

## ***Incredible Wood Lesson Plan***

**Keywords:** fiber, lumber, paper, veneer, engineered wood products, wood chemicals, fuel

**Lesson Plan Grade Level:** 6<sup>th</sup>- 8<sup>th</sup>

**Total Time Required For Lesson:** 50 minutes (as one continuous time block)

**Setting:** Classroom

**Subjects Covered:** Science

**Topics:** Wood Products, Manufacturing, Renewable Resources

### **Goals For The Lesson:**

Students will be capable of listing different wood products.

Students will be capable of identifying wood products.

Students will gain a better understanding of how we use the wood from Pennsylvania's trees.

**Materials Needed:** *Incredible Wood* fliers (one for each student)

*Incredible Wood Pretest* (one for each student)

*Incredible Wood Posttest* (one for each student)

Pencils (one for each student)

Construction paper (preferably poster board, one for each group)

Magazines/ newspapers (for pictures of wood products)

Scissors (one or two for each group)

Glue Sticks/Bottles (one or two for each group)

Appendix 1 & 1b (one copy for each group)

Appendix 2

**State Standards Addressed:** *E&E Standards: 4.2.7*

**Teaching Model:** Experiential Learning Model (Experience, Share, Process, Generalize, Apply)

### **Methods:**

#### **Preparation:**

Read through the entire lesson to ensure your understanding of the material and activity. Be sure that you have the correct number of copies for the lesson and its activity.

\*The students will be working in groups, so you may want to create several workstations.

Place the newspapers, magazines, construction paper, scissors and glue at each workstation. Try to have at least 2-4 magazines and a newspaper at each station.

### **Doing The Activity:**

Introduction to the lesson:

“Today we will be exploring the wood products made from Pennsylvania trees. Our goal is to be capable of identifying various wood products. Who can tell me one wood product found in your home? (Allow approximately 2 minutes for the students to share their examples). Now we are going to see what knowledge you have already acquired concerning wood products through a pretest.”

## Steps:

### (Experience and Share Stages 30 minutes)

1. Administer the pretest to the students; explain that the purpose of the pretest is test knowledge the students already have acquired on the subject. (Allow approximately 5 minutes for the test then collect)
2. Ask the students if they have any comments concerning the pretest.
3. Give each student a copy of the 'Incredible Wood' flier. Read through the introduction together including the section titled 'Wood Stuff'.
4. Explain to the students that they will be working in groups (6 groups) to read the remainder of the flier. Each group will be assigned a section of the reading: *Lumber, Paper, Hardwood Veneer, Engineered Wood Products, Wood Chemicals, & Firewood*. The students will be responsible for 'teaching' the class the information in their section. The groups should report: the section title, an explanation of the wood type and examples of products which may be made from the wood, and four facts. You may divide the groups or the students may choose. Allow 3- 5 minutes for the students to read. Monitor students to ensure they are all participating.
5. Allow time for each group to present their information. Then read the last section titled 'Incredible Wood' together. You may want to go over the illustrations with the class. Ask the students if there are any questions before moving on to the next activity.
6. Explain to the students that they will be working in groups, again. Each group will create a collage of *Incredible Wood* products. Divide the students into groups (preferably no more than 3-4 students per group).
7. Hand out all necessary materials (magazines, newspapers, scissors, and glue) and directions to each group. Go over the instructions and expectations with the class. (Appendix 1)
8. Allow 15-20 minutes for the students to complete the collages. Allow more time if necessary. Be sure to monitor the groups to ensure all the students are participating.

### (Share and Process Stages 8 minutes)

9. After each group has completed allow each to share their collage with the class. (The groups may quiz the other students by asking the students if they can name a product on their collage and what it may have been made from; each group should have their answer key).
8. Ask the students to share any new information they may have learned through the lesson.

### (Generalize and Apply Stages 12 minutes)

9. Prepare the students for the posttest; complete the discussion questions- Appendix 2. Ask the students if there are any questions.
10. Administer the posttest. Allow the student's time to complete then collect.

**Assessment:** The students will be evaluated through participation during the reading, discussions and activity. The students will be evaluated upon results of the posttest.

**Conclusion To The Lesson:** "I hope that you learned and enjoyed today's lesson. Does anyone have any questions or comments concerning today's lesson? Next time you look at a wood product you may look at it a little more closely." You may want to display the collages in the classroom or hallway.

**References and Resources:** *Incredible Wood* flier (From The Woods Series)

The Pennsylvania State University  
112 Agricultural Administration Building  
University Park, PA 16802

This lesson was prepared by Katie Roth, Middle School Teacher and Sanford Smith, Extension Specialist Penn State School of Forest Resources

## Appendix 1 – Incredible Wood

**Directions:** You will be creating a collage of wood products. Your group will be looking through magazines and newspapers to find wood products. Your group will cut out the wood products and glue them onto the poster board. Your group will need to determine what wood type the product was made of (lumber, paper, hardwood veneer, engineered wood products, wood chemicals or firewood).

Steps:

- \* Assign each member a job. Someone should be in charge of: *looking* (allow each member to find one product then the assigned person should continue while the others begin their jobs), *cutting*, *gluing*, and *writing*.
- \* Begin creating your collage.
- \* Write down each product and what it may have been made from (ex. ice cream= wood chemicals). You may use the chart provided in Appendix 1b. If necessary, use the back of the paper.
- \* You should create a legend to identify the products ‘written’ to the pictures on the collage. (for example, No. 1 labeled on the collage should be listed as No. 1 on the paper with the ‘product’ name and the ‘product type’ it represents)
- \* Your group should create a title.
- \* Write each group members name on the back of the poster board.
- \* After you have completed the collage you will be presenting it to the class.
- \* You may ask other students to provide the names of products and how they may have been made.



## Appendix 2- Discussion Questions- Incredible Wood

The answers to the questions/ statements follow in (*italicized letters*).

1. Approximately how many different native tree species are located in Pennsylvania?  
(108)
2. Describe wood. (*hard, fibrous, inner section of a tree, etc*)
3. What is the role of lignin? (*the material that holds fibers and cells together*)
4. What do celluloses make up? (*wood fibers and other cell walls*)
5. What do extractive chemicals 'give' wood? (*color and odor*)
6. Name the 5 major ways we use Pennsylvania wood. (*lumber, paper, hardwood veneer, engineered wood products, and firewood*)
7. Ask the students to provide examples of the following wood:

Engineered wood products- (*ceiling tiles, strand board, particle board, etc.*)

Lumber- (*doors, furniture, baseball bats, toys, flooring, etc.*)

Paper- (*books, tissue, tickets, envelopes, bags, etc.*)

Hardwood veneer- (*cover: tables, cabinets, doors, floors, etc.*)

Wood chemicals- (*cosmetics, photographic films, food additives, shampoo, etc.*)

Firewood- (*fuel for heat, generate electricity, etc.*)