



Reduce, Reuse, Recycle

Middle School Food and Agricultural Literacy Curriculum

Precepts

- J. Mental Growth
- J3. Practice sound decision-making

National Standards

- ESS.04.02.06.b. Describe recycling methods and identify materials that can be recycled.
- CS.03.02.01.b. Utilize the process used to reach a conclusion for a decision.
- NL-ENG.K-12.12 – Applying Language Skills
- NSS-C.5-8.5 – Roles of the Citizen

Student Learning Objectives

- As a result of this **unit** the students will...
- Identify best practices to be utilized in Natural Resources Stewardship.
- As a result of this **lesson** the students will ...
- Describe the importance of Reduce, Reuse, Recycle.

Content Outline

Objective 1. Describe the importance of **Reduce, Reuse, Recycle**.

I. Reducing, reusing, and recycling.

- A. What does it mean to **reduce** waste?
 - 1. **Reduce:** use fewer resources (which, in turn, **reduces** trash)
 - 2. Methods of reducing use of resources and trash
 - a. Buy used products
 - b. Select products which are energy-efficient
 - c. Avoid overly packaged goods because packaging is all throw away
- B. What does it mean to **reuse**?
 - 1. **Reuse:** taking an item that might be thrown out and using it again for a purpose other than its original use (or allowing someone else to use it instead of throwing it out)

Time

Instruction time for this lesson: 45 minutes.

Resources

Honolulu ENV. (2005). Recycling songs. Retrieved August 10, 2009, from City & County of Honolulu's — Department of Environmental Services Web site: http://www.opala.org/solid_waste/media/Recycling_Songs.htm. — Minnesota Pollution Control Agency. (2008). No-waste holiday ideas. Retrieved August 6, 2009, from — The Minnesota Pollution Control Agency Web site: <http://www.pca.state.mn.us/oea/reduce/nowaste.cfm>. — National FFA Organization. (2003). LifeKnowledge Precepts and Signs of Success. — National FFA Organization. (2009). LifeKnowledge Online. Retrieved July 17, 2009, from <http://agedlearning.org>. — Natural Resources Defense Council. (2009). This green life. Retrieved August 6, 2009, from The — Natural Resources Defense Council Website: <http://www.nrdc.org/thisgreenlife/0802.asp>. — No More Trash. (2009). Litter facts and research. Retrieved August 10, 2009, from No More Trash Web — site: <http://mdc.mo.gov/nomoretrash/facts/>. — Paper Usage and Recycling. (2009). How much paper do we waste? Retrieved August 10, 2009, from — Lisa Shea Homepage: <http://www.lisasha.com/lisabase/aboutme/paperusage.html>. — Recycling Guide. (2008). How to reduce, reuse, recycle. Retrieved August 6, 2009, from The Guide — Network Web site: <http://www.recycling-guide.org.uk/rr.html>.

Tools, Equipment, and Supplies

Writing surface
 Transparencies and projector or LCD projector
 MS.NR.7.1.AS.A – one per student or projected
 MS.NR.7.1.TM.A – one per teacher
 MS.NR.7.1.TM.B – one per teacher
 Old newspaper
 Scissors – one pair per student
 Glue stick – one per student
 Old magazines – one per student
 MS.NR.7.1.ASSESS.A – one per student

Key Terms

The following terms are presented in this lesson and appear in **bold italics**:

Reduce

Reuse

Recycle

- 2. Items that can be **reused**
 - a. An old shirt can become a rag used for cleaning
 - b. An old envelope can become a shopping list or a note



Lesson Number: MS.NR.7.1

Middle School Food and Agricultural Literacy Curriculum

Reduce, Reuse, Recycle

- c. Magazines, CDs, and DVDs can be shared or traded

C. What does it mean to **recycle**?

1. **Recycle:** process old, used items in order that the material can be used to make new products
2. Items that can be **recycled**
 - a. Paper
 - b. Metal
 - c. Glass

D. Why is it important to **reduce, reuse, and recycle**?

1. Conserve natural resources
2. Save energy
3. Decrease pollution
4. Protects the environment

Prior to teaching this lesson, you will need to secure a song to be used during the *Sound Track e-Moment*®. If possible, the song should relate to conservation, recycling, etc. For a list of possible songs, visit the website: http://www.opala.org/solid_waste/media/Recycling_Songs.htm. All songs on this page are copyrighted; however, artists have granted permission to use these songs for educational purposes – songs can be played directly from this website.

Additionally, you will instruct the students to talk with a friend throughout this lesson; this can be predetermined by you. It may be easiest to have students match up with someone sitting close by. Possible song titles and artists include: "The 3 R's" by Jack Johnson, "**Reduce, Reuse, Recycle**" by the Lava Jam Band, or "Good Garbage" music and lyrics by James McCarthy.

Interest Approach

While students are entering the classroom, utilize the *Sound Track e-Moment* so students will attach music to the information they will be learning. While students are entering the classroom, play the song you have selected for this e-Moment. Announce to students:

Thank you for coming to class today. As we prepare to learn, listen to the song playing and think about the words in the song. We will be listening to this song again as we review today's lesson.

In this interest approach, students will make predictions about the decomposition time of different items. List the following items on a writing surface: paper bag, wool sock, leather shoe, tin can, disposable diaper, an aluminum can, a plastic jug, and a Styrofoam container.

We have probably heard the word "decompose" before. What does this word mean?

Elicit responses.

Great answers! Decompose means to rot or to break down. When a piece of trash decomposes, it becomes nonexistent in the environment. Different types of items take longer to decompose. For example, a banana peel takes three or four weeks to decompose, while a cigarette butt takes two to five years. We are about to guess the decomposition time of different items.

Please observe this (gesture to items listed on writing surface) list of items that we might throw away as trash.

When I say GUESS, write down how long you think it might take each of these items to decompose. Write this on a scrap sheet of paper. Two minutes will be allotted for this activity. What questions are there? GUESS

Pause for two minutes while students write down their guesses. Monitor to ensure students are on task.

Time is up. It is surprising to hear how long some of these items take to decompose. As the decomposition time for each item is revealed, think about how often these items are placed into trash and the impact this has on our environment.



Lesson Number: MS.NR.7.1

Middle School Food and Agricultural Literacy Curriculum

Reduce, Reuse, Recycle

Slowly present the following information to students. Pause between each item and allow students to think about the decomposition time. As the decomposition time gets longer, emphasize the longer times by changing your voice (so that you sound as if you can hardly believe the information you are presenting) for dramatic effect.

Paper bag – 1 month

Wool sock – 1 year

Leather shoe – 45 years

Tin can – 90 years

Disposable diaper – 550 years

Aluminum can – 200-500 years

Plastic jug – 1 million years

Styrofoam container – more than 1 million years

Pause for a few seconds while students reflect over this information.

Surprised?

Pause for a few seconds.

It takes a lot of time for trash to decompose. As we continue through the lesson, we will learn about different ways we can **reduce** the amount of trash that enters our environment. Be prepared to talk and share ideas with one another as we tackle this dirty topic because it is everyone's responsibility to lower the trash output, since we are all contributors to the problem.

Summary of Content and Teaching Strategies

Objective 1. Describe the importance of **Reduce, Reuse, Recycle**.

In this lesson, project **MS.NR.7.1.TM.A** and **MS.NR.7.1.TM.B** to highlight content outline of Objective 1. Keep the transparency master covered, and uncover as you discuss each component of the outline.

Distribute **MS.NR.7.1.AS.A**. After distributing, continue.

During today's lesson, we will be using these sheets.

Hold up **MS.NR.7.1.AS.A**.

On the sheet, there are three bubbles that each contain a word – **reduce**, **reuse**, or **recycle**. As we discuss each word, write the definition in the corresponding bubble. Also, there are boxes with numbers – instructions will be provided for the boxes throughout the lesson. What questions are there about the activity sheet?

Pause for a few seconds. If no questions, continue. Pose the following question:

We are talking about waste today. What does it mean to **reduce** waste?

Pause for a few seconds.

Who will share an answer?

Allow students to share responses. After students have provided a few responses, share the definition below.

I. **Reducing, reusing, and recycling.**

A. What does it mean to **reduce** waste?

1. **Reduce**: use fewer resources (which, in turn, **reduces** trash)

Did everyone get the definition written down on the activity sheet?

Pause for a few seconds while students write the definition.

There are many different ways that we can **reduce** the use of resources and **reduce** trash in the environment. One way to do this is buying used products instead of new products. For example, purchasing a used bicycle that someone else does not use anymore instead of buying a new bicycle would prevent a new bicycle from being made, thus, reducing the use of resources. Please write this down beside number 1 on the activity in the sheet in the box labeled "**reduce**."

Pause while students write.

When I say GO, write down all of the methods you can think of that might **reduce** the use of resources and trash. By the way, work on this with a friend and your answers will be written on the activity sheet. Thirty seconds will be allotted for this activity. What questions are there? GO.

Pause for 30 seconds and then continue.



Reduce, Reuse, Recycle

Time is up. There were many good conversations about waste reduction. As we listen to methods provided by classmates, fill in blanks on the activity sheet. Who will share examples?

Allow students to share. If students are slow to respond, use examples from the list below to prompt them. Correct students if they give examples that are not methods of reducing waste. Students may suggest recycling or reusing a product – while these are effective, encourage students to focus on activities other than recycling or reusing.

After all examples have been written, if the items below were not mentioned, provide these as additional examples of ways to **reduce** the use of resources and trash.

2. Methods of reducing use of resources and trash
 - a. Buy used products
 - b. Select products that are energy-efficient
 - c. Avoid overly packaged goods because packaging is all throw away

Great job! The **reduce** concept can be confusing. If you fully understand what reducing means, show a thumbs up.

Demonstrate thumbs up.

If you somewhat understand what reducing means, show a sideways thumb (demonstrate sideways thumb). If you do not understand what reducing means, show a thumbs down

Demonstrate thumbs down.

Observe the class for comprehension. Re-teach if necessary.

Thank you. Reducing our use of resources and the amount of trash we create is important to maintaining a safe environment. Now, let's get ready to consider something else that will help maintain a safe environment.

In addition to reducing, there is something else we can do to help decrease pollution – we can **reuse** items. What do you think it means to **reuse**?

Pause for a few seconds. Who will share an answer?

Allow students to share responses. After students have provided a few responses, share the definition below.

B. What does it mean to **reuse**?

1. **Reuse:** taking an item that might be thrown out and using it again for a purpose other than its original use (or allowing someone else to use it instead of throwing it out)

Good work – make sure the definition is written on the activity sheet. Similar to reducing, reusing also prevents the use of resources and trash. Without realizing it, we **reuse** items every day. Think about the number of times you may have **reused** an old assignment for writing a note or marking the page in a book?

Pause for a few seconds.

Here is another example of reusing an item. An old shirt can be used as a rag for cleaning. The concept of reusing suggests that we take an item we are considering throwing away and find a new use for it.

Pause while students write.

When I say USE AGAIN, write down examples of how you could **reuse** items. Again, work with a friend and answers will be written on the activity sheet. Thirty seconds will be allotted for this activity. What questions are there? USE AGAIN

Pause for 30 seconds and then continue.

Time is up. Again, fill in blanks on the activity sheet while we hear examples of reusing. Who will be the first to share?

Allow students to share. If students are slow to respond, use examples from the list below to prompt them. Correct students if they give examples that are not methods of reusing items. After all examples have been written, if the items below were not mentioned, provide these as additional examples of ways to **reuse** items.

2. Items that can be **reused**
 - a. An old shirt can become a rag used for cleaning
 - b. An old envelope can become a shopping list or a note
 - c. Magazines, CDs, and DVDs can be shared or traded



Lesson Number: MS.NR.7.1

Middle School Food and Agricultural Literacy Curriculum

Reduce, Reuse, Recycle

Excellent ideas – we are definitely on the way to saving our environment! Quick check on understanding – thumbs up if this concept is clear, thumbs sideways if there is some confusion, and thumbs down if the concept of reusing does not make sense.

Observe for comprehension and re-teach if necessary.

Think about the things that people throw out on a daily basis. Pause for a few seconds. How aware is our community about the importance of reusing? Pause for a few seconds. In what ways could we educate our community about reusing items instead of throwing them away?

Pause for a few seconds.

When we hear the word, COMMUNITY, answer that question with a friend. You will have 30 seconds to answer that question. What questions are there? COMMUNITY!

Pause for 30 seconds and then continue.

Who will explain to the class a way that we could communicate the importance of reusing items to our community?

Allow students to share. After a few answers have been given, continue.

It is important that we address the issue of reusing products here in our community. Let's set a goal. After school today, each of us will share with one person what we talked about in class today regarding the **reuse** of products. Be prepared to discuss who you shared this information with in class tomorrow. It is important that you follow up the next day by asking students who they shared the information with and providing an example yourself. We have talked about reducing the use of resources and reusing products. Now, let's prepare ourselves to discuss a different concept that can help decrease the amount of trash entering our environment.

Reducing and reusing are important, but another important concept we may have heard of is recycling. What does it mean to **recycle**?

Pause for a few seconds.

Who will share an answer?

Allow students to share responses. After students have provided a few responses, share the definition below.

C. What does it mean to **recycle**?

1. **Recycle:** process old, used items in order that the material can be used to make new products

Write that definition. There are some very common items we use everyday that can easily be **recycled**. One example is paper. Each year, Americans throw away enough paper to build a 12-foot-high wall from New York to California. That is a lot of paper! In fact, it is equal to about four million tons of paper wasted each year. Now, listen to this: it takes 17 trees to make one ton of paper.

Speak the next part slowly so students can process the information.

If it takes 17 trees to make one ton of paper, and Americans throw away 4 million tons of paper each year, that means that 68 million trees are thrown away each year! Think about how many trees would not have to be cut down if we could **recycle** all of that paper instead of throwing it away.

Pause for a few seconds.

Okay – paper is just one example of something that can be **recycled**.

When I say GO, write down examples of other things that can be **recycled**. Work with a friend and write answers on the activity sheet. Thirty seconds will be allotted. What questions are there? GO

Pause for 30 seconds and then continue.

Time is up. Who will give examples of items that can be **recycled**?

Allow students to share. If students are slow to respond, use examples from the list below to prompt them. Correct students if they give examples of things that cannot be **recycled**. After all examples have been written, if the items below were not mentioned, provide these as additional examples of things that can be **recycled**.

2. Items that can be **recycled**
 - a. Paper
 - b. Metal
 - c. Glass



Lesson Number: MS.NR.7.1

Middle School Food and Agricultural Literacy Curriculum

Reduce, Reuse, Recycle

Okay, with your thumb show how well you comprehend the recycling concept. Thumbs up mean you've got it, sideways indicates there may be some confusion, and thumbs down indicates that there are questions.

Observe for comprehension and re-teach if necessary.

Well done. **Reduce, reuse, and recycle** is a very important concept for many different reasons.

The following reasons are on **MS.NR.7.1.TM.B**. Reveal and briefly discuss each reason on the transparency master.

D. Why is it important to **reduce, reuse, and recycle**?

1. Conserve natural resources
2. Save energy
3. Decrease pollution
4. Protects the environment

Thank you for participating in today's discussions. We are going to review the concept of **reduce, reuse, and recycle**.

Review/Summary

For the review, you will need glue sticks, scissors, and magazines from which students can cut pictures. In addition, you will need three big sheets of newspaper as a surface for gluing (effective because you will be reducing your use of paper by not using poster board or butcher paper, reusing the newspaper for another purpose, and you could then recycle all the paper).

Each gluing surface will have a title. At the top of one surface, write **REDUCE**, on another write **REUSE**, and on the third write **RECYCLE**. Students will look through magazines – each student will find a picture of something that the use of could be **reduced**, something that could be **reused**, and something that could be **recycled**. Upon finding each of these, students will cut the picture out and glue it to the appropriate surface with the category under which it falls (**reduce, reuse, or recycle**).

At the completion of this review activity, you will run through each surface identifying the items that have been glued. If scissors and glue are not available, you could have students rip out pictures and use scotch tape as an alternative.

To review information we covered today, we will be cutting pictures out of magazines and identifying items that could be **recycled, reused, or** the usage could be **reduced**.

To complete this review successfully, desks will need to be cleared. Please make this happen.

You will be given magazines, scissors, and glue. When I say **REDUCE, REUSE, RECYCLE**, flip through the magazines and find a picture of one item that could be **recycled, reused**, or the usage could be **reduced**. When you have found a picture, cut it out of the magazine. After one picture has been cut for each category, glue the picture under the appropriate heading (gesture to each surface as you say the heading) **reduce, reuse, or recycle**. Five minutes will be allotted for this activity. What questions are there?

Observe for questions; after all questions have been answered distribute the magazines, glue sticks, and scissors – one of each per student. If supplies are low, students can share. Also, mount the surface where students will be gluing the pictures (these three surfaces can be mounted around the room or all in a central location). Once materials have been passed out and surfaces for the activity mounted, continue.

It seems everyone is ready. **REDUCE, REUSE, RECYCLE!**

While students are working on the activity, play the song utilized during the Sound Track e-Moment at the beginning of class so students will attach music to the information they have learned. Announce to students:

While working, we will listen to the song that was playing at the beginning of class. Again, listen to the lyrics of the song and think about how they relate to today's lesson.

Pause for five minutes and monitor students to ensure they are on task. If students finish before five minutes, continue.

Time is up. Let's take a look at the items identified.

Review the items glued under each heading. If any items do not belong, point this out.

Today, we learned about the concepts of **reduce, reuse, and recycle**. Making these concepts a habit in our daily lives will help protect the environment by reducing pollution, saving energy, and conserving natural resources. We all enjoy living in a clean environment and future generations will want to enjoy the same thing, so we should help protect it now.



Lesson Number: MS.NR.7.1

Middle School Food and Agricultural Literacy Curriculum

Reduce, Reuse, Recycle

Be mindful of these concepts as we prepare for future discussions on natural resources and remember that tomorrow you will share with the class who you told about the concept of reusing items.

Application

Extended classroom activity:

Students create a poster/draw a picture that illustrates the importance of **reduce**, **reuse**, and **recycle**. This can be done individually or in groups.

FFA activity:

The FFA chapter can initiate a recycling project at the school. This can be a classroom project or a school wide project. Options for recycling might include: paper, plastic bottles, aluminum cans, newspapers, etc.

SAE activity:

Students begin a recycling project at home by creating different collection bins for different recyclable items.

Possible exploratory type SAE activities that could be done in this regard might be:

- Visit a recycling center and interview the manager of the center.
- Prepare a paper identifying what happens to a piece of paper (plastic, glass, metal, etc.) from the time it is placed in your recycling bin until it gets **recycled**.
- Volunteer for a day to assist at a town recycling center or conduct a survey at the center by watching and analyzing what people are bringing.

Evaluation

MS.NR.7.1.ASSESS.A.

Answers to Evaluation

1. a
2. a
3. d
4. c
5. b



Name _____

REDUCE BY...

1. _____

2. _____

3. _____

4. _____

5. _____

REDUCE

REUSE...

1. _____

2. _____

3. _____

4. _____

5. _____

RECYCLE

REUSE

RECYCLE...

1. _____

2. _____

3. _____

4. _____

5. _____



Reducing, reusing, and recycling

What does it mean to *reduce* waste?

Reduce: use fewer resources (which, in turn, reduces trash)

- Methods of reducing use of resources and trash
- buy used products
- select products that are energy-efficient
- avoid overly packaged goods because packaging is all throw away

What does it mean to *reuse*?

Reuse: taking an item that might be thrown out and using it again for a purpose other than its original use (or allowing someone else to use it instead of throwing it out)

- Items that can be reused
- An old shirt can become a rag used for cleaning
- An old envelope can become a shopping list or a note
- Magazines, CDs, and DVDs can be shared or traded

What does it mean to *recycle*?

Recycle: process old, used items in order that the material can be used to make new products

- Items that can be recycled
- Paper
- Metal
- Glass



Why is it important to *reduce, reuse, and recycle*?

- conserve natural resources
- save energy
- decrease pollution
- protects the environment



Name _____

Directions: Read each statement and decide whether it is true or false.

1. ____ **Reduce, reuse, recycle is important to help decrease pollution.**
 - a. True
 - b. False
2. ____ **Recycle means to process old, used items so the material can be used to make new products.**
 - a. True
 - b. False

Directions: Read each question and circle the response that best answers the question.

3. ____ **Which of the following is an example of reducing waste?**
 - a. Buying products that are energy-efficient
 - b. Buying used products
 - c. Not buying overly packaged products
 - d. All of the above answers
4. ____ **Which of the following is an example of reusing an item?**
 - a. Wearing sunglasses when the sun is shining outside
 - b. Placing an aluminum can in a recycling bin
 - c. Using a paper receipt as a bookmark
 - d. None of the above
5. ____ **Which of the following items cannot be recycled?**
 - a. Glass
 - b. Ink
 - c. Metal
 - d. Paper