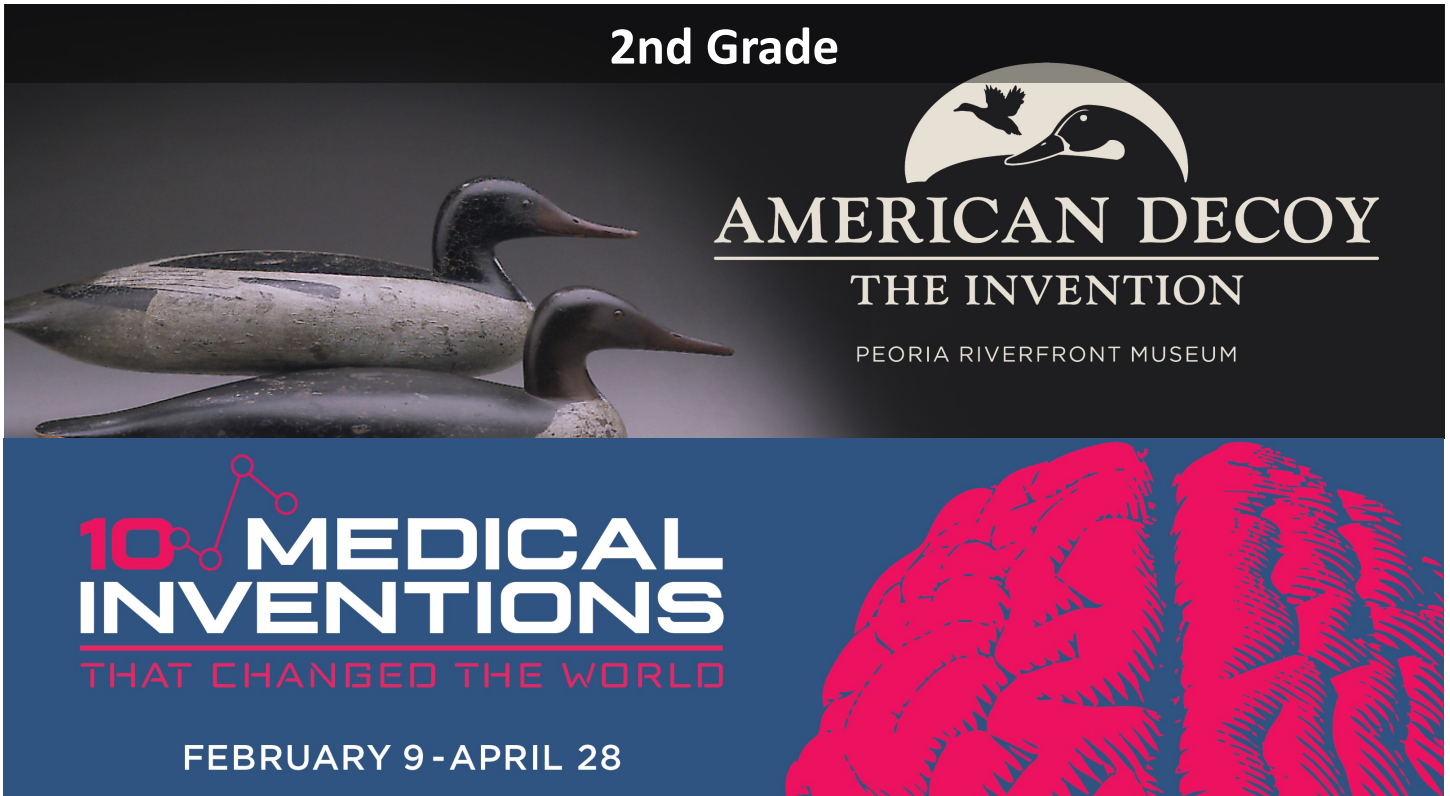


TEACHER GUIDE TO THE
2018-2019 Every Student Initiative Field Trips



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Introduction

Please read through this document at least once before arriving at the museum for your field trip.

Every Student Initiative

The Every Student Initiative (ESI) is an ambitious new program to bring every student in Central Illinois to the Peoria Riverfront Museum every year. With hands-on learning through objects, a Giant Screen Theater, Dome Planetarium, and rotating exhibits, the Peoria Riverfront Museum is a great place for students to learn in a new environment. ESI supports the museum's mission to encourage life-long learning in students of all ages while connecting them to their community at large.

The Every Student Initiative is privately funded, allowing donors to help their communities by sponsoring field trips to the Peoria Riverfront Museum.

With the Peoria Public Schools, the Barton Family Foundation has sponsored curriculum-related field trips for every student in grades K-8. The field trips are scheduled throughout the year to coincide with the curriculum the Museum can match best. Each trip includes a visit to the Giant Screen Theater or Planetarium and a guided gallery tour. The specific show and gallery are picked based on the current curriculum during that quarter.

This is an excellent opportunity for students to explore what their community has to offer and experience their classroom curriculum in a unique way.



If you have any questions, comments, or concerns, please contact:

Holly Johnson

Every Student Initiative/Group Tours Coordinator

(309) 863-3013

hjohnson@peoriariverfrontmuseum.org

Museum Policies & Expectations

About this guide:

- This guide is intended to help give an overview of your grade level's specific field trip along with pre and post visit activities to help integrate the trip into the classroom.
- Please review this guide prior to your scheduled field trip to ensure a smooth experience.

Arrival/Check-In:

- Please **confirm your final numbers** (students & chaperones) with Holly Johnson **5 days prior** to your visit.
- Do your best to **ARRIVE ON TIME!** Tours are carefully scheduled, and arriving on time makes the day go easier for both you and your students.
 - "On Time" is defined as arriving **5-10 minutes before your first scheduled program** to allow for transition time (e.g.: check-in, bathroom breaks, etc.)
- Upon arrival, one leader should check in at the front desk to report the final tally of students and adults. It is important that you know your total numbers before coming to the front desk. This will ensure your group starts promptly at your designated time.
- Rolling bins will be provided to your group upon arrival to store items like sack lunches and/or coats. We cannot provide cooling or heating services for lunches.
- A museum host/educator will greet the group in the lobby and give a brief orientation.

Bus Loading/Unloading Zones:

- Buses can load and unload at the front entrance of the museum at 222 SW Washington Street. There is a drop-off lane directly in front of the museum.
- There is no on-site bus parking; buses can park under the Bob Michel Bridge.
 - A bus driver map is available [online](#), or at the front desk.





Group Orientation:

- Upon your arrival at the museum, a staff member will briefly explain the museum rules, review your group's specific schedule, and provide chaperones with maps, activity sheets, and gallery guides as needed.

Chaperone Policy:

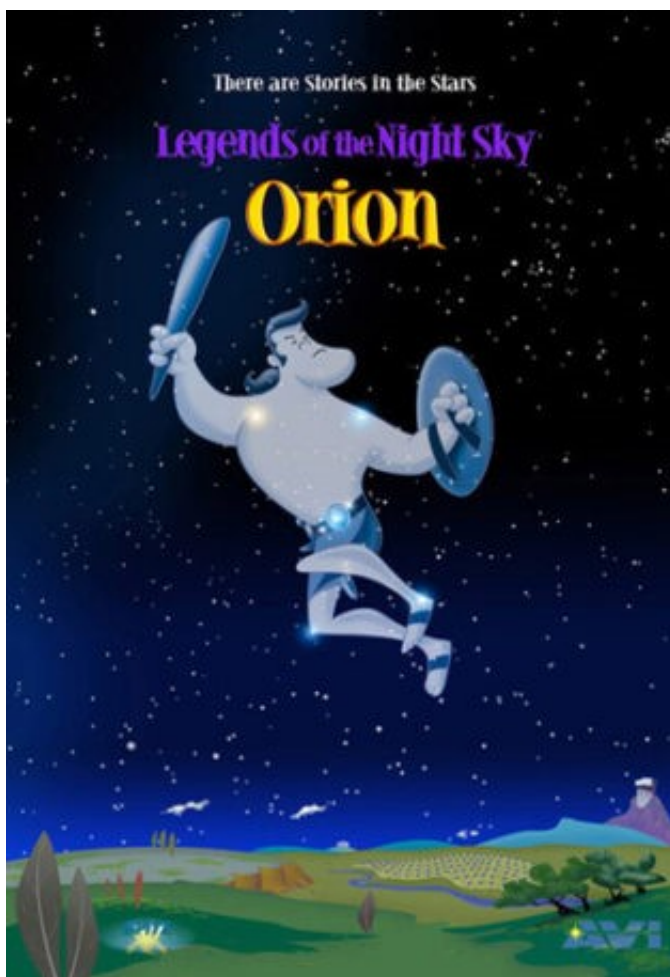
- Peoria Riverfront Museum recommends one chaperone for every five students; all attending adults are considered a chaperone.
- Chaperones arriving separately can park in the museum parking deck for free.
- All chaperones should be made aware of the tour's itinerary.
 - Chaperone guides are available on the museum's website; please make use of these.

Museum Rules:

Our goal is to provide a successful learning environment for all students. **You can help to create that environment by clarifying our behavioral expectations with your students both before you arrive AND by helping us enforce those expectations during your visit.** During your group orientation, a staff member will remind your students of the following rules:

- Walk in the museum. No running.
- Use indoor voices.
- Many of our exhibits are "hands-on," but some are not. We'll help your students to know the difference.
- No food, drink, candy or gum in the galleries.
- Respect others in your group as well as other museum visitors and staff.
- Teachers and chaperones must stay with their groups at all times.
- Photography is permitted in some galleries. Please ask your host for details.

Element 1: Planetarium: *Legends of the Night Sky: Orion*



Trailer: <https://www.youtube.com/watch?v=RqXOJsNBtcl>

Warning: Strobing Lights

In the past, people could track the time of the year by watching the stars. In order to remember how the stars looked during certain times of the year, people would group the stars into patterns. These patterns are called constellations. People came up with stories to explain why these constellations appeared in the sky. This *Legends of the Night Sky* is about Orion, a legendary hunter from Greek Mythology. How did Orion end up in the sky? What time of the year can we see Orion? Who were Orion's companions? All of these questions and more will be answered in *Legends of the Night Sky: Orion*.

Element 2: Inventor's Tour in *American Decoy: The Invention* and *10 Medical Inventions that Changed the World*



AMERICAN DECOY: The Invention

From its earliest history as a device luring waterfowl from the air, the decoy has provided subsistence for nearly a millennia. The trajectory of this ingenious craft has evolved into a sophisticated art form which speaks to hunters and artisans alike.

Waterfowl decoys are a uniquely American invention, first created by indigenous tribes 2,000 years ago to attract much-needed sustenance from the skies. Often called the finest visual art form ever created in the United States, the decoy has become an object of art, history and storytelling, coveted by collectors worldwide.

10 Medical Inventions That Changed the World

The mass production of penicillin, invented in the early 1940s at the Northern Regional Research Laboratory - now the National Center for Agricultural Utilization Research (NCAUR) - in Peoria, Ill., saved countless lives during World War II and beyond. Peoria has since become a national leader in healthcare research and development.

In a first-of-its-kind exhibition, the Peoria Riverfront Museum's *10 Medical Inventions That Changed the World* tells the stories of pioneering medicine - from the use of radiation to recent breakthroughs in virtual technologies and simulation - that have saved lives, cured diseases and made life better for billions of people worldwide

Partnering with local and national medical organizations and schools, the museum identifies and investigates the major medical technologies with worldwide impact. The exhibition will celebrate these amazing medical and healthcare innovations and their benefits for humanity.



PEORIA
RIVERFRONT
MUSEUM

Educator Preview Pass

Preview the museum before planning your field trip! Educators are invited to come to Peoria Riverfront Museum and visit the galleries and see the Dome Planetarium shows* at no cost.

Print out this pass and bring it and your official school ID to the ticket desk in the main lobby. This pass is good for free admission for one educator.

**Applies to our regularly scheduled public shows only.*

INFO BELOW MUST BE FILLED OUT FOR FORM TO BE VALID

Name _____

School _____ Grade(s) Taught _____

City _____ Email _____

Peoria Riverfront Museum
222 SW Washington Street | Peoria, IL 61602
309.686.7000 | www.PeoriaRiverfrontMuseum.org

Pre-Visit Activity: Anyone can be an Inventor!

Introduction: At the Peoria Riverfront Museum, your students will be led on an inquiry tour about inventions. This tour will lead through *American Decoy: The Invention* and *10 Medical Inventions that Changed the World*. The Pre-Visit activity is intended to help students learn what an inventor is, who can be an inventor, what inventors do, and how to start thinking like an inventor.

Materials

Television/Projector to show video and inventor profiles

Notebook and pencil

Random assortment of classroom objects (1 per group)

Instructions

1. Discuss with your students the following topics:

What is an inventor?

An inventor is someone who comes up with brand new ideas to help make people's lives better! Inventors use skills like problem solving and creativity to make a new invention or idea that has never been done before! Everything we use today was invented by someone to help make daily activities easier. Have a few examples to point out in the classroom, like a doorstop, the projector, books, or electricity. Have a discussion either with the entire class or in groups. Ask these questions:

1. What does this do?
2. What does this invention make easier?

Have them write down their answers to these questions in their notebook. Remind them that inventors create BRAND NEW ways to do things. If it's a brand new way to do something, it's an invention!

Who are inventors?

Now that we know what inventors do, who can be an inventor? This is a trick question. Anyone can be an inventor! Inventors are just like you. Here are some resources to help your students see that inventors can be just like them:

Videos:

11 Kid Inventors Break Down Their Greatest Inventions | The New Yorker:

<https://www.youtube.com/watch?v=XiuU1mlFeEc>

How To Be An Inventor! | Kid President

<https://www.youtube.com/watch?v=75okexRzWMk>

Kid Inventor: Tennis Ball Picker-Upper

<https://illinois.pbslearningmedia.org/resource/phy03.sci.engin.design.ztennis/kid-inventor-tennis-ball-picker-upper/>

Who are Inventors? Cont.

Kid Inventor: The Couch Protector

<https://illinois.pbslearningmedia.org/resource/phy03.sci.phys.mfw.zcouch/kid-inventor-the-couch-protector/>

Kid Inventor: Newspaper Crank

<https://illinois.pbslearningmedia.org/resource/phy03.sci.engin.design.znews/kid-inventor-newspaper-crank/>

Kid Inventor: The Collapsible Lacrosse Stick

<https://illinois.pbslearningmedia.org/resource/phy03.sci.engin.design.zstick/kid-inventor-the-collapsible-lacrosse-stick/>

Website Resources:

<https://www.thoughtco.com/famous-inventors-4133300>

<https://www.thoughtco.com/women-in-history-1992650>

<https://www.thoughtco.com/science-for-kids-invention-1992065>

<https://www.biographyonline.net/scientists/inventors.html>

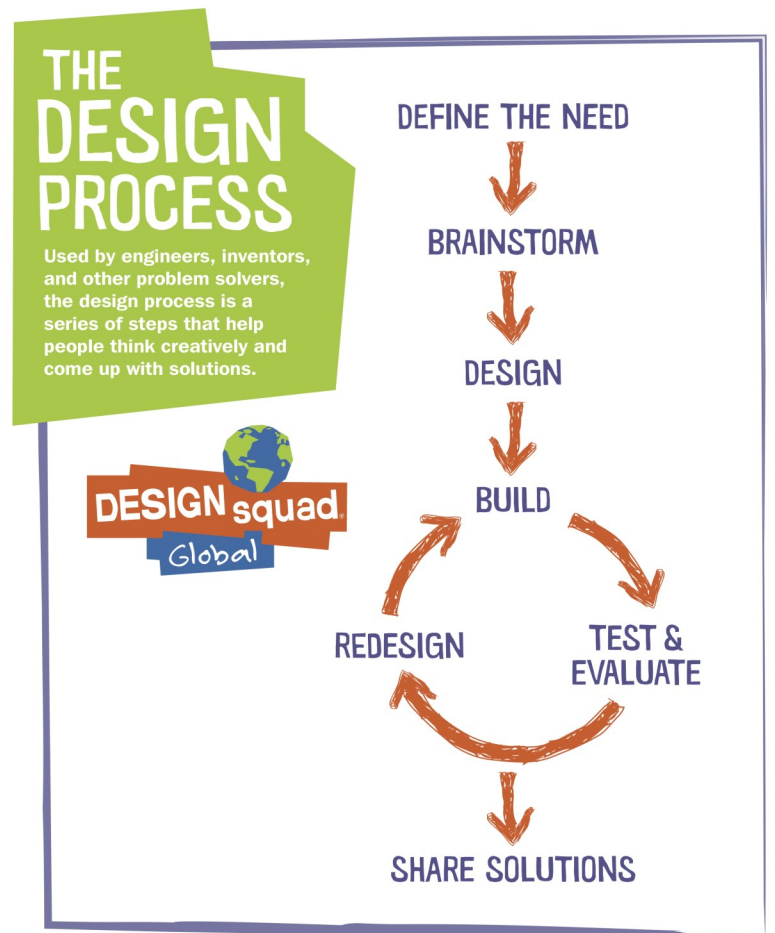
http://www.ideafinder.com/history/of_inventors.htm

After your students see all of these different inventors, they should feel like they, too, can be an inventor!
Anyone can be an inventor.

What do Inventors do?

Inventors create new things using their creativity and problem solving skills! Good inventors find a problem, think of a solution, then design and test their solution until sharing it with others. This can be seen this chart.

Inventors use this process to make their ideas better, so their invention can be useful to the people they're trying to help.



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MAJOR FUNDING



PROJECT FUNDING

The Lemelson Foundation

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Think Like An Inventor Activity!

4. After discussing and familiarizing your students with inventors, move into the “think like an inventor” activity. This will use your random assortment of classroom objects. Pick objects that you can easily think of multiple uses for. If you can help students think of ideas at the beginning, they will be able to gain confidence in the activity.

5. Explain to your students that inventors need to be creative in order to solve problems. That means thinking about ordinary things in new ways. To help introduce the activity to your students, try to come up with an example. An easy example is a wire coat hanger. Use the whiteboard to lead your students in thinking of all of the different things a wire coat hanger (or other example) can become. They can imagine changing the object for more uses. The point is they start to think about ordinary things in new ways.

6. After a few minutes of focusing on your example, your students should be warmed up and excited to think outside the box. Place your students in groups and give each group one of your objects. They will, as a group, think of all of the different things their object can become. Remember, they can imagine changing the object to come up with more uses, but they cannot actually change the object.

7. To make this activity longer, have the groups pass their objects around! See which group made the longest list for each object.

At the Museum, they will be using some of their new inventor’s creativity to look at different inventions in *American Decoy: The Invention* and *10 Medical Inventions that Changed the World*.



In-Visit Activity: Inventor's Tour

In the exhibits *American Decoy: The Invention* and *10 Medical Inventions that Changed the World*, your students will be given a tour by a Museum Docent. This activity will be in the International Feature and Permanent Collection galleries, but you will **meet your docent in the lobby**. Please wait for your docent there.

Students should remember these rules on their tour:

1. Use inside voices
2. Hands and feet to yourselves
3. Raise your hand to answer questions
4. Think creatively!

Some quick information about the inventions on the tour:

Duck Decoys: Duck decoys are an invention that allowed hunters to catch ducks more efficiently. It's very difficult to shoot ducks out of the sky, so they created a fake duck to trick real ducks into landing on the water. As ducks on the water have a difficult time getting back into the air, they are easier to hunt.

Wheelchair: We don't know who invented the first wheelchair, but there are inscriptions describing wheeled furniture from both China and Greece between the 5th and 6th centuries BCE. Wheelchairs are used to help people who have a difficult or impossible time walking be able to move around.

Glasses: The first glasses were made in Northern Italy by around 1290. Glasses help people who can't see properly see better. They use glass or hard plastic lenses mounted in a frame that sits on the ears and bridge of the nose. Worldwide, around 1.34 billion people wear glasses.

3D Printed Organs: Jump Simulation in Peoria creates 3D printed organs and skin to help train young doctors. They also use these organs to help diagnose heart disease. Using a 3D scanner to make a copy of someone's heart, the doctors can print out a model of the heart to better understand what's wrong!

Post-Visit Activity: Be an Inventor!

Introduction: At the Peoria Riverfront Museum, your students were able to see many different inventions that helped make people's lives easier. Now, they should be thinking about their own lives. What are some problems that they have in their lives? Or a problem that they see that effects other people? It's time for them to come up with their OWN inventions, following the design flowchart.

Materials

Paper

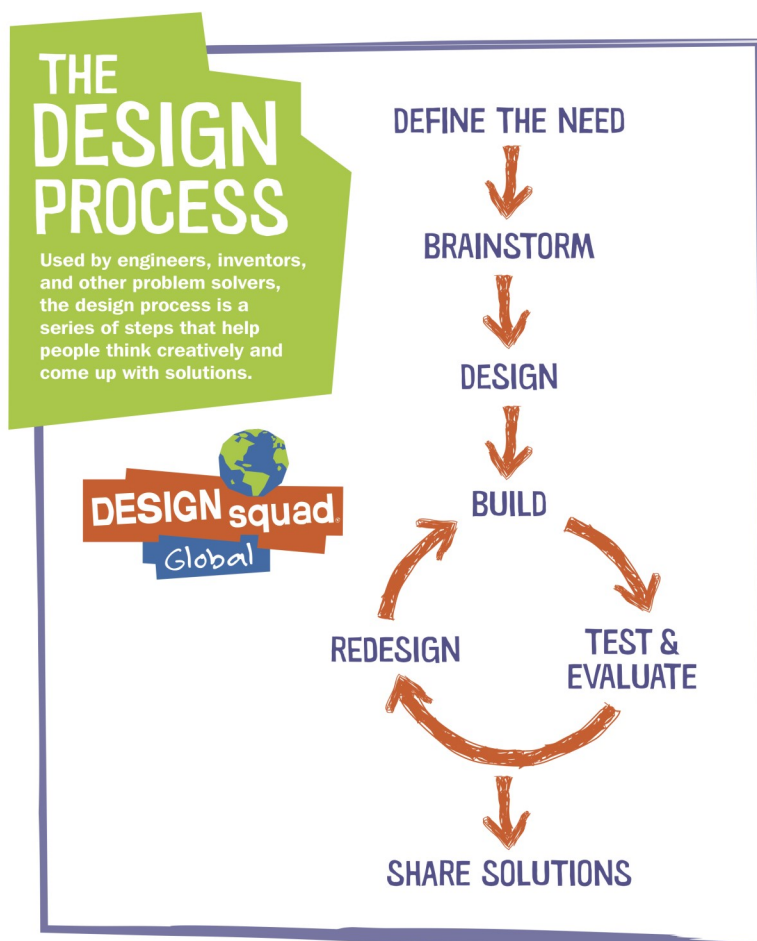
Pencils

Crayons/colored pencils/markers

Instructions

1. Tell your students that they are now inventors! They will be creating a solution to a problem that they identify. Your students should now start thinking of different problems. This problem can be something they deal with, their parents deal with, or something they think the world needs. They should make a list of 1-5 different problems.
2. Now that your students have identified their problems, they need to put their creative thinking caps on and start thinking of solutions! This solution can be an object or an idea. As they come up with solutions, have them pick ONE problem and solution that is their favorite. Because they will not be actually making their invention, feel free to let them be as creative as possible.
3. After they have narrowed their invention down to ONE, your students should start designing! Make sure they have these things on their papers: a) The name of their invention, b) The problem their invention solves, c) A brief description of what their invention does, d) A step-by-step guide to how their invention works, e) A labeled drawing of your invention
4. After everyone has designed their invention, it's time for the last section of the design process: sharing! Your students should give a quick, 5 minute presentation to the class explaining why they invented their invention and what it does.

The next page has an example of an invention and what the students should have on their paper.



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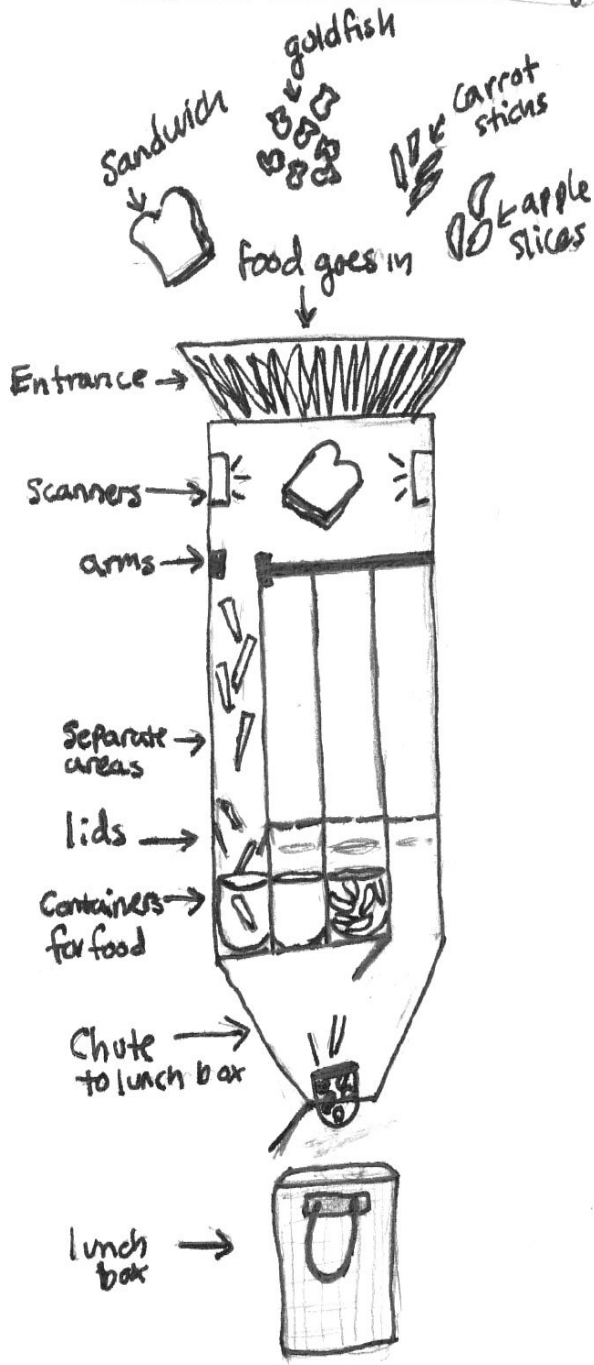
My Invention Examples

My Invention:

Automatic Lunch Maker!

My Problem: I always run out of time to pack lunch.

My Solution: I invented a machine that sorts your lunch, puts them in separate containers, and then drops it into your lunch box.



How my invention works:

1. Put food in entrance
2. A scanner identifies and sorts with an arm, which pushes the food into the correct spaces.
3. The separated food falls into a chute
4. The chutes open into a space with a recyclable container
5. lids are pushed on top of the containers and secured.
6. After the container is secured with the lid, the container falls into another slanted chute that leads to the lunch box.