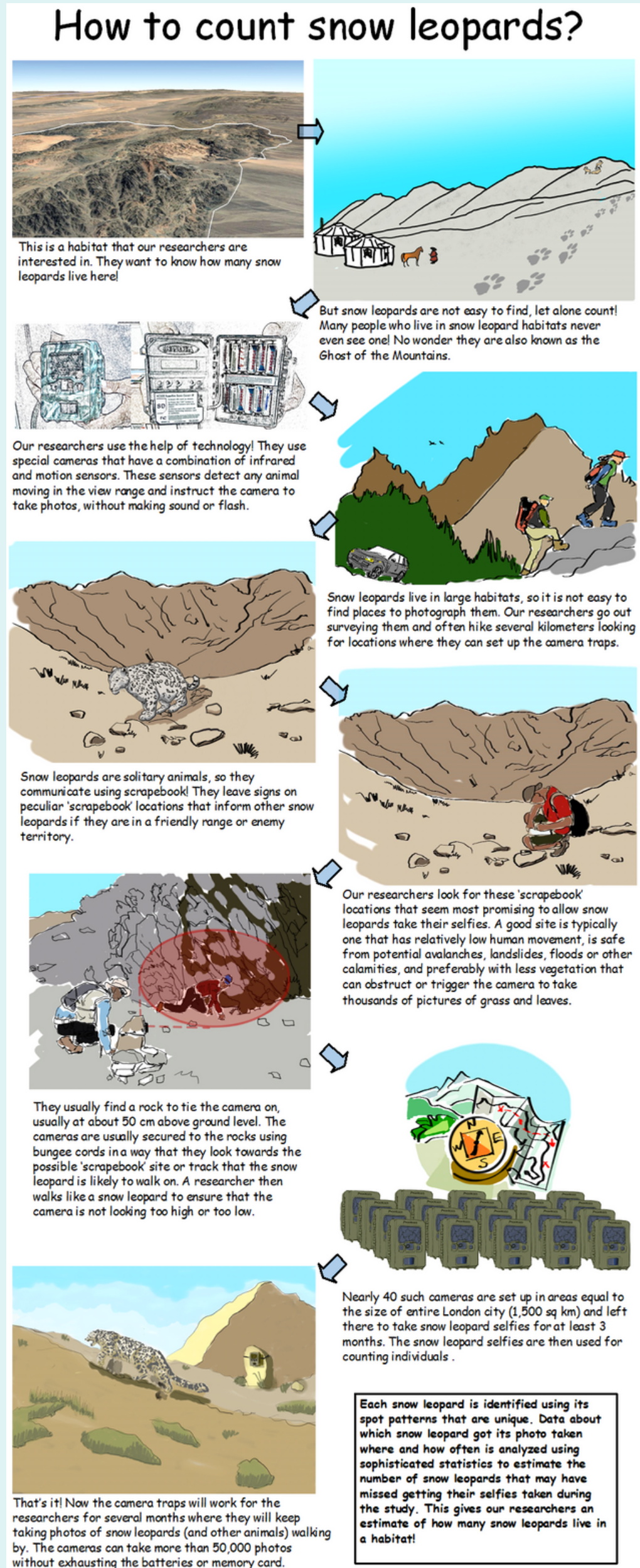


Read the “How to count snow leopards?” comic strip that explains how the Snow Leopard Trust deploys remote sensor cameras to learn more about snow leopards in the wild. After reading with your children, you can help them build their own camera trap. This can be done inside or outside.

How to count snow leopards?



This is a habitat that our researchers are interested in. They want to know how many snow leopards live here!

But snow leopards are not easy to find, let alone count! Many people who live in snow leopard habitats never even see one! No wonder they are also known as the Ghost of the Mountains.

Our researchers use the help of technology! They use special cameras that have a combination of infrared and motion sensors. These sensors detect any animal moving in the view range and instruct the camera to take photos, without making sound or flash.

Snow leopards live in large habitats, so it is not easy to find places to photograph them. Our researchers go out surveying them and often hike several kilometers looking for locations where they can set up the camera traps.

Snow leopards are solitary animals, so they communicate using scrapebook! They leave signs on peculiar 'scrapebook' locations that inform other snow leopards if they are in a friendly range or enemy territory.

Our researchers look for these 'scrapebook' locations that seem most promising to allow snow leopards take their selfies. A good site is typically one that has relatively low human movement, is safe from potential avalanches, landslides, floods or other calamities, and preferably with less vegetation that can obstruct or trigger the camera to take thousands of pictures of grass and leaves.

They usually find a rock to tie the camera on, usually at about 50 cm above ground level. The cameras are usually secured to the rocks using bungee cords in a way that they look towards the possible 'scrapebook' site or track that the snow leopard is likely to walk on. A researcher then walks like a snow leopard to ensure that the camera is not looking too high or too low.

Nearly 40 such cameras are set up in areas equal to the size of entire London city (1,500 sq km) and left there to take snow leopard selfies for at least 3 months. The snow leopard selfies are then used for counting individuals.

Each snow leopard is identified using its spot patterns that are unique. Data about which snow leopard got its photo taken where and how often is analyzed using sophisticated statistics to estimate the number of snow leopards that may have missed getting their selfies taken during the study. This gives our researchers an estimate of how many snow leopards live in a habitat!

That's it! Now the camera traps will work for the researchers for several months where they will keep taking photos of snow leopards (and other animals) walking by. The cameras can take more than 50,000 photos without exhausting the batteries or memory card.

Illustrations and text by Koustubh Sharma. Activity design and layout by Jennifer Snell Rullman and John Klees.

Materials

Needed:

- Cardboard: tissue box, shoe-box, tea or cereal box, or any other scraps of cardboard will work
- Tape
- Markers or crayons
- Rope, string, or yarn
- Paper or journal for documenting your research!

Activity:

Build your own camera trap

Build your camera:

Find materials around the house such as an empty tissue box, empty tea or cereal box, shoebox, or other pieces of cardboard and allow the children to build their own idea of a camera. Your camera can be very simple, even just a box itself with some coloring on it, or it can be more complex construction using tape, glue, markers and other creative elements. It's really up to you!

Place your camera trap:

It's called a 'trap' because the camera is placed somewhere hidden where it won't be seen easily or at least won't disturb whatever you are hoping to 'capture' on your camera. When placing your camera, try to answer the following:

Where would you put the camera trap?

- Watering hole = faucet - someplace the animal needs to get water to drink
- Scratch/spray = bathroom - someplace that the animal goes often to mark their territory
- Hunting perch = kitchen - someplace that the animal goes to look for food
- Den or cave = bed or couch - someplace the animal might sleep or rest

How should you set up your camera trap?

- Find a rock or tree or stump if outside, or a table leg, chair leg or safe location in your house
- Tie the camera on and make sure it is pointing in the correct direction
- Test the camera height - have someone be the snow leopard (or fox, ibex, pallas' cat) and crawl in front of the camera.
- Pose for the camera to make sure it is going to get the picture you want.
- Modify the placement: If you only get the top of your head in the photo or just the feet, then find a small rock or stick or lego to adjust the direction the camera is pointing
- Set the camera to ON and walk away - Great job!

Record your findings:

We set camera traps to help us learn more about the animals and how we can help protect them. Once we get photos, we need to record information about each of the photos and determine how many 'individuals' we are seeing. Say we have 10 pictures of snow leopards on the camera, we need to determine if those photos represent **10 different individual cats** or maybe we have 10 pictures of **only 1 individual cat**. Maybe we are seeing 2 different individual cats with 5 pictures each. We have to look very closely at each photo to see if we can tell them apart and see if the photos are the same cat or different cats. You can do the same.

What did you capture on your camera trap?

After leaving the camera for a bit of time, record what you see. For your camera, you can imagine what animals you might have captured on your camera, or you can look around and see what animals you observe in your yard or house with your naked eye and draw photos of each animal that you **imagine** and/or see. These drawings can be put in a journal as the 'photos' your camera captured! (Additionally, if you get permission from your parent/caregiver you could use a phone set on video mode/photo timer in a secure location to record actual images).

Journal activity

- Draw the photos of each of the animals you think you captured.
- Did you get quality photos of the entire animal's body?
- Draw some 'lower quality shots' - maybe on one photo, the animal was too close to the camera and all you can see is one eye or just fur - draw it!
- Maybe one photo is only of some mysterious feet - can you identify the feet - draw it!
- Maybe one photo shows just a strange body part like the tip of a tail, the edge of a bird's wing, or something. Draw it!
- For the photos where you can see the entire animal, draw them and see if you can find distinguishing characteristics that make it different from others. For example, does it have a scar? Does it have a special spot that looks like an S on its left side? A small nick on the right ear?
 - Give each animal a name or number. This will let you start to see how many of that animal there are in your area. (For example, if you name one animal Charlee, you can see if you got more than one photo of Charlee)
 - Does it have babies with it? Draw the babies if they come in front of the camera trap.

Send us your data!

Parents/Caregivers - if you are comfortable sending us a photo of the homemade camera and the completed activity, we would love to see them. Please send to learn@snowleopard.org.

Please send only what you are comfortable with us sharing in our newsletter or website. We will not sell to or share photos with other organizations or companies and we will not share last names.

Thank you! We hope you had fun with this activity. Thanks for being part of our snow leopard team!