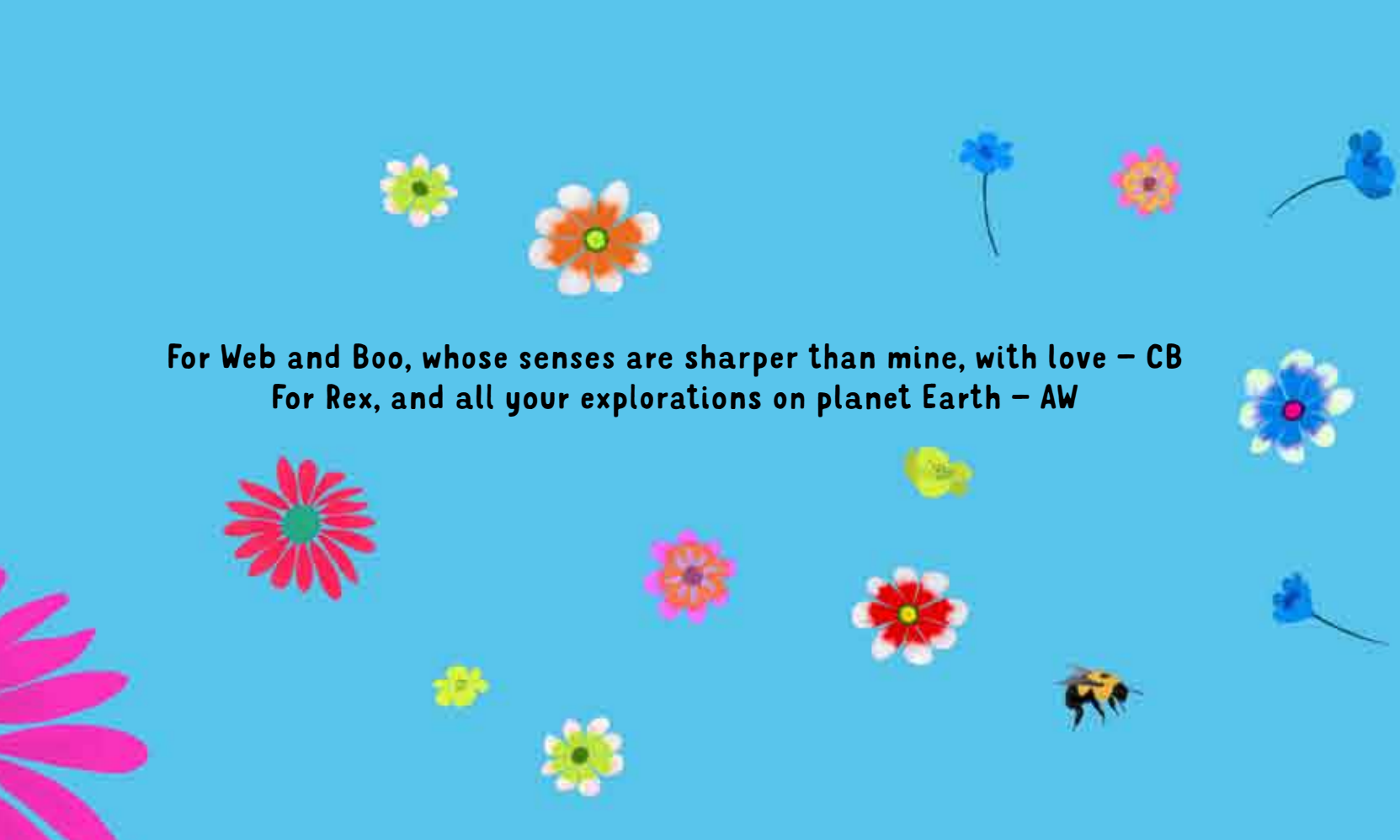




For Web and Boo, whose senses are sharper than mine, with love – CB
For Rex, and all your explorations on planet Earth – AW

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Invisible Nature

A Secret World Beyond Our Senses

Written by **Catherine Barr**
Illustrated by **Anne Wilson**



Otter-Barry
BOOKS

Invisible Nature

Invisible sights, silent sounds,
odourless smells and mysterious forces

Have you ever wondered how dolphins find friends,
vampire bats zoom in on victims, why reindeer food glows in the snow,
or even how a duck-billed platypus finds its worm?

These animals and many others use light, scent, sound
and forces beyond our human senses to survive.
But though we cannot feel, see, smell or hear their secret world,
we use it every day in ways that might surprise you.

In each section, discover first how animals use these
mysterious powers, then find out how people have learned
to use them too. See how Invisible Nature affects you!

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Follow me to
find out more!

Day Glow and Shiny Colours

The secret world of ultraviolet

Ultraviolet (UV) light waves are powerful rays from the sun that can damage many forms of life on Earth. Luckily a blanket of gases shields our planet from most of the sun's UV radiation. We cannot see UV light but some animals can, and they rely on it for their survival.

Explore ultraviolet in the Canadian Arctic.

Lichens glow in UV, making it possible for hungry reindeer to find this precious food in barren Arctic habitats.

UV colour and patterns on plants help bees and butterflies find nectar, helping pollination take place.

Sweat, saliva and urine glow in UV, helping rats and other animals to trace their prey and survive in deep winter snow.

Butterflies use ultraviolet spots on their wings to send secret signals to one another and show off to attract mates.

Sockeye Salmon spot their prey, plankton, when it shows against UV light in shallow water.

Electromagnetism... in our lives

We use electricity to power our modern lives but we also use the electromagnetic force every day in all sorts of surprising ways.

Compasses use magnets... to help us find our way by pointing North and South in the Earth's magnetic field.

Hospitals use magnetic forces... to make 3D pictures of the insides of our bodies with a Magnetic Resonance Imaging (MRI) machine.

Electric doorbells and buzzers use magnets... to make familiar noises in our homes and schools.

ATTRACTIVE FACTS

- Ⓒ Microwaves, UV, infrared and visible light are all electromagnetic energy waves.
- Ⓒ The flow of electric currents is called electricity.
- Ⓒ The Earth's magnetic force is strongest at the North and South poles.

Loudspeakers and headphones use magnets... to power our music and play tunes out loud.

Recycling centres use magnets... to attract steel cans so they can pull them out of the rubbish for recycling.