

FIRST GRADE: HAPPY HEALTHY HABITATS

PROGRAM OVERVIEW

Key Concepts: There are many different types of plants and animals in nature. All living things (including humans) have basic survival needs. Plants and animals have external parts that help them survive. Animals also engage in behaviors that help them survive. By exploring nature, we can observe patterns in the natural world and learn how living organisms adapt to their surroundings. All plants and animals, including humans, need a healthy habitat. Everyone can help care for plants, animals, and the island home we share.

Goals: To foster an awareness and appreciation of nature, with an emphasis on habitats, survival needs, structure and function of living things, and food chains. To expose students to the plants and animals found in lowland Hawaiian forest and stream environments. To promote enthusiasm for taking action in helping to take care of nature.

Objectives: Students will be able to describe the essential elements of a healthy habitat and our four basic survival needs (shelter, water, food, and space). They will observe and describe how plants and animals have different external parts that help them survive and grow. Students will also demonstrate a simple food chain and identify different behaviors that animals engage in to help them survive. They will be able to express why nature is important to all of us and identify ways we can help to take care of the environment.

Next Generation Science Standards (NGSS) *more details on last 2 pages

Science Practices:

- Asking Questions
- Analyzing and Interpreting Data
- Constructing Explanations
- Obtaining, Evaluating, and Communicating Information

Disciplinary Core Ideas:

- LS1.A: Structure and Function
- LS1.B: Growth and Development of Organisms
- LS1.D: Information Processing

Crosscutting Concepts:

- Structure and Function
- Patterns



PROGRAM SCHEDULE

- | | |
|-------------|--|
| 9:00-9:30 | Introduction to Plants, Animals and Habitats, bathroom break |
| 9:30-10:10 | Field Activities: 1st rotation |
| 10:10-10:50 | Field Activities: 2nd rotation |
| 10:50-11:30 | Field Activities: 3rd rotation |
| 11:30-12:00 | Lunch (includes wash-up and clean-up) |
| 12:00-12:30 | After Lunch Activities and Summary |



INTRODUCTION

Key Concepts: All living things have four basic survival needs: food, water, shelter, and space. All plants and animals need a healthy habitat that provides adequate food, water, shelter and space. Plants and animals have external parts that help them grow and survive. Animals also engage in patterns of behavior that help them survive. (*Sun is a requirement for “most” living things, but here we include sun as food since it is an energy source. Also, most living things require air for survival, in our lessons, we include air as part of the space we need.)

Objective: Students will be able to define a habitat, and match plants and animals to their appropriate habitat. They will also be able to describe some of the external parts of plants and animals that help them survive (i.e. how structure relates to function.)

Activity: Using animal and plant props and photos of different habitats of Makiki Valley, Hawai'i Nature Center staff lead students through an introduction to the habitats of plants and animals. Students will identify which habitat each of the plants and animals best belongs in based on their survival needs. Our presentation is designed to promote critical thinking skills while stimulating children's enthusiasm for exploring nature and to prepare them for an adventure-filled morning in the great outdoors.

MORNING FIELD ACTIVITIES (Three rotations)

Stream Safari

Key Concepts:

1. Both living and non-living things are part of the stream habitat.
2. Freshwater animals have certain body parts and behaviors that help them survive.
3. Freshwater plants have external parts that help them survive in the stream.
4. Patterns can be observed in nature.

Objectives:

Students will be able to:

1. Identify several living and non-living components of the stream habitat.
2. Describe at least 3 different stream animals' body parts that help them survive in the stream.
3. Describe a freshwater plant and its external parts that help it survive in the stream.
4. Identify patterns in the plants and animals observed in the stream habitat.

Activity: Students will gather at the edge of Makiki Stream to explore and discover the different kinds of plants and animals living there. After reviewing the components of a stream habitat with help from colorful props, they'll be challenged to work in small groups to create a miniature stream habitat in a bin. Before releasing the stream life back into the stream, students will observe the plants and animals, identify behaviors and external parts that help them survive in the freshwater habitat. Students will also observe patterns (including size, shape, color, etc.) in the stream life.



Habitat Hunt

Key Concepts:

1. Plants and animals have external parts that help them survive (i.e. structure relates to function).
2. Animals (including humans) engage in behaviors that help them survive.
3. Patterns can be observed in nature.

Objectives:

Students will be able to:

1. Identify external parts of forest plants and animals that help them survive.
2. List three (3) examples of animal behaviors observed in the forest and describe how the behaviors help them to survive in the forest.
3. Describe patterns observed among the plants and animals in the forest habitat.



Activity: In a cozy clearing on a mountain path, we'll review the survival needs of all living things and look at examples of behaviors as well as the external parts of different organisms found in the forest habitat. From there, we'll set out on a hike along side of the mountain in search of wild plants and animals and their habitats. We'll stop to observe the behaviors of various small forest animals (birds, lizards, insects, etc.) and identify the different parts of forest plants that help them survive.

Food Chain Challenge

Key Concepts:

1. All living things ultimately depend upon the sun for their food (energy).
2. Animals, including humans, depend on plants or other animals for their food (energy).
3. Plants and animals have external parts that help them survive in the meadow habitat.
4. Animals engage in different patterns of behavior that help them survive.

Objectives:

Students will be able to:

1. Describe a simple food chain.
2. Explain the importance of the sun and plants in the food chain.
3. Describe how plants found in the meadow habitat have external parts that help them survive.
4. Give examples of how meadow animals have body parts and behaviors that help them survive.

Activity: Students will role play a food chain in nature, then create a food chain of their own bug jar by collecting plants and animals found in the meadow habitat. They'll observe the plants' and animals' external parts up close to discover how each structure relates to a particular function. Students will also observe animals' behaviors in the meadow habitat.



AFTER LUNCH ACTIVITIES (*If time permits)
“HOW CAN WE HELP TAKE CARE OF NATURE?”

Rotation 1 - Recycling and Worm Composting

Key Concepts: Instead of taking up more space in the landfill, students will learn how vegetarian food scraps and other organic matter can be recycled back into rich soil and used to grow plants. Worms decompose food waste and recycle the nutrients. Composting is easy to do and lots of fun!

Objective: Students and teachers will learn about worm composting and how helpful they are in reusing food scraps and preventing large garbage pits.

Activity: Students will add their lunch leftovers to the Center’s worm compost bins. They will dig through the pile to discover the special worms and the nutrient-rich soil they create.



Rotation 2 - Classroom Play

Students will get a chance to climb up the mountain rocks in our classroom and slide down the watershed slide!

Key Concepts:

1. Plants, animals, and habitats are everywhere, even in our playgrounds and neighborhoods.
2. Humans have the same four survival needs (shelter, water, food, space); everything we need for survival comes from nature!
3. All living things, including humans, need a healthy habitat. There are many different things first graders can do to care for plants, animals, and their homes – our home!

Objectives:

Students will be able to:

1. Review the four survival needs of all living things (including humans), and describe the different habitats explored today.
2. Describe how our own survival needs come from nature and why it is important to care for plants, animals and their habitats.
3. Give examples of what they can do to help take care of the environment.

Activity: Gathered together at the end of a fun-filled day exploring nature, students will share their favorite parts of the day. Bringing back some of the props used in the Introduction, an HNC educator will lead the students through an interactive summary of the different habitats they explored and the animals and plants that live in them. Students will then be prompted to think about our (human) survival needs. All of our human needs come from nature. We’ll discuss the importance of taking care of nature - to make sure plants and animals, including humans, have a healthy habitat today and in the future. In the end, students will be asked to share examples of ways they can help take care of nature (i.e. don’t litter, recycle, compost, etc.). HNC educator will explain one of the best things you can do to take care of the environment is to get outside and explore! HNC will encourage them to continue to explore plants, animals, and habitats everywhere they go. Mahalo for coming and hope to see you all again!

SUMMARY

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***More background information on the Next Generation Science Standards (NGSS) to be added soon!**

Below are the NGSS for First Grade Life Sciences that are emphasized in HNC's Habitat program. HNC is currently in the process of compiling additional background information as well as pre/post activities that are aligned with the new standards. Thank you for your patience with this!

Science Practices:

1 - Asking Questions. Ask questions based on observations to find more information about the natural and/or designed world(s).

4 - Analyzing and Interpreting Data. Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.

6 - Constructing Explanations and Designing Solutions. Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. Generate and/or compare multiple solutions to a problem.

8 - Obtaining, Evaluating, and Communicating Information. Builds on prior experiences and uses observations and texts to communicate new information. Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world.

Disciplinary Core Ideas:

LS1.A: Structure and Function.

All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.

LS1.B: Growth and Development of Organisms.

Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive.

LS1.D: Information Processing.

Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs.

Crosscutting Concepts:

Structure and Function:

* The shape and stability of structures of natural and designed objects are related to their function(s).

Patterns.

* Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.