or blackberries? What about grapes, apples and oranges? How about tomatoes, peppers, cucumber, broccoli or even brussel sprouts? Mmmm! Well for all these foods you have bees to thank because without the bees there wouldn't be any! Why? Because bees have the all important job of



pollination. Yes my friend, you see bees pollinate many of the plants we eat and without pollination they wouldn't grow seeds and without seeds no more plants can

grow in the future. So "WHAT IS POLLINATION?" I hear you cry! Let me explain:

When bees are being busy drinking nectar from the middle of the flowers, lots of yellow dust called pollen sticks to their furry bodies. The pollen is picked up from various flowers which then brushes off on others. In other words the bee helps the flowers to swap pollen between themselves. If they don't do that, many plants can't make seeds and then they won't produce any fruit either, since the seeds are inside of the fruit. It would be impossible for us to do their job and even trying would take a long time and cost our country about £200 million every year!

Did you know...?

One out of every three things we eat needs a bee to pollinate a plant - even meat since farm animals eat plants too!



Bees pollinating a flower

"It's The Bees Knees!"

That's a saying people sometimes use to mean something is really great! But the bees knees are actually where they put the pollen they have collected. They brush it off their bodies and it sticks to some long hairs on their back legs called pollen sacs or pollen baskets.



When they are full the pollen sacs are so heavy that sometimes the bees find it difficult to take off!

The pollen is taken back to the bee hive where they use it as a food for themselves and their grubs as it is full of protein, which helps them to grow.

Buzz off!

We have seen how important bees are, but now it seems they are all buzzing off, or disappearing at least! About a quarter are already considered to be endangered - in other words there aren't too many of them left! Three out of 27 species of bumble bee have already become extinct in this country and a third of UK bee colonies have been lost in the last two years. This is known as colony collapse disorder (CCD) and could be happening for a number of reasons:



Mobile phone masts - are these confusing the bees and upsetting their sense of direction? There is a theory that radiation from mobile phones may interfere with way they navigate so that they can't find their way back to their hives. Maybe but no-one can say for sure.

Pesticides - sometimes these kill useful insects like bees as well as harmful ones. One kind called neonicotinoids have been linked to the drop in bee numbers so some countries have banned them, but not the UK - yet! There is an ongoing campaign to get them banned. There is evidence that neonicotinoids can impair the ways bees communicate with one another, their sense of smell, how they fly and do their waggle dance and how well they forage.

The varroa mite - this tiny creature is a bit like a spider which sucks on the blood of the larvae and spreads disease around the colony. It can spread very quickly because the bees live so closely together. Think about how quickly a cold might spread around your class.

Wild flowers - there used to be plenty of wild flowers in the countryside, full of pollen and nectar, but we have lost nearly all (about 98%) of our meadows. They have been dug up and replaced with plants which are no good for bees. Herbicides also kill plants the plants that the bees would forage on. Less flowers means less food.

Nesting sites - different kinds of bees like to make their nests in different kinds of places such as among long grass or in hedges or in underground holes made by other creatures like mice. Now there aren't as many of these natural places as there used to be so the bees have no-where to go.

Unfriendly gardens - many gardens have been covered with paving slabs or decking so that plants can't grow. Also, some garden flowers are very pretty but don't have much pollen or nectar inside of them, so they're no good for the bees.



The weather - in the last few years the weather has been behaving strangely and some summers have been particularly wet. This is no good for bees who cannot forage (look for their food) unless it is dry.

Bee friendly



Well it looks like our bees are having a hard time at the moment! But don't worry because there are so many simple things we can do to help them. Here're a few ideas...



Leave a small patch of your garden to "go wild" - don't cut the grass and let the "weeds" grow. Some of these weeds will be wild flowers which bees will like. It will also attract other wildlife.

Tie together a bundle of hollow bamboo sticks or half fill a plant pot with autumn leaves and place in a sheltered spot in the garden. Bees may use these as places to hibernate.

Another idea is to get a grown up to drill some holes about 6 mm deep into a piece of wood such as a log. They need to be at an uphill angle to make sure that the rain doesn't get in. Fix the log in a sunny spot on a wall or tree. In the spring time solitary bees may lay their eggs in the holes.



Foxgloves

What to plant...

Make sure that there are plants in flower throughout the year so that bees always have a supply of food. They can use their sense of smell through their antennae to tell the which kind of flowers they are.

March - April Bluebells, rosemary, snowdrops, heather, daffodils.

May - June Borrage, foxgloves, geranium, honeysuckle, lupin.

July - September

Sunflowers, cornflowers, hollyhock, lavender.



Did you know...? There are many kinds of bee and they all have their favourite kinds of flowers. Some like deep tube shaped flowers like foxgloves and can get the nectar with their long tongues. Others like flat open flowers like poppies.



Bluebells

Simple shaped flowers which the bees can easily get to the middle of are the best. They love the colours **blue**, **purple** and **yellow** and flowers should be planted in big patches so that the bees can spot them easily! If you don't have a garden, even one or two potted plants will help!

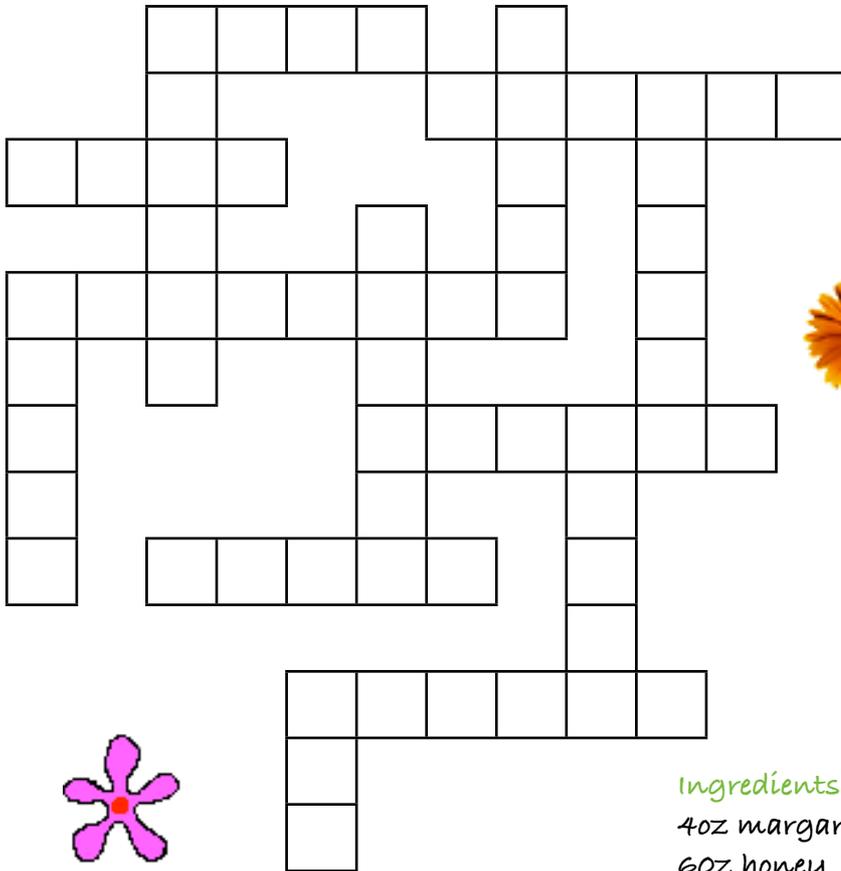
Go Organic!
Look for the organic food label on packaging - this is food which hasn't been sprayed with any pesticides or



insecticides to kill creepy crawlies. In fact, why not try and grow some of your own organic food?

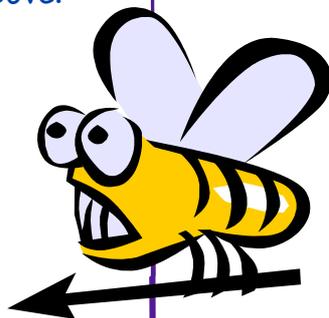
Crazy About Conservation!

This is your page so if you want to send us a poem, story or letter about the environment, sent it to us at this address: Crazy about Conservation!, YPTE, Suite 29, Yeovil Innovation Centre, Barracks Close, Copse Road, Yeovil, Somerset, BA22 8RN or e-mail it to us at... info@ypte.org.uk



See if you can fit these words into the grid above:

- 3 letters - wax
- 4 letters - buzz
comb
- 5 letters - drone
honey
queen
sting
- 6 letters - bumble
garden
larvae
pollen
waggle
worker
- 8 letters - solitary



You're joking!



Why do bees have sticky hair?
Because of all the honey combs!

Why did the Queen bee kick out the others?
Because they kept droning on and on!



What bee is good for your health?
Vitamin bee!

What did one bee say to the other one
summers day?
Swarm in here, isn't it?!

Hey Honey!

Try this delicious Honey & Sultana
Cake recipe...mmmm!

Ingredients:

- 4oz margarine/butter
- 6oz honey
- 2 eggs
- 6oz self raising flour
- pinch of salt
- 6oz sultanas
- a splash of milk

What to do:

1. Grease and line a 7" cake tin.
2. Preheat oven to gas mark 3/160 C/325 F.

3. Cream the margarine with the honey.
 4. Beat the eggs and add.
 5. Add the flour and salt and mix well.
 6. Add the sultanas and splash of milk if needed.
 7. Bake in oven for 1 1/4 to 1 1/2 hours.
 8. Leave cake to cool for 10 minutes before removing from the tin.
- For more honey recipes see www.honeyrecipes.org.uk

Here are some useful websites to find out more information:

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| Bumble Bee | www.bumblebeeconservation.org.uk |
| Bees for Kids | www.britishbee.org.uk/bees4kids |
| Soil Association | www.soilassociation.org.uk |
| Buglife | www.buglife.org.uk |
| Rowse Honey | www.beeschool.co.uk |
| Plan Bee | www.vanishingbees.co.uk |

