

ROBERSON MUSEUM AND SCIENCE CENTER

Pre-Visit Homegrown: Recycling Paper

Grade Level: 7 through 12

New York State Learning Standards: MS&T 2, 5, 7; ELA 1, 3, 4; SS 2, 3

Pennsylvania Learning Standards: RWS&L 1.1, 1.2, 1.4-1.6, 1.8; S&T 3.2, 3.6-3.8; E&E 4.2, 4.8; H 8.1, 8.4

Objectives: Students will complete an activity sheet using an online resource. Students will increase their awareness about paper production, including the history of its use, the process of making it, its impact on communication and education, and benefits of recycling it.

Materials:

- Computers with internet access
- Student activity sheet, “Recycling Paper” (see attached)
- Teacher answer key to activity sheet, “Recycling Paper” (see attached)

Procedure:

1. Begin by having a brief discussion with the students about paper in their everyday lives by asking them to name some settings where they use paper or would need to use paper.
2. Next ask them if they know how paper is made? Or when it was first invented?
3. Tell the students that they will be learning more about paper by going online to find information to complete an activity sheet.
4. Each student should have his or her own computer. Depending on class size and computer availability, you may choose to have students working in groups of two.
5. Instructions are located on the activity sheet. Have students complete the activity sheet.
6. Review the activity sheet as a class, sharing answers for questions 6 through 9.

Conclusion: After completing the activity sheet, students will have a greater understanding of the importance of paper in our everyday lives and the need to recycle it.

Additional topics: On the earth911.com website, located under “Helpful Links for Paper Recycling,” there are links for different kinds of Recycling Awards. If the students seem enthusiastic about this topic, you may choose to browse through some of the programs implemented at other schools and either adopt or create a recycling initiative at your school.

Attachments: “Recycling Paper” student activity sheet and teacher answer key.

Developed by: Deborah Sason

Date: April 2010



Name: _____

Date: _____

Recycling Paper

Go to the website: <http://earth911.com/recycling/paper/> in order to learn more about recycling paper. Use the links in the blue box on the left labeled “Essential Resources” to find information to answer the following questions.

1. True or false: More than half of paper that was used in a year was recovered for recycling. Explain.

2. True or false: Paper recycling is not important. It does not take up any space in our landfills. Explain.

3. Briefly explain the paper making process.

4. When and where was paper first made? What materials were used?

5. About how many times can paper be recycled before its fibers are not strong enough? How do paper mills deal with this problem?

6. How has paper impacted history? In what ways did its invention and use affect education and communication?

7. What are some benefits to recycling paper? Name and explain at least three.

8. What do you think is the most important reason that we should recycle paper? Why?

9. What are some things you can do to increase awareness about recycling paper?

10. What is something new you learned about paper today that you did not know before?

Recycling Paper

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1. True or false: More than half of paper that was used in a year was recovered for recycling. Explain.

True, 57.4% of paper was recovered for recycling.

2. True or false: Paper recycling is not important. It does not take up any space in our landfills. Explain.

False, every ton of paper recycled saves more than 3.3 cubic yards of landfill space. (3.3 cubic yards is about the size of a small refrigerator.)

3. Briefly explain the paper making process.

Cellulose from wood is put through a shredder and combined with water in order to turn it into pulp. Next, the pulp is cleaned and put through a blender to turn it into slush. Then it is placed on a screen and the water is drained through. Rollers take out the rest of the water and create uniform thickness and smoothness. The paper is rolled up and later is cut by a slitter. After the paper is used, it may be recycled again.

4. When and where was paper first made? What materials were used?

A Chinese official, Ts'ai Lun, first made paper in China in 105 C.E. He used materials like rags, used fishing nets, hemp and China grass.

5. About how many times can paper be recycled before its fibers are not strong enough? How do paper mills deal with this problem?

Paper can be recycled about seven times. Paper mills mix unused fibers with used ones to ensure that it will be strong and reusable.

6. How has paper impacted history? In what ways did its invention and use affect education and communication?

Paper was used more frequently with the ability to make inexpensive books after the invention of the printing press. Schools and universities expanded and there was an increase of literacy and education among all classes.

Newspapers have been a constant source of communication for people so that they can stay informed, especially during political instability and war.

7. What are some benefits to recycling paper? Name and explain at least three.

Answers may include:

- Conserves resources
- Prevents emissions of many greenhouse gases and water pollutants

- Saves energy
- Supplies valuable raw materials to industry
- Creates jobs
- Stimulates the growth of greener technologies
- Reduces the need for new landfills and incinerators

8. What do you think is the most important reason that we should recycle paper? Why?

Answers may vary

9. What are some things you can do to increase awareness about recycling paper?

Answers may vary

10. What is something new you learned about paper today that you did not know before?

Answers may vary