4-H2O WATER KEEPER

COOPERATIVE EXTENSION
College of Agriculture, Forestry and Life Sciences
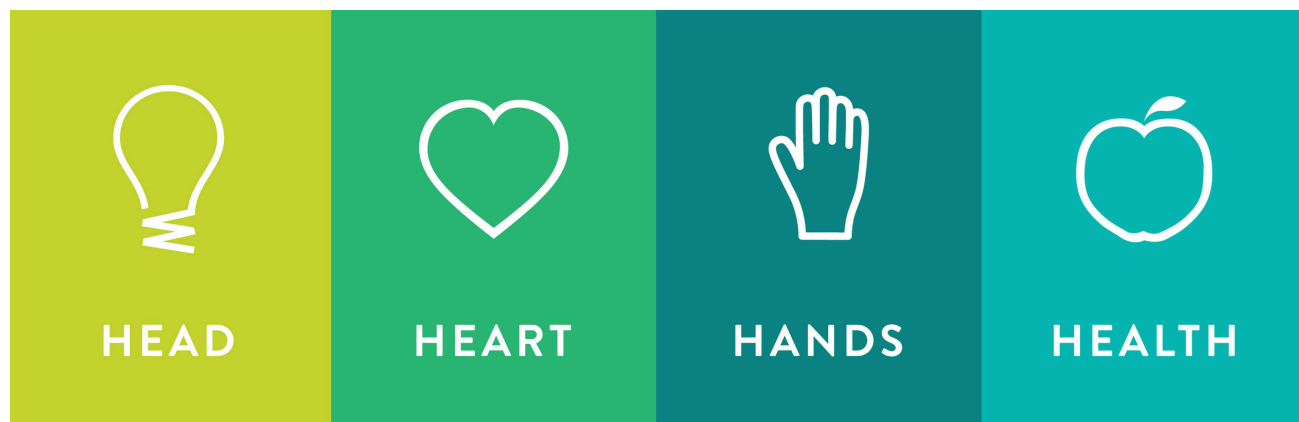
A LOWCOUNTRY
4-H PROJECT

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HEAD **HEART** **HANDS** **HEALTH**

All About Me

<u>Age Division</u>

Age is as of January 1st of the current 4-H year, which spans from September 1st through August 31st.

☐ *Junior (9-13)*   ☐ *Senior (14-18)*

<u>Contact Information</u>

Name:_____

Address:_____

City, State, Zip:_____

4-H County:_____

Extension Agent:_____

Birthdate:_____ Years in 4-H:_____Grade in School:_____

Project Start Date:_____ Project End Date:_____

<u>Signatures:</u>

By signing below we certify that: I (the Participant) personally kept records on and completed this record book; I (the parent or guardian) helped my child only as needed to complete this record book and the tasks associated with this project; and I (local Clemson Extension Agent) confirm that the participant is a current member, in good standing of 4-H.

4-H Member's Signature:_____ Date:_____

Parent/Guardian's Signature:_____ Date:_____

Extension Agent's:_____ Date:_____

Introduction to 4-H

In 4-H, we believe in the power of young people. We see that every child has valuable strengths and real influence to improve the world around us. We are America's largest youth development organization—empowering nearly six million young people across the U.S. with the skills to lead for a lifetime.

4-H is delivered by Cooperative Extension—a community of more than 100 public universities across the nation that provides experiences where young people learn by doing. Kids complete hands-on projects in areas of health, science, agriculture, and citizenship in a positive environment where they receive guidance from adult mentors and are encouraged to take on proactive leadership roles. Kids experience 4-H in every county and parish in the country—through in-school and after-school programs, school and community clubs and 4-H camps.

Based on their interests and guided by adult mentors, youth develop their own pathway in 4-H. They select from a broad menu of local 4-H programs. There are hands-on and learn-by-doing opportunities for everyone.

To find more information about ways you can get involved in South Carolina 4-H in your area, contact your local Cooperative Extension Office:
http://www.clemson.edu/extension/co/index.html

To receive more information on state-level 4-H opportunities, visit:
http://www.clemson.edu/extension/4h/index.html

"Making the Best Better."

4-H Motto

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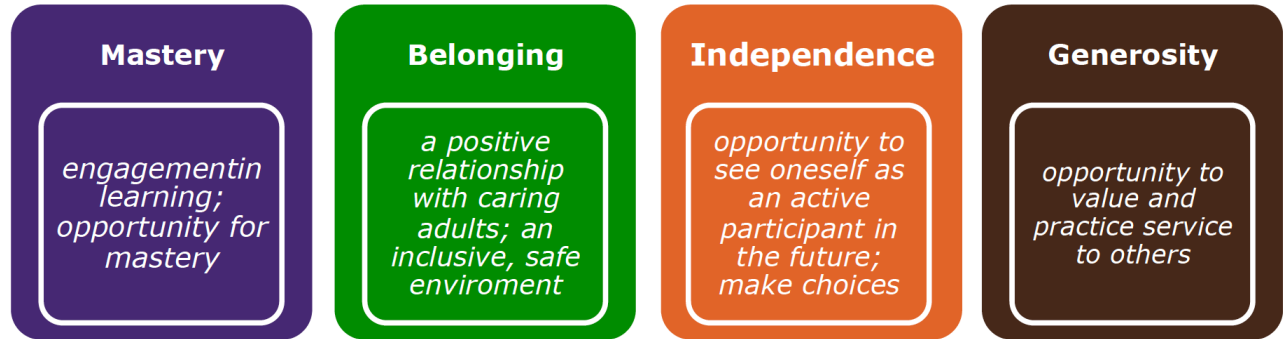for my club, my community,
my country, and my world."

4-H Pledge

"Learning By Doing."

4-H Slogan

Essentials Elements of 4-H Youth Development

The essential elements of 4-H youth development are the underlying principles that we embed in programs, curricula, and learning opportunities to promote positive youth development. Regardless of the project area, youth need these four essential elements to develop to their fullest potential with a variety of experiences.

Mastery	Belonging	Independence	Generosity
engagementin learning; opportunity for mastery	a positive relationship with caring adults; an inclusive, safe enviroment	opportunity to see oneself as an active participant in the future; make choices	opportunity to value and practice service to others

Experiential Learning Model

In 4-H, supportive, caring adults help youth discover what they are learning with minimal guidance. Part of their experience is to learn and discover on their own and to pursue deeper understanding to be able to apply what was learned in other life situations. We encourage youth to seek, and adults to provide, mentoring in life- and technical skill development through use of the five-step experiential learning model.

Do

1. Experience — The activity; perform; do it.

Reflect

2. Share — The results, reactions, & observations.

3. Process — By discussing, looking at the experience; analyze, reflect

Apply

4. Generalize — To connect the experience to real-world examples

5. Apply — What is learned to a similar or different situation; practice

Introduction to the 4-H2O Water Keeper Project

Overview

One component of the Beaufort County 4-H Natural Resources program, the 4-H2O Water Keeper Project is an independent-study project that engages youth in the active study of water quality and preserving natural resources. We strongly advise youth to find a 'mentor' to work with during this project (Extension Agent, Park Ranger, Biologist, etc.)

Objectives

Youth involved in the Beaufort County 4-H2O Water Keeper Project will:
• Set goals and plan activities and strategies to achieve those outcomes, even in the face of challenges.
• Reflect on their yearly work by documenting skill development and learning experiences.
• Give back to their communities through educational and service activities.
• Learn valuable skills in record keeping, financial management, and written communication.
• Gain technical expertise that can promote beneficial practices.

Guidelines

Age Divisions (all ages are calculated on January 1st of the current 4-H year (The club year runs from September 1st to August 31st)
- Junior, 9-13 years of age
- Senior, 14-18 years of age

Youth will turn in their finished project book into the judges as part of Beaufort County 4-H Achievement days to be eligible for awards. You must return the included evaluation to be eligible for awards earned! Youth participating in the presentation contest should be prepared to discuss the following:
- What is a watershed?
- The difference between point source and non-point source pollution
- Best management practices
- Experiences throughout the project

Timeline

September 1, 2020: 4-H Club Year Begins
June 2021: Beaufort County 4-H Project Achievement Day
August 2021: Beaufort County 4-H Project Achievement Banquet
August 2021: 4-H Club Year Ends

Acknowledgements

References

Information was gathered from the Clemson University Cooperative Extension, South Carolina 4-H, National 4-H Council, and National 4-H Headquarters websites.

Additional Sources

Blyler, K. (2017, November 06). Fins & Scales: An Introduction to Bony Fish?A Marine Science Project Guide for 4-H Leaders and Educators. Retrieved from https://edis.ifas.ufl.edu/4h355

Selden, G., Archer, D., Jacks, A. (2013). 4-H Reel Into Sport Fishing. Retrieved from http://fisheries.tamu.edu/files/2013/09/4-H-Reel-Into-Sport-Fishing-For-Regional-and-State-Level-Competitions.pdf

University of Kentucky Extension. (2011). What is a Watershed? Retrieved from http://www2.ca.uky.edu/agcomm/pubs/4de/4de02po/4de02po.PDF:

Acknowledgements

Image Sources

Goal Setting

Name at least two goals you would like to achieve by participating in this project, as well as an action you will take to achieve each goal. In addition, think of challenges or potential limitations that may prevent you from achieving your goals. Use the table below to write your goals, actions, and challenges.

	Goal	Action	Challenge
1			
2			
3			

Watersheds: What is a Watershed?

A watershed is the area of land that drains into a body of water. A watershed is nature's boundary for water. It includes all of the land that drains to a single stream, river, lake, or other body of water. No matter where you are, you are always in a watershed. Watersheds can be big or small. Big watersheds often contain smaller watersheds. Learning about your watershed as well as sources of water pollution can help keep water clean.

Using SC DHEC's Watershed Atlas, find the watershed in where you live. What is it called? What is SC's largest watershed? The smallest?

_____

_____

_____

What kinds of land cover is common in your watershed?

_____

_____

_____

What are pollutants and how do they affect watersheds?

_____

_____

What's a pollutant in your watershed?

_____

_____

_____

What is point source pollution?

_____

What is non-point source pollution?

_____

Watersheds: Draw Your Watershed

Once you determine what watershed you live in, draw yours! Include buildings, roads, and other man-made structures as well as the natural landscapes, plants and animals, and the waterways that are part of your watershed.

Water Quality: Water Quality Standards

Water quality standards describes how we use water bodies and the requirements that need to be met to use them. We can use water for drinking, swimming, irrigation, fishing, and more. Water quality standards include designated uses, water quality criteria, and antidegradation policy. Chemical measurements, biological surveys, and visual observations provide a "big picture" of what is happening in a waterbody.

1

Designated uses are specific for each waterbody. These uses can be related to water supply, aquatic life, agriculture or recreation.

2

Water quality criteria are how we determine if water can be used for certain purposes. The chemical, biological, and physical conditions of a waterbody must be measured to do so. Water quality criteria are adjusted as needed to reflect changes in law and science.

3

Antidegradation policy protects how we use our water. It states that any change in land use, water use, or water flow will not hurt the waterbody or how people currently use it. This helps keep our drinking water streams clean and our fishing creeks full of life.

Water Quality: Water Quality Parameters

Water quality describes the chemical, physical, and biological condition of a body of water. National, state, and local agencies are tasked with monitoring and protecting water quality. They establish standards for each one of these classes of attributes. In the United States, all public water supplies must be measured against these standards that are developed by the Environmental Protection Agency (EPA). You can learn how to find current water quality data for South Carolina watersheds in the "Accessing DHEC Water Quality Data From The Water Quality Portal (WQP)" section at https://bit.ly/2EveIgT

Chemical

Air temperature, water temperature, dissolved oxygen (DO), pH, electrical conductivity, salinity, hardness, alkalinity, ammonia, nitrate/nitrite, phosphorous, bacteria, and the amount of metals in the water column are used to determine the chemical conditions of a body of water.

Biological

Certain species of macroinvertebrates have different tolerances to water pollution. Some species can tolerate lots of pollution while other species cannot tolerate any pollution. These types of species are called indicator species, and their presence or absence can be used to draw conclusions about the quality of the water.

Physical

The physical characteristics of a waterbody such as observations related to the movement of water (e.g. fast, slow, still), water clarity, tree canopy (e.g. full shade, part shade, exposed), bottom composition (e.g. bedrock, boulder, cobble, gravel, sand, silt), land use, water appearance, water odor, and presence and size of vegetation can be used to draw conclusions about water quality.

Water Quality: Assessing Water Quality

Check out a water quality monitoring kit from your local county extension office to conduct the assessments. Consider potential risks (high water, tide changes, etc.) when selecting a testing spot. Dress for the environment and consider using protective gear like gloves and/or boots.   Do not enter dangerous areas or private property. Take an adult with you and do not sample alone.

Location:_____ Date/Time:_____ Water Body:_____

Location on Water Body:_____

Weather:
◯Clear
◯Overcast
◯Rain

Overhead Canopy:
◯Full Shade
◯Part Shade
◯Exposed

Current:
◯Fast
◯Slow
◯Still

Land Use:
◯ Forestry
◯ Urban Residential
◯Urban Commercial
◯ Agriculture
◯Industrial
◯Mining
Other: _____

Possible Pollution Sources:
◯Bank Alterations
◯ Channel Alterations
◯Storm/Sewer Pipes
◯ Straight Pipes
◯Waste Water Plant
◯ Construction Sites
◯ Logging Area
◯Nearby Roads
◯ Livestock/Feedlots
◯Litter
Other: _____

Water Appearance:
◯ Clear
◯ Oily
◯Green
◯Foamy
◯ Reddish
◯Muddy
◯Tea
◯Cloudy
Other: _____

Water Odor:
◯ None
◯ Sewage
◯Oil
◯Rotten Eggs
◯Fish
◯Chlorine
◯Acrid/Bitter
Other: _____

Air Temperature: _____
Water Temperature:_____
Dissolved Oxygen (DO):_____
Nitrates: _____
Phosphates: _____
pH: _____
Secchi Depth:_____
Salinity:
Other Observations/ Measurements:
_____
_____
_____

Water Quality: Evaluating Results

After conducting your water quality assessment, you will analyze your results. Use the reference guide in your kit to determine whether or not your sample had favorable or unfavorable conditions.

| Parameter	Test Results	Favorable Conditions	Unfavorable Conditions
Dissolved Oxygen			
Nitrates			
pH			
Temperature			
Turbidity			
Phosphates			
Salinity			
Coliform bacteria			
BOD (Biological Oxygen Demand)			
Overall			

Aquatic Habitats: A Place to Call Home

A habitat is a place where an organism has food, water, shelter, and space. Habitats are made up of both abiotic and biotic factors. Abiotic factors are non-living things like soil types, light intensity, and temperature. Biotic factors are living things like the types of vegetation, prey species, and predator species. Habitats can be big, like the ocean, or small, like the underside of a log. Some species can call a broad range of habitats home while other species can only survive in one specific habitat.

Aquatic Habitats

Aquatic habitats are habitats that are primarily composed of or heavily influenced by water. There are two main types of aquatic habitats: freshwater habitats and marine (or saltwater) habitats. Aquatic habitats can be entirely or partially composed of water. For example, terrestrial habitats like wetlands are so influenced by water, that they are also considered aquatic habitats.

Habitat Research

Research a freshwater habitat, a marine habitat, and a terrestrial (land) habitat that is dependent on water. In the course of your research, visit each habitat to take pictures and field notes. Record your observations, photos, and research on the following pages. Use additional paper as needed.
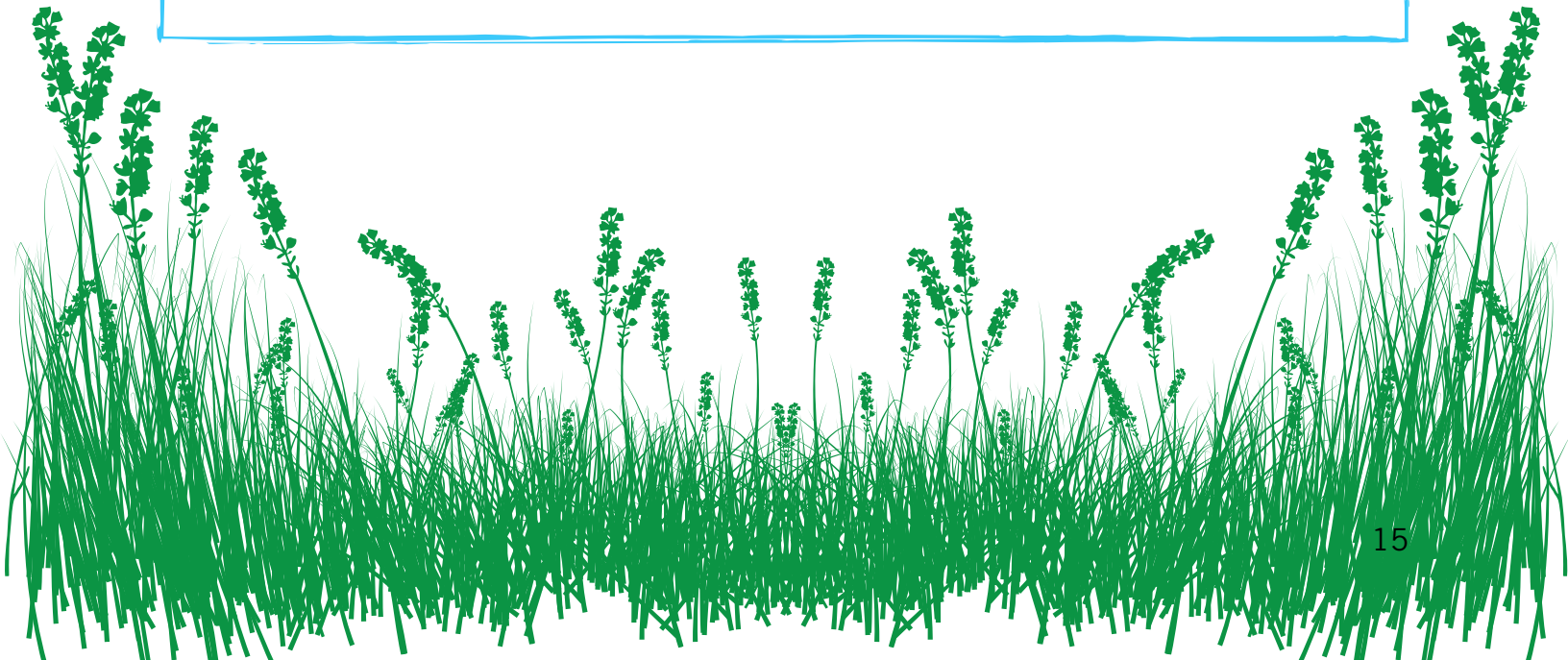
Aquatic Habitats: Research

When going out to take photos, stay aware of your surroundings and potential risks such as dangerous wildlife, high water, and fall hazards. Be sure to bring hiking books, water, and other protective gear. Do not enter dangerous areas or private property. DO NOT GO ALONE. Bring a trusted adult with you.

Attach Photo Here

Attach Photo Here

Name:_____

Location in SC:_____

Abiotic Characteristics: _____

_____

Biotic Characteristics: _____

_____

Common Plant/Animal Species: _____

_____

Field Notes: _____

_____

Fun Fact:_____

_____

Aquatic Habitats: Research

When going out to take photos, stay aware of your surroundings and potential risks such as dangerous wildlife, high water, and fall hazards. Be sure to bring hiking books, water, and other protective gear. Do not enter dangerous areas or private property. DO NOT GO ALONE. Bring a trusted adult with you.

Name:_____

Location in SC:_____

Abiotic Characteristics: _____

_____

Biotic Characteristics: _____

_____

Common Plant/Animal Species: _____

_____

Field Notes: _____

_____

Fun Fact:_____

_____

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When going out to take photos, stay aware of your surroundings and potential risks such as dangerous wildlife, high water, and fall hazards. Be sure to bring hiking books, water, and other protective gear. Do not enter dangerous areas or private property. DO NOT GO ALONE. Bring a trusted adult with you.

Attach Photo Here

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Name:_____

Location in SC:_____

Abiotic Characteristics: _____

_____

Biotic Characteristics: _____

_____

Common Plant/Animal Species: _____

_____

Field Notes: _____

_____

Fun Fact:_____
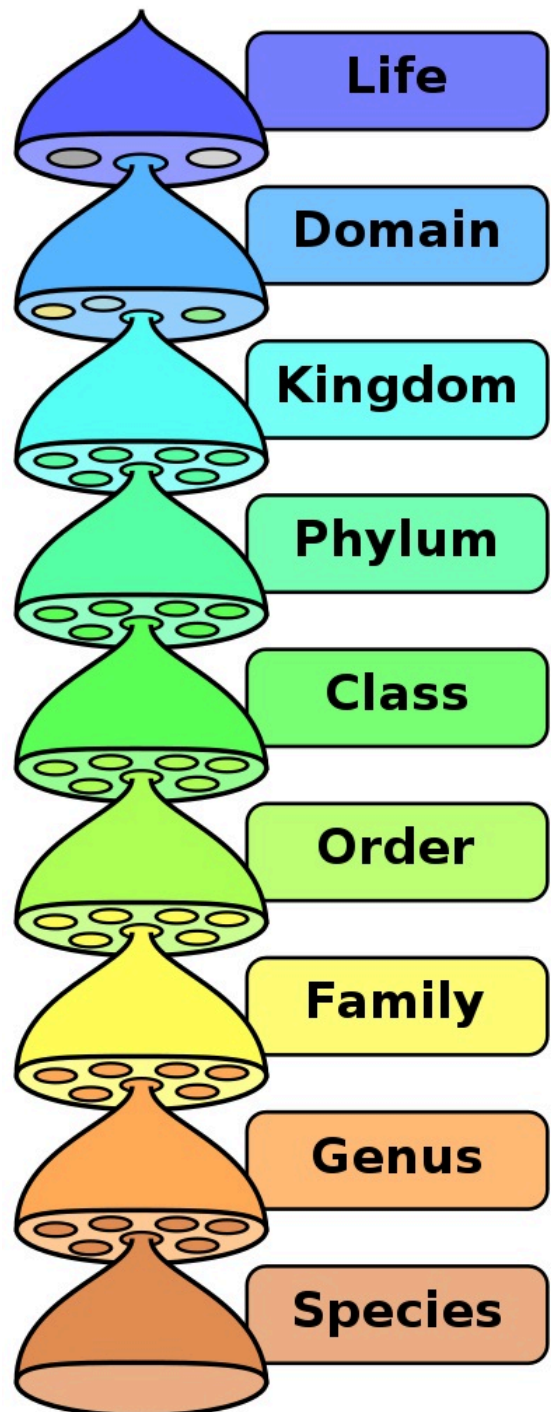
_____

Biodiversity: Taxonomy

There are an estimated 8.7 million species on Earth, and only 14% of them have been discovered! We use the term "biodiversity" to describe this abundance of life. Biodiversity is the number and variation of species found in a place. Biodiversity is important because it boosts ecosystem productivity, resiliency, and sustainability.

Scientific Classification

Scientific classification (also known as taxonomy) is how scientists organize life. It distinguishes how similar unique living organisms are to one another. There are eight levels of classification: Domain, Kingdom, Phylum, Class, Order, Family, Genus and Species. Each level groups organisms by shared characteristics and ancestry. Domain is the largest classification and makes broad distinctions between the types of living cells. Species is the most narrow level of classification and refers to only one type of organism.

Species Research

Research different organisms in South Carolina using a field guide. Visit the species' habitat to take a photo of it. Record your field observations, photo, and other facts on the following pages. Use additional paper as needed. Be sure to include what other species are related to it (and on what level) and research at least one plant, one animal, and one fungus.

Life

Domain

Kingdom

Phylum

Class

Order

Family

Genus

Species

Biodiversity: Species Research

When going out to take photos, stay aware of your surroundings and potential risks (high water, dangerous wildlife, fall hazards, etc.). Do not enter dangerous areas or private property. Do not handle, pick up, or disturb the wildlife. Dress appropriately for the outdoors and weather. DO NOT GO ALONE. Bring a trusted adult with you.

Attach Photo Here

Common Name and Scientific Name :_____

Related species:_____

Size:_____

Characteristics:_____

Diet:_____

Habitat:_____

Field Notes:_____

Fun Fact:_____

Biodiversity: Species Research

When going out to take photos, stay aware of your surroundings and potential risks (high water, dangerous wildlife, fall hazards, etc.). Do not enter dangerous areas or private property. Do not handle, pick up, or disturb the wildlife. Dress appropriately for the outdoors and weather. DO NOT GO ALONE. Bring a trusted adult with you.

Attach Photo Here

Common Name and Scientific Name :_____

Related species:_____

Size:_____

Characteristics:_____

Diet:_____

Habitat:_____

Field Notes:_____

Fun Fact:_____

Biodiversity: Species Research

When going out to take photos, stay aware of your surroundings and potential risks (high water, dangerous wildlife, fall hazards, etc.). Do not enter dangerous areas or private property. Do not handle, pick up, or disturb the wildlife. Dress appropriately for the outdoors and weather. DO NOT GO ALONE. Bring a trusted adult with you.

Attach Photo Here

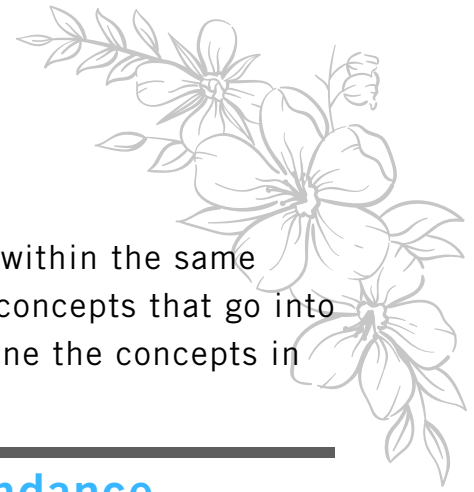**Common Name and Scientific Name :**_____

Related species:_____

Size:_____

Characteristics:_____

Diet:_____

Habitat:_____

Field Notes:_____

Fun Fact:_____

Biodiversity: Concepts

Biodiversity can be measured at many scales, ranging from within the same habitat to across different ecosystems. There are multiple concepts that go into measuring biodiversity. Take some time to explore and define the concepts in the boxes below.

Daubenmire Frame

A daubenmire frame is a 10in by 20in rectangle frame that is used to measure plant cover.
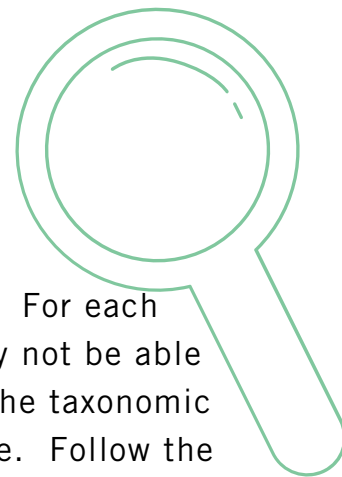
Abundance

Community

Population

Species Richness

Species Eveness
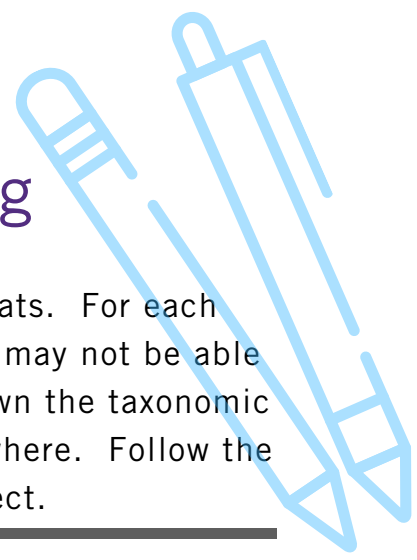
Biodiversity: Measuring by Sampling

Using a Daubenmire Frame of your own construction (check out https://tinyurl.com/y4cvshby for instructions), sample two habitats. For each sample, label the table with the habitat type and fill it in. You may not be able to determine every species, so classify each organism as far down the taxonomic hierarchy as you can. The habitats can be in your yard or elsewhere. Follow the safety guidelines for the previous research portions of this project.

Sample 1:_____

Organism or Species Name *ex. Dandelion (Taraxacum spp.)*	Number of Individuals *ex. 10*
TOTAL	

Biodiversity: Measuring by Sampling

Using a Daubenmire Frame of your own construction (check out https://tinyurl.com/y4cvshby for instructions), sample two habitats. For each sample, label the table with the habitat type and fill it in. You may not be able to determine every species, so classify each organism as far down the taxonomic hierarchy as you can. The habitats can be in your yard or elsewhere. Follow the safety guidelines for the previous research portions of this project.

Sample 2:_____

Organism or Species Name ex. Dandelion (Taraxacum spp.)	Number of Individuals ex. 10
TOTAL	

Biodiversity: Evaluation and Reflection

Using your knowledge and experience, answer the questions below.

Which sample had greater species richness? Which sample had greater species evenness?

_____

_____

_____

Which sample had the greatest biodiversity? Why do you think that is?

_____

_____

_____

How did species richness and evenness affect the biodiversity of the samples?

_____

_____

_____

How could you sample aquatic habitats to measure biodiversity?

_____

_____

_____

How could you sample animals to measure biodiversity?

_____

_____

Gone Fishing: Fish Anatomy

Most fish fall into one of two taxonomic classes. Bony fish are in the class of fish called osteichthyes (os-te-ich-thyes) and have a skeleton made of hard bone. Other fish, such as sharks, skates, and rays, have skeletons made of cartilage and are in the class chondrichthyes (kan-drik-the-ez). Cartilage is soft flexible connective tissue. We have cartilage in our nose and ears. Below, you will learn about the anatomy of bony fish. This will help you in identifying species.
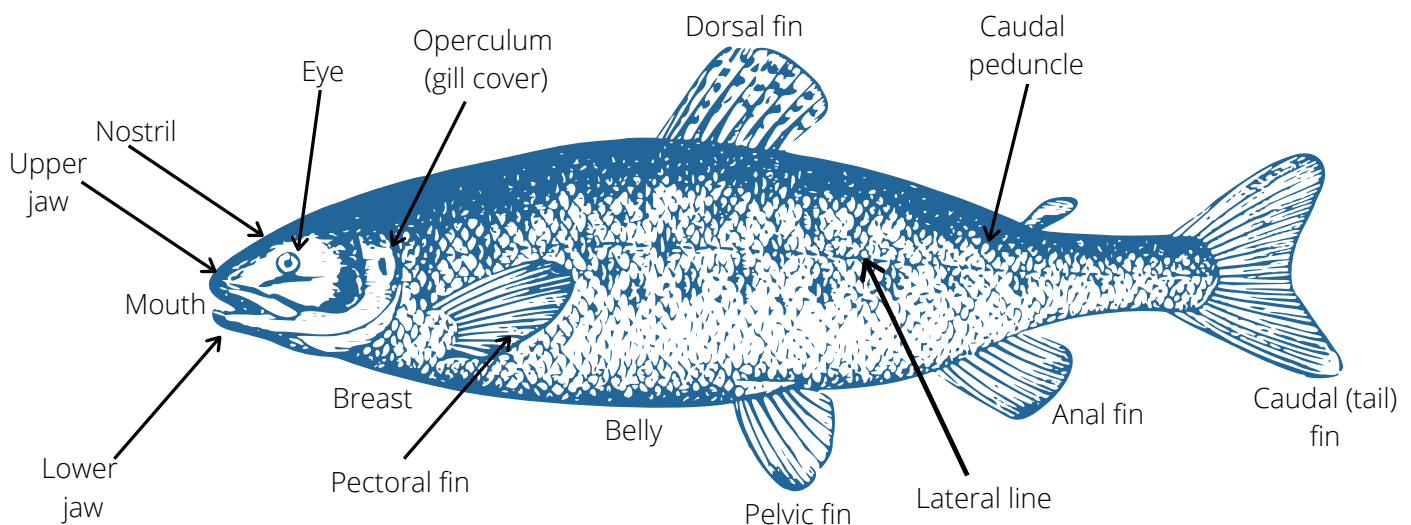
Parts & their functions

Dorsal fin– is a single fin on the top of the body. The dorsal fin helps in sudden turns and stops and helps keep the fish from rolling while moving.

Caudal peduncle– is the narrow area of the fish's body to which the caudal (or tail fin) is attached.

Caudal (tail) fin– is located at the end of the fish. It is the tail fin.

Lateral line– is a sensory organ which is used to detect movement, vibration and pressure changes in the water.

Anal fin– is located behind the anal vent. When swimming this fin is used to stabilize the fish.

Pelvic fins– occur in pairs and are found on the lower side of the fish below the pectoral fins. Pelvic fins help the fish in going up, down, turning and stopping.

Pectoral fins– occur in pairs and are located on each side. Usually just behind the operculum (gill cover).

Operculum (gill cover)– open and close to protect the gills and allow water flow over the gills which allows the fish to collect dissolved oxygen and breathe.
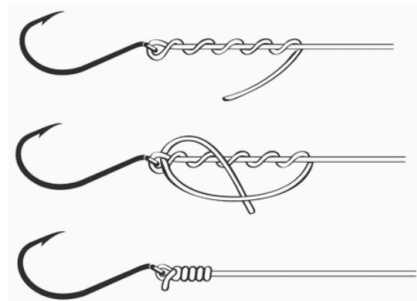
Gone Fishing: Knot Tying

Learning knot tying is fun and the best way to properly secure your hook and bait. Practice the knots below before you head out on the water. Search online for video instruction or how to guides.
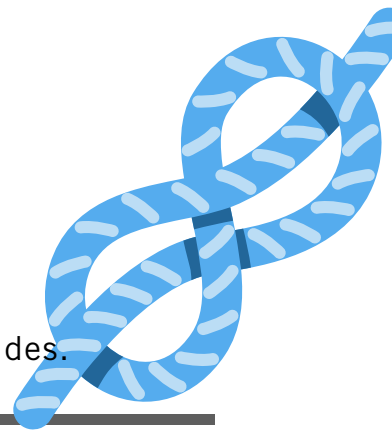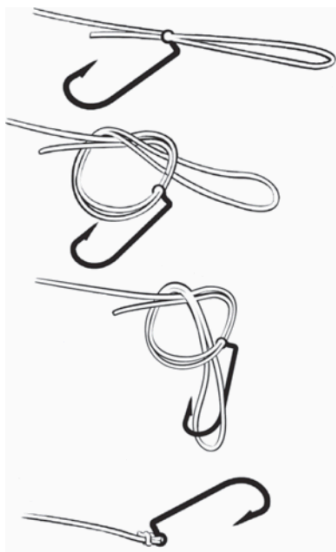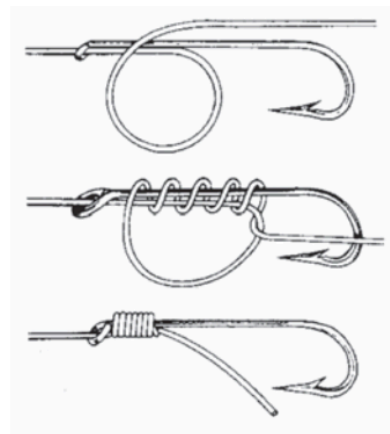
Rapala Knot
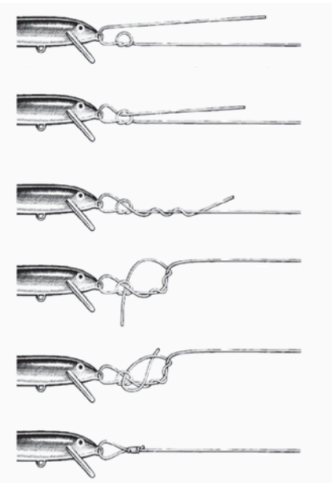
Improved Clinch Knot

Palomar Knot

Snell Knot

Gone Fishing: Fish Species Identification

Before you go fishing, make sure you know all the rules and regulations for the individual species. This will tell if you are allowed to catch them, how big they must be and when it is legal to do so.

Tips for Identification

Questions to ask yourself when trying to identify a fish:

- Where did I catch this fish (freshwater or saltwater, shallow or deep, open water or around a structure)?
- What body shape is this fish?
- What color is this fish?
- How many spines or rays are in the dorsal fin?
- Where is the back end of the jaw in relation to its eye?
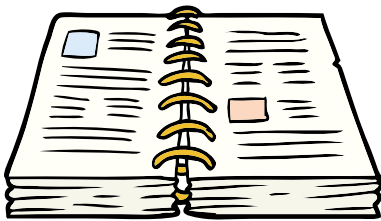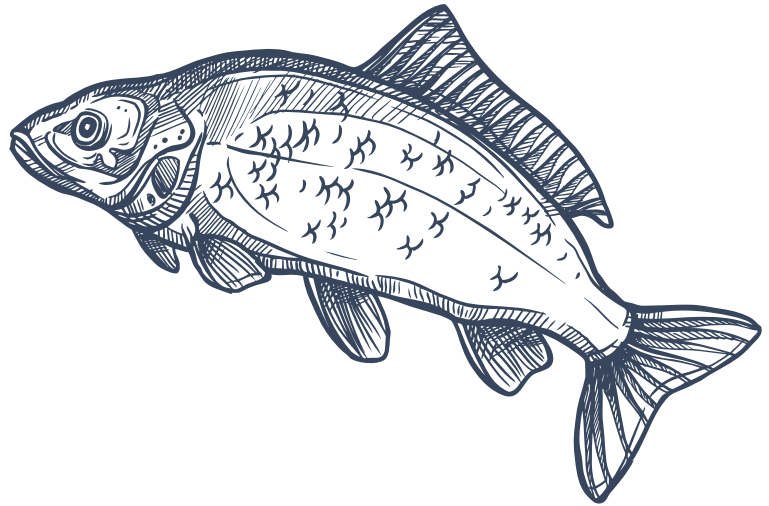
Using a Field Guide

Field guides help you identify living and nonliving things in nature. They require you to pay careful attention to characteristics such as color, shape, and size. Many guides will have keys which guide you through a series of steps in identification.

South Carolina Department of Natural Resources

SCDNR helps protect natural resources. Visit their website for tools to identify fish species.

https://www.dnr.sc.gov/wildlife/fishspecies.html

Gone Fishing: Fishing Log

Consider potential risks when selecting a fishing spot. Do not enter dangerous areas or private property. State parks, as well as, wildlife refuges are safe options. Bring a trusted adult with you. Visit SCDNR's website or visit your local bait shop/supply store to learn about fishing licenses. Use the log below to record your trips and catches. THIS PAGE MAY BE DUPLICATED.

Date:_____ Time Start:_____ Finish:_____

Location:_____

Weather Conditions (Circle)   Moon Phase:_____
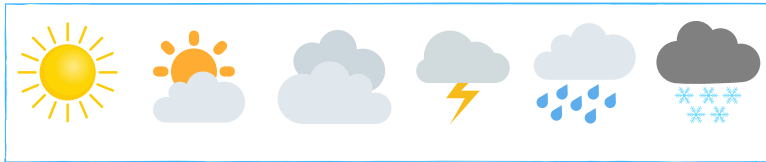
Air Temperature:_____

Wind: Direction_____ speed _____ barometer_____

Water: Temperature_____ clarity_____ depth_____

Records

SPECIES	W/L/G	TIME	KEPT	LURE

Largest catch: Weight_____ Length_____ Girth_____

Stormwater: Pollution and Runoff

The leading threat to water quality, according to the EPA, is stormwater pollution. South Carolina's water quality data has also reached the same conclusion. In SC more than 1,150 of our waterways have been classified as "impaired," which means they are too polluted or degraded to meet accepted water quality standards, usually from pollutants known to enter our waterways through stormwater runoff. Stormwater is any type of precipitation that falls from the sky and onto the ground. When stormwater can't infiltrate into the ground, it runs off the ground. When stormwater runs off, it picks up pollution and transports it to our waterways.

Define impervious surface and pervious surface. Give an example of both. Which type of surface contributes more to stormwater runoff? Why?

_____

_____

_____

_____

What are common stormwater runoff pollutants? Are they typically point source pollutants or non point source pollutants?

_____

_____

_____

_____

What qualities of stormwater runoff allow it to pick up pollution?

_____

_____

How does stormwater runoff enter (and potentially pollute) our waterways?

_____

_____

Stormwater: Reducing Pollution

We can reduce stormwater runoff pollution by using Best Management Practices (BMPs). There are several kinds of stormwater BMPs, but there are two main types: structural and behavioral. Structural BMPs focus on slowing, capturing, and filtering stormwater runoff to reduce pollution. Behavioral BMPs focus on day-to-day actions we can take to prevent stormwater pollution. Research the following BMPs and describe how they work, if they are a structural or behavioral BMP, and what kinds of pollution they target.

Rain Gardens:

Picking Up After Your Pet:

Stormwater Ponds:

Permeable Pavers:

Annual Soil Testing:

Vegetated Buffers:

Rain Barrels:

Stormwater: Improving Your Watershed

Once you've explored different storm water BMPs and how they can help keep our watersheds healthy, draw your (or a friend's) home and yard. Indicate both impervious and pervious surfaces, as well as how water flows across the landscape. If you're unsure which direction water flows, watch the yard in a rain storm! In your map, include where you could put different structural BMPs. Label each BMP with its name and how it will help reduce stormwater runoff.

Leadership Experiences

These experiences refer to the times, whether 4-H or non-4-H, where you lead others and/or helped them accomplish more than they could have without your involvement.

Date	Description

Citizenship/Community Service Experiences

These experiences refer to the times, whether 4-H or non-4-H, where you engaged in activities that helped or contributed to the betterment of your community. Be sure to record your hours spent working on your project as well as the actual citizenship/community service experience.

Date	Description

Service Project Ideas

- Build your own rain garden.

- Build your own rain barrel or rain chain.

- Create an art project to spread awareness.

- Volunteer at local natural resources organization or state park.

- Participate in Adopt-a-Highway.

- Participate in DNR's SCORE program.

- Participate in Seeds to Shoreline program.

- Mark storm drains.

- Bag oyster shells.

- Pick up litter in your community.

Service Project Hours Log

Be sure to record your hours spent working on your actual service project.

Date	Description

Financial Records

With the 4-H2O Ambassador project, you are most likely going to have expense records. Service projects take time and money, but the benefits outweigh the costs. Use this page to document your expenses and any items donated.

MATERIALS DESCRIPTION	DATE PURCHASED	COST
TOTAL		

DONATION DESCRIPTION	DATE DONATED	VALUE
TOTAL		

4-H Project Story

Your 4-H story should reflect the impact that your 4-H project has had on your life or the lives of those around you. It should not merely repeat what has already been documented in your experiences section.

Project Story Guidelines
- Should be handwritten on 8 ½ X 11 sheet of paper.
- Notebook paper is allowed.
- The length of the story should be age-appropriate. 4-H project story pages should be at least 1 page for Junior 4-H members and 3 pages for Senior 4-H members.

Project Story Outline
Section 1: Introduce Yourself

Write about your family members and any hobbies or interests you have. When and why did you join 4-H? Why did you choose to participate in this SC 4-H Project?

Section 2: Goals

What were your goals for this project and why did you choose them? What did you do or could you have done to help reach your goals?

Section 3: Participation and Activities

Explain your level of participation. What did you have the most fun doing? Which activities did you like doing the least? Discuss at least one way you helped or taught others.

Section 4: Knowledge and Skills Gained

How did participating in this project help you learn about your topic? Discuss any skills or knowledge you've gained or improved and how you did that this year.

Section 5: Summary

What was the greatest challenge you faced during this project and how did you overcome it? What are the three most important things you learned this year during the project? Would you choose to participate in this project again? Why or why not?
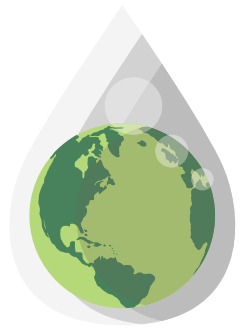
4-H Story Release

Clemson University, Cooperative Extension and the Beaufort County 4-H program are proud of our project members and what they learn and do! Sometimes we like to use excerpts (parts) from member Project Stories to show the public how our programs impact our youth members. We will not attach real names to any project story used for publicity purposes. If you do not want your story shared with the general public we want to honor that. Please let us know your preference by checking one of the boxes below:

□ **You may use my story for publicity.**   □ **Do not use my story for any publicity.**

Resources

National 4-H
> https://4-h.org/parents/curriculum/water-conservation/

HGIC
> https://hgic.clemson.edu/

Clemson Water Resources
> https://www.clemson.edu/extension/water/index.html

Clemson Carolina Clear
> https://www.clemson.edu/extension/carolinaclear/

Discover Water
> https://www.discoverwater.org/

SCDNR
> https://www.dnr.sc.gov/

SC DHEC Watershed Atlas
> https://gis.dhec.sc.gov/watersheds/

Clemson Rain Garden Initiative
> https://www.clemson.edu/extension/raingarden/

Plants Interactive ID Keys
> https://www.nrcs.usda.gov/wps/portal/nrcs/detail/plantmaterials/technical/toolsdata/plant/?cid=stelprdb1045110

USDA Plant Database
> https://plants.usda.gov/java/

Southeastern Flora Plant ID
> http://www.southeasternflora.com/

4-H2O Water Keeper Record Book Judging Criteria

This is the judging criteria and score sheet for the 4-H2O Water Keeper Record Book. Use this rubric while completing your book to score the most points possible.

Points Possible	Category	Judging Criteria	Points Awarded
25	Project Experience	Clearly stated goals that are challenging but not unattainable. Shows evidence of working toward goals and goals are reflected on. Book is completed by participant and not an adult and is appropriate for age/experience level. Participated in events and activities to build skills and character.	
20	Project Story	Thoughtful, descriptive, creative, highlights what was learned in the project; includes both good and bad experiences; explains level of activity and participation, and summarizes the overall experience in the project.	
10	Leadership Experience	Clearly stated leadership experience that is appropriate for age and experience level.	
15	Citizenship/Community Service Experience	Clearly stated citizenship/community service experience that is appropriate for age and experience level.	
10	Overall Neatness	Easy to follow, easy to read, correct spelling and grammar, professional look, shows effort and creativity, items attached neatly and securely.	
10	Overall Completeness	All signatures, all essential information included (some lines may be left blank if they do not apply), shows overall effort and creativity. Accurately completed all finance equations.	
10	Support Materials	Relevant support materials that illustrate skills acquired or learning experiences and have captions describing what is happening and why or what is being learned.	
100	**Total Points Possible**	**Total Points Awarded**	

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