Plants, Animals, and Habitats

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## Revision History

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# Plants, Animals, and Habitats

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Educational Videos ........................................................................................................ 12
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Handouts
  “Tadpole Progress”
  “Needs cards”
  “Pumpkin Life Cycle Pictures”
  “Baby and Adult Pictures”
  “Where Do Seeds Come From?”
  “Plant Parts”
Excellence in Curricula and Experiential Learning

Introduction

Grade Level

These activities are intended for a first grade classroom.

Discipline

These activities have a science and social studies focus.

TEKS

Content:
In Grade 1, students observe and describe the natural world using their five senses. Students do science as inquiry in order to develop and enrich their abilities to understand the world around them in the context of scientific concepts and processes. Students develop vocabulary through their experiences investigating properties of common objects, earth materials, and organisms. TEKS §112.12. Science, Grade 1. (a)(4)(D)

Skills:
The student knows that information and critical thinking are used in scientific problem solving. TEKS §112.12. Science, Grade 1. (b)(3)(A)(B)(C)

The student knows that the living environment is composed of relationships between organisms and the life cycles that occur. TEKS §112.12. Science, Grade 1. (b)(9)(A)(B)(C)

The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. TEKS §112.12. Science, Grade 1. (b)(10)(A)(B)(C)(D)

National Education for Sustainability K-12 Student Learning Standards

2.2 ~ Ecological Systems ~ Plants, Animals, Habitats
Objective

Students will learn about the needs of plants and animals, including humans. They will learn about the growth and development of both plants and animals through interactive activities.

Key Words

Cycle
Development
Sequence
Examine

Description of Activities

The following activities have been compiled to address the topic of “Plants, Animals, and Habitats” in first grade classrooms. The activities meet the state and national education standards for first grade, and are intended to supplement pre-existing curricula, with a focus on integrating sustainability topics. The activities can be used in conjunction or alone.
Activities

Activity 1: Cycles in the Garden

Introduction

In this activity, students will observe the five things that plants need. They will discover the key parts of a plant and they will plant bean seeds that will be continually studied throughout the unit. They will also be introduced to science notebooks.

Materials

Handout- “Plant Parts”

Dress Up a Bean costume:
Leaves: Green cut outs that clip on to sleeves
Stem: A long piece of green fabric, green sweater, and/or green knee socks
Flower: fabric or laminated paper cut in the shape of flower petals that fit like a collar around the head/shoulders
Bean: fabric or laminated paper cut in the shape of a bean
Roots: twine or brown pipe cleaners that can attach to shoes

Fab 5 Scavenger Hunt:
Clues for each
Signs with illustrations (optional)
Beads: brown (soil), blue (water), clear (air), green (space), and yellow (sun)
twine or string for bracelets

Planting:
Clear cups
Bean seeds, 2 per student plus 10 extras
Germinating soil mix
Waterproof marker
Labels or masking tape to label each cup
Spray bottle filled with water

Products

List of plant vocabulary
Necklace/bracelet
Notebook Entries
Bean Plants
Process

1. Begin with a group discussion on plants. Focus on the following:
   - What is a plant?
   - What do we know about plants?
   - What do we want to know about plants?
   - Share photos of various plants.

2. Tell the students that one of the best ways to learn about plants is by becoming a plant! Dress up a student or another adult in the classroom with the “Dress Up a Bean” costume as students tell you what parts plants have. How do each of these parts help plants survive? Make a list of all the new plant vocabulary used.

3. Lead the students on a scavenger hunt of the “Fab 5: What Plants Need to Stay Alive”. This acquaints the class with the needs of plants—sun, water, air, space, and soil. At each clue, students gather a colored bead that represents one of the Fab 5. These can be strung on a necklace or bracelet to remind the students what plants and other living things need.

   - Variations on the Fab 5
     - Can be done in the schoolyard with illustrated signs posted for each Fab 5, the next clue and beads attached to the back. At the last stop each student gets a bean seed to plant.
     - Each clue can be found outside where a real world example of each is visible, i.e. hose for water, sunny spot for sun, etc.
     - Can be done inside, using the classroom resources such as the sink, a fan, etc., which is helpful if students are to take care of plants in a grow lab. Remember to discuss nature and people working together to care for our plant friends.

4. Fab 5 Clues:

   In order for me to grow big and strong,
you’re going to need to help me along.
Five things I need to stay alive—
We’ll call them the fabulous five!
The first will surely help me wake,
It’s cold in here for goodness sake!
I must warm up and feel the light—
Take me where it’s warm and bright. (SUN)
***
I’m much warmer now, thanks a bunch
But I think it’s getting time to munch
I make my own food whenever I’m hungry
But the problem is, I’m really thirsty! (WATER)
Look around—you need to think, and find something for the plants to drink.

You need me and I need you!
Soon you’ll learn a step or two
We eat and drink and need to share,
‘Cause both of us must breathe the...
Look around—think and observe. Can you see the wind pushing air in a swerve? (AIR—can use a pinwheel to see air moving)
***
Even though I’m little now
I’ll soon be big—somehow.
I’ll grow with others—it’s not a race
Just don’t plant me too close...I need my...
Look around—there’s a sign you’ll see—showing plants with room, growing happ-ily. (SPACE—can also find a big open space to place the clue)
***
Sun, water, air and space—all things I need to live
But there’s one more, to me, you must give
It’s dark and brown, under your feet
Without it my life will be incomplete!
Look around—complete the Fab 5 and your plants will grow fine! (SOIL)
***
If activity is done outside, review the needs of plants and discuss how these needs will be met in the classroom.

5. Introduce science notebooks. Discuss with students the role of this special notebook. Model to students that each entry will have a title, date, perhaps some labels, a scientific drawing, and words to describe the picture. Have students label their own notebook and make their first entry. This can be a simple map of where to find each Fab 5 in the schoolyard or classroom, a drawing of the bean seed surrounded by the Fab 5, etc.

6. Have each fill a clear planting container (could be a plastic or compostable cup, ideally with a hole or two poked in the bottom using a nail to let excess water drain) with soil gently patted down. Make two holes half the length of your pinky finger, ALONG OPPOSITE SIDES OF THE CUP (so as the plant grows students can observe the roots) and plant one bean seed in each hole. Cover with soil and spray with water.

7. As each student is passed the spray bottle ask him or her what his or her hopes and dreams (or prediction, something they wonder about the seed, etc.) for this bean seed is. Label each cup with the students’ name, type of seed and date planted.

8. Have students care for their bean seed/plant and monitor it daily. Introduce students to the “Growth Graph” (see handout). Discuss the graph, how to use it, and what we can learn from it. Begin plotting the height of the plant. You can start from the first day of growth above the soil or from the day the seed was planted and discuss more in depth germination. Students can also monitor the seed germination process and practice scientific drawing at various points throughout the week, between lessons.
Activity 2: We All Have Needs

Introduction

Students will learn the difference between needs and wants. They will also identify the needs of plants and animals.

Materials

Chart paper
Markers
Handout- “Food, Water, Air and Shelter Cards”
Poster board

Products

Poster

Process

1. Discuss the following essential questions:
   - What are needs?
   - What do people and animals need?
   - What do plants need?

2. Play a short name game: ask students to name their favorite plant or animal.

3. Ask students if they know what it means to need something. What things do people need?

4. Write their responses on a two-column list, dividing between needs and wants. After the students are done listing their “needs,” ask if they notice a difference between the things in the two columns. Then put in the column headings. Help students narrow down the list to four basic needs: food, water, shelter, and air.

5. Go outside, if possible to play a game. Students line up in two parallel lines about 40 feet apart. One fourth of the class will be humans; the rest will be the items humans need to survive. Students will be given a food, water, air or shelter card. When they are ready, both groups of students will skip toward each other. The humans will have to find/capture all the basic needs in order to survive. Discuss who survived and who did not. Play several rounds of the game.

6. After the game, talk about the needs of animals. Are they the same needs that humans have?

7. Discuss the needs of plants. They are similar to animals, but plants get their energy from the sun, so they need sun, water, space, nutrients and air.

8. Make a poster of the “Fab 5”- sun, water, soil, air (CO2) and room to grow.
Activity 3: The Needs of Seeds

Introduction

Students will learn how to identify seeds, where seeds come from and what seeds need to grow. They will track the progress and learn about keeping information up to date.

Materials

Plant investigation journals
Fruit (i.e. cherry tomatoes, mangos, avocados, apples etc.)
Butter knives
Adult knife
Cutting boards
Paper towels
Seeds
Non-seeds (i.e. rocks, beads, etc.)
Glue
Egg cartons
Labels to identify experiments
Soil
Watering can
Handout- “Where Do Seeds Come From”

Products

Plants
Growth chart

Process

1. Review what plants need to survive and grow using the poster created in activity 2

2. Distribute plant investigation journals and explore them with students

3. Divide the class into three groups to rotate through the following station:

- Seed examination: cut several varieties of fruit so the students can examine the seeds. Where do seeds come from? Draw and count seeds from each fruit and report in the journal.

- Sorting seeds and non seed: glue onto correct columns in their journals

- Planting non-seeds and seeds in separate containers: use the egg cartons, and soil to plant the seeds. Give half of the seeds all the things they need to survive. Make sure each experiment is correctly labeled. Ask students to draw their predictions in their journals

Plants, Animals, and Habitats
4. Reconvene as a class and ask the students to share their predictions about the plantings. They could also act out what happens to seeds when they are given what they need and when they are not given what they need. Show them the chart in their journals where they can keep track of plant growth and explain how to use it.

5. Continue observing the plants over the course of several days, even weeks. Have students discuss the progress periodically.
Activity 4: The Growth of Plants

Introduction

Students will understand the life cycle of a plant and the differences in appearance in young and older plants.

Materials

- Book- The Pumpkin Lifecycle: The Story of a Garden
- Handout- “Pumpkin Lifecycle Pictures”
- Small container for sprouts
- Plant for every student
- Poster board with young and mature plants in outline drawn on it
- Coloring materials
- Scissors

Products

- Presentation (Slideshow, Poster, etc.)

Process

Read “The Pumpkin Lifecycle: The Story of a Garden”

1. Ask the students how the pumpkin plant looked immediately after sprouting. What did it look like at the end of the growing season?

2. Ask the class to organize the pumpkin sequence cards in order from seed to pumpkin pie. Discuss each step of the development. What enabled the plant to grow?

3. Give each student a developed plant and a sprout to closely examine and draw in their journals.

4. Students will be given a section of the poster to decorate. The poster will be of a young plant and an adult with its parts labeled. Assemble the poster as a group.

5. Either plant the plants somewhere on school grounds and observe their growth throughout the school year or give them to each student to take home.

6. Do a plant sorting activity with the class, either with real plants or pictures of plants. How can you tell which plants are the same?
Activity 5: Growing Animals

Introduction

Students will learn that some young animals look very similar to their parents, while some look very different from their parents.

Materials

Book- Are You a Dragon Fly?
Handout- “Water Babies”
Baby pictures of students and teachers
Form to send home prior to the class asking for a student’s pictures
Poster of dragonfly
Poster of dragonfly larva
Coloring supplies
Picture of a human baby and human adult handout

Products

Poster
Matched cards

Process

1. Ask students the following focusing questions:
   How do animals grow?
   Aside from getting bigger, do they look different as they grow? Remind them of the pumpkin sequence cards.
   Did the plant look different as it grew from a sprout to a pumpkin? How?

2. Read “Are You a Dragon Fly?” Discuss the dragonfly’s development.

3. Have the two posters. Ask students which parts are similar and then color in the parts in the same color. Ask students which parts are similar and then color in the parts in the same color. Than ask which parts are different and then color in the parts in different colors. Do a similar activity with pictures of a human baby and adult.

4. Have students pass their baby pictures around have students match them to their classmates.

5. Have students examine the water babies cards and make matches.

6. Reflect on the different types of animals that look similar as adults and babies and those that look much different.


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Activity 6: A Frog’s Life Cycle

Introduction

Students will learn about the different stages of a frog’s life through reading and a hands-on activity.

Materials

Book- Tale of a Tadpole
Aquarium
Tadpoles in glass jars
Pond water
Rocks
Fish food
Handouts- Tadpole progress

Products

Frog-mobile
Tadpole drawings

Process

1. Read the students the book, “Tale of a Tadpole,” or another frog book

2. Ask students the following focusing questions:
   - What does a bay frog look like?
   - What are the stages that a tadpole goes through before turning into a frog?
   - What do tadpoles need to survive in an aquarium?

3. Students then will go through two stations:
   - Setting up the aquarium: Remind students about the four needs of all animals (food, water, shelter, air) and then make sure that each need is present in the aquarium
   - Meeting the tadpoles: Each child will get a tadpole in a glass jar to examine and draw in their journals or in the handout provided.

4. Students can continue to examine tadpoles throughout the week. And record the changes in their journals or in the handouts.
Additional Resources

Online Resources

Primary Resources

http://sustainableschoolsproject.org/file/377/BabyAnimals.pdf?redirect=node%2F284

Secondary Resources

http://environment.nationalgeographic.com/environment/photos/freshwater-plants-animals/

http://a-z-animals.com/reference/habitats/

Educational Literature

“The Pumpkin Circle: The Story of a Garden” by George Levenson

“Are You a Dragonfly” by Judy Allen

“Wonderful Nature, Wonderful You” by Karin Ireland Illustrated by Christopher Canyon

“From Tadpole to Frog” by Wendy Pfeffer

“Why Frogs Are Wet” by Judy Hawes

Educational Videos

http://www.youtube.com/watch?v=xO8hrqDuMmY

http://www.youtube.com/watch?v=EDrKq-SE0G0

http://www.youtube.com/watch?v=vNoiKS8AIgk

Instructional Games

http://www.sciencekids.co.nz/gamesactivities/plantanimaldif.html

http://www.sciencekids.co.nz/gamesactivities/plantsanimals.html

http://www.sheppardsoftware.com/content/animals/kidscorner/gamesforkids.htm


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The first day I met the tadpoles they looked like this........
Now the tadpoles look like this........
Needs cards for Lesson 1

AIR
Pumpkin Life Cycle Pictures for Lesson 3
Baby and Adult Pictures for Lesson 4
Where do seeds come from?

Draw the seeds you find inside the fruit.

# of seeds______  # of seeds______

# of seeds______  # of seeds______

# of seeds______  # of seeds______
Plant Parts
Locate and draw all of the different plant parts

- Flower
- Stem
- Leaf
Fruit

Root

Seed
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