



Pipsqueak Hears Echoes

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Level 3



It was a cold night, but Pipsqueak was not ready to return home yet. His bright eyes sparkled as he and his friends, Mandra and Bedomi, flew around the street lights. The light drizzle did not seem to bother the insects flying around.



This suited the young insect-eating bats just fine. Pip simply loved mosquitoes for dinner. "Yum-yum-yum! I got another one!" he sang. The three friends were having a competition – who would eat the most mosquitoes in one hour!



Half an hour into the hunt, Pipsqueak had already caught a hundred and fifty insects. This was going to be a good night.



Suddenly, there was a ringing in his ears and he started to drop towards the ground.
Bedomi, a bigger bat, swung by his side.



“What’s the matter, Pip? Are you all right?” she asked.

“Nooo, my ears!” cried Pip in distress. He spiralled down to the nearest branch and hung upside down. “Ow, ow...They hurt!”



Mandra set off to fetch Pipsqueak's mother and Bedomi stayed behind to comfort Pip. Pipsqueak was feeling very strange indeed. He felt dizzy. His ears twitched and every movement was painful.



Bedomi used her powerful ears to scan the air for Pipsqueak's mother. She was worried that Lyra, the bat who fed on birds, frogs, reptiles and injured bats, might attack Pip. She covered him with her furry wing.

Soon, Mandra returned with Pip's mama who took him to the doctor.



Doctor Ella looked at his ears closely. She shook her head, and said, "Your ears have become too cold, Pip. Don't you know that we Pipistrelles don't do well in the rain?"

Pipsqueak started to mumble in protest, "It's just drizzling, not raining..."

But the doctor slipped some medicine into his mouth for the pain. Then she pulled out a chart.

"Our ears are very important, Pipsqueak, because we use echolocation to find food. Do you know what that means?"



Pip shook his head. He was already feeling a little better.

“We insect bats send out signals through our noses. These signals bounce off objects and become echoes. And the echoes come back and tell us what that object is,” the doctor continued.

“Oh, yes! The echoes are all different. If they show that there’s an insect, we catch and eat it. But if it is a tree or a wall, we avoid flying into it,” said Pip excitedly.





"Mama says our ears are like radars!" Pipsqueak was no longer in pain, and was enjoying this little lesson.

"Yes!" agreed Dr. Ella. "Humans use radars in airports, ships and submarines to find objects. And we use our senses to find food. Our noses and ears are so powerful that we don't really need to use our eyes too much. That's why we have such small eyes, you know."

“Is that why humans shriek when we go near them? They think we are blind and may get stuck in their hair, ha ha! Thank you, Doc,” said Pip.

“You are welcome, Pip. Now, remember, no more hunting tonight. You can beat your mosquito-hunting record tomorrow,” said Doctor Ella, grinning.





Pipsqueak and Mandra

Pipsqueak and Mandra are tiny bats – their scientific names are *Pipistrellus tenuis* and *Pipistrellus coromandra*. They live close to humans – the cracks of buildings, below roof tiles, under window eaves, behind photo frames and in tree holes.



Bedomi

Bedomi is a 'Lesser-woolly Horseshoe Bat' found in the forests of India and Sri Lanka. Its scientific name is *Rhinolophus beddomei*.



Lyra

Lyra belongs to the family of bats called *Megaderma **lyra***. These carnivorous bats are also known as 'False Vampire Bats'.



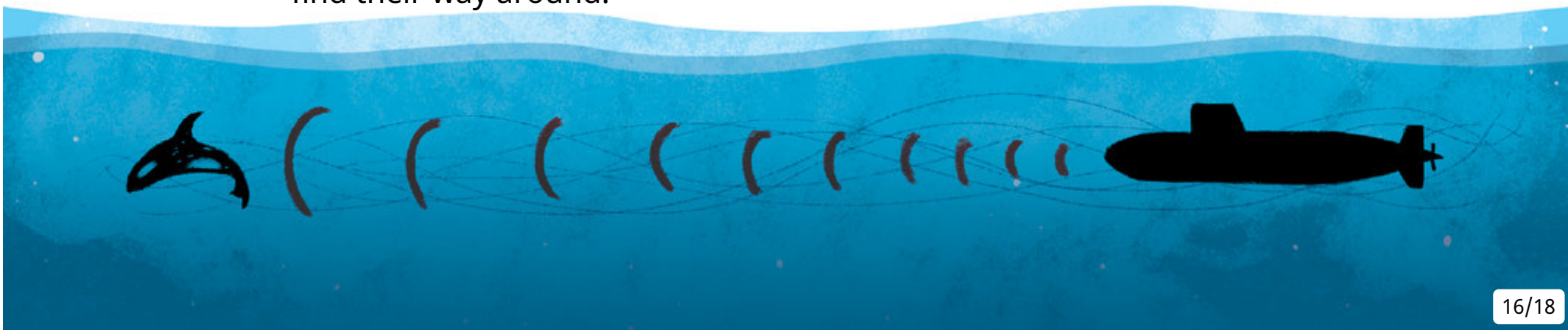
Doctor Ella represents all *Pipistrellas*, a genus of bats.

We can't hear them

Bats make clicking sounds that humans cannot hear. Scientists use a detector to listen to the high-pitch call of a bat on a computer.

The sound waves from bats bounce off solid objects. These create echoes. Just like Pipsqueak, radars in submarines also use echolocation to navigate underwater. In seawater, sound travels over four times faster than in air.

Amazingly, some people who have lost their sight have gained the ability to use their sense of hearing more and use echolocation to find their way around.





We need our bats

Bats are the only flying mammals. There are 1,116 species of bats, and they all fall under the order Chiroptera. This word is Greek for 'hand wing'. There are two kinds of bats - insect eaters and fruit eaters.

Bats are found almost all over the world. In the Western Ghats alone, where Pip and his friends play, we know of 52 species.

Bats help keep pests under control, and in spreading seeds so that trees can grow.

Unfortunately, bats are at the risk of extinction. This is partly because people mistakenly believe they are pests. Scientists make Red Assessment Lists that tell us which animals are getting extinct and how we can save them.



1. *Rhinolophus beddomei* - Photo credit: Dr. Sanjay Molur
2. *Pipistrellus coromandra* - Photo credit: Dr. Mike Jordon
3. *Megaderma lyra* - Photo credit: Bhargavi Srinivasulu
4. *Pipistrellus coromandra* - Photo credit: Aditya Srinivasulu

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'Pipsqueak Hears Echoes' was originally published on StoryWeaver by Pratham Books. The development of this book has been supported by CISCO. www.prathambooks.org Guest Editor: Aravinda Anantharaman

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The development of this book has been supported by CISCO. www.prathambooks.org

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Pipsqueak Hears Echoes

(English)

Pipsqueak is an insect bat. He loves to eat mosquitoes for dinner. Sometimes, he and his friends have contests to see who will catch the most. Because it's fun. And easy. What makes bats like him such great insect hunters? Echolocation, says Doctor Ella. She's telling young Pip all about it. Let's listen in, shall we?

This is a Level 3 book for children who are ready to read on their own.



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