PHILADELPHIA ORCHARD PROJECT

TALKING TRASH, AN ACTIVE SENSORY-ADVENTURE BOOK

A learning & sensory-activity guide for students of Overbrook School for the Blind

EDUCATIONAL & WORK STANDARDS / CURRICULUM EXTENSIONS & ADAPTATIONS

Expanded Common Core

- ***Assistive Technology*** - kit utilizes Active Learning materials
- ***Career Education*** - provides students with visual impairment ability to learn through hands-on experiences as with testing of germination rates for seeds grown in / out of greenhouses
- ***Compensatory Skills*** - builds skills necessary for accessing core curriculum including concept development, communication modes, object or tactile symbols
- ***Sensory Efficiency*** - instruction in the use of vision, hearing, touch, smell, taste. Includes proprioceptive, kinesthetic, and vestibular system processing.
- ***Social Interaction*** - creates opportunity for interpersonal relationships through awareness of body language, gestures, facial expression, personal space, self-control.

PA Career Standards

- ***13.1.3 / 13.1.5 - Career Awareness & Preparation -*** *Recognize that individuals have unique interests and abilities, identify range of jobs available in community*
- ***13.2.3 / 13.2.5. - Career Acquisition -*** *Identify appropriate speaking and listening techniques used in conversation*
- ***13.3.3 / 13.3.5. - Career Retention & Advancement -*** *Identify how to cooperate at both home & school and to complete a task; identify effective group interaction strategies*
- ***13.4.3 - Entrepreneurship -*** *Describe the character traits of successful entrepreneurs - inc. adaptability, creative thinking, ethical behavior, leadership, positive attitude, risk taking*

Curriculum Extensions & Adaptations

- ***Sorting Project*** - engage students in sorting trash, recycling, and compostable or vermicomposting materials in your school!
- ***Vermicomposting*** - pair this lesson with POP's Sensory Lesson on Worms to teach students about how food waste can be composted using earthworms and set up a classroom worm bin.
- ***Plastic Bag Weaving Project*** - strips of cut plastic bags can be woven together into usable, durable mats or stronger woven bags. https://www.persil.com/uk/dirt-is-good/arts-crafts/plastic-bag-weaving.html

RESOURCES USED IN SHAPING OF LESSON

- https://www.youtube.com/watch?v=ergwipqLwqY
- https://www.need.org/files/curriculum/guides/TalkingTrash.pdf
- https://www.titlemax.com/discovery-center/lifestyle/trash-one-person-produces-year/
- https://www.youtube.com/watch?v=6HBtl4sHTqU
- https://www.fda.gov/food/consumers/food-waste-and-loss
- https://www.nationalgeographic.com/environment/habitats/plastic-pollution/
- https://www.nationalgeographic.com/environment/habitats/plastic-pollution/
- https://www.goodnet.org/articles/5-countries-creative-approach-to-trash-disposal

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Let's talk TRASH! What happens to your snack wrapper, used newspaper, half-eaten sandwich, or water bottle when you're finished with it? Chances are -- you'd throw it in the trash! What IS trash? Trash are things that are 'THROWN AWAY' and thought to be without second use. It can include old food, bags, boxes, jars, toys, clothes, branches, and furniture, and can be made of a variety of materials including PAPER, WOOD, CLOTH, METAL, PLASTIC, and GLASS.

EXPLORE: Teacher passes around some cleaned snack wrappers.

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Did you know: the average American produces almost 6 pounds of trash per day (1.5 lbs of which is recycled), according to the Environmental Protection Agency? That's comparable to 24 sticks of BUTTER or the weight of 2 LARGE PIZZAS, loaded with 3 toppings each! In a year's time, the average person recycles 710.6 lbs and throws away 1,361.4 lbs of trash -- the weight of a GRIZZLY BEAR!

Source: https://www.titlemax.com/discovery-center/lifestyle/trash-one-person-produces-year/

EXPLORE: Teacher passes around representation of a black bear for students to handle, and plays track of grizzly roar, connecting it to amount of trash average person throws out yearly.

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Human civilizations have always created TRASH but not to the extent that they do now! The Greek City of ATHENS opened the first dump more than 2,500 years ago! How do you think it may have looked differently than it does today?

EXPLORE: Teacher passes around a globe or topographical maps for students to feel the location and distance from their starting point to early landfills in Athens, Greece. Students can brainstorm about what trash they'd imagine be found in earlier landfills compared to more modern ones.

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During the MIDDLE AGES, people threw their trash including FOOD and BATHROOM WASTE out their WINDOW -- later learning that it could get them sick! It wasn't until the 1700s that cities began to collect trash to get it out of their roads and waterways. By the late 1800s, Europeans were BURNING THEIR TRASH to produce ELECTRICITY.

EXPLORE: Teacher can ask students to imagine what kinds of animals they might expect would be attracted by trash. Teacher can pass around a toy rat. During the Middle Ages, the shout 'Cheerio' came from the phrase 'Chair Below!' so servants above would not throw waste down on the street while someone was walking by. Students can shout both.

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Today, we're experiencing a TRASH CRISIS worldwide with BILLIONS OF TONS of garbage in LANDFILLS, releasing harmful gases and TOXINS in the AIR and SOIL, and billions of tons of plastic entering the earth's WATERWAYS-- oceans, rivers, streams & harming wildlife.

EXPLORE: Teacher passes around plastic bags and soda can connecting plastic rings around a sea creatures neck to show how this type of trash impacts wildlife.

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So, what happens to an item once it's thrown away? Is there such a thing as 'away?' Let's explore the LIFECYCLE of various materials and what becomes of them once they are thrown away!

PACKAGING is the single LARGEST TYPE OF TRASH, making up 30 percent of the trash we generate and 22 percent of what ends up in a landfill.

EXPLORE: Teacher passes around samples of packaging materials including cardboard boxes, wrapping from toys, food, bubble wrap, taped packages etc.

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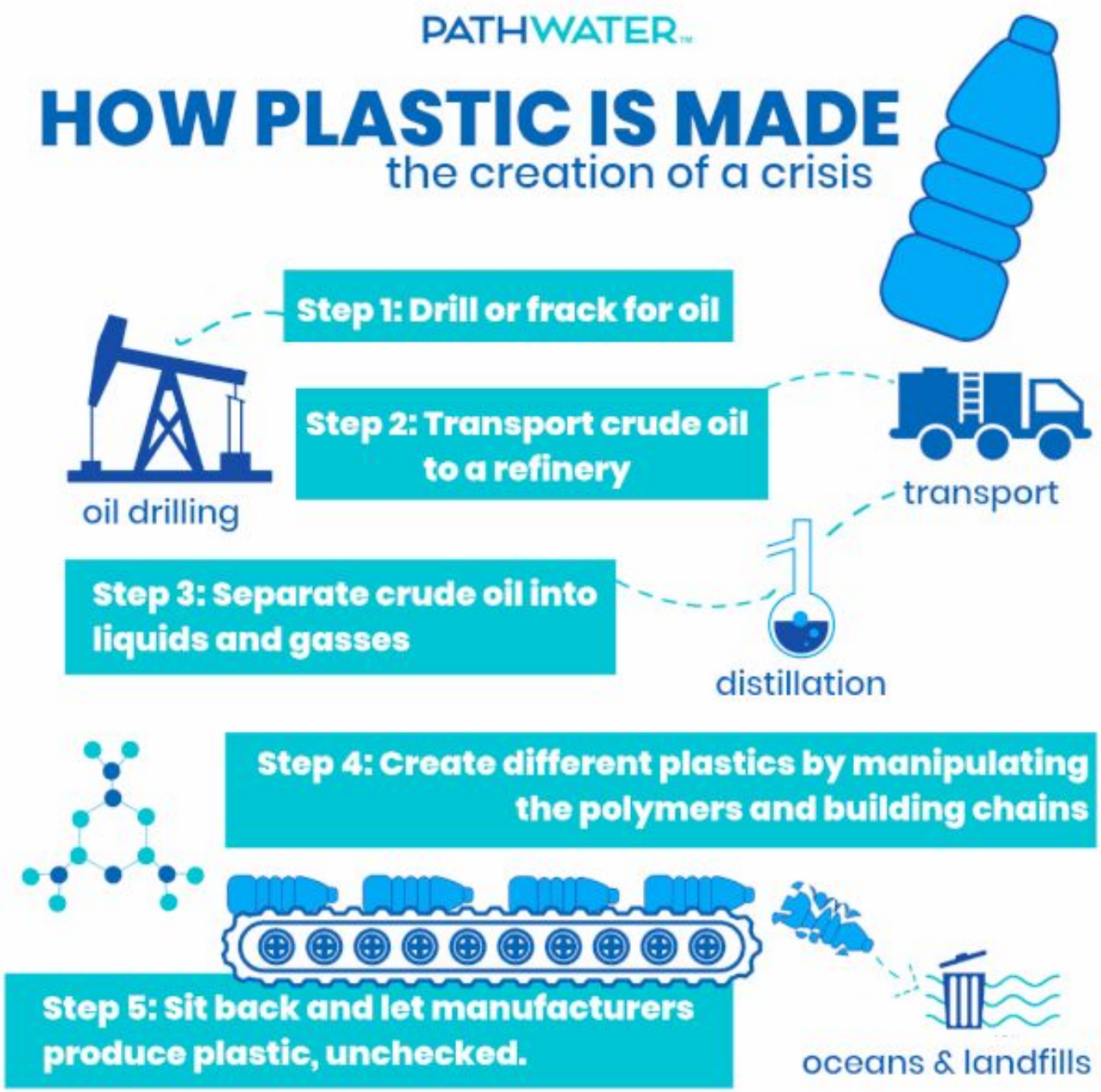
Let's start with PLASTIC! Where do you come across plastic in your daily life? It's in FOOD WRAPPING, bottled beverages, STRAWS, SHOPPING BAGS, umbrellas, the list goes on! Plastic comes from PETROLEUM and or NATURAL GAS.

They can be lightweight, soft, or hard, and come in a variety of colors. There are MORE THAN 10,000 DIFFERENT KINDS of plastic!



EXPLORE: Students explore different types of plastics they commonly come into contact with: straws, food wrapping, plastic bags, toys, pipes, etc. Students observe and name different qualities of plastics. Why do we use this material?

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While SOME plastic is RECYCLABLE, it's estimated that 91 percent of plastics aren't recycled. They can take between 10 and 400 YEARS to fully BREAK DOWN. It's estimated that every year 8 MILLION TONS of plastic waste escape into OCEANS from COASTAL NATIONS. (Nat Geo)

In the RECYCLING PROCESS, plastic trash is WASHED, CHOPPED, DRIED, and REMELTED into PELLETS for use again.

EXPLORE: Students can sign the recycling process: THROW in GARBAGE, WASH, CHOP, MELT, MAKE AGAIN. Teacher can pass around recycled plastic pellets for students to feel.

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GLASS is an extremely STRONG material made from SAND, SODA ASH, and LIMESTONE. It is used to package things like jellies, baby food, juice, and more and can be found frequently in clear, brown, green, blue, or amber colors. You can also find glass in items like LIGHT BULBS and DISHES, mirrors, and WINDOWS.

GLASS can be EASILY RECYCLED and uses less energy to recycle than it does to create new glass!

32% of the glass that is used by Americans is said to be recycled --

https://www.need.org/files/curriculum/guides/TalkingTrash.pdf

EXPLORE: Students can feel sand, limestone that is the basis of glass. Students can feel different objects made of glass. Teacher can ask students to name some properties of glass.

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In the U.S., the most recycled metals are STEEL and ALUMINUM. STEEL is the MOST RECYCLED METAL -- with 90% of the metal used in food packaging coming from steel! You can tell the difference between steel and aluminum because STEEL is MAGNETIC, and ALUMINUM is NOT! Steel can be light-weight or dense and is found in things like your dog food cans, coffee cans, in appliances, frames of cars, electronics, old bridges, etc. Sometimes, it can be called TIN because food cans are often lined with tin to protect the food inside.

Steel spice cans on a fridge

Aluminum cans

EXPLORE: Using magnets, students can explore what type of metal they have in front of them -- aluminum or steel -- with an assortment of empty soda cans, steel coffee tins, aluminum foil, etc.

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ALUMINUM is a NATURALLY OCCURING MINERAL ORE (BAUXITE) which is mined from a REDDISH CLAY in the earth. Aluminum is found in things like aluminum FOIL you might use to wrap your food in, or heat in the oven, SODA CANS, and more. Aluminum cans can be shredded down and remelted and recycled into new cans in as little as 60 DAYS! RECYCLING just 4 ALUMINUM CANS SAVES as much energy as the ENERGY in 1 CUP of GASOLINE!

EXPLORE: Students can count cans and estimate how many cups of gasoline would be saved if those cans were recycled!

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What about PAPER? Things like CARDBOARD BOXES, NEWSPAPERS, glossy SHOPPING ADS? Paper is made from TREES, old CLOTH, or even GRASS!! It's the number one material we throw away. Of every 100 pounds of trash, 27 pounds are paper. Recycling paper saves A LOT of water! One ton of recycled paper saves 7,000 gallons of water, 15-17 trees, almost 6,000 kWH of electricity,and one metric of greenhouse gas!

In the orchards, POP uses cardboard boxes stripped of their tape to sheetmulch. Cardboard is placed down on the ground and covered with woodchips where it will break down into rich soil!

EXPLORE: Students can feel cut pieces of branches and various types of paper (cardboard boxes, newspaper, etc) to make the connection of paper coming from the cellulose in trees.

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FOOD WASTE like uneaten or expired food FILLS landfills more than any other material! 30-40% of the ENTIRE food supply ends up UNEATEN and creating GASES that contribute to GLOBAL WARMING. In 2010, the United States Department of Agriculture estimated that FOOD WASTE AMOUNTED to 131 billion pounds of food!

WHAT ARE SOME WAYS WE CAN REDUCE FOOD WASTE?

EXPLORE: Teacher asks students what are some ways we can reduce food waste? What types of practices help less uneaten food going into landfills?

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The UNITED STATES is among the TOP MOST WASTEFUL COUNTRIES. As of 2006, the U.S. produced 236 tons of waste ANNUALLY -- producing 30% of the world's waste with JUST 5% of the WORLD'S POPULATION.

Some countries, like SWEDEN, have become INSPIRING ROLE MODELS for how a country might deal with its waste including RECYCLING, sorting of TRASH materials, RESTORING items that would otherwise be thrown out, ELIMINATING SINGLE USE PLASTICS and creating ENERGY from trash.

EXPLORE: Teacher passes around some tools explaining that one way we can reduce what enters the landfills is by fixing what is broken rather than throwing it away. Teacher can ask students when they fixed something that belonged to them instead of throwing it away.

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In UGANDA, an artist collective called ECO ART UGANDA led by artist and environmentalist Ruganzu Bruno has turned trash into treasure! They build amusement parks for children out of discarded materials -- creating LIFE SIZE BOARD GAMES and swings from plastic bottles. Their creative initiative helps beautify the community, educate kids, and helps to recycle trash and manage waste!

EXPLORE: Teacher can pass out board games and students can brainstorm how recycled materials could be used as materials in place of the playing pieces. Students can build a small model playhouse using clay and soda bottle caps.

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So what can YOU do to become a WASTE WARRIOR, helping to reduce TRASH that enters LANDFILLS, WATERWAYS, and the NATURAL ENVIRONMENT? At home and school, you can help by SORTING YOUR TRASH and trying to give a SECOND LIFE to what you throw away! Plastics, metal, glass and paper can be thrown into the RECYCLING bin where they will be shredded down and remade into new material!

EXPLORE: Teacher can bring out a mix of mixed trash objects and involve them in sorting them into their appropriate receptacles or piles. If the weather is conducive, teacher can lead students out to their school yard with gloves and trash pick-up sticks and trash bags to clean up the schoolyard. Students brainstorm ways to reduce waste at their school.

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What about FOOD WASTE and YARD WASTE? Scraps from fruits, vegetables, nuts, and grains can be COMPOSTED. When placed in a BIN with good airflow or a LARGE PILE OUTSIDE, these NATURAL MATERIALS will BREAK DOWN and turn back into SOIL!

We can also feed some of these scraps to EARTHWORMS who digest these scraps into nutrient-rich food for the garden! Are you ready to get your hands in on the fun of helping the environment… WASTE WARRIORS to the REDUCE, REUSE, RECYCLE, RESCUE!

EXPLORE: Teacher can drill holes in yogurt containers or a larger classroom bin to establish a school compost bin. With the addition of worms, students in the classroom can be involved in caring for a vermicompost bin.

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MATERIALS PHOTO:

MATERIALS LIST FOR SENSORY COMPONENT:

PAGE 1: cleaned snack wrappers
PAGE 2: stuffed grizzly or black bear, audio track of roar
https://www.youtube.com/watch?v=YexQcXnVSzg, empty pizza boxes
PAGE 3: topographical map or globe
PAGE 4: toy or stuffed rat
PAGE 5: soda pack plastic rings, plastic bags, stuffed sea creature representation
PAGE 6: samples of packaging materials from toys, bubble wrap, mailers, etc.
PAGE 7: mixed plastic items, soda bottles, straws, food wrappers, etc.
PAGE 8: shredded plastic pellets or products made from post-recyclable materials
PAGE 9: sand, limestone, glass bottles
PAGE 10: steel coffee cans, aluminum cans, magnets
PAGE 11: aluminum ore, red clay, 4+ soda cans
PAGE 12: samples of paper - cardboard, newspaper, mail, branches
PAGE 14: tools for fixing broken items
PAGE 15: board games, clay, plastic soda bottle caps
PAGE 16: trash bags, trash pick-up sticks
PAGE 17: yogurt cups, drill, leaves, grass clippings, earthworms, screen

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PHOTO CREDITS BY SLIDE:

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