



SMARTPHONE SCIENTISTS

Summary



During the *Arctic Adventures: Polar Bears at Play* Virtual Field Trip, your family witnessed how creativity, imagination, and a sense of play can be paired with technology to solve environmental problems in the Arctic. In this activity, your family will apply the same skills as you use a smartphone to collect data and solve problems around your own home and community. After learning about the term *Citizen Scientist*, you'll explore your home, your neighborhood, or a community park together and you'll use various features of your smartphone to capture what you see. Once you return home, you will reflect on your findings and consider how you can apply them to help the world around you!

Materials

- One or more smartphones
- *Citizen Scientist Family Checklist* (see page 4), and a pencil
- Model materials: paper & pencil or household supplies

Get Started

Has your family ever heard of the term *Citizen Scientist*?

Citizen scientists are everyday people (kids, teens, and adults) who help real scientists learn about the world! By observing the world around them, they help collect important information that scientists could use to understand nature and make our planet a better place. Citizen scientists



FAMILY ACTIVITY

can also analyze the information they collect and use it to help the environment and community in which they live.

During the Virtual Field Trip, you saw some of the ways that technology is helping scientists learn more about the Arctic. You were also challenged to do your part to help the natural world around you.

What technology does your family already have that could be used to make citizen scientist observations?

Explore

Today, let's use technology (a.k.a. a smartphone!) to learn more about the world.

Take a look at the Citizen Scientist Family Checklist and review the instructions together. If needed, scroll through your smartphone and figure out how to accomplish as many of the bullets as possible.

Then, head outside as a family with your smartphone(s), checklist, and a pencil in hand. You can go for a walk, stay in your backyard, or even explore a nearby park or greenspace. No matter where you go, be sure to take your time, mark your observations on your checklist, and share the smartphone so each family member can collect as much data as possible!

Regroup

Once you're back home, review the data that your family collected. Reflect and discuss some or all of the questions below:

- Did using technology, as opposed to a notebook, help you make stronger observations? Why or why not?
- What observations did your family capture well? Which observations should your family have tried to capture in a different way? Why?
- Based on the observations you collected, what is one action your family could take to help your community better protect the environment?



Create

Imagine that you could create a brand-new gadget to help citizen scientists like your family better observe the world. Think big! What would it be? Sketch a picture of your idea or build a model. Be sure to include all of its most important parts.

Then, share it with us using the QR code below!

Remember: The best innovations come about as a result of play and exploration. So never stop observing, exploring, or enjoying the world around you as you strive to make it a better place.

Share your findings with others!

SciStarter.org relies on people everywhere to help advance scientific research. Visit the website as a family and see if your findings could help a current citizen scientist project!

Share what you created!

Upload pictures of your sketches and models to <https://www.lego.com/en-us/sustainability/buildthechange/challenges/discovery/upload?CMP=EMC-LCE>

UPLOAD HERE



Citizen Scientist Family Checklist

Directions: As you take a walk outside together, use a smartphone to capture the observations listed below. Try to use as many different observation tools as possible! Draw a line between the observation you make and the observation tool you use so you can remember where to find each observation later.

Observations
• Garden
• Bird
• A human action that positively affects the environment
• Animal
• Clouds
• Water source
• Tall tree
• Large leaf
• Insect
• A human action that negatively affects the environment
• Your walking route
• Nature sounds
• _____
• _____
• _____
• _____

Smartphone Observation Tools
Photographs: Take pictures to capture still details of animals, plants, and landscapes that you encounter.
Sound Recording: Record specific nature sounds, such as bird calls, the rustling of leaves, or water flowing.
Video Recording: Capture moving creatures or things. This can also be used for slow-moving phenomena, like the movement of clouds or shadows.
Time-Lapse Videos: If you have time, and a safe place to prop your camera, this feature can observe slow changes in nature.
GPS Tracking: Record your walk. You can even mark special spots of interest that you may want to revisit.
Magnifying Apps: Some smartphones can be used with attachable macro lenses or magnifying apps to observe things closely, like insect details or the texture of leaves.
Note-taking: Type your observations into a notes app, being as detailed as possible.
Voice Memos: Speaking into your phone might help you make more detailed observations. It also allows multiple family members to easily join in!

