Georgia 4-H at Camp Jekyll: Environmental Education

Student Journals

Many schools choose to have their students complete journals while they are here. You are welcome to use the journal questions we have provided. If you choose to make your own, please make sure we get a copy well before your visit so we can make sure we cover all of your questions. You might also consider scheduling journals as one of your teacher led activities (day or evening) as a structured time for students to reflect.

Beach Ecology

Key Words: *barrier island, erosion, accretion, long shore current, wrack, Georgia bight, waves*

1. a) Describe how dunes form.
   b) Why are dunes important?
   c) What holds dunes together?
2. a) Draw the shape of the Georgia bight.
   b) How does the bight affect our coastline?
3. a) Which end of barrier islands tend to erode?
   b) Which end of barrier islands tend to accrete?
4. What is the difference between univalve and bivalve shells?
5. Name two kinds of organisms you found on the beach.

Marsh Ecology

Key Words: *detritus, Spartina, salt pan, hammock, tides, brackish, salinity, adaptation*

1. Give three reasons why the salt marsh is important.
2. List two conditions make it difficult for plants and animals to live in the marsh.
3. What causes the tides?
4. How many high and low tides does Jekyll have each day?
5. Draw a picture of the salt marsh and try to include the following zones: hammock, salt pan, high marsh, low marsh, tidal creek

Ornithology

Key Words: *adaptations, indicator species, feather, endothermic*

1. What characteristics make birds unique from other animals?
2. Of all the birds you've seen on Jekyll, draw and name your favorite bird below.
3. In what habitat does your favorite bird live?
4. What are two adaptations that help your favorite bird survive in its specific habitat?
5. List two reasons why birds are important.

Seining & Nets

Key Words: *seine net, dorsal fin, caudal fin, pelvic fin, pectoral fin, anal fin, operculum, lateral line*

1. What characteristics make fish unique from other animals?
2. Draw a fish below and label the following parts: dorsal fin, pectoral fin, pelvic fin, anal fin, caudal fin, operculum, lateral line
3. What size were most of the fish that you caught? Why?
4. What is the purpose of a lateral line?

5. How are sharks different from other fish?

Dock Study

Key Words: *invertebrate, sessile, motile, plankton, nekton, benthic, fouling community, filter feeder, intertidal, subtidal*

1. What is an invertebrate?
2. Draw and label three lifestyles marine animals. Give an example of an animal for each lifestyle.
3. Describe two reasons why it is difficult for organisms to live in the intertidal zone.
4. Why is the dock community called the fouling community?
5. Draw and label three organisms you discovered during dock study today.

Herpetology

Key Words: *metamorphosis, adaptation, venomous, ectothermic, carapace, scutes, terrestrial, aquatic*

1. What is herpetology?
2. Describe three differences between reptiles and amphibians.
3. Why do we call snakes venomous and not poisonous?
4. How can you tell the difference between an alligator and a crocodile?
5. List two reasons why reptiles are important.

Maritime Forest Ecology

Key Words: *maritime, community, succession, adaptation, decomposition, canopy, understory, epiphyte*

1. What is a maritime forest?
2. List two conditions that make plants growing on the dunes different than the plants growing in the forest.
3. What does "F.B.I." stand for in the forest and what do they do?
4. How does the soil change from the dunes to the maritime forest?
5. Draw a picture of a maritime forest showing the different stages of succession (from primary dunes to the climax community).

Botany

Key Words: *botany, photosynthesis, respiration, transpiration, adaptation, dichotomous key, angiosperm, gymnosperm*

1. What are the differences between plants and animals?
2. Give three reasons why is Jekyll Island is considered a harsh environment for plants to live.
3. Name one adaptation a plant on Jekyll Island has and how that adaptation helps the plant survive.
4. List three characteristics that are used to identify plants.
5. What is the most interesting plant you learned about today? Why?

Orienteering

Key Words: *compass, pace, cardinal direction, base plate, magnetic needle, housing, bearing, degree*

1. Why might you need to use a compass?
2. What is a pace? What is the length of your pace (in feet)?
3. What does the following phrase mean in orienteering? "Put Red in the Shed and follow Fred."
4. What are some things that may affect the accuracy of your compass?
5. What would you do if you were lost in the woods, but you had a compass?

Slough Slog

Key Words: *complete metamorphosis, incomplete metamorphosis, nymph, pupae, larvae, adaptations, indicator species*

1. What type of water is found in sloughs? Where does the water come from?
2. List the stages of complete and incomplete metamorphosis.
3. What conditions can make it difficult to live in the slough?
4. What sorts of plants an animals rely on the slough to live?
5. Name and draw one organism you saw in the slough.

Sand & Lab & Beach profile

Key Words: *grain, sediment, longshore current, quartz, slope, texture, graph*

1. Where did the sand on Jekyll Island come from?
2. What are three characteristics or properties of sand?
3. In which direction does the longshore current carry sand along the Georgia coast?
4. What forces can move sand on a beach?
5. What may affect the slope of a beach?

Plankton Lab

Key Words: *zooplankton, phytoplankton, holoplankton, meroplankton, producer, consumer, photosynthesis, photic zone*

1. What does "plankton" mean?
2. List two reasons why phytoplankton are important.
3. What is the difference between holoplankton and meroplankton? Give one example of each.
4. How are plankton collected? Draw the device below.
5. Why are most plankton generally found in the photic zone?

Coastal Concerns / North End Survey

Key Words: *erosion, sea wall, jetty, rip-rap, dredge, decomposition*

1. Describe how the beach at the north end of Jekyll is different from the south end beach.
2. What causes the differences between the north end and south end beach?
3. Why haven't the tree stumps at "boneyard beach" decomposed?
4. What is the purpose of a sea wall or jetty? Do they always work?
5. What kinds of different animals live on the north end beach? Why are their differences from the south end beach?

Perch Dissection

Key Words: *lateral line, swim bladder, otilith, operculum, ctenoid scales*

1. List three characteristics of perch.
2. Give two reasons why perch are important.
3. What is the function of the swim bladder?
4. Examine a scale and remove it. Draw a picture of a perch scale.
5. Imagine a perch ate a small fish. Trace the passage of the prey through the perch's digestive system.

Hurricanes!

Key Words: *hurricane, eye, storm surge, tropical depression, eyewall, storm tide, tropical storm, rain band, Saffir-Simpson Scale*

1. When is hurricane season?
2. What is the major cause of a hurricane?
3. Draw and label a picture of a hurricane.
4. Which hurricane category will cause the most damage to a coastal community?
5. What protects the Georgia coast from hurricanes?

Endangered Species

Key Words: *species, threatened, endangered, habitat, food chain, extinct*

1. List three endangered species in the Southeast Coast.
2. List two things that cause a species to become endangered.
3. What is the difference between endangered and threatened?
4. What has to happen before a species is taken off the endangered list?

Environmental Issues

Key Words: *erosion, development, land use, waste management, pollution*

1. What environmental issues did you discuss in class?
2. Draw a picture of what you presented in class.
3. Who is affected by environmental issues?
4. How are environmental issues solved?
5. What did you learn that you didn't know before coming to Jekyll Island?

Marine Mammals

Key Words: *mammal, pinniped, cetacean, dolphin, right whale*

1. What are three characteristics of mammals?
2. What special adaptations do marine mammals have to live in the water?
3. How did right whales get their name?
4. If you could be any marine mammal, what would you be? Why?

Sea Turtles

Key Words: *predator, turtle excluder device (TED), Endangered/ Threatened Species*

1. How many species of sea turtles are there worldwide?
2. Which species is the most rare?
3. Which turtle is most commonly found off the Georgia coast?

4. List three reasons why sea turtles are endangered.
5. Name two things you can do to help sea turtles survive.

Night Walk

Key Words: *nocturnal, senses, bioluminescence*

1. Where did you go for your night walk?
2. What senses did you use during your night walk?
3. How were these senses different than what you use in the daytime?
4. Did your attitude change during or after your night walk?
5. List two nocturnal animals. Did you see any during your night walk?

Water Thick & Thin

Key Words: *salinity, cohesion, adhesion, density, hydrometer, refractometer, surface tension, brackish*

1. What are three properties of water?
2. Does fresh water have any salt in it?
3. How salty is the average ocean water?
4. How can salinity be measured?
5. What do you call water that is a mixture of fresh and salt water?

Sharks

Key Words: *cartilage, ampullae of Lorenzini, chondrichthyes, gill slits, nictitating membrane, placoid scales*

1. List three characteristics of sharks.
2. Give two reasons why sharks are important.
3. All are sharks carnivores? Give an example of a shark that is not a carnivore.
4. Why do sharks have such large, oily livers?
5. Are sharks fish? Why or why not?

Fish Kits

Key Words: *counter shading, dorsal fin, caudal fin, gills, scales, fusiform, compressiform, depressiform*

1. List three characteristics of fish.
2. How does tail and body shape affect the speed of a fish?
3. Draw a "fast" fish below using the appropriate tail and body shape.
4. What can a fish's mouth tell you about that fish?
5. List three ways a fish may protect itself.

CSI Cetacean

Key Words: *necropsy, stranding, hypothesis, rehabilitation, Marine Mammal Protection Act*

1. What is a stranding, and why might an animal strand?
2. Why would a necropsy be useful?
3. List two negative impacts and two positive human impacts on marine mammals.
4. State your hypothesis as to why your dolphin stranded.

Snakes

Key Words: *venomous, scales, cold-blooded, hemotoxic, neurotoxic, Jacobson's organ*

1. What is the difference between venomous and poisonous?
2. How often do snakes shed?
3. What are the two most common toxins in snake venom?
4. How does Jacobson's organ work?
5. Give two reasons why snakes are important.

Jekyll Island Summary

Key Words: *barrier island, salt marsh, maritime forest, beach*

1. How are the beach, the salt marsh, and the maritime forest all related?
2. How are the beach, the salt marsh, and the maritime forest all different?
3. Why are barrier islands important?
4. What was your favorite class at Camp Jekyll? Why?
5. What was your least favorite class at camp Jekyll? Why?