Forestry

*Lesson Plan for Grade 5, Science*

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*for Mississippi Farm Bureau Federation - AITC*

# OVERVIEW & PURPOSE

In this lesson, students will be able to observe forestry practices that help to protect and conserve forests.

# EDUCATIONAL STANDARDS

**Mississippi College-and-Career Readiness Standards:**

E.5.10 Students will demonstrate an understanding of the effects of human interaction with Earth and how Earth’s natural resources can be protected and conserved.

ELA-W.5.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work and provide a list of sources.

**NALOs:**

T2.3-5 e Understand the concept of stewardship and identify ways farmer/ranchers care for soil, water, plants, and animals.

# OBJECTIVES

* Students will identify factors of good and bad forest management
* Students will identify the benefits of good forest management and the ramifications of bad forest management
* Students will identify different types of forest management

# MATERIALS NEEDED

* Pictures of well managed forests (Google and display)
* Pictures of forests that have not been well managed (Google and display)
* Factor cards ( 1 set per student)
* Paper, Crayons, and Markers ( 1 pack per student)
* Web worksheet (1 per student)
* Definition worksheet (1 per student)
* Writing prompt paper discussing why cutting down trees can be good for the forest and the ways the methods of cutting down trees and the benefits of each (1 per student)

Essential Links:

* Factor cards ([see attachment 1](https://drive.google.com/file/d/1v8eFVlTdV7GuA_4a2X-jCZOU6xl5kf7m/view?usp=drive_link))
* Web worksheet ([see attachment 2](https://drive.google.com/file/d/1iSsZiuhIrqbZh4b5GFgH51o5YLcFTqE1/view?usp=drive_link))
* Definition worksheet ([see attachment 3](https://drive.google.com/file/d/123OwihknUh6wpAQI2vncsUUgHVPYH2yp/view?usp=drive_link))
* Writing prompt paper ([see attachment 4](https://drive.google.com/file/d/1pKUA_Ey9td0pWaTuJvb9AnyDVqQNJZ8X/view?usp=drive_link))

# Lesson Set Up:

1. The teacher will need to print all attachments (1 per student).
2. The teacher will also need to pull some visual aids of well managed forests and not well managed forests from a web quest search.
3. The teacher will need to have coloring paper and crayons or markers ready for students to use.

# VOCABULARY

**Older forest:** Group of more developed trees

**Younger forest:** Group of trees that have not fully developed

**Silviculture:** Controlling the structure growth, regeneration, and composition of the forest

**Competition:** The health of one tree is being hindered by another tree

**Forest Diversity:** Lots of different types of trees of different ages existing in the same stand

**Thinning:** Removing trees so that others can grow

**Clear Cut :** Removal of all trees in a specific area

**Shelterwood:** Multiple step way of cutting trees that creates an even-aged forest

**Single Tree Selection:** Type of Forest Management where you cut individual trees from a stand

**Group Selection:** Type of Forest Management where you cut a small cluster of trees from a stand

**Stand:** A section of the forest that is very similar

# Ag Facts:

* Timber is the 2nd most valuable commodity in Mississippi
* The total value of timber harvest in 2017 was $1.39 billion
* There are 19.7 million acres of forest lands in Mississippi
* Timber is the leading agricultural crop in 40 of the state’s counties

# Background information for teachers:

Mississippi forests provide recreational opportunities, encourage tourism, and create environmental benefits such as excellent water quality, cleaner air, improved wildlife habitat and the storage of atmospheric carbon. Sixty-five percent of Mississippi’s land is in forests, and 70% of that land is owned by private, nonindustrial landowners (individuals and families). Our landowners care deeply for our state’s forest resources, and they are responsible for managing their lands in a sustainable manner to benefit future generations. This is demonstrated by the fact that Mississippi ranks number one in the nation in the number of Certified Tree Farms with more than 3,200.

Our forest landowners know that promoting sustainable forest management, reforestation after harvest, and keeping our forests productive have strategic long-term economic benefits for Mississippi, as well. Timber is a very important commodity in Mississippi. The total value of Mississippi’s timber harvest is well over $1 billion per year. Forestry and forestry-related employment accounts for 8.5% of all jobs in Mississippi (totaling over 123,000 jobs) and pays out $4.4 billion in wages, annually.

Every year, our forest landowners plant and grow more trees than are actually harvested. Mississippi has 19.7 million acres of forestland. That is 1.1 million more acres than in 1992 and 3.6 million more than in 1934. Contrary to popular belief, this acreage is not all pine plantations. The majority of our state’s forestlands (46%) are hardwood, and 15% are mixed oak and pine.

Mississippi is a forestry leader. The first ever comprehensive state-sponsored forest resources inventory began in 2004. Mississippi was also the first state in the nation to establish a reforestation tax credit, helping landowners with expenses associated with the stewardship of forestland and encouraging them to replant after harvest.

For more information about forestry in Mississippi, visit the [Mississippi Forestry Association.](http://www.msforestry.net/)

# LEARNING PROCEDURES

Interest Approach:

1. Show students a picture of a well managed forest and a picture of a forest that has not been well managed (both forests are roughly the same age). Students will be asked to orally reflect on what they see and to determine which forest is well managed and which forest has not.
2. Show students cards with different factors that affect a forest’s health (see attachment 1). Teacher will explain all unfamiliar words.
3. Students will group the cards into three categories- healthy, not healthy, and depends on the forest.
4. After the students have finished the activity the teacher will lead a discussion to help correct any student misconceptions. Students will identify that well managed forests have different types of trees, different ages of trees, and access to sun, water, good soil, and nutrients.
5. Students will be asked to draw a picture of a well managed forest using crayons, markers, and white paper.
6. Teacher lead review discussion on the characteristics of well managed forests and not well managed forests.
7. Students will look at pictures of well managed forests that are different ages and ask their opinions on them. Students will identify the differences and changes in the pictures.
8. The teacher will discuss how all the forests are healthy and well managed and why. Students will brainstorm orally what the trees in the forest need to survive and thrive.

Activity 1:

1. Students will then look at different aged pictures of forests that are not well managed and ask their opinions on them. The teacher will discuss how all the forests are not well managed and how students can determine that they are not well managed.
2. Students will brainstorm on a web (see attachment 2) why the forests look as they do (discussing the motivation of the property owner).
3. The teacher will introduce the vocabulary words clear cut, thinning, shelterwood, single tree selection, group selection, competition, forest diversity, silviculture, young forest, older forest, and stand. The teacher and students will talk about the benefits and drawbacks of each of the words.
4. Students will then complete a worksheet to match the word to the definition of the above mentioned vocabulary words (see attachment 3).

Activity 2:

1. Students will view a picture of three trees in the forest (some are healthy trees and some are not) and the teacher will ask if each tree has sufficient water, nutrients, soil, and sun. The teacher will ask if the trees have competition or problems caused by animals or humans. Students will be shown pictures/ diagrams of different methods of selective forestry.

**Concept Elaboration and Evaluation**

Students will complete a writing prompt paper (see attachment 4) discussing why cutting down trees can be good for the forest and the methods of cutting down trees and the benefits of each. Writing prompts may be completed for homework due to time constraints.

# Additional Learning Procedures

To help students review and elaborate more about forestry, try using the [“I used to think.. Now I think…”](https://drive.google.com/file/d/1i_W22hrPfPt4VTFJVvSQMy5ikPzZ-S8O/view?usp=drive_link) method to allow students to think deeper and make new connections.

Additional Things to Include:

[How Drones are Helping to Plant Trees](https://agclassroom.org/matrix/resource/955/)

[At Grandpa's Sugar Bush](https://agclassroom.org/matrix/resource/909/)

[The Tree Farmer](https://agclassroom.org/matrix/resource/81/)



Source: ecosystems.psu.edu

*For more information and additional lessons visit*

*https://msfb.org/ag-in-the-classroom/lesson-plans/.*