

Birds on the Move: Tracking Our Feathered Friends!



Many birds fly south from the northern U.S. and Canada to wintering grounds in the southern U.S., Caribbean and Central and South America, sometimes covering thousands of miles. But have you ever wondered how scientists track birds' movements *across the globe*?

Scientists use **bird banding** and various **tracking devices** to figure out the amazing routes and timing for most birds that migrate.



Bird banding is when scientists carefully place a small, lightweight metal or plastic ring, called a band, on a bird's leg. This helps them keep track of the bird's movements, like where it goes and how long it lives. When the bird is spotted again, the band's number can tell scientists who the bird is, and where it has been seen before.

It's like if you had a pet cat and wanted to know if it visited your neighbor. Your neighbor could use the cat's collar and name tag to identify it and tell you if your cat came to visit.

There are different types of tracking devices that scientists use to track birds' movements too, like **PIT tags**, **radio tags**, **light-level geolocators**, and **satellite tags**. Some of these devices look like tiny backpacks when they're attached to the bird. But not all of these gadgets work in the same way. Go to page 5 to learn more!



An American Kestrel with a colored leg band.
Photo by Jeff Strong (www.bearriverblogger.com)

Radio telemetry helps scientists find out where birds and other animals are using radio signals. It has three main parts: a radio tag, an antenna, and a receiver. The tag is a small device that the bird wears to send out radio signals. The antenna picks up these signals, and the receiver turns them into beeping sounds. When the receiver gets closer to the bird, the beeps get louder, helping scientists know where the bird is so they can follow it.

This is especially useful during important times in a bird's life, like the breeding season when they move between their nests and different places.

But what if you wanted to track birds across islands and continents?

That's where automated telemetry comes in! Instead of just one person following a bird, there are special listening stations set up in different places around the world as part of the Motus Wildlife Tracking System. Some of these stations are in the Caribbean, and they can automatically pick up signals from the bird's transmitter. These stations are placed in areas where birds live, and they have antennas to catch the signals.

When a station picks up a signal, it records information about where the bird is and when it was there. This way, scientists can collect lots of data without having to chase the birds all the time.



A radio tag attached to the back of an American Kestrel.
Photo by Kestrel Land Trust (www.kestellandtrust.org)

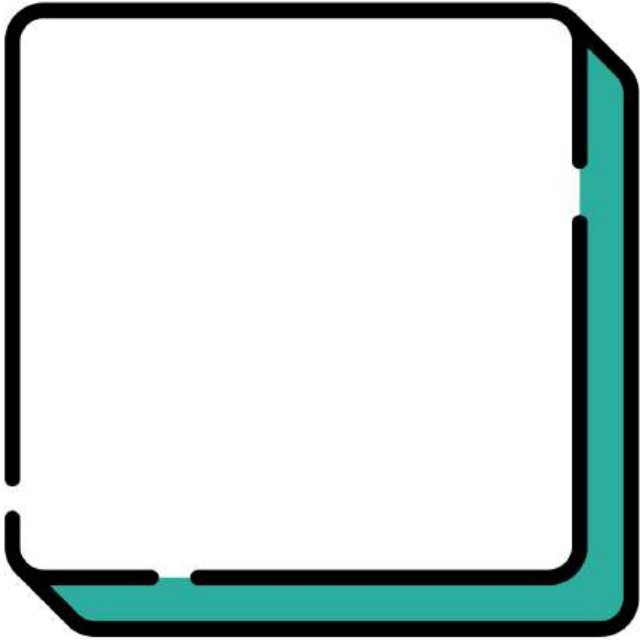
Signal Seeker: Can You Track An American Kestrel?

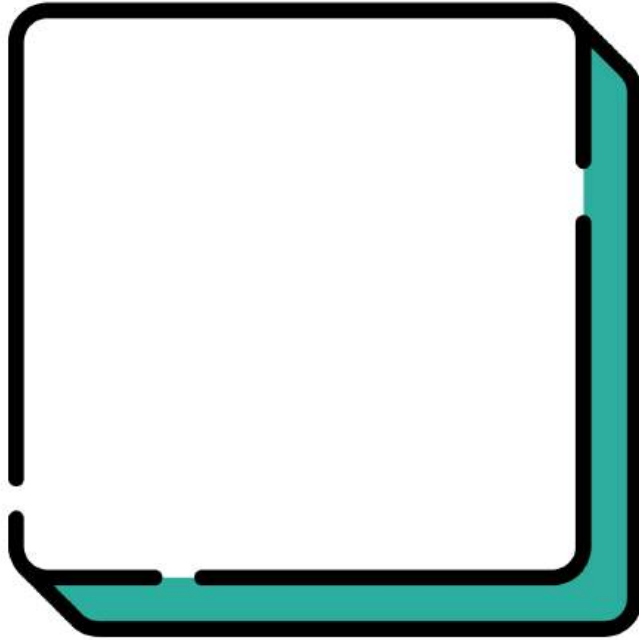
In this activity, you're going to use radio telemetry to track the movements of an American Kestrel. Your task is to draw and label the main parts of the radio telemetry system on page 4.

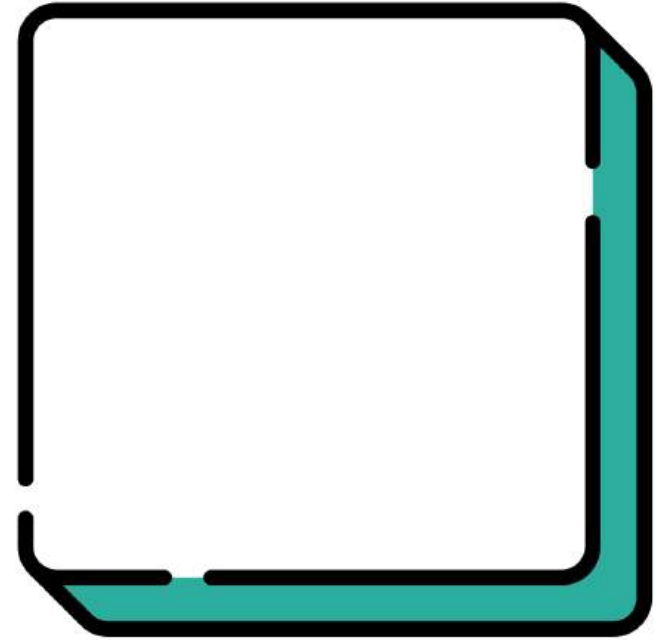
1. Draw the **Radio Tag**: Show what the small device looks like when attached to the American Kestrel.
2. Draw the **Station**: Don't forget the antenna which picks up the signals from the tag.
3. Draw the **Receiver**: Where the data from the listening stations is processed and analyzed.

Make sure to include labels for each part of your drawing and provide a brief description of what each part does. *With the help of an adult, you can search the internet for photos of each part to help you understand what they look like and learn about their function.* Have fun with your drawings!

Signal Seeker: Tracking An American Kestrel







PIT Tag



An electronic microchip that can be glued to a bird band, attached to a bird's leg or inserted surgically under a bird's skin. PIT tags require no batteries, so they can last for a bird's entire life! But the birds must be very close to be picked up by the station.

It's like scanning a bar code that's on the bird!



Radio Tag



A small device that is attached to a bird. It sends out radio signals that can be picked up by special receivers on the ground.

It's like giving the bird a walkie-talkie so scientists can hear where it is!



Light-level Geolocator



A small device that scientists attach to a bird. It works by measuring the amount of light the bird experiences during the day and night. By keeping track of these light levels, scientists can figure out the bird's location over time.

It's like giving the bird a special flashlight that helps researchers know where it has been!



Satellite Tag



A small device that is attached to a bird. The tag sends signals to satellites in space, which then send that information back to researchers on the ground. This helps scientists see where the bird is flying, even if it goes to faraway places.

It's like giving the bird a high-tech GPS that lets scientists know exactly where it is!

