



Maryland State Department of Education
Service-Learning
Special Education Unit
School-Wide Recycling Project

Primary Subject: Science (Environmental)

Grade Level: 3-12 grades (Alt-MSA)

Additional Subject Area Connections:

Reading/Language Arts, Math, Technology,
Art

Unit Title: School-Wide Recycling Project

Type(s) of Service: Direct, Indirect, and
Advocacy

Students participating in service-learning projects may have a wide range of abilities, challenges, and needs. Teachers and parents may provide a greater amount of guidance and assistance before, during, and at project completion. Procedures and steps described in the unit may be modified or excluded as dictated by the needs of the students.

Unit Description: As students learn about the planet and recycling, they often have limited knowledge with what happens to the by-products they discard. Students will research, discuss, and identify issues associated with keeping a healthy planet. Using knowledge of school climate and activities associated with recycling, the students will design a plan of action to reduce the amount of school recyclable items that are thrown into the trash. Math and technology skills will be used to collect, record, and analyze data associated with school-wide recycling trends. Students will extend their understanding of human effects on their environment by conducting home and school surveys regarding recycling practices. In addition, students will visit a recycling center. Ultimately, students will become actively involved in preparing and taking recyclable items (plastic bottles/cans) to a local pick-up center. Students will report to

Maryland Curriculum Standards Met

Science:

Standard 6.0 Environmental Science: Students will use scientific skills and processes to explain the interactions of environmental factors (living and non-living) and analyze their impact from a local to a global perspective.

Recognize and explain how renewable and nonrenewable natural resources are used by humans in Maryland to meet basic needs.

Identify and compare Maryland's renewable resources and nonrenewable resources.

Describe how humans use renewable natural resources, such as plants, soil, water, animals.

Describe how humans use nonrenewable natural resources, such as oil, coal, natural gas, minerals, including metals

1. Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs.

a. Identify and describe personal and community behaviors that waste natural resources and/or cause environmental harm and those behaviors that maintain or improve the environment.

b. Identify and describe that individuals and groups assess and manage risk to the environment differently.

Additional standards met follow

the school and student body the findings and totals on the number of recycled items saved from the trash and taken to the recycle center. Through announcements made to the student body, and a letter writing campaign, students will solicit the support of peers and adults to increase their involvement in recycling. As a culminating activity, students will host a screening of a video documenting the recycling project.

Potential Service-Learning Action Experiences:

- Collect plastic bottles/cans/paper to recycle. (*indirect*)
- Create public service announcements (PSAs) regarding recycling awareness. (*advocacy*)
- Create a video for community distribution on the importance of recycling. (*advocacy*)
- Create social story for sensory students who will visit the recycling center. (*direct*)
- Visit a recycling center/drop-off-location to deliver collected items. (*direct*)
- Create a letter to the editor about recycling at their school. (*advocacy*)
- Host a community screening of recycling video and a recycling promotional event. (*advocacy*)

Additional Standards Met

Science Continued:

2. Recognize and describe that consequences may occur when Earth's natural resources are used. Explain how human activities may have positive consequences on the natural environment.

- a. Recycling centers
 - b. Native plantings
 - c. Good farming practice
- Health

3.0 Personal Consumer Health- Students will demonstrate the ability to use consumer knowledge, skills, and strategies to develop sound personal health practices involving the use of health care products, services, and community resources.

- a. Analyze various media messages for valid health information.
- b. Identify advertising techniques used in different media sources
- c. Identify and recognize products label information.

Alignment with Maryland's Best Practices of Service-Learning: *School Recycling Project*

1. **Meet a recognized community need**

Students will collect plastic bottles /cans/paper in order to demonstrate the ease of recycling and reduce the trash in and around their school or community.

2. **Achieve curricular objectives through service-learning**

Many curricular objectives could be met through this project in a variety of content areas (see numerous attached indicators) depending on how the teacher implements the project.

Students will advocate for recycling and develop a social story (an anticipatory story for sensory challenged peers). Directions for recycling may be displayed in a picture form for those students who have reading challenges.

3. **Reflect throughout the service-learning experience**

Students will use graphic organizers, video recording, and story boards to reflect on their collection process and to develop PSA and a community video of the project. The culminating reflection task will ask students to write a letter as a class to the editor of the school newspaper and community newsletter/school or district website describing their service-learning project. Written correspondence may be completed on a computer with keyboard adaptations.

4. **Establish community partnerships**

Students will:

- design or decorate receptacle covers to easily identify recycling containers;
- create social stories for sensory challenged peers;
- develop a survey to learn the recycling habits of the members of their home and school community;
- interview school personnel about their recycling habits to create a DVD and PSA;
- develop a storyboard;
- create letters and thank you notes regarding the recycling project;
- use data to identify, describe, and analyze numeric patterns.



5. Develop student responsibility (Students have opportunities to make decisions about the service-learning project.)

Establish a partnership with a recycling center and waste removal vendor to provide recycling containers, guest speakers, and a recycling center tour.

6. Plan ahead for service-learning

Building Background Knowledge / Vocabulary Development

- living/non-living, environmental issues, and recycling

Social Stories

- A social story can be developed for sensory challenged students who may need more preparation for the field trip to the recycling center. Students can create a storyboard and then photograph specific places to prepare the students (e.g. The recycling center is large and noisy. Most of the work is outside. The big machines make the floor and the grounds vibrate.)

7. Equip students with knowledge and skills needed for service

The student will learn about the importance of service-learning. They will explore concepts associated with civic responsibility. They will learn about the importance of having a healthy planet.

They will read books, visit web sites, read survey questions, conduct interviews and report and share findings using various technologies. Teachers may adapt stories or books through the use of a tool such as Boardmaker. Adaptations may increase visual memory and comprehension.

Students will learn behaviors for life skills (e.g. use community transportation, empty recycling containers, rinse recycled bottles and cans, operate a camera), create a PowerPoint, video, or storyboard, write a letter of introduction and request for assistance, read a short paragraph fluently, interview an adult (by introducing himself, shaking hands, and thanking the interviewee), and write a thank you letter.

Students can sort collected items as a class or in small groups. Recycling containers must be accessible to students in wheelchairs.

Procedures with Resources:

School Recycling Project

These procedures represent an example of a service-learning lesson on this specific topic, but can be changed to meet individual classroom interests or varying community needs. You are encouraged to adapt this unit to fit your unique classroom and community and to solicit student input in planning and decision making.

1. Introduce the service-learning project by discussing service-learning and citizenship with students and engaging in activities to explore those themes. A resource to support this topic can be found at [Bringing Learning To Life](https://www.youtube.com/watch?v=o2-eoEi6FCo) (<https://www.youtube.com/watch?v=o2-eoEi6FCo>).
2. Send letter home with students to inform parents about the project and service-learning used as an integrated teaching method.
3. Build Background:
 - a. Instruction provided to build student background knowledge in the following areas:
 - i. Our planet (healthy planet)
 1. [You and the environment](http://www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=288&id=2651) (<http://www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=288&id=2651>)
 2. [Learning and Teaching about the Environment](https://www.epa.gov/students) (<https://www.epa.gov/students>)
 3. [Planet Pals](http://www.planetpals.com/) (<http://www.planetpals.com/>)
 - ii. Positive/negative effects that humans have on environments
 1. [Human Impacts on the Environment](https://www.nationalgeographic.org/topics/resource-library-human-impacts-environment/?q=&page=1&per_page=25) (https://www.nationalgeographic.org/topics/resource-library-human-impacts-environment/?q=&page=1&per_page=25)
 2. [Exactly How to read Plastic Recycling Symbols](https://www.goodhousekeeping.com/home/g804/recycling-symbols-plastics-460321/) (<https://www.goodhousekeeping.com/home/g804/recycling-symbols-plastics-460321/>)
 3. [The Environment](https://www.ducksters.com/science/environment/) (<https://www.ducksters.com/science/environment/>)

Additional Interdisciplinary Connections



Reading/Language Arts – read and conduct research on the topic. Write letters and survey.

Math – track material recycled and graph.

Technology – Create visual presentation/video on project and recycling.

Art – Create posters and signage for recycling program.

- iii. Recycling projects completed by same aged peers in other locations states, – reduce, reuse, recycle
 1. [Kids Recycling](https://www.recycleandrecoverplastics.org/consumers/kids-recycling/) (https://www.recycleandrecoverplastics.org/consumers/kids-recycling/)
 2. [Recycle](https://kids.niehs.nih.gov/topics/reduce/recycle/index.htm) (https://kids.niehs.nih.gov/topics/reduce/recycle/index.htm)
 3. [Recycling for Kids](http://www.sciencekids.co.nz/recycling.html) (http://www.sciencekids.co.nz/recycling.html)
 4. [Kids Super Guide on How to Recycle](https://www.reusethisbag.com/articles/kids-guide-to-recycling/) (https://www.reusethisbag.com/articles/kids-guide-to-recycling/)
 5. [The Association of Plastic Recyclers](https://plasticsrecycling.org/) (https://plasticsrecycling.org/)
 6. [How Trash is Recycled](https://thekidshouldseethis.com/post/recycle-video-for-kids) (https://thekidshouldseethis.com/post/recycle-video-for-kids)
 7. [Starting a School Recycling Program](http://www.mwcog.org/uploads/committee-documents/bF5eWVxY20080717152942.ppt) (http://www.mwcog.org/uploads/committee-documents/bF5eWVxY20080717152942.ppt)
 - iv. Characteristics of living and non-living things
 - Reading focus: books, websites, etc. High interest, lower level readings by:
 - What Living Things Need: Homes
 - What Living Things Need: Food
 - What Living Things Need: Light
 - What Living Things Need: Water
 - What Living Things Need: Air
 - b. Instruction provided in reading and writing:
 - i. Comprehension
 - ii. Main idea
 - iii. Use of graphic organizer/story maps
4. Construct surveys & conduct interviews
 - a. Use information from background to
 - i. Construct a survey on recycling practices
 - ii. Give survey to staff and parents/guardian
 - iii. Write class letter to invite school personnel to participate in class survey
 - iv. Practice reading survey question, practice using video camera
 - v. Interview school personnel
 5. Discuss human/environmental issues at home and school
 - a. Conserving energy
 - b. Water usage
 - c. Pollution
 - d. Trash verses recyclable items
 - e. Identify problems associated human/environmental issues at school
 6. Discuss and design ways to collect recyclables in school
 - a. Write a class note to administrator to conduct a school-wide recycling competition between grade levels
 - b. Get permission to conduct a school-wide recycling project

- c. Write and make announcement about school wide recycling project competition
 - d. Get separate recycling containers per grade/level decorate and place in lunch area
 - e. Students count items that are deposited in each container and record data on graphic organizer
7. Students keep data on recyclable items by grade
 - a. Students keeps log
 - b. Report totals to peers on school-wide announcements
 - c. Report totals to classmates and use for math instruction
 - i. Skip counting (counting by twos, fives, tens)
 - ii. Tally
 - iii. Enter info into graph format.
 8. Teacher provide instruction on how to use video/technology
 - a. Instruction in PowerPoint, MovieMaker, PhotoStory. Technology will be used to make final project.
 9. Visit Recycling Center
 - a. Visit website
 - b. Discuss what happens to bottles/can (recyclables) when recyclables are removed from the school/home
 - i. Initial team of students go out and take camera
 - ii. Report back to class about what will be experienced during the visit
 - iii. The purpose of this visit is to develop a social story to for sensory challenged students who may need more preparation for the field trip to the recycling center.
 10. Students study environmental science in science class.
 11. Students discuss behaviors and habits of community members.
 12. Students research recycling center and learn life skills behaviors to prepare for survey, interviews, and storyboard.
 13. Students recall aspects of project and they are written as a language experience story infused with photos taken throughout the project.
 14. Review the impact of the project and what students learned and how they helped their community.
 15. Upon completion, analyze the plan to evaluate the successful completion of the objective and overall success of the project. Also, reflect on the project using various reflection activities and evaluate the effectiveness of the project by completing the [Rubric for Assessing the Use of the Maryland's Seven Best Practices of Service-Learning](http://marylandpublicschools.org/programs/Documents/Service-Learning/rubric_best.pdf) (http://marylandpublicschools.org/programs/Documents/Service-Learning/rubric_best.pdf).

Division of Student Support, Academic Enrichment, and Educational Policy
Youth Development Branch
200 West Baltimore Street
Baltimore, Maryland 21201
410-767-0357

[Maryland Public Schools Service-Learning Website](http://www.mdservice-learning.org) (www.mdservice-learning.org)
[Maryland Public Schools](http://www.marylandpublicschools.org) (www.marylandpublicschools.org)



**This material is based upon a template for service-learning experiences created by the Maryland State Department of Education. Opinions or points of view expressed in this document are those of the authors and do not necessarily reflect the official position of the Maryland State Department of Education or constitute an endorsement.*