

# Meet a Tree

## Correlated Standards by Grade

NGSS=Next Generation Science Standards, ACOS=Alabama Course of Study, GPS=Georgia Performance Standards, GSE=Georgia Standards of Excellence, MSF=Mississippi Science Framework, TASS=Tennessee Academic Standards for Science



### Grade 2

#### **NGSS**

#### **ACOS**

#### **MSF**

2.I.1. Develop abilities necessary to conduct scientific investigations.

#### **TASS**

2.ETS1.1, Define a simple problem that can be solved through the development of a new or improved object or tool by asking questions, making observations, and gather accurate information about a situation people want to change.

2.LS2.2. Predict what happens to animals when the environment changes.

2.LS2.1. Develop and use models to compare how animals depend on their surroundings and other living things to meet their needs in the places they live.

#### **GPS**

S2CS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

S2CS4. Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

S2CS5. Students will communicate scientific ideas and activities clearly.

S2CS7. Students will understand the important features of the process of scientific inquiry.

### Grade 3

#### **NGSS**

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.

#### **ACOS**

SC.3.8. Engage in argument from evidence to justify that traits can be influenced by the environment.

#### **MSF**

3.LS.3. Describe the characteristics, structures, life cycles, and environments of organisms. A, Research and explain diverse life forms live in different environments and the structures that serve different functions in their survival.

3.I.1. Apply concepts involved in a scientific investigation.

#### **TASS**

3.LS1.1. Analyze the internal and external structures that aquatic land animals and plants have to support survival, growth, behavior, and reproduction.

#### **GSE**

S3L1. Obtain, evaluate, and communicate information about the similarities and differences between plants, animals, and habitats found within geographic regions.

## ***Aquatic Adventures***

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S5L2. Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited and other characteristics are acquired.

### **GPS**

S3L1. Students will investigate the habitats of different organisms and the dependence of organisms on their habitat.

S3CS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

S3CS4. Students will use ideas of system, model, change, and scale in exploring scientific and technological matters.

S3CS6. Students will question scientific claims and arguments effectively.

S3CS7. Students will be familiar with the character of scientific knowledge and how it is achieved.

S3CS8. Students will understand the important features of the process of scientific inquiry.

## Grade 4

### **NGSS**

### **ACOS**

### **MSF**

4.I.1. Explain and use skills necessary to conduct scientific inquiry.

### **TASS**

4.ETS2.2. Determine the effectiveness of multiple solutions to a design problem given the criteria and the constraints.

4.LS2.1. Support an argument with evidence that plants get the materials they need for growth and reproduction chiefly through a process in which they use carbon dioxide from the air, water, and energy from the sun to produce sugars, plant materials, and waste (oxygen); and that this process is called photosynthesis.

### **GSE**

### **GPS**

S4CS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

S4CS4. Students will use ideas of system, model, change, and scale in exploring scientific and technological matters.

S4CS6. Students will question scientific claims and arguments effectively.

S4CS7. Students will be familiar with the character of scientific knowledge and how it is achieved.

S4CS8. Students will understand the important features of the process of scientific inquiry.

## Grade 5

### **NGSS**

### **ACOS**

### **MFS**

5.LS.3.B. Research and classify the organization of living things.

5.I.1. Develop and demonstrate an understanding of scientific inquiry using process skills.

## ***Aquatic Adventures***

## **TASS**

5.LS3.1. Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment.

## **GSE**

**S5L1. Obtain, evaluate, and communicate information to group organisms using scientific classification procedures.**

## **GPS**

S5L1. Students will classify organisms into groups and relate how they determined the groups with how and why scientists use classification.

S5CS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

S5CS4. Students will use ideas of system, model, change, and scale in exploring scientific and technological matters.

S5CS6. Students will question scientific claims and arguments effectively.

S5CS7. Students will be familiar with the character of scientific knowledge and how it is achieved.

S5CS8. Students will understand the important features of the process of scientific inquiry.

## Middle School

## **NGSS**

MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

## **ACOS**

SC.7.10. Use evidence and scientific reasoning to explain how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of both animals and plants.

## **MFS**

6.LS.3.D. Describe and summarize how an egg and sperm unite in the reproduction of angiosperms and gymnosperms.

6.LS.3.A. Describe and predict interactions (among and within populations) and the effects of these interactions on population growth that include the effects on available resources.

6.I.1. Conduct a scientific investigation utilizing appropriate process skills.

## **TASS**

6.LS2.3. Draw conclusions about the transfer of energy through a food web and energy pyramid in an ecosystem.

7.LS1.6. Develop an argument based on empirical evidence and scientific reasoning to explain how behavioral and structural adaptations in animals and plants affect the probability of survival and reproductive success.

## **GPS**

S6-8CS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

S6-8CS5. Students will use ideas of system, model, change, and scale in exploring scientific and technological matters.

S6-8CS7. Students will question scientific claims and arguments effectively.

S6-8CS8. Students will be familiar with the character of scientific knowledge and how it is achieved.

## ***Aquatic Adventures***

S6-8CS9. Students will understand the important features of the process of scientific inquiry.

### High School

#### **MSF**

HS.I.1. Apply inquiry-based and problem-solving processes and skills to scientific investigations.

#### **TASS**

L.LS1.9. Construct a scientific explanation based on compiled evidence for the processes of photosynthesis, cellular respiration, and anaerobic respiration in the cycling of matter and flow of energy into and out of organisms.

BIO1.LS2.2. Create a model tracking carbon atoms between inorganic and organic molecules in an ecosystem. Explain human impacts on climate based on this model.

BIO1.LS1.8. Create a model of photosynthesis demonstrating the net flow of matter and energy into a cell. Use a model to explain energy transfer from light energy into stored chemical energy in the product.

#### **GPS**

SCSh1. Students will evaluate the importance of curiosity, honesty, openness, and skepticism in science.

SCSh3. Students will identify and investigate problems scientifically.

SCSh8. Students will understand important features of the process of scientific inquiry.