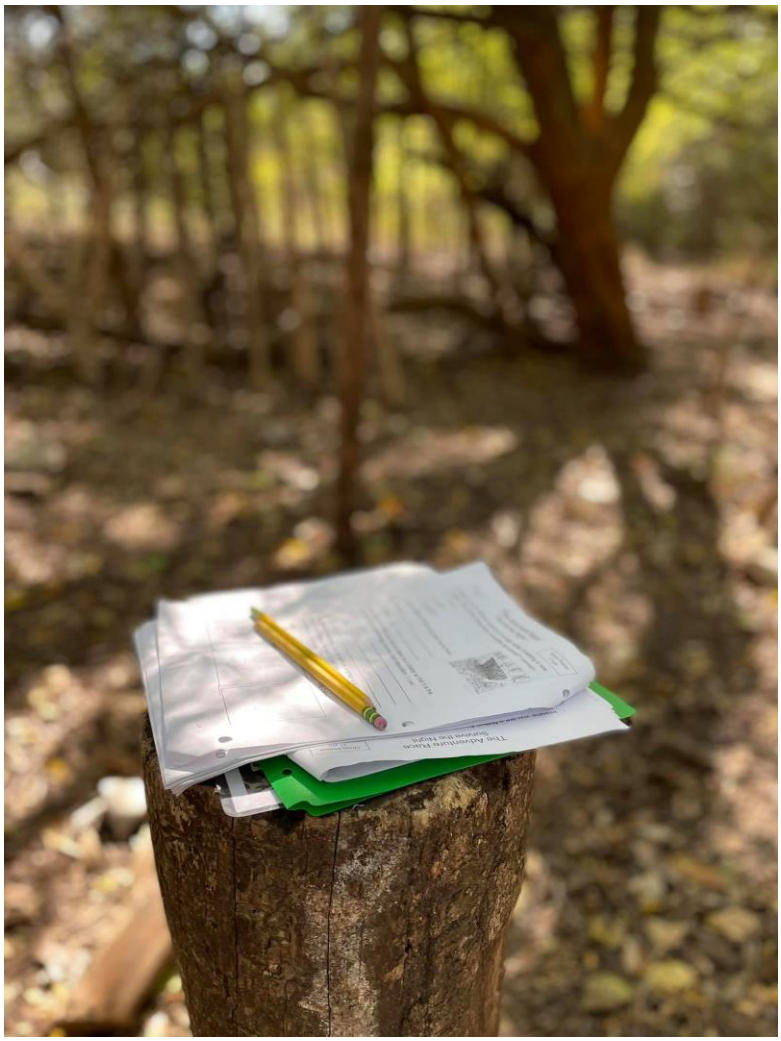
5th Grade
Outdoor School
Field Guide
2024 – 2025



NAME_____

SCHOOL_____

Adventure BINGO

Challenge your classmates to a game of Adventure Bingo. Before you can fill in a box, you must observe that item in some way while you are at camp. List, draw, or describe what you see. Be the first to get 5 in a row (left to right, up and down, or diagonal) or all 4 corners, but the real challenge is to get them all ("Black Out"). Good luck and happy hunting! (Hint: your instructor will point many of these out during class.)

An Insect's Home	Produces Oxygen	A Pollinator	Tonight's Moon Phase	Evidence of Erosion
Edible or Medicinal Plant	An Aquatic Animal	A Seed	A Natural Resource	Poison Ivy
State Tree of Texas	Beginning of the Flow of Energy	Today's Weather	Evidence of Wildlife	Sedimentary Rock Found Here
Evidence of Life Cycle	A Constellation	A Decomposer	Evidence of a Food Chain	A Coniferous Tree
An Animal Track	Example of a Structure	A Stinging Insect	An Abiotic Factor	Evidence of Human Impact

Forest Adventure

During the Forest Adventure I will be:

- Developing and using models
- Analyzing and interpreting data
- Constructing explanations
- Engaging in arguments from evidence
- Obtaining and evaluating communication information

Forest Adventure - Inherited Traits & Interactions

Activity 1: Identify and list examples of inherited physical traits of plants.

- _____
- _____

Identify and list 2 examples of structures that help a plant survive and describe the function of each structure.

- Structure: _____
- Function: _____
    - Structure: _____
    - Function: _____

Activity 2: Create a T-Chart with one side labeled **Biotic** and the other **Abiotic**. List all the Biotic and Abiotic factors you observe.

Explain how an organism you found interacts with both biotic and abiotic factors in this environment.

Forest Adventure – Leaf Rubbing

My leaf is from a _____ tree.

Flow of Energy

Draw a food chain to represent the flow of energy from your producer (tree). Include and label: producers, consumers, and decomposers. The flow of energy begins with the _____, so include it too.

Forest Adventure – Sensory Map

Make observations using your senses.
What did you observe?

Shelter

- If you were an animal living in this forest, how would these senses help you survive?

Forest Adventure - Human Impact on the Environment

1. Write down one positive impact, one negative impact, and one neutral effect of human activity on the environment.

2. Which impact do you find most concerning and why?

3. What actions can individuals or communities take to reduce negative impacts and promote positive ones?

It is important to make environmentally responsible choices in everyday life.

Adventure Quest

During Adventure Quest I will be:

- Asking questions
- Developing and using models
- Planning and carrying out investigations
- Constructing explanations

Adventure Quest - Energy Tag

Red Station

1. What was your role in the food web at the start of the game? (Circle one)

   Producer Consumer Decomposer

2. How did the flow of energy change throughout the game?

3. What environmental change occurred and how did that affect the outcome?

4. Who was responsible for recycling energy and matter?

Adventure Quest - Survival S.T.E.M.

Green Station

The Goal: Design a shelter to help you and your team survive a night in the woods.

Ask: What materials do you have available to complete this task?

Imagine/Brainstorm: Work with your team to discuss and develop a plan for your shelter. 5-10mins

Plan: Draw your team's plan for the shelter in the box below. Once approved you can move to the next step and make a model of your design.

Create: It is important to communicate with your team when constructing your model. We want to make sure that all team members are being safe while you are building.

Improve: Was your design a success? What would you do differently if you had the chance to build another shelter or redesign the current one?

_____
_____
_____
_____
_____

Yellow Station

Adventure Quest - Discovering the White Ditch!

Draw a picture of the ditch and label what you see (different soil types, plants, rocks, etc.). List any physical characteristics that you notice (size, color, shape, etc.).

1. What natural processes may have formed this ditch?

2. What type of rock is exposed?

3. What might be found here?

    - Look in and around the ditch.
    - What evidence of past living organisms can you find?

4. Describe this environment when your organism was alive.

5. Sketch or make a rubbing of your fossil:

Blue Station

Adventure Quest - Animal Observations

Visit the animals and other organisms in and around this station. Choose an organism to observe. Answer the questions to help you determine how your organism survives. Observe your organism for several minutes and answer the questions.

My animal is: _____

Question 1: What are some physical traits that help you survive? And how do they help you?

Answer:

Question 2: What instinctual behaviors help you survive in the wild?

Answer:

Question 3: What are some learned behaviors that you need for survival?

Answer:

Question 4: As a captive animal, what are some behaviors that you may have learned?

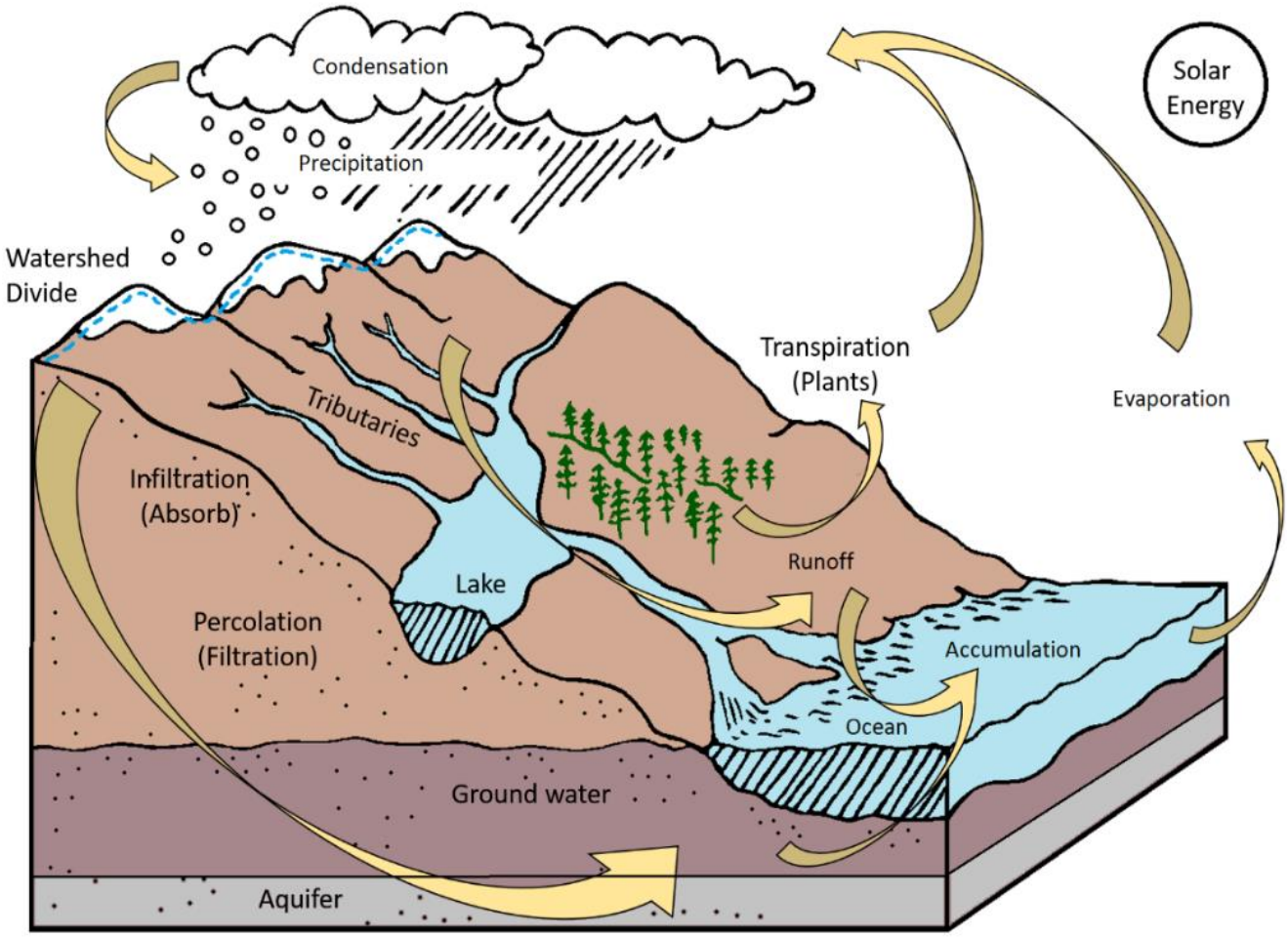
Draw a picture of your organism and label 2 **structures** that help the organism survive. Describe the **function** of each structure.

Lindberg Lake Adventure

During the Lake Adventure I will be:

- Asking questions
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Constructing explanations
- Engaging in argument from evidence

Lake Adventure - Journey of a Water Molecule



Lake Adventure - Journey of a Water Molecule

List some things that could happen to precipitation once it reaches the earth’s surface:

Lake Adventure - Observing W.E.D.H.

Looking at the creek and the area around the creek, list and describe any evidence of the following:

Weathering:

Erosion:

Deposition:

Human impact:

Lake Adventure - Evaluating the Lake

Evaluate the water quality in Lindberg Lake, to determine if the lake is a healthy ecosystem.

Collect Evidence:
Complete the frequency table below to reflect the number of different organisms your group collected. (use the macro mania data sheet to help)

Category	Tally Marks	Total
1 Pollution Tolerant		
2 Moderately Pollution Intolerant		
3 Pollution Intolerant		

1. Based on the group's results (evidence), make a claim about the water quality in Lindberg Lake ecosystem. Is this ecosystem healthy or unhealthy?

2. Support your Claim by explaining the reasoning based on the evidence.

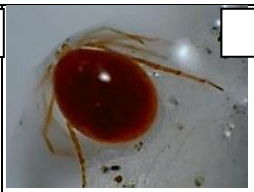
3. What factors might change the outcome of the lab and how?

Lake Adventure - Macro Mania Data Sheet

CATEGORY 1: These organisms are **pollution tolerant**. If you find these organisms in a freshwater ecosystem it could mean **poor/low water quality**.


Giant Water Bug


Water Strider

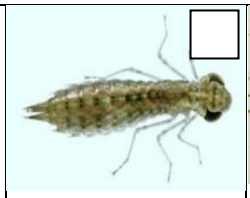

Water Mite


Midge Larva

Others: aquatic worm, lunged snail, blackfly larva, mosquito larva

CATEGORY 2: These organisms are **moderately pollution intolerant**. If you find these organisms in a freshwater ecosystem it could indicate **medium/moderate water quality**.


Whirligig Beetle


Dragonfly Nymph


Damselfly Nymph


Creeping Water Bug


Predaceous Diving Beetle


Water Boatmen


Orb Snail


Horsefly Larvae

Others: Scud, riffle beetle larva, aquatic caterpillar

CATEGORY 3: These organisms are **pollution intolerant**. If you find these organisms in a freshwater ecosystem it signifies **high/excellent water quality**.


Caddisfly Larva


Water Scorpion


Fishing Spider


Crayfish


Southern Leopard Frog


Minnows


Water Penny


Dobsonfly Larva

Others: Mayfly nymph, freshwater shrimp, tadpoles, stonefly nymph, crane fly

Adventure Challenge

During Adventure Challenge I will be:

- Engaging in argument from evidence
- Defining problems
- Designing solutions

The Night Adventure

During the Night Adventure I will be:

- Asking questions
- Planning and carrying out investigations
- Constructing explanations
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information
- Defining problems
- Designing solutions

Night Adventure – N.S.I. Nature Scene Investigation

Carefully study the crime scene. Based on what you observe write a scientific argument that answers the question: What role did humans play in this animal's death?

Case 1: _____

Evidence: Observe the scene and record the evidence below.

Claim: Make a claim by writing a sentence, based on the evidence you have found.

Reasoning: Explain how your evidence supports your claim.

Case 2: _____

Evidence: Observe the scene and record the evidence below.

Claim: Make a claim by writing a sentence, based on the evidence you have found.

Reasoning: Explain how your evidence supports your claim.

Night Adventure – N.S.I. Nature Scene Investigation

Case 3: _____

Evidence: Observe the scene and record the evidence below.

Claim: Make a claim by writing a sentence, based on the evidence you have found.

Reasoning: Explain how your evidence supports your claim.

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Case 4: _____

Evidence: Observe the scene and record the evidence below.

Claim: Make a claim by writing a sentence, based on the evidence you have found.

Reasoning: Explain how your evidence supports your claim.

Night Adventure – N.S.I. Nature Scene Investigation

Case 5: _____

Evidence: Observe the scene and record the evidence below.

Claim: Make a claim by writing a sentence, based on the evidence you have found.

Reasoning: Explain how your evidence supports your claim.

Case 6: _____

Evidence: Observe the scene and record the evidence below.

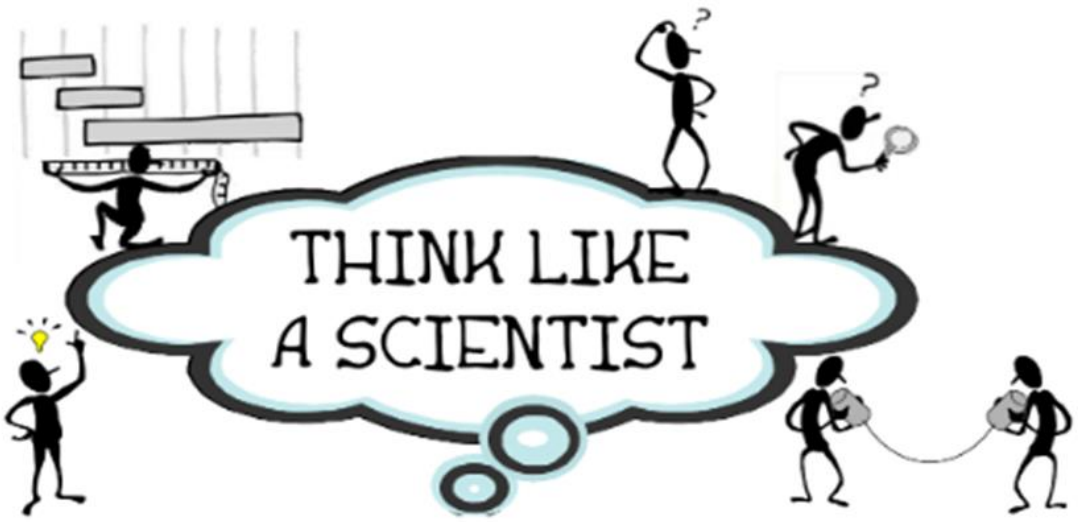
Claim: Make a claim by writing a sentence, based on the evidence you have found.

Reasoning: Explain how your evidence supports your claim.

Night Adventure - Notes

Glossary / Vocabulary

Abiotic factor	A nonliving part of an ecosystem
Accumulation	The process during which precipitation collects into a larger body
Adaptation	A structure or behavior that help an organism survive in its surroundings
Biotic factor	A living thing in an ecosystem, such as a plant, an animal, or bacteria
Carnivore	An animal that gets its energy from eating meat
Climate	The general weather of an area over a long period of time.
Condensation	The process through which a gas changes into a liquid
Consumer	An organism that cannot make its own food
Deciduous	A plant that allows its leaves to drop off in the Fall and grow new leaves in the Spring. For example: Texas Red Oak
Decomposer	An organism that breaks down dead plant and animal material
Deposition	The dropping off eroded soil, sand, and bits of rock
Ecosystem	The living and nonliving things that interact in an environment
Erosion	The process of wind or water moving small pieces of rock, soil, and sand from one place to another
Evaporation	The process through which a liquid changes into a gas
Evergreen	A type of coniferous tree. Evergreens have leaves growing all year long.
Food chain	The flow of energy through organisms in an ecosystem
Food web	The overlapping food chains in an ecosystem.
Function	The purpose or role for which something is used
Herbivore	An animal that gets its energy from eating plants
Human impact	The actions and behaviors of humans that affect the environment.
Inherited trait	A trait that can be passed from parent to offspring
Instinct	A behavior that an animal does not have to learn
Invasive species	Non-native to the ecosystem, likely to cause environmental harm
Learned behavior	A behavior that an animal develops by observing other animals or by being taught
Omnivore	An animal that eats both plants and meat
Precipitation	Water that falls from clouds to the ground in the form of rain, sleet, hail, or snow
Producer	An organism that uses energy from the Sun to make its own food
Recycling	The processing of certain materials to be used again
Sedimentary rock	A rock that forms when small bits of materials are pressed together in layers
Structure	A part of something
Water cycle	The continuous movement of water between Earth’s surface and the air
Watershed	An area of land that feeds all the water running off it and under it into a body of water
Weather	The condition of the sky and air at a given place and time
Weathering	The slow process that breaks materials into smaller pieces



Predict Hypothesize

COMMUNICATE

Interpret OBSERVE

Question

PLAN & INVESTIGATE