



THE GREEN TREE

A Keep Nebraska Beautiful
Bulletin for Educators



Fall 2005

Paper Recycling and Schools

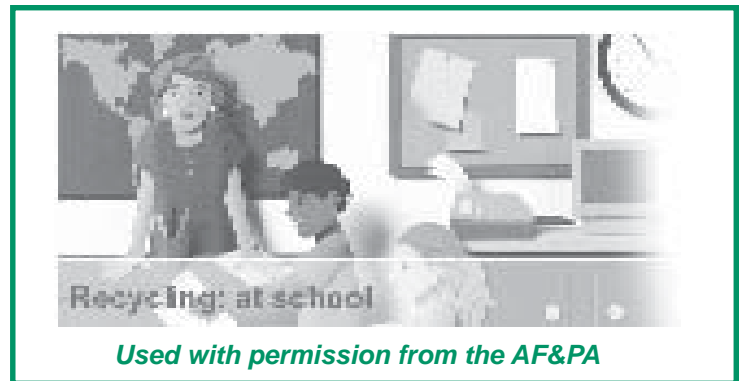
Every day, schools use massive amounts of paper. It comes in the form of books, notebooks, puzzles, boxes, and of course, the paper that is written on, drawn on, tested on, etc. According to the U.S. Environmental Protection Agency, waste from schools, institutions, and businesses accounts for 35 to 45% of all solid waste in the United States. On average, up to 80% of the waste from schools can be recovered. About half of this waste is in the form of paper.

In 2003, Americans were recycling paper at a rate of 50.3%. The U.S. paper industry has set a goal to increase this amount to 55% of all paper by the year 2012. In order to reach this goal, they need your school's help.

Keep America Beautiful (KAB) has partnered with the American Forest & Paper Association (AF&PA) to help promote paper recycling in schools. Keep Nebraska Beautiful (KNB) is encouraging all schools throughout the state to consider participating in paper recycling.

Your school can get involved! Many students already recycle at home. You can help to reinforce this by giving them opportunities to recycle at school, too. If they aren't already recycling, by getting them started at school, you may get them going at home, too!

To learn more about the American Forest & Paper Association, you may write to them at 1111 Nineteenth St., NW, Suite 800, Washington, DC 20036 or check them out on the web at www.afandpa.org or www.paperrecycles.org.



Ways to Get Involved at Your School:

- Set an example for your students! Let them see you practice reuse by printing new information on the back of used paper.
- Coordinate a recycling drive and get everyone in the school involved. The drive may be held at the school only or may include the entire neighborhood or community.
- Start or improve a recycling program at your school. Help classes remember to recycle by placing posters around the building asking them to do their part.
- Let us know if you start or improve a recycling program at your school. We'd love to hear about it!



For more information or to let us know about your school's recycling program contact us at: Keep Nebraska Beautiful, 3201Pioneers Blvd., Suite 306, Lincoln, NE 68502-5963 or call us at 486-4562 (in Lincoln) or 1-800-486-4562 or fax us at 402-486-4563. You may also visit us on the web at www.knb.org or email us at info@knb.org.

AN ENVIRONMENTAL LEARNING RESOURCE

Why Recycling at Your School Makes Sense

- Thirty-seven percent of the raw material used to make new paper and paperboard products comes from recycled paper.
- Presently, more paper is recycled than is sent to landfills, and for every ton of paper that is recycled, 3.3 cubic yards of landfill space is saved.
- Recycling has a positive impact on the environment, it helps add jobs, and it helps turn old products into new ones.
- By recycling, students learn that they are part of something much larger, and that if everyone does their part, a lot really can happen.
- Recycling is a hands-on tool, that teaches students about the papermaking process, the environment, and about being personally responsible for their planet. It can also be helpful in teaching science and math skills and can be used effectively in collaborative learning situations.

Important Fact

Most of the trees that are used to make paper today are grown on working forests and the trees are harvested just like a crop. They are grown specifically to be made into paper. The paper industry plants more than 1.7 million trees every day to ensure there will be an abundant supply of this renewable resource.

Hands On

School Recycling Program

Objective: *To improve or start a recycling program at your school.*

1. Gather facts first. Conduct an audit to find the amount of recyclable items that are being used in your classrooms, staff offices, food service areas, and libraries. This will help to determine where most of the materials to be recycled are coming from. From this, you can begin to plan what you will recycle. It is probably best to start with what you have the most of, which will likely be paper items.

2. Design a Program. As you begin to plan a program, it is important to seek the support of school administrators and the custodial staff. Decide who will be the program coordinator. It should be someone who will be enthusiastic about the program and will keep things running smooth. You will need to determine the best way to collect items to encourage participation by students and staff. Placing bins in highly visible locations will help remind everyone to pitch in.



3. **Get things going.** If your school is small, you may be able to start the recycling program all at once. If you are in a larger school, you may want to start with a pilot program involving only a few classes to make sure everything will go as planned. You may want to hold a kick-off event when everything is ready to encourage ownership of the program and to help educate your school about what and how to recycle. Involving students right away is another way to help ensure the success of your program.

4. **Education is key.** Once your program is up and running, you will need to reinforce the use of the program. Take every opportunity to praise positive actions. Have older students teach younger classes about the school recycling program. Make sure teachers are informed about the program by including information about it in staff meetings, written communications, and in-service days. Use the school newsletter, website or other communications to continue educating your audience.

5. **Measure and share results.** Keeping track of your results is a way to evaluate the program's value. You will be able to see how much is being diverted from the landfill and if the program is affecting the school's waste disposal costs. Start-up costs may be offset by the savings realized. Surveying participants to get feedback on the program is vital, as well. Knowing that everyone sees the value of the program helps to ensure its continued success.

Publicizing the results is important. Keep running totals of figures for the program and provide the information to students, staff, families, and community residents. This can be accomplished through school newsletters, newspaper articles and presentations to parent organizations. You can even consider entering your school's recycling program in state and national recycling awards and competitions to bring recognition to the program's best practices and results.

6. **Keep it going.** It takes effort to keep the program going. Plan ahead for potential lapses such as summer vacation and winter break. Reinforce education to everyone when they return to make sure that things continue to run smoothly. Ask for feedback to address any issues that arise. Include everyone so that the whole program is not dependent on one champion to keep it successful. Make the program fun! Motivate students with contests, classroom rewards, and personal recognition for a job well done.



For more information about starting a recycling program at your school, be sure to check out the following websites (provided by the American Forest & Paper Association):

www.paperrecycles.org; www.afandpa.org/recycling; www.kab.org;
www.nrc-recycle.org; and www.plt.org. **Happy recycling!**

To order a copy of Keep America Beautiful's guide "School Recycling Guide: Setting up Solid Waste Recycling Programs in Schools" write to them at Keep America Beautiful, Inc., 1010 Washington Blvd., Stamford, CT 06901 or call them at 203-323-8987 or fax them at 203-325-9199. You may also email them at orders@kab.org or visit their website at www.kab.org.

Rewritten from the Waste in Place educational publication from Keep America Beautiful, Inc.

Objective: Students will be able to:

1. Name the benefits of paper recycling.
2. Summarize the paper recycling process.
3. Make a sheet of recycled paper.

Method: Students will be making new paper by recycling used paper.

Vocabulary: recycle



Discussion before beginning the activity:

Discuss the meaning of the word “recycle”. Recycle means to use waste materials again by saving them from the trash and reprocessing them. Reprocessing waste materials involves breaking them down and then reforming them into a new product.

Materials:

The materials listed below will be used at each papermaking station.

Tin Cans: Two 26 oz. cans (coffee cans work well). Actually, the diameter of the can will determine the size and shape of the paper. You will need to have one end cut out on one can and both ends cut out on the other.

Support Screen: This needs to be a sturdy, rigid screen since it will be supporting the papermaking screen. Hardware cloth is excellent for this. Like window screen, it has strands going both directions, but the strands and the openings between them are larger. It generally comes in three different sizes of openings. You will need at least one 6”x6” piece at each station. It’s best to have extra on hand.

Paper Screen: Can use nonmetal window screen. You will need at least two 6”x6” pieces per station. It is advisable to have extra on hand. You may want to experiment with other materials if you are going to be making paper often.

Sponges: You will need sponges for removing water. Use a good cellulose sponge that is about the size of your hand.

Paper towels: Large size paper towels in a roll or as singles. These will be reused, so when they become too wet to use, set them aside to dry out and reuse later.

Board for Pressing: This will be used to press down on a piece of the wet paper between layers of the paper towels. It is best to use a board that fits your hand. A 1”x4” board cut into 6” lengths works well.

Blender: Any type of kitchen blender will work fine.

Paper: Used paper, both white and colored (the content on the paper affects the final color)

Other materials: measuring cup, water, newspaper, cloth towels, plastic dish pan, apron (optional)

Tin Can Papermaking™

Procedure:

Be sure to cover the station to protect your work surface. The following should be used for each station that is set up. Set the open-ended tin can on a level surface in the dish pan with the open end up. Place a 6"x6" piece of the hardware cloth (support screen) over the tin can's open end. Place a 6"x6" piece of the window screen (paper screen) on top of the support screen. Place a tin can that is open on both ends over the paper screen. If the cans are the same size, line them up one on top of the other. The top can may be smaller or the same size, but not larger than the bottom can.

Tear at least half a sheet of scrap paper into small pieces (the piece of scrap paper should be about 7"x7"). Put the pieces into the blender. Add between one and two cups of water. Put on the lid and run the blender for approximately 30 seconds. This is the pulp that will be used to make the paper.

Pour half of the blender's contents into each of the two plastic cups. Take one cup in each hand and pour the contents quickly through the top can at the same time. Pour the contents from opposite sides of the can, so that the two streams collide. Let the water drain through to the bottom can through the screens.

When the water has drained, carefully pick up the top can to reveal your new piece of paper. Lift the paper screen off of the bottom can and support screen (the new paper will be on the paper screen). Place this on a flat, dry surface (several layers of cloth, piece of plastic, etc.). Place another 6"x6" piece of window screen over the new sheet. Take a sponge and press it down on top of the window screen and new paper. Squeeze water from the sponge. Continue pressing and squeezing until the entire sheet has been pressed and little or no water can be removed.

Starting at one corner, carefully lift the top screen off of the paper. Lay paper towels down on a flat surface. Pick up the new paper and the other screen and turn them over onto the paper towels. Press the sponge on the screen again, pressing hard to remove as much water as possible from the paper below. Starting at one corner, slowly peel off the paper screen (window screen). If the sheet doesn't come loose, try to remove more water or flip the assembly over and try to carefully remove the new sheet of paper from the screen. Place the sheet on the paper towels and place more paper towels on top. You will now need the pressing board. Take the board and press it down hard on top of the dry paper towels. Remove the paper towels and place more fresh towels on top. Continue this process until little or no water is removed with the paper towels. You can let the towels dry out and reuse them if you are going to be making paper again. Students will want to label their paper. Allow the paper to dry overnight.

Suggestions for additional items that can be added to your papermaking activity:

- Add one or two dried leaves from trees or flowers with the paper to be recycled. These can be added to the paper scraps in the blender.
- Add threads, ribbon pieces, or grass. These can be added to the pulp in the containers just before pouring.
- Add glitter either to the blender or just before pouring from the cups.
- Experiment on your own and see what you can come up with.

Activity: Word Jumble

Try your hand at unscrambling the following words or phrases to find the names of items that can be made from recycled paper. Unscramble the circled letters from the words to answer the question at the bottom of the page.

ppera rgcreyo gbsa

-----○-----○-----

pwesparsne

-----○-----

velpoenes

-----○-----○-----

rugacrtdeo xobes

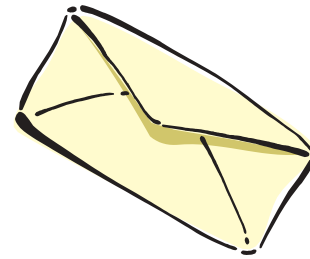
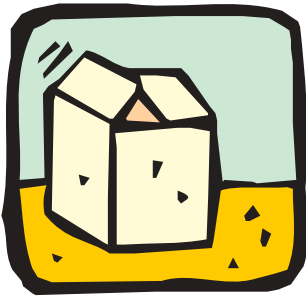
○-----○-----

gazmniesa

-----○-----

snarcto

-----○-----



What is an important thing to do with paper?



-----○-----!

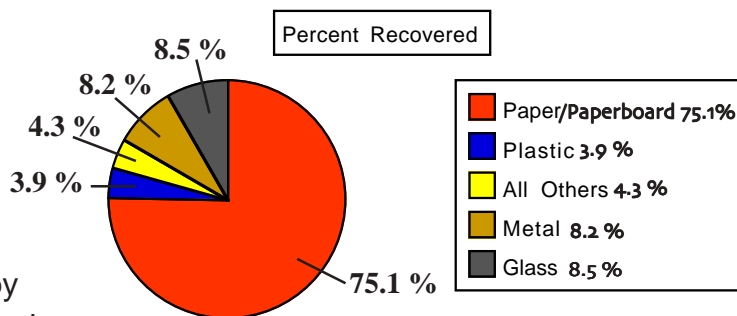
Paper - A Part of Everyday Life

Paper is something that we take for granted. We never give a thought to how many things we would be without if we didn't have paper. From reading the morning newspaper, to having a good cry with a box of tissues by our side, there is nothing more versatile, reliable or practical than paper. We use it to carry our groceries, to box our things to move from one home to another, and to read a map. We keep our kindergartners works of art, we journal our thoughts and dreams, and we use it to wipe up spills.



Unlike many natural resources, paper is renewable through both recycling and through planting new trees to keep our supply coming. The paper industry is there for us ensuring that we will have paper today, as well as, in the future. Wood is the main source of many grades of pulp and paper. To keep an adequate supply, the industry is planting trees at the rate of 1.7 million per day. The fiber from trees is not only needed to make "virgin" paper products, but it is also essential for making paper recyclable over and over again. In fact, of the new paper products made in our country today, 37% of the fiber used comes from recycled sources.

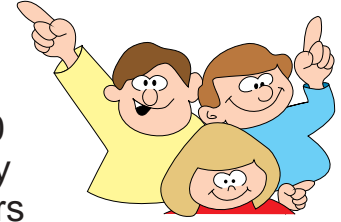
Today, many people are recycling paper and paper products. In fact, the rate of paper recovered exceeds the amount that is sent to landfills. For every ton that is recycled, 3.3 cubic yards of landfill space is saved. Also, more paper is recycled in this country by weight than all glass, aluminum and plastic combined (see chart for percent recovered). Even though the rate of recycling paper is outstanding, there is still room for improvement. To this end, the paper industry has set a goal to increase the rate of recovery to 55% by the year 2012. One of the areas that the paper industry is focusing on is the workplace. This includes school buildings, where much paper is consumed every day.



Recycling is easy and achievable and is good for the environment. All it takes is a little planning and a commitment to help the environment by recycling as much paper and paper products as possible. If your community does not offer recycling, it is time to get things started. If we all pitch in, the recycling goal can be met and paper will always be here for whatever we may need!

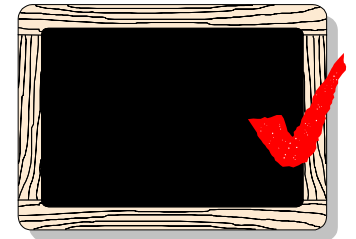
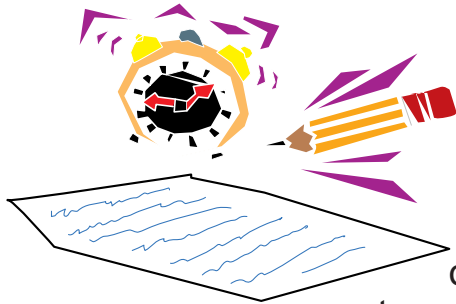
Complete the circle and recycle!

Activity: Word Race



Have students form teams and give them the words “paper recycling”. Give them a designated amount of time, such as 20 minutes, and ask them to come up with as many words as they can using the letters in the words. They may only use the letters available to form as many words as possible.

At the end of the time, have someone from each team come up to the board and write down their team’s words. Compare the words from each team. Alternately, have each group read a word aloud and compare the words by writing them down on the board and placing checkmarks by each word to correspond with the number of teams who came up with the same word. See how many words each team can discover that the other teams did not. You may decide to award points for unique words or give a small prize to the team that comes up with the most words. Be sure to emphasize that we’re all winners when we are involved in “paper recycling”!



Listed below are some of the words that can be found in “paper recycling”:

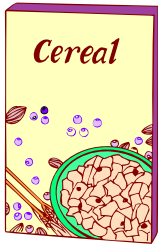
a	air	are	ape	cane	cap	cape
car	care	career	carp	clang	clean	clear
cling	clip	cycle	cycling	ear	eel	eye
gear	gel	glare	grape	grip	l	ice
in	lace	lair	lane	lap	leg	nap
nape	near	nice	nip	pace	pain	pair
pan	pang	par	pare	pairing	paring	pear
peel	peer	pen	pig	pin	pine	prepare
preparing	pry	race	rain	rang	rap	rare
rear	recycle	ring	rip	rye	year	yelp

Important Fact

To increase the percent of paper recycled to 55%, there would have to be 12.45 million more tons of paper recycled. This would be enough to fill the Empire State Building 23 times.

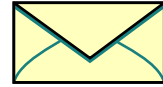
(Based on results obtained by AF&PA)

Activity: Acrostic



Look at the statements below and try to fill in the missing words. Hints are given in parentheses. The letters going vertically along the page spell out the words "Paper recycling". Students may also work in groups to see if they can come up with their own words or statements using "paper recycling" or "environment" or any other word or phrase written vertically on the page that would emphasize recycling or waste reduction.

P _____ from recycled paper can be _____ (Orange juice usually contains this)
a _____ to new fibers from wood in the _____ (He didn't subtract, he...)
p _____ of _____ (a play at a theater)
e _____ and many other products which helps to _____ (you put your letters in one)
r _____ the amount of material going to a landfill. (to make smaller)



R _____ is another way to keep materials from cluttering our _____ (to use over again)
e _____ (what we try to protect)
C _____ the loop by buying products made from recycled paper is a way (not opening)
y _____ can get involved. (not me)
C _____ boxes can be kept from the _____ (often eaten for breakfast)
l _____ if you become _____ (place where garbage goes after it leaves your home)
i _____ in recycling them. (to be included in)
N _____ should be kept from the _____ (the daily news can be found here)
g _____, too. Recycle! (where items that can't be reused or recycled go)

Here are a few items that can be made from recycled paper products:

Newspapers → more newspapers, notebook paper, cereal boxes

Paper Grocery Bags → more paper grocery bags, corrugated boxes

Mixed Paper (magazines, envelopes, egg cartons) → Paper towels, cereal boxes, notebook paper, textbook paper

Corrugated Boxes → more corrugated boxes, gift boxes

Notebook Paper → copy paper, newspapers, game and puzzle boards

(Source: AF&PA)





ABOUT US....

Keep Nebraska Beautiful (KNB) is a nonprofit organization dedicated to public education. Headquartered in Lincoln, KNB has been active since 1964 and became an affiliate of Keep America Beautiful in 1980. Along with 21 affiliates across the state, our educational efforts focus primarily on solid waste issues such as recycling and litter reduction. KNB also actively participates in community improvement projects and beautification efforts. Our mission is "To empower Nebraskans to take greater responsibility for enhancing their community environments."

To accomplish our goal, Keep Nebraska Beautiful and its affiliates sponsor community cleanups, organize beautification efforts, and provide environmental education programs across the state. Here are some other programs offered by Keep Nebraska Beautiful and Keep America Beautiful:

WASTE IN PLACE - This educational resource is available to teachers as a curriculum supplement for grades K-6. Focusing on waste and waste management, *Waste in Place* promotes critical thinking and enhances problem-solving skills so our future leaders can better understand waste management. The lesson plans include hands-on projects so students can become more familiar with topics such as recycling, preventing litter, and sanitary landfilling.

CLEAN SWEEP U.S.A.- This educational web-based program is from Keep America Beautiful. The program teaches students in grades 5-8 about waste reduction through the use of colorful citizens in the fictional town of Clean Sweep U.S.A. There is an area for educators where lesson plans and evaluation tools may be downloaded from the site.

LITTER FREE SCHOOL ZONES - This program encourages students to keep their school grounds litter-free through education, awareness, and litter cleanups. Participating schools receive a "Litter Free School Zone" sign to place outside their school.

NEBRASKA MATERIALS EXCHANGE - The goal of this program is to divert usable or recyclable material from the landfill by promoting recycling and reuse. The Materials Exchange is active in helping schools and nonprofit organizations find much needed materials like computers, desks, binders, and sports equipment from businesses or other organizations where the items are no longer being used.

GROW BIG RED GARDENS - This statewide beautification effort encourages communities, businesses, civic organizations, and individuals to show their Husker spirit and Nebraska pride by planting gardens using red flowers. Gardens can be planted in public areas such as schools, parks, medians, and along highways.

For more information about these and other programs offered by Keep Nebraska Beautiful and ideas about how you and your students can participate, please visit our website at www.knb.org or email us for further information at info@knb.org.

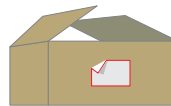
Answer Key: Word Jumble and Acrostic Activity

Word Jumble From Page 6

ppera rgcreyo gbsa
pwesparsne
velpoenes
rugacrtdeo xobes
gazmniesa
snarcto



paper grocery bags
newspapers
envelopes
corrugated boxes
magazines
cartons



What is an important thing to do with paper?

Recycle it!

Acrostic Activity From Page 9

P u l p from recycled paper can be a d d e d to new fibers from wood in the p r o d u c t i o n of e n v e l o p e s and many other products which helps to r e d u c e the amount of material going to a landfill.



R e u s e is another way to keep materials from cluttering our e n v i r o n m e n t.

C l o s i n g the loop by buying products made from recycled paper is a way y o u can get involved.

C e r e a l boxes can be kept from the l a n d f i l l if you become i n v o l v e d in recycling them.

N e w s p a p e r s should be kept from the g a r b a g e, too. Recycle!



Keep Nebraska Beautiful Affiliates

For more information about litter cleanups, beautification projects and educational activities in your area, please contact these local affiliates.
For contact information, visit our affiliates page at www.knb.org.

Keep Alliance Beautiful • Keep Beatrice Beautiful • Keep Broken Bow Beautiful
Keep Chadron Beautiful • Keep Columbus Beautiful • Keep Creighton Beautiful
Keep Fremont Beautiful • Grand Island Area Clean Community System
Keep Keith County Beautiful • Keep Kimball Beautiful • Keep Lexington Beautiful
Keep Lincoln/Lancaster County Beautiful • Keep Loup Basin Beautiful
Keep Norfolk Beautiful • Keep North Platte/Lincoln County Beautiful
Keep Northeast Nebraska Beautiful • Keep Omaha Beautiful • Keep Schuyler Beautiful
Keep Scottsbluff-Gering Beautiful • Keep Sheridan County Beautiful
Keep Sidney Beautiful