Unit Name: Life Science **Time Frame:** *Trimester 3*

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UNIT

Subject: **Life Science** Country: **USA**

Course/Grade: 3 State/Group: **NJ**

School: **EHT School District**

UNIT SUMMARY

The students will be able to understand how organisms have unique and diverse life cycles. Characteristics of organisms are either inherited from parents or a result of the environment. Sometimes differences in characteristics provide advantages in which some survive and some cannot.

The students will be able to understand how organisms adapt to changes in the environment and interact within a group.

The students will be able to understand how populations live in a variety of habitats and how changes in those habitats affect all organisms living there.

UNIT RESOURCES

Trimester 3 – Life Science - Plants and Animals/Survival Needs (food, water, light):

- Are you living? By Laura Salas
- What's Alive by Kathleen Weirder Zoefeld
- Is it Living or Nonliving by Rebecca Rissman
- When Rain Falls by Melissa Stewart
- The Tree in the Ancient Forest by Carol Reed-Jones
- When We go Camping by Margriet Ruurs
- Good Night Owl by Pat Hutchins
- Living and Nonliving by Carol Lindeen
- The Tiny Seed by Eric Carle
- What do you do with a Tail Like This? By Steven Jenkins and Robyn Page
- Animals Grow New Parts by Elaine Pascoe and Dwight Kuhn
- Living and Nonliving by Angela Rotation
- Why Living things need Light by Daniel Nunn
- Why Living Things Need Food by Daniel Nunn
- Why Living Things Need Water by Daniel Nunn

Internet Resource Links:

Resources

- http://www.dnr.state.wi.us/org/caer/ce/eek/nature/wetland1.htm, wetland animals and plants.
- http://wwwrus.lkwash.wednet.edu/users/Wetlands/inhab.html, wetland plants
- http://www.mobot.org/MBGnet/fresh/wetlands/why.htm overview of wetlands
- http://library.advanced.org/11922/habitats/habitats.htm, world habitat
- http://www.mobot.org/MBGnet/sets/rforest/animals/index.htmi rainforest animals
- http://desertusa.com/animal.html, desert animals
- http://library.advanced.org/11922/african/african.htm, African Grasslands Animals
- http://www.mobot.org/MBGnet/sets/desert/animals/index.htm, desert animals
- http://projects.edtech.sandi.net/chavez/batquest/navigator.html bats
- http://nbk.grolier.com/nbk-bin/bp.nbk?artbaseid=a2002870-h&dbname=nbk habitats
- http://www.panda.org/kids/wildlife/idxgrsmn.htm all original habitats
- http://www.britannica.com/EBchecked/topic550897/social-behavior-animal
- http://videonationalgeographic.com/video/environment/habitats
- www.ecokids.ca/pop/eco_info/biodiversity
- http://pbskids.org/wildkratts/creaturepedia (videos)
- http://sciencethinks.com/lessons/animal_adaptations/
- www.kidport.com/refb/science/videos/animals/animalsurvival.htm

STAGE ONE

GOALS AND STANDARDS:

Students who demonstrate understanding can:

3-LS1-1. **Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.** [Clarification Statement: Changes organisms go through during their life form a pattern.] [*Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.*]

3-LS3-1. **Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.** [Clarification Statement: Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans.] [*Assessment Boundary: Assessment does not include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.*]

3-LS3-2. **Use evidence to support the explanation that traits can be influenced by the environment.** [Clarification Statement: Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is

given too much food and little exercise may become overweight.]

3-LS4-2. **Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.** [Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.]

3-LS2-1. **Construct an argument that some animals form groups that help members survive.**

3-LS4-3. **Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.** [Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.]

3-LS4-4. **Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.** [Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.] [*Assessment Boundary: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.*]

ENDURING UNDERSTANDINGS

Students will understand that…

- *Changes organisms go through during their life form a pattern.*
- *Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings.*
- *Traits can be influenced by the environment.*
- *Differences in characteristics provide advantages in surviving among individuals of the same species.*
- *Changes in the environment will determine how organisms adapt.*
- *Social interactions and group behavior can help animals survive.*
- *When the environment changes organisms may survive, adapt, migrate or die.*

ESSENTIAL QUESTIONS

How do changes in the environment affect living things?

KNOWLEDGE AND SKILLS

SUGGESTED VOCABULARY:

Birth- the start of life

Growth-the process of developing

Reproduction- the production of offspring or physically maturity

Adapt- adapt or conform oneself to new or different conditions

Death-The end of a life cycle.

Solitude-The act of living or being alone.

Herd- The act of living with others. Depending on the animal, it can be called families, colonies, troops, swarms, and many other names.

Fossils- Preserved traces of animals, plants, and other organisms from the past.

Pollinate-To deposit pollen on a plant to allow the plant to spread its seeds.

Climate-The typical weather conditions of a given region.

Habitat- the natural home or environment of an animal, plant, or other organism.

Predator-An animal that preys on other animals for food.

Prey-An animal that is hunted or killed for food.

Global warming-The gradual increase in the temperature of the Earth's atmosphere.

Deforestation-The act of clearing an area from trees.

Desert- A very dry habitat defined as having less than 10 inches of rainfall each year.

Tundra- Usually found in the extreme north and experiences harsh winters and cool summers.

Deciduous forest- An area with dense growth of trees that lose their leaves each year.

Grassland-A habitat where the land is dominated by grass.

Tropical rain forest- A habitat usually located near the equator that experiences high temperatures and high rainfall.

Land cave- A habitat characterized by dark, often cooler temperatures.

Freshwater marsh- A habitat that is located near freshwater lakes or rivers.

Coral reef- Warm, clear, shallow ocean habitats that are usually rich with wildlife.

Temperate ponds- A habitat offering both land and water with mild temperatures that is usually teeming with wildlife.

Students will know:

- *How animals adapt to different environments*
- *Be able to come up with a solution*

STAGE TWO

PERFORMANCE TASKS

Design an enclosure to support the life of an animal from an alien planet.

Directions: Using a cardboard box, design an enclosure to keep the animal alive and to allow them to thrive.

Materials:

- *Cardboard box*
- *Toilet paper/paper towel rolls*
- *Bowls*
- *Soil*
- *Tape*
- *Glue*
- *Construction Paper*
- *Pipe cleaners*
- *Clothespins*
- *Popsicle sticks*
- *Leaves*
- *Water*

STAGE THREE

LEARNING PLAN

Habitat Adventure Webquest:
http://www2.lhric.org/course/irvingtn/rothchan/Habitat1.htm

(see available resources for fact sheets and assessments)

Optional Writing Assessments:

Choose from the following environmental circumstances:

1. **What is happening to the polar bears? It seems the artic is literally melting away due to global warming.**
2. **What is happening to the fish? September of 2012, thousands of dead fish appeared along the shore line of Lake Erie.**
3. **What is happening to the sea turtles? The population of sea turtles is on the decline.**

- **Write a newspaper article explaining the changes occurring in the environment to the citizens. Include ways citizens could help make changes.**
- **Write a postcard from the perspective of the animal. How is the animal impacted by these changes?**
- **Think about an alternative perspective. Create a brochure about this environment and how these changes are positively impacting this place.**