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# Jr. Animal Scientist

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# THE HIDDEN WORLD OF BURROWING ANIMALS

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# The creatures under your feet!

What do rabbits, foxes and ants have in common? These animals live in holes in the ground!

Why live in the dirt? Some animals, like moles, find their food underground. Others use their holes as safe hideouts from predators or as cozy nurseries to raise their young. When an animal is good at digging and adapted to living underground, we call that animal **fossorial.** Animals like hedgehogs, ground squirrels and burrowing owls are fossorial. They live in burrows but come above ground to find food. Some bees and wasps are even fossorial!

Other burrowing animals are **subterranean.** This means they spend all their time underground. Worms are subterranean animals!

Let's go for a dig today to learn about the world of animals that live beneath our feet!

**Groundhogs live in burrows and come out to find food. Their burrows protect them from predators like hawks.** Photo: Shenandoah National Park

## Fun Fact!

Some underground animals, like the Cape mole rat, communicate to each other by "drumming" on the sides of their burrows. The vibrations from the drumming can travel through the soil and be heard by other Cape mole rats far away.

**Cowboys sometimes called burrowing owls “howdy birds” because they appeared to nod their heads in greeting when a person rode by.**

**Photo by Lori Smith**

# Word Watch

## Look for these terms in this issue of Jr. Animal Scientist

**FOSSORIAL:** A type of animal adapted to digging and living mostly underground.

**SUBTERRANEAN:** Living underground or “below the Earth.”

**NOCTURNAL:** An animal that sleeps during the day and is active at night.

**HIBERNATE:** When an animal spends the winter in an inactive state. The animal slows down how its body works and can often go without eating.

# Why live underground?

## To stay cool

Animals that live in hot places need a way to stay cool. One way to do that is to live underground during the day! Animals like kangaroo rats, burrowing owls, and even aardvarks are **nocturnal.** They sleep under the hot ground during the day and then come out to find food at night.

**The nocturnal kangaroo rat is native to the deserts of Southern California**

**Photo by Emily Cate/USFW**

## To stay safe

Imagine being a small animal like a squirrel! As you run around to get food, a predator like a hawk could swoop down at any time. To try to stay safe, animals like squirrels, rabbits, and prairie dogs dig burrows that they can duck into if danger is nearby. The burrows are also a safe place for animals like foxes to raise their babies.

**Prairie dogs will call to each other as a warning when a hawk or another predator is nearby**

**Photo by John Carr. USFWS Mountain-Prairi**

## To catch food

The trapdoor spider uses its burrow as a way to catch food. It uses spider silk to make a little door to the burrow and hide itself. The spider waits at the entrance to its burrow for an insect to come by. Then it springs out and catches dinner!

# How animals adapt

Living underground can have some interesting consequences. Some animals, like moles, spend so little time above ground that they barely see the light. This has led them to develop very weak eyesight—seeing the things around them is just not important. Instead, many burrowing animals have a good sense of smell. By smelling their surroundings, burrowing animals can sense more of what's around them in the dark.

**Moles also have very large paws to help them dig!**
**Image: iStock/ Tramper2**

# How we study burrowing animals

Scientists need to study burrowing animals in order to learn more about important ecosystems! But how can they see these animals when they're hidden underground?

One way to study burrowing animals is to set up motion-activated cameras that turn on when an animal runs by. Researchers can set these cameras up at the entrances to burrows to see the daily comings and goings of animals like foxes and groundhogs.

To get the full view of the inside of a burrow or a system of underground animal tunnels, some scientists point laser beams into the ground! This technology is called LiDAR. The laser beams work sort of like x-rays and they can reveal a whole map of underground burrows!

Some underground animals are too small for us to see! Scientists can study these animals using a tool called DNA sequencing. DNA is the genetic "code" that makes every animal unique. Scientists can take a scoop of soil and look for DNA from microscopic animals like worms and spiders! In fact, DNA sequencing has shown that even a small soil sample from the rainforest can contain more than 80 kinds of very small roundworms, called nematodes!

## Fun Fact:

Snapping turtles burrow into river banks to **hibernate** in the winter! Many turtles return to the same riverbanks to hibernate year after year!

**Photo by Courtney Celley/USFWS**

# Activity: Design a burrow!

Some burrows are just small holes. Other burrows are much more complicated! In fact, African animals called naked mole rats are known for digging a system of tunnels to other “rooms” of the burrow.
**Grab a pen or a pencil and design your own burrow!**

Image: iStock/ Okea

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