



Waste Free Lunch

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Target Grade: 6th Grade Science

Time Required: three 45 minute class periods

Standards:

MS-ESS3-3: Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

Lesson Objectives:

Students will describe how a waste free lunch at the Olympics could minimize our impact on the environment.

Central Focus:

Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth's environments can have different impacts (negative and positive) for different living things. (MS-ESS3-3) Typically as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise. (MS-ESS3-3), (MS-ESS3-4) All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. (MS-ESS3-1), (MS-ESS3-4)

Background Information:

- <https://www.epa.gov/recycle>
- <http://chettinadtech.ac.in/storage/11-07-19/11-07-19-03-32-34-985-sampathkumar.pdf>
- <http://worldcentric.org/about-compostables/traditional-plastic/pollution>
- <https://www.rmhckc.org/how-you-can-help/poptabs/>
- <http://infohouse.p2ric.org/ref/30/29367.pdf>
- <http://www.foxnews.com/lifestyle/2013/11/20/trash-and-sewage-clog-rio-de-janeiro-olympic-waterways.html>
- <https://www.hometowndumpsterrental.com/blog/even-trash-has-value-at-2012-london-olympics>



Materials

- Teacher computer/projector
- Student tablets
- Google Slides presentation
- [Glogster](#) website (or recycled paper)
- [Google Docs](#) (or student notebooks)
- [Google Sheets](#) (or student notebooks)
- Letter to parents (found at the end of lesson)
- Poster Message Ideas and Waste Reduction Ideas (found at the end of lesson)
- Waste-free lunch

Day 1 (45 minutes)

Introduction (20 minutes) *Optional: Include the whole grade/school by meeting in the auditorium and performing the introduction activity.*

Teacher will:

1. announce the objective and present the challenge
 - Objective: Students will describe how a waste free lunch at the Olympics could minimize our impact on the environment.
 - Challenge: A waste free lunch day will occur on Wednesday at our school. How can we advertise this? How would a waste free lunch at our school influence the environment? What effect would a waste free lunch at the Olympics be?
2. give examples of what happens to the environment when non-biodegradable items pollute the environment
3. show a presentation of how we can help reduce millions of pounds of garbage in our landfills and go over the 3 R's
 - a. Extension: Play and sing the song "The 3 R's" while the words are presented on the screen.
4. lead class discussion about personal relevancy to the issue (students will type their initial responses to the challenge on a Google Doc document)

Activity (15 minutes)

Students will be broken up into groups and will use Glogster (or notebook paper that should have been thrown away) to create a poster that advertises the Waste Free Lunch Day. Students may look at the *poster message ideas* for assistance (see end of lesson plan).



Closure (10 minutes)

Students will type on Google Docs (or write in notebooks) why it's important for everyone to do something to help the environment. Then, students will present their explanation to group members asking each other questions and discussing personal relevancy. Teacher will explain the homework assignment.

Homework: Students will give the letter to their parent/guardian and will begin planning what they are bringing for lunch on Wednesday. Students will be encouraged to think about how they will pack their lunch too. Optional: students will bring in items they would normally throw away (items that are recyclable).

Day 2 (45 minutes)

Introduction (5 minutes)

Teacher will refer back to the objective and challenge from 1st class period.

Procedure (20 minutes)

Class will:

1. review the posters created on Day 1
2. brainstorm the ways in which we can reduce, reuse, & recycle in our everyday lives (scaffold students once they get stuck by narrowing it down to the classroom; see *waste reduction ideas for the classroom* at the end of the lesson)
3. discuss the conversations they had with their parents last night after sharing the letter and planning for Wednesday's waste-free lunch
4. discuss ways to avoid wasting parts of a lunch using the school cafeteria lunches or a fast food restaurant as an example
5. predict the items and the number of items a person at the Olympics would have that could be reduced, re-used, or recycled

Closure (20 minutes)

Students will write down in Google Docs how today's lesson influences how they will pack their lunch on Wednesday. Students will write a list of items they think they come across in their lives that could be recycled or re-used.

Homework: Students will tally how many times they come across an item on their list. Then, add items they find that were not previously on the list and tally those. Students will pack their waste-free lunch.



Day 3 (45 Minutes)

Introduction (5 minutes)

Teacher will restate the objectives as from 1st class period and show a video of crowds at the Olympics. Teacher will state the number of people who attend the Olympics.

Procedure (25 minutes)

The class will:

1. discuss how they packed their lunch, identifying intentional choices
2. record the items and quantity of items they found for homework on Google Sheets
3. discuss the item that was tallied the most
4. make a prediction about whether they think this item will be the most abundant at the Olympics
5. use Google docs to write down ways they could influence people at the Olympics to reduce or re-use recyclable items

Closure (15 minutes)

Students will type or write a 1 page summary and reflection about the lesson.

Students should write about their reaction to what they learned, how they plan to apply what they learned, and why it would be important if the Olympics was waste-free.

Differentiation

Students will be grouped in mixed ability levels. Students are encouraged to use the tablets in an effort to reduce the amount of paper used. However, students may write on paper if they would like. ELL and special needs students may be given a pre-made list of items for the homework assignment. The letter to parents will be in their first language.

Assessment

1. Formative assessment of student initial responses to challenge. This will determine the level of scaffolding needed for the following days.
2. Formative assessment throughout the lessons. Teacher will evaluate via questioning to determine if students are associating the school waste-free lunch with a potential waste-free Olympics.
3. Performance based assessment of student posters and tally collection. Teacher will evaluate if students are monitoring their impact on the environment.
4. Summative assessment of the lesson summary and reflection paper. Teacher will evaluate whether students can describe how a waste free lunch at the Olympics could minimize our impact on the environmen

Parent Letter

Dear Parents and Guardians,

In an effort to monitor and minimize our impact on the environment, our school is having a “Waste-Free Lunch” on Wednesday, February 14th. Your child is encouraged to participate in this event by planning a lunch that is “waste-free”. This can mean packing the lunch with re-cycled containers, food that is not packaged, etc. Students should plan their lunch on Monday and Tuesday. Then, students will bring their lunch on Wednesday. The purpose of this event is for students to become more aware of the influence their actions have on the environment.

If you have any questions or concerns, please feel free to contact me.

Sincerely,

Your child’s teacher

Poster message ideas:

- 38 billion plastic water bottles end up in landfill each year.
- Plastic water bottles take 700 years before they start to decompose.
- Children's lunches create 3.5 billion pounds of garbage each year.
- 18,000 pounds of trash is generated each year from one average-sized elementary school.
- It takes a 15-year-old tree to produce 700 brown paper bags.
- The average child generates 67 pounds of lunchtime trash each year.
- Trash is often mistaken for food and eaten by sea life.
- The United States has 6% of the population and produces half of the world's garbage.

Waste reduction ideas for the classroom:

- Encourage students and teachers to pack a waste-free lunch.
- Encourage teachers to use an overhead projector or blackboard to reduce the amount of paper distributed in class.
- Encourage teachers and staff to communicate with parents using email when possible instead of sending home paper communication.
- Encourage teachers to make double-sided copies when possible.
- Encourage students to write on both sides of paper before recycling.
- Designate a box in the classroom for scrap paper, fabric, and other objects that can be reused for projects.
- Encourage students to collect reusable supplies for art projects such as egg cartons, magazines, milk cartons, paper grocery bags, etc.
- Encourage students to use 3-ring binders instead of spiral notebooks (binders can be reused and paper can be easily removed for recycling).
- Encourage classrooms to use reusable dishes, cups, utensils and napkins for parties and events.