

Animals and Their Habitats

Are you a Science teacher who is keen to provide more engaging and active learning experiences for your students? In this lesson plan, we will help you to teach your students about animals and their habitats through technology and STEAM. Let's start!



Subject

Science



Level

Elementary



Objective(s)

- Define the term "habitat".
- Identify different animals' habitats.
- Hypothesize, design and test a means to keep a hand warm in icy water.
- Identify personal, daily actions that protect the environment and preserve animal habitats.



Extension(s)

If desired, extend the learning with **E-Learning For Kids "Science World"** content found on Thaki laptops and online. Suggestions include:

- Grade 6; North Sea - [Our Negative Impact on the Environment](#) and [Care for our Environment](#)

Alternatively, use the **World's Largest Lesson** "Wild for Life" lesson ([English link here](#)) to guide students through discovering endangered species and exploring how to protect animals and their environments.

Material and Resources:



Teacher

Thaki laptop

Optional, if available:

- Projector
- Speakers
- USB cable



Students

Thaki laptops

Lesson Activities:

Introduction (Warm-up activities)

🕒 **Duration: 5-7 mins**



Teacher
Activities

Start the class by identifying the objectives of the session then pose some previewing questions to your students:

- What are your favorite animals?
- What does your favorite animal look like?
- What special features do those animals have?
- Where do they live?

If possible, generate a list or chart on the board as you take student responses. Then, ask students to identify any similarities that might help to group the animals such as, animals with fur, animals that fly, animals that live in the ocean.

Introduce the term, “habitat,” and ask students to define it. Tell students they will now watch a video to learn more about animal habitats.



Student
Activities

Respond to the questions and group discussion.

Body

🕒 **Duration: 35 mins**



Provide a few key points or questions for students to focus attention on during the video. Example points or questions could include:

- What is the word used for an animal's home?
- Why do certain animals live in certain homes?

If an internet connection or mobile hotspot is available, use a projector, speaker or laptop screen to play the video “**Differences Between Animal Habitats**” ([English link here](#) - [Arabic link here](#)).

If an internet or mobile hotspot connection is not available, download the video on Thaki laptop or your mobile device ahead of time and play it in class by tethering with a USB cable as needed.

After watching the video, lead a discussion with students on the key points or questions like:

- Which habitat is best for animals that swim and need water? (Ocean habitat)
- Which animals can survive in the Desert habitat and why? (Camel and falcon because they need very little water)
- Which habitat can a polar bear live in and why? (Polar habitat, because it is very cold with lots of ice and the food polar bears like can be found there)
- What other habitats do you know of? (Forest, Rainforest, Mountain, etc.)

Use LibreOffice Impress to create a presentation on the main points of the lesson according to your objectives such as:

- What are the different types of habitats?
- How can a habitat be good or bad for an animal's survival?
- What happens when animals' habitats are destroyed?

Depending on the number of students in class and the number of laptops available, have students work on laptops individually, in pairs, or in small groups on any of the following activities:

Activity A) Using a Thaki laptop and a projector if available, model how to open the program **E-Learning for Kids “Science World”** and locate the content relevant to the student's grade level and the instructional objectives. Suggestions include:

- Grade 2; Pacific Ocean - [Animals & Plants in their Habitats](#), [Habitats & their Properties](#)
- Grade 4; Caribbean Sea - [Animal Habitats](#), [What are Common Habitats](#), [Animal Species and Habitats](#), [Sea Animals and their Habitat](#)
- Grade 6; Arctic Ocean - [Animal Adaptation](#), [Habitats](#), [How are Animals adapted to their Environment](#)

For a full description of each activity within the sections listed above, refer to the [E-Learning for Kids - Science World content guide available here](#).

Activity B) Divide the students into groups, give each group a list of animals, then ask them to draw the animals as well as their habitats using one of the drawing programs on Thaki laptop, such as **Tux Paint** or **KolourPaint**.

Activity C) Using a Thaki laptop and a projector if available, launch a game created using [Flippity](#) such as Matching or Quiz Show and have students note answers in LibreOffice Writer. Adapt this option for independent practice by saving the Flippity activity for offline use and loading it onto student laptops with a USB stick.



Distance Learning

This lesson can also be adapted for distance learning by sending all instructional information, images, and / or links via Whatsapp (or any other communication platform). Students can respond to discussion questions within the class group as well as share photos or screenshots of their certificates of completion, drawings, or Flippity game boards as relevant to the selected activities.



Student Activities

- Utilize LibreOffice Calc to rank the causes of water pollution.
- Complete the selected activities on the laptop.

Closure

 **Duration: 10 mins**



Teacher Activities

Ask students to use a digital format such as LibreOffice Writer or Impress to demonstrate understanding / mastery of the lesson's objectives. Suggestions include:

- Given a brief list of animals, students type the name of the habitat those animals live in.
- Given a habitat, students type as many animals as possible who live in that habitat and state why those animals are able to survive there.
- "Create your own Habitat;" students invent a new habitat and specify its characteristics such as temperature and terrain. Students then name the animals that could survive in that habitat and explain why those animals are able to survive there.



Student Activities

Demonstrate understanding by engaging with the specified activity.

STEM and SDG13 Session

In this session, students will do a STEM experiment to learn more about how arctic animals stay warm in a polar habitat. The learning links to SDG 13 on Climate Action by exploring how climate change is affecting animals' habitats and identifying actions that students can take to help protect the environment.

Material and Resources:



Teacher

Thaki laptop

For the STEAM activity:

- Large bowl of cold water
- Ice cubes
- Plastic bags, or Latex gloves
- Shortening
- Newspaper or cotton
- Sand, cornmeal, or flour
- Timer, using a mobile phone or the Clocks app found on Thaki laptops



Students

Thaki laptops

Lesson Activities:

Introduction (Warm-up activities)

 Duration: 10 mins



Teacher Activities

Tell students that today's activity will demonstrate how arctic animals, such as polar bears, stay warm with **The Blubber Glove Experiment**:

Begin with a large bowl of water that has been kept briefly in a freezer so it is extra cold then add some ice cubes.

Ask a few students to place their bare hand into the icy water to get an idea of how cold the water really is.

Next, put your hand inside a plastic bag or latex glove and ask students if they think this will help your hand to stay warm in the icy water. Test it and invite some of the students to test it as well. Add a second plastic bag or latex glove and ask students if they think this will help. Emphasize the fact that more insulation is needed.

Introduce the materials, 1.) shortening, 2.) newspapers or cotton, 3.) sand, cornmeal or flour, and tell students that they will do “The Blubber Glove” experiment to test which material is best at keeping a hand warm in the icy water.

Model how to make a Blubber Glove by taking one bag or glove, partially filling it with one of the materials, putting another bag or glove on your hand, and putting your covered hand into the materials bag to show the layers of insulation.



Observe the modeled experiment and pose any questions.

Body

 Duration: 35 mins



Divide the class into groups according to the number of students and the amount of materials available. There should be one or more groups to test the shortening, one or more groups to test the newspaper or cotton, and one or more groups to test the sand, cornmeal or flour.

Give each group the relevant materials and a fixed amount of time to create their Blubber Glove designs. While students are working, make sure the bowl of water stays cold by putting it back in a freezer or adding ice cubes as needed.

After time has passed, ask groups to make a hypothesis, or an educated guess, on which material they think will work best.

Tell students that making a hypothesis is an important part of the scientific process, as is observing and recording the results of the experiment. To do this, scientists must take note of everything, so the class will too.

Use LibreOffice Calc to create a spreadsheet similar to the below and if possible, project or show the spreadsheet on your laptop screen and fill it in as the class runs the experiment.

	Group 1	Group 2	Group 3
Hypothesis			
Material tested			
Time in water			

Run the experiment by bringing one group at a time to the front of the class with their Blubber Gloves. Have a student from the group submerge their gloved hand into the water. Time how long the student can keep their hand in the water and be prepared with a maximum time such as 3 minutes in order to keep the experiment moving. Track the results in the spreadsheet.

Continue to run the experiment with other groups and time permitting, allow all students a chance to experience having their hand in the water wearing their group's glove, another group's glove, or simply with a bare hand.



Distance Learning

Alternatively, send instructions for the experiment to students via Whatsapp (or any other remote communication platform) and ask them to photograph or film their experience.

Debrief by explaining to students that this experiment helps to show how arctic animals like polar bears, keep warm in icy conditions thanks to the special layer of insulation in their bodies called 'blubber' or fat. Tell students that polar bears' bodies have a layer of blubbery fat that can be as much as 51 centimeters or 20 inches thick. Model the size for students with your hands to illustrate the point.

State that like polar bears, every animal has special features that help them live in their environment. Because of those features the animals often cannot survive elsewhere. Ask students what they think can happen to the polar bears if we take them to Africa, for example.

Tell students that due to Climate Change, the polar bear's habitat is actually getting much warmer. Much of the snow and ice found in the Polar Habitat is melting, which is causing polar bears to suffer and die.





Distance Learning

Alternatively, send a video or voice note to debrief the Blubber Glove experiment and ask students to respond with other examples of animals that cannot survive outside of their normal habitats.

**Student Activities**

- Work in groups to plan and create the Blubber Gloves.
- Participate in the experiment by forming a hypothesis and testing the glove.

 **Closure** **Duration: 10 mins****Teacher Activities**

Using a Thaki laptop and a projector if available, open the program **World's Largest Lesson** and locate the [brochure for SDG 13](#) on "Climate Action".

Use the brochure to illustrate that we are all connected and no matter where we are, our actions can affect living organisms across the globe.

Guide students to generate a class list of promises and actions they will take to help protect the environment and combat climate change .

Ideas include:

- Organise for your school or company to plant new trees every year. Trees give oxygen and take in carbon dioxide.
- Take reusable bags to the store.
- Unplug TVs, computers and other electronics when not in use.
- Share ideas with family and friends to promote awareness.

For more ideas, reference the UN's "170 Daily Actions to Transform our World" ([English link here](#) - [Arabic link here](#)) and / or **E-Learning for Kids "Science World"** Grade 4; Caribbean Sea - [Why Must we Care for the Environment?](#)

Type the promises and actions in a document and hang it somewhere visible in the classroom as a reminder and refer to it as much as possible.

**Distance Learning**

Alternatively, send a screenshot of the Climate Action brochure and ask students to share ideas on promises and actions they can take to protect the environment and combat climate change. Collate responses into a visually appealing document or [Wordle](#) and share with students.

**Student Activities**

Make suggestions for the list of promises and actions.