DISCOVER

4-H CLOVERBUD

ENVIRONMENTAL EARTH SCIENCE

EXTENSION
UtahStateUniversity

DISCOVER

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Description

The Discover 4-H Clubs series guides new 4-H volunteer leaders through the process of starting a 4-H club or provides a guideline for seasoned volunteer leaders to try a new project area. Each guide outlines everything needed to organize a club and hold the first six club meetings related to a specific project area.

Purpose

The purpose is to create an environment for families to come together and participate in learning activities while spending time together as a multi-family club. Members will experiment with new 4-H project areas.

What is 4-H?

4-H is one of the largest youth development organizations in the United States. 4-H is found in almost every county across the nation and enjoys a partnership between the U. S. Department of Agriculture (USDA), the state land-grant universities (e.g., Utah State University), and local county governments.

4-H is about youth and adults working together as partners in designing and implementing club and individual plans for activities and events. Positive youth development is the primary goal of 4-H. The project area serves as the vehicle for members to learn and master project-specific skills while developing basic life skills. All projects support the ultimate goal for the 4-H member to develop positive personal assets needed to live successfully in a diverse and changing world.

Participation in 4-H has shown many positive outcomes for youth. Specifically, 4-H participants have higher participation in civic contribution, higher grades, increased healthy habits, and higher participation in science than other youth (Lerner et al., 2005).

Updated September 2017

Utah 4-H

4-H is the youth development program of Utah State University Extension and has more than 90,000 youth participants and 8,600 adult volunteers. Each county (Daggett is covered by Uintah County) has a Utah State University Extension office that administers the 4-H program.

The 4-H Motto

"To Make the Best Better!"

The 4-H Pledge

I pledge: My HEAD to clearer thinking, my HEART to greater loyalty, my HANDS to larger service and my HEALTH to better living, for my club, my community, my country, and my world.

4-H Clubs

What is a 4-H Club? The club is the basic unit and foundation of 4-H. An organized club meets regularly (once a month, twice a month, weekly, etc.) under the guidance of one or more volunteer leaders, elects its own officers, plans its own program, and participates in a variety of activities. Clubs may choose to meet during the school year, only for the summer, or both.

Club Enrollment

Enroll your club with your local Extension office. Each member will need to complete a Club Member Enrollment form, Medical History form, and a Code of Conduct/Photo Release form (print these from the www.utah4h.org website or get them from the county Extension office).

Elect Club Officers

Elect club officers during one of your first club meetings. Depending on how many youth are in your club, you can decide how many officers you would like. This will typically include a president, vice president, pledge leader, and secretary. Other possible officers or committees are: song leader, activity facilitator, clean-up supervisor, recreation chair, scrapbook coordinator, contact committee (email, phone, etc.), field trip committee, club photographer, etc. Pairing older members with younger members as Sr. and Jr. officers may be an effective strategy to involve a greater number of youth in leadership roles and reinforce the leadership experience for both ages. Your club may decide the duration of officers (6 months, 1 year, etc.).

A Typical Club Meeting

Follow this outline for each club meeting:

- ☐ Call to order–president
- ☐ Pledge of Allegiance and 4-H Pledge–pledge leader (arranges for club members to give pledges)
- ☐ Song–song leader (leads or arranges for club member to lead)
- ☐ Roll call–secretary (may use an icebreaker or get acquainted type of roll call to get the meeting started)
- ☐ Minutes of the last meeting–secretary
- ☐ Business/Announcements–vice president
- ☐ Club Activity–arranged by activity facilitator and includes project, lesson, service, etc. These are outlined by project area in the following pages.
- ☐ Refreshments–arranged by refreshment coordinator
- ☐ Clean Up–led by clean-up supervisor

Essential Elements of 4-H Youth Development

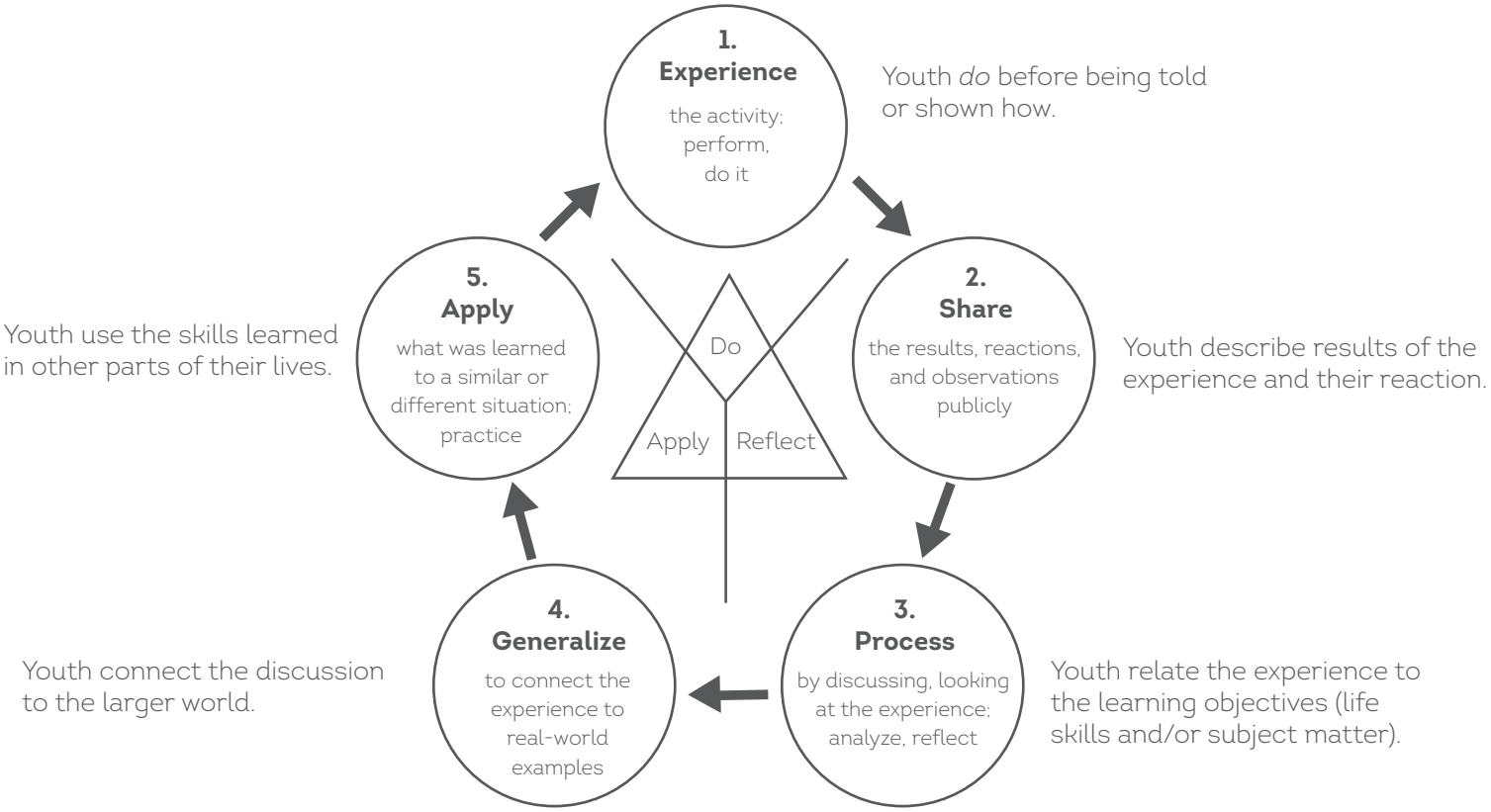
The essential elements are about healthy environments. Regardless of the project area, youth need to be in environments where the following elements are present in order to foster youth development.

1. **Belonging**: a positive relationship with a caring adult; an inclusive and safe environment.
2. **Mastery:** engagement in learning, opportunity for mastery.
3. **Independence:** opportunity to see oneself as an active participant in the future, opportunity to make choices.
4. **Generosity:** opportunity to value and practice service to others.

(Information retrieved from: http://www.4-h.org/resource-library/professional-development-learning/4-h-youth-development/youth-development/essential-elements/)

4-H "Learning by Doing" Learning Approach

The Do, Reflect, Apply learning approach allows youth to experience the learning process with minimal guidance from adults. This allows for discovery by youth that may not take place with exact instructions.



4-H Mission Mandates

The mission of 4-H is to provide meaningful opportunities for youth and adults to work together to create sustainable community change. This is accomplished within three primary content areas, or mission mandates - citizenship, healthy living, and science. These mandates reiterate the founding purposes of Extension (e.g., community leadership, quality of life, and technology transfer) in the context of 21st century challenges and opportunities. (Information retrieved from: http://www.csrees.usda.gov/nea/family/res/pdfs/Mission_Mandates.pdf)

1. **Citizenship:** connecting youth to their community, community leaders, and their role in civic affairs. This may include: civic engagement, service, civic education, and leadership.
2. **Healthy Living:** promoting healthy living to youth and their families. This includes: nutrition, fitness, social-emotional health, injury prevention, and prevention of tobacco, alcohol, and other drug use.
3. **Science:** preparing youth for science, engineering, and technology education. The core areas include: animal science and agriculture, applied mathematics, consumer science, engineering, environmental science and natural resources, life science, and technology.

Getting Started

1. Recruit one to three other families to form a club with you.
    a. Send 4-H registration form and medical/photo release form to each family (available at utah4h.org).
    b. Distribute the Discover 4-H Clubs curriculum to each family.
    c. Decide on a club name.
    d. Choose how often your club will meet (e.g., monthly, bi-monthly, etc.).
2. Enroll as a 4-H volunteer at the local county Extension office (invite other parents to do the same).
3. Enroll your club at the local county Extension office.
    a. Sign up to receive the county 4-H newsletter from your county Extension office to stay informed about 4-H related opportunities.
4. Identify which family/adult leader will be in charge of the first club meeting.
    a. Set a date for your first club meeting and invite the other participants.
5. Hold the first club meeting (if this is a newly formed club).
    a. See *A Typical Club Meeting* section above for a general outline.
        i. Your activity for this first club meeting will be to elect club officers and to schedule the six project area club meetings outlined in the remainder of this guide. You may also complete a-d under #1 above.
    b. At the end of the first club meeting, make a calendar outlining the adult leader in charge (in partnership with the club president) of each club meeting along with the dates, locations, and times of the remaining club meetings.
6. Hold the six project-specific club meetings outlined in this guide.
7. Continue with the same project area with the 4-H curriculum of your choice (can be obtained from the county Extension office) OR try another Discover 4-H Club project area.

Other Resources

Utah 4-H website: www.Utah4-h.org

National 4-H website: www.4-h.org

4-H volunteer training:

To set up login:

http://utah4h.org/volunteers/training/

To start modules: (password = volunteer)

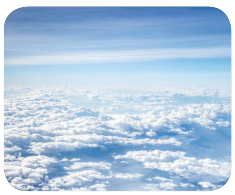
References

Information was taken from the Utah 4-H website (utah4h.org), the National 4-H website (4h.org), the Utah Volunteer Handbook, or as otherwise noted.

Lerner, R., M. et al. (2005). Positive youth development, participation in community youth development programs, and community contributions of fifth grade adolescents: Findings from the first wave of the 4-H Study of Positive Youth Development. Journal of Early Adolescence, 25(1), 17-71.

We would love feedback or suggestions on this guide; please go to the following link to take a short survey:
Go to https://goo.gl/iTfiJV or Click here to give your feedback

4-H CLOVERBUD ENVIRONMENTAL EARTH SCIENCE CLUB *Meetings*



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4-H Club Meeting 1

Our Environment

Supplies

- Brown lunch bags
- Craft items
- Markers
- Glue
- Construction paper
- Scraps of fabric
- Scissors
- Recyclable items (plastic caps, soda can tabs, newspapers, etc.)
- Books about recycling
- Nature magazines
- Newspapers
- Rubber stamps
- Stamp pad
- Construction paper
- Scissors
- Glue
- Markers
- Colored pencils
- Tree
- Seedlings
- Shovels
- Water

INTRODUCTION

Helping kids learn about the environment around them helps them feel more respect and gratitude for it. As they better understand nature and how to keep it clean and healthy, theytry harder to take care of it.

PRIOR TO MEETING

- Before the meeting starts, set out the materials needed for making the puppets on a table or on multiple tables. If desired, feel free to use additional supplies not listed above.

Activity #1

Who Litters?

WHO LITTERS?

TIME: 30 MINUTES

1. Let the youth pick out the supplies they want to use to make their puppets.
2. Have the youth make puppets out of recyclable items (plastic caps, soda can tabs, newspapers, etc.).
3. Help them along the way if they need help making their puppets.
4. Once they have completed the puppets, have them put on a puppet show or a dramatic play with the puppets about caring for the earth by recycling and not littering.

FAVORITE PLACE IN NATURE

TIME: 15 MINUTES

1. Have the youth look through the magazines.
2. Tell them to choose a favorite place.
3. Let them cut it out and glue it to construction paper.
4. They can make a fancy border for their picture with stamps.
5. Have them write (or dictate) a short sentence that tells why that is their favorite place.
6. Ask them how they would feel if it became dirty and people left their garbage everywhere. We always need to be clean and pick up our garbage.

PLANT A TREE

TIME: 15 MINUTES

1. Before the group meeting, arrange to plant a few trees somewhere in the community.
2. Get the youth involved in digging a deep hole.
3. Ask the children why you would want to plant a tree.
4. Explain to them that trees are used for many things, like giving us oxygen, stabilizing soil, etc. We need to give back to the environment by planting a tree. We need to conserve our trees and also plant new trees.

Reflect

- Discuss what the youth learned about recycling and how they can apply it in their home lives.
- Talk with them about their favorite places to be in nature.
- Have them brainstorm places where they would like to go someday.
- Bring the group together and talk about what their favorite part of the Plant a Tree activity was.
- Talk about the things they enjoy doing on a tree (e.g., climbing it, building a swing on it, eating the fruit, etc.).

Apply

- The kids have learned the importance of not littering. Help them to see how they can apply what they've learned.
- Reflect on the importance of trees to our environment.
- Talk about how doing a simple thing like planting a tree can have a great impact. If possible, encourage the kids to plant their own trees in the future.

4-H MISSION MANDATES

Citizenship

After you learn how to plant a tree together, encourage the youth to do service wherever possible in their community. Encourage them to be good examples of taking care of their environment.

Healthy Living

Planting a tree is good exercise. Once the tree has grown, it will also be great for kids to play on and around. Helping the environment helps everyone have a healthier life.

ESSENTIAL ELEMENTS

Belonging

Asking about each youth's favorite place will make them feel involved and that their opinion is valued.

Generosity

Planting trees for the community or even in someone's yard helps benefit the beauty and health of the environment.

Mastery

Now that the youth know the basics of tree planting, they can grow on the knowledge they have and continue to use it and build upon it.

References and Other Resources

BooksRecycle!: A Handbook for Kids by Gail Gibbons Publisher: Little Brown & Company; ISBN: 0316309435
The Giving Tree by Shel Silverstein Publisher: Harpercollins Juvenile Books; ISBN: 0060256656

Supplies

- Glass bottle
- Boiling water
- Cloth
- Rubber band
- Crushed ice
- Water cycle picture (found at the end of this club meeting)
- Paper towel tube for each child
- Tape or contact paper
- Styrofoam peanuts
- Dry rice or beans
- Yarn
- Feathers
- Crayons
- Scissors
- Colored paper

INTRODUCTION

Rain is an essential part of the environment. For kids it can be unknown of where it comes from. It is a great opportunity for them to learn about clouds, rain, and the impact of them both.

Activity #1
Create a Cloud

CREATE A CLOUD

TIME: 30 MINUTES

- What are clouds?

A cloud is a large collection of very tiny droplets of water or ice crystals. The droplets are so small and light that they can float in the air.

- How are clouds formed?

All air contains water, but near the ground it is usually in the form of an invisible gas called water vapor. When warm air rises, it expands and cools. Cool air can't hold as much water vapor as warm air, so some of the vapor condenses onto tiny pieces of dust that are floating in the air and forms a tiny droplet around each dust particle. When billions of these droplets come together they become a visible cloud.

1. Set water boiling in a pot.
2. When the water has boiled, pour it into a glass bottle.
3. When the bottle becomes hot, pour out all but one inch of the water.
4. Stretch a cloth over the mouth of the bottle, and fasten it with a rubber band.

5. Place some crushed ice on top of the cloth.
6. A cloud will form as the warm air meets the cold.
7. Show the students the bottle.
8. Explain how the weather cycle works and how this activity demonstrates that.

Activity #2

Rain Stick

RAIN STICK

TIME: 20 MINUTES

- What is rain?

Rain is actually part of a bigger part of the weather called precipitation, which means any form of water that falls to the earth like rain, snow, drizzle, hail, and sleet.

- How is rain formed?

Water is always moving. Because of this movement and precipitation, rain that has fallen where you live may have been water in the ocean a couple of days before.

1. Give each youth a paper towel tube.
2. Help the participants cover one end with tape or contact paper.
3. Have youth fill up the paper towel tube with the Styrofoam packing peanuts.
4. Tell them to add two or three tablespoons of dry rice and then cover the other end with the tape or contact paper.
5. Let them be creative in decorating with the yarn, feathers, paper, etc.
6. When turned over, the rice falls slowly from one end to the other, making a sound like falling rain.
7. Let the youth experiment with their rain sticks, and have fun!

Reflect

- Ask them what they think are the benefits of rain.
- Ask the kids what they thought was going to happen with the cloud experiment.

Apply

- Talk about their favorite things to do when it rains.
- Continue by talking about how important rain is and its benefits.
- Make sure they understand where rain comes from.

4-H MISSION MANDATES

Citizenship

Learning about how the environment works can help the kids have more love and respect for it.

Healthy Living

Kids will learn and have a better understanding of their own environment.

ESSENTIAL ELEMENTS

Belonging

Encourage everyone to be creative and to value each other's ideas.

Generosity

This could help them become creative and thoughtful with crafts and projects they can do.

Mastery

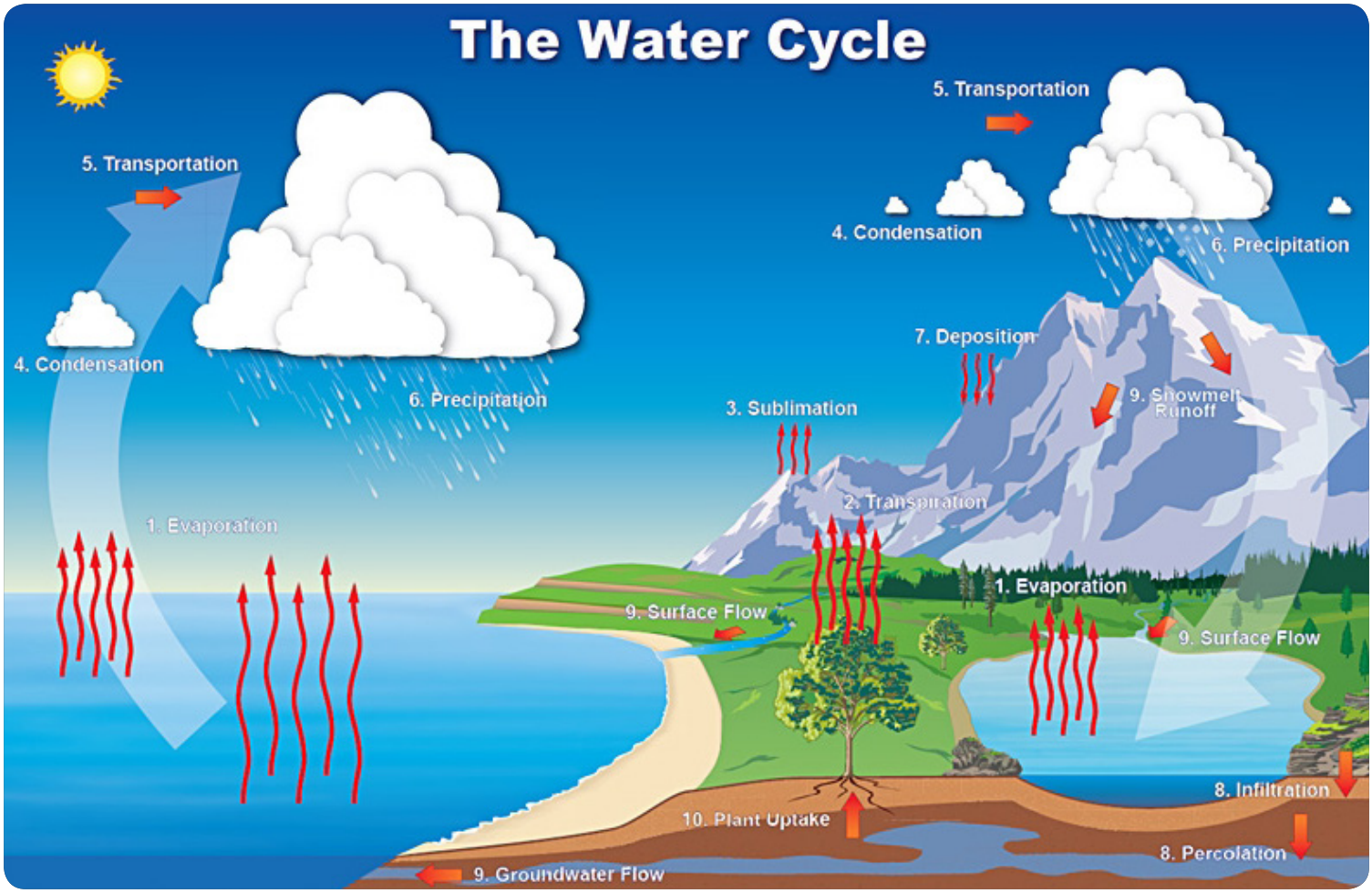
What they are learning about rain is a very small sample of all there is to learn about it. This project also encourages their creativity.

References and Other Resources

http://www.weatherwizkids.com/?page_id=64

https://www.coolkidfacts.com/how-is-rain-formed/

DIAGRAM OF THE WATER CYCLE



4-H Club Meeting 3

Ocean Life

Supplies

- Two large plastic containers or cups
- Salt
- Water
- Two raw eggs
- Rope or string (about 100 feet)
- Fine sand
- Water
- Food coloring
- Paper cups
- Plastic spoons
- Strong paper towel

INTRODUCTION

Whether or not someone lives near an ocean, it is helpful for them to understand the importance of ocean life. It is also a fun experience for them to learn more about animals they may not be familiar with, or learn even more about animals they are already familiar with.

Activity #1

Egg Float

EGG FLOAT

Time: 10 MINUTES

1. Fill two containers with water.
2. Add generous amounts of salt to one of the containers and stir until dissolved.
3. Place a whole raw egg in each container.
4. Have the youth watch which one floats and which one sinks.
5. The egg in the unsalted water should sink and the one in the salted water should float.
6. Discuss that salt makes things float. Some animals can live in the salt water, but others can't live in so much salt.

HOW LONG IS A WHALE?

TIME: 15 MINUTES

Blue whales can grow to 100 feet (30.5 meters) long and weigh about 400,000 pounds (181,437 kilograms). Diving to depths of 328 feet (100 meters) to munch on millions of krill each day, the blue whale takes the prize for the largest creature alive (and ever to exist)! For this activity, make sure you are in a space where the 100 ft rope can stretch.

1. Ask the youth how long they think the largest creature in the world is.
2. Listen to their answers, and tell them to come to the front to help with the activity.
3. Take the rope and have the children unwind it.
4. Explain that the rope is approximately how long a blue whale is.
5. Ask the youth how many of their lengths it would take to make a blue whale (about 20).
6. Have them hold hands and move along the rope to see.
7. Tell them some more facts about the blue whale:
    a. The blue whale is bigger than any animal that has ever lived on Earth, including all dinosaurs.
    b. Even though this mammal is massive, it feeds on some of the world's smallest animals: tiny sea creatures called krill. As it swims, it strains the water into its mouth, catching the krill.
    c. Its heart is the same size as a small car weighing about 2,000 pounds!
    d. The blue whale's biggest blood vessel is big enough for a human to crawl through.

SAND COLORING

TIME: 25 MINUTES

Sand is a loose granular material blanketing the beaches, riverbeds, and deserts of the world. Composed of different materials that vary depending on location, sand comes in an array of colors including white, black, green, and even pink.

The most common component of sand is silicon dioxide in the form of quartz. The Earth's landmasses are made up of rocks and minerals, including quartz, feldspar, and mica.

In this activity, youth will learn about sand, and will also be able to experiment with it.

1. Tell the youth a little bit about sand before starting the activity.
2. Before starting, have them get supplies and take them to their seats.
3. Fill paper cups half-full of sand.
4. Cover the sand with water.
5. Add food coloring until it is the color you want.
6. Stir the mixture with a plastic spoon and let it set for 15 minutes.
7. Pour the mixture onto a strong paper towel to remove extra water.
8. Spread out the sand and let it dry.
9. Use the sand to make fun pictures with glue.

Reflect

- Talk with the youth about their favorite ocean animal.
- Ask them if they were surprised about how big blue whales are.
- Why did the egg in the salt water float and the egg in fresh water not?

Apply

- Why is it important to learn about the ocean?
- How is learning about the ocean helpful to you when you live so far away from it?
- What are some other animals you know of that live in the ocean? Are they mammals or sea fish?

4-H MISSION MANDATES

Citizenship

A higher understanding of different habitats will help the kids be more respectful of all the environment.

ESSENTIAL ELEMENTS

Belonging

Make sure that all of the kids' ideas and questions are validated and respected.

Generosity

Sharing what they learned will help youth and those they share with have a desire to be more generous.

References and Other Resources

Ocean Life: Whales, Fish, and Other Sea Creatures by Kathleen M. Hollenbeck Publisher: Scholastic Professional Books; ISBN: 0439188385

http://coolscienceexperimentshq.com/floating-egg/

https://www.livescience.com/32780-whats-the-biggest-animal-in-the-world.html

http://wildkratts.wikia.com/wiki/Blue_Whale

https://www.livescience.com/34748-what-is-sand-beach-sand.html

Supplies

- Dinosaur pictures (at end of club meeting)
- Dinosaur books (see "References and other Resources" at the end of the club meeting)
- At least 50 feet of string
- Scissors
- Glue
- Paper bags
- Construction paper
- Markers or crayons
- Toy animals to represent meat
- Toy kitchen set pieces to represent plants

INTRODUCTION

Dinosaurs are interesting. There is so much to learn about them. Dinosaurs dominated the earth for over 165 million years. Humans have been around for only 2 million years. There is a sense of mystery about them as we try to figure out what they really looked like.

Dinosaurs actually survived for more than 700,000 years after the earth was hit by a massive meteorite originally believed to have caused their extinction, according to new research. Many scientists believe that a massive meteorite hit the Yucatan Peninsula of Mexico 65.5 million years ago and caused the extinction of the dinosaurs as well as the pterosaurs and plesiosaurs. The 112-mile-wide crater was caused by a rock 6 miles in diameter. It would have hit Earth's crust with immense force, sending shockwaves around the world. No land animal heavier than a large dog survived. However, animals such as sharks, jellyfish, fish, scorpions, birds, insects, snakes, turtles, lizards, and crocodiles survived.

Activity #1
Dinosaur Measurements

DINOSAUR MEASUREMENTS

Time: 35 MINUTES

- Before the activity, research and pick out a few types of dinosaurs (four to six different kinds, some big, some small) you'd like to use for the activity. Find pictures of these dinosaurs. Find out the height and length of each one, how much food they usually ate each day, and be prepared to tell the youth more facts about them.

1. Show the youth the picture for each dinosaur.
2. Tell them the name of each dinosaur and a bit about its lifestyle, etc.
3. Have the participants hypothesize the size and height of each.

4. Tell them to write down their estimates.

5. Have them go outside and use string to measure out the size of several dinosaurs.

6. Use a measuring tape to show them on the string how tall and long each dinosaur was.

7. Let them check to see if their estimates were close.

8. Have them compare their height to that of the dinosaurs. Who is bigger? Who is smaller?

9. After they know the size of each dinosaur, tell the youth to estimate how much food a dinosaur of that size would need to eat every day.

10. Let them know at the end of the activity how much food each dinosaur would usually consume in a day.

Activity *#2*

Meat Eaters and Plant Eaters

MEAT EATERS AND PLANT EATERS

TIME: 30 MINUTES

1. To begin, have the club members take the materials they need to make their paper bag puppets.

2. Have them make the dinosaur puppets to use in the second part of this activity. They will make the features they can put on their puppets, including eyes, scales, a tail, etc.

3. Once their dinosaur puppets are made, let each club member choose to be a dinosaur that is either a meat eater or a plant eater.

4. Cut and paste triangle-shaped teeth to the meat-eater puppets.

5. Cut and paste horizontal, rectangle-shaped teeth to the plant-eater puppets.

6. Explain that the shape and position of a dinosaur's teeth are key to helping scientists decide whether it was a meat eater or plant eater.

7. Gather toy animals (meat) from a farm set, etc., and some toy vegetables (plants) from a kitchen or grocery set.

8. Place all the items in a large bag, and have the participants reach in and grab one item (without looking and using their puppets' mouths).

9. If the toy food pulled from the bag is the right kind of food for that specific dinosaur, the puppeteer keeps the food. If the dinosaur catches the wrong food, he spits it out!

Reflect

- Were you surprised by how big/ or small some of the dinosaurs were?
- What were some of the favorite things you learned about dinosaurs?
- If you could have a dinosaur for a pet, which one would you have?

Apply

- How big was the largest dinosaur we talked about? How tall and long was it?
- What were some of the things that some of the dinosaurs ate?
- How does learning about dinosaurs benefit us today?

ESSENTIAL ELEMENTS

Belonging

Make sure that all of the kids' ideas and questions are validated and respected.

Mastery

As the kids learn more about dinosaurs, they think more creatively. It will help them think outside the box about different possibilities that could exist.

References and Other Resources

Dinosaurs Big and Small (Let's-Read-and-Find-Out Science, Stage 1 by Kathleen Weidner Zoehfeld and Lucia Washburn Publisher: Harpercollins Juvenile Books; ISBN: 0064451828
http://www.factretriever.com/dinosaur-facts

Supplies

- Cardboard (8 ½ X 11) or paper plate
- Pencil (4 in. long)
- Small ball of clay
- Pen
- Compass
- Green twig
- Plastic cup
- Water
- Oil
- Large jar
- Baby food jars and lids
- Rubbing alcohol
- Vegetable oil
- White glitter
- Small white beads
- Small plastic snowman (check your local craft store)
- Hot glue guns (3-4 for the whole group to share)

INTRODUCTION

Learning about the different elements and weather inspires and enlightens youth's creative minds. In this club meeting, youth have the opportunity to learn how to make their own sundial, rain, and snow globe. Before each activity, gather the necessary supplies and set them out for the youth.

Activity #1
Sundial

SUNDIAL

Time: 30 MINUTES

1. To make a sundial, all you need is a pencil, a small ball of clay, a piece of cardboard or a paper plate, and a pen.
2. Start by pushing the sharp end of the pencil into the ball of clay.
3. Press the clay ball near one side of the cardboard. (If you're using a paper plate, place the ball of clay in the middle of the plate.)
4. Use a compass to determine the closest celestial pole. Your straw, or gnomon, should point toward the closest celestial pole, which is parallel with the Earth's axis.
5. If you live in the Northern Hemisphere, slightly slant the pencil toward the North. If you live in the Southern Hemisphere, slant it slightly toward the South.
6. Draw a 12 at the top of the cardboard/plate.
7. Starting at noon, trace the pencil's shadow on the cardboard every hour.
8. You can use push pins to hold the carboard or plate firmly on the ground so it doesn't move.

9. At 1 p.m., go back to the plate and check the position of the straw's shadow. Write the number 1 at the very edge of the plate, where you see the shadow falling.

10. Use a watch or a timer to remind yourself each hour to go outside and draw a new line.

11. Write the time each hour where the new shadow falls.

12. Repeat this at the top of each hour until the sun goes down.

13. Return to the plate on the next sunny day. You will be able to tell the time based on the shadow's position. Now, your new sundial can tell you the time on any sunny day.

Activity #2
Rain in a Jar

RAIN IN A JAR
TIME: 30 MINUTES

1. Fill the plastic cup halfway with water.

2. Place the twig in the water, and pour a small layer of oil over the water.

3. Take the large jar and turn it upside down, then put it over the plastic cup with the twig inside the cup.

4. Place in the sun light and watch it rain!

5. The water and twig inside the cup will create condensation on the glass jar, which will make it appear that it is raining.

Activity #3
Snow Globe

SNOW GLOBE
TIME: 25 MINUTES

1. Let the youth each choose a snowman for their jar.

2. Glue the snowmen to the inside of the jar lids using the hot glue gun.

3. Help the youth each fill their jar ¼ of the way with alcohol.

4. Next, fill the jar with vegetable oil until it is 1 inch from the top.

5. Add glitter and beads to decorate.

6. Fill to the top with more vegetable oil so there is no air, and screw the lid on tightly.

7. Use the hot glue gun to seal the top to prevent leaks.

8. Shake the snow globes to see how the snow falls!

Reflect

- What did you learn from making your own sundial?
- What did you learn while making it rain inside a jar?
- What was your favorite part of making a snow globe?

Apply

- Why do you think people used sundials in ancient times? Do you think they are as useful as the clocks we have nowadays?
- Why does the sun dial work accurately?
- Do you think making your sundial would have worked as well had you been impatient while trying to make it?
- Were you surprised by the outcome of the "Rain in a Jar" activity?
- How do alcohol and vegetable oil work together to create the effect of a snow globe?

ESSENTIAL ELEMENTS

Belonging

Make a snow globe for someone who is close to you. How do you think they feel knowing you thought of them?

Generosity

Get together to make snow globes for children in hospitals. Encourage them to teach the children the things they've learned.

References and Other Resources

https://www.wikihow.com/Make-a-Sundial

Natural Disasters

Supplies

- Glass or plastic cups
- Books
- Pencils
- Pans
- Timer
- Bell
- Blankets
- Play phone

INTRODUCTION

People are afraid when they don't know how to respond to a situation. Kids are no different. Teach them how to respond to certain natural disasters to help them not be afraid when they have to experience them.

Activity #1
Drop, Cover, and Hold

DROP, COVER, AND HOLD

TIME: 30 MINUTES

1. Explain to the participants that you are going to pretend they are in an earthquake so they will know what to do if there is a real earthquake.
2. Tell them that you will call out, "Earthquake! Drop, Cover, and Hold!"
3. Direct the participants to practice getting under a table and turning away from windows.
4. Tell them to put a hand on the back of their neck, tuck their head down, hold on to the legs of a table, and be prepared to move with it. The reason they need to put a hand on the back of their neck is to protect it.
5. Ask half of the participants to be actors and the other half to be the sound crew to help in creating the pretend earthquake.
6. Ask one youth to flick the lights on and off several times and then turn them off completely.
7. Have another youth be the timer and time the activity for 5 minutes.
8. Ask the other helpers to create earthquake sounds. These sounds can be made by scraping tables, dropping books, opening drawers, shouting, banging pots and pans, imitating barking dogs and meowing cats, dropping several pencils to imitate falling bricks, and using plastic cups to imitate rattling glass.

9. Read the earthquake simulation found below.

10. Carry out the simulation.

11. Repeat the simulation and have the actors and sound crew switch places so that all participants can practice earthquake safety.

12. After the second or third simulation, ask the participants how they feel. Explain that they don't need to be afraid of earthquakes, but they do need to know how to act in case of an earthquake.

Earthquake Simulation

Imagine that you hear a low, rumbling, roaring sound. The noise builds, getting louder and louder for about 10 seconds. Then, wham! there's a terrific jolt. You feel like someone suddenly slammed on the brakes in the car, or like a truck just rammed into the side of the building. The floor seems to be moving beneath you. It's hard to stand up, or even stay in your seat. If you do stand up, you might feel like you're riding a raft down a fast river. When you walk, it's like trying to walk on a trampoline or a waterbed. You hear someone say, "Earthquake! Drop, Cover and Hold!"

I want all of you at your desks to take cover as quickly and quietly as you can, right now. Please listen very carefully. The shaking and commotion may last about 60 seconds or a little longer. We'll have our timer count off the seconds for as long as this earthquake lasts. (The timer may begin counting softly now.) The building is creaking and rattling. Books are falling from the bookcases. Hanging lamps and plants are swaying. Suddenly a pot falls to the floor and smashes, and the plant spills. A window pane just shattered, and glass is falling to the floor. The table is sliding, too. Be sure to stay in the "Drop, Cover and Hold" position under your desk. If your desk is moving, hold onto the legs and move with it. You hear noises outside. Dogs are barking. Cats are meowing. A baby is crying. People are shouting and screaming.

You hear crashing sounds, from brick chimneys and other loose parts of the building falling to the ground. Trees outside are swaying and scraping against the walls. Inside the room, pictures are moving on their nails. Oh! That one just fell off the wall and crashed to the floor. The desk drawers are sliding open. The lights begin to flicker on and off--they just went out! Now the door swings back and forth on its hinges. Bang! It slams shut. There's silence now. Just as suddenly as the noise and shaking began, the room grows quiet. (The timer can stop counting now.)

Please, everyone, get back in your seats. It is important to remain very quiet and wait for instructions. If it is safe to leave the building, I am going to lead you outside to an open space. Stay together, and be ready to take cover again at any moment because the shaking may start again. Sometimes other quakes, called aftershocks, begin after the first earthquake has stopped.

IF FIRE STRIKES

TIME: 20 MINUTES

1. Practice a pretend fire drill while the kids are at "home" in bed.
2. Have each youth lie on the floor and pretend to be sleeping.
3. Ring a bell for the fire alarm.
4. Have each participant crawl out of bed and walk over to a designated "door."
5. They must touch it with the back of their hand first to see if it is hot or cold.
6. Pretend that it is hot, then ask them what to do next.
7. Have them practice the stop, drop, and roll.
8. Set up chairs in a vertical line and have them crawl under all of the chairs pretending to crawl under smoke.
9. Have the children practice dialing 911 and telling the fireman what is going on.
10. Once they are "outside," ask them what they thought of the drill and how they felt during it. Go over the Reflect and Apply questions with them as well.

Reflect

- What is the first thing you do when an earthquake hits? Where do you go?
- Where are some places that you need to make sure to stay away from whenever possible?
- What causes earthquakes?
- What are some things to make sure you do when there is a fire in your home?
- What are some things to make sure not to do if you ever have a fire?

Apply

- How can you make sure your family knows what to do if there is an earthquake?
- How can you practice what to do when there is an earthquake?
- Encourage the youth to go home and create a plan with their family of what to do if there is a fire.

ESSENTIAL ELEMENTS

Belonging

The kids will feel like an important part of their family when they take the lead in teaching their family about earthquake and fire safety.

Mastery

The kids will be taught how to respond in natural disasters. They will learn new skills by practicing the drills.

References and Other Resources

DK Readers: Jobs People Do –A Day in The Life of a Fire Fighter by Linda Hayward Publisher: DK Publishing; ISBN: 0789473658
The Wonderful Wizard of Oz by L. Frank Baum, Greg Hildebrandt, and Tim Hildebrandt Publisher: Courage Books; ISBN: 0762416289

More to Discover

Congratulations on completing your Discover 4-H club meetings! Continue with additional curriculum in your current project area, or discover other 4-H project areas. Check out the following links for additional 4-H curriculum.

1. www.discover4h.org
2. http://www.4-h.org/resource-library/curriculum/
3. http://utah4h.org/curriculum/

Become a 4-H Member or Volunteer

To **register** your Utah club or individuals in your club, visit and contact your county Extension office.

http://utah4h.org/about/

http://utah4h.org/join/index

For help registering in 4-H online, visit:

http://utah4h.org/staffresources/4honlinehelp

Non-Utah residents, please contact your local 4-H office:

http://www.4-h.org/get-involved/find-4-h-clubs-camps-programs/

Stay Connected

Visit Your County Extension Office

Stay connected with 4-H activities and news through your county Extension office. Ask about volunteer opportunities, and don't forget to register for your county newsletter. Find contact information for counties in Utah here:

https://extension.usu.edu/locations

Enjoy the Fair!

Enter your project or create a new project for the county fair. Learn about your county fair and fair judging here:

http://utah4h.org/events/index

Participate in Local or State 4-H Activities, Programs, Contests, or Camps

For Utah state events and programs, visit:

http://utah4h.org/events/index

http://utah4h.org/projects/

For local Utah 4-H events and programs, visit your county Extension office:

https://extension.usu.edu/locations

Non-Utah residents, please contact your local 4-H office:

http://www.4-h.org/get-involved/find-4-h-clubs-camps-programs/

Discover *Service*

Become a 4-H Volunteer!

http://www.youtube.com/watch?v=UBemO5VSyK0

http://www.youtube.com/watch?v=U8n4o9gHvAA

To become a 4-H volunteer in Utah, visit us at:

http://utah4h.org/join/becomevolunteer

Serve Together as a 4-H Club or as an Individual 4-H Member

Use your skills, passions, and 4-H to better your community and world. You are needed! Look for opportunities to help in your area or participate in service programs that reach places throughout the world (religious groups, Red Cross, etc.).

Hold a Club Service Project

USU Collegiate 4-H Club hosted "The Gift of Giving" as a club activity. Club members assembled Christmas stockings filled with needed items for CAPSA (Community Abuse Prevention Services Agency).

http://tinyurl.com/lu5n2nc

Donate 4-H Projects

Look for hospitals, nursing homes, or other nonprofit organizations that will benefit from 4-H projects. Such projects include making quilts for CAPSA or Primary Children's Hospital, or making beanies for newborns. During Utah 4-H State Contests, 40 "smile bags" were sewn and donated to Operation Smile.

Partner with Local Businesses

92,000 pounds of processed lamb, beef, and pork were donated to the Utah Food Bank in 2013 by multiple companies.

http://tinyurl.com/pu7lxyw

Donate Money

Clubs or individuals can donate money gained from a 4-H project to a worthy cause. A nine-year-old 4-H member from Davis County donated her project money to help a three-year-old battle cancer.

http://tinyurl.com/mqtfwxo

Give Us Your *Feedback*

Help us improve Discover 4-H curriculum. We would love feedback or suggestions on this guide. Please go to the following link to take a short survey: Click here to give your feedback or go to: https://goo.gl/iTfiJV