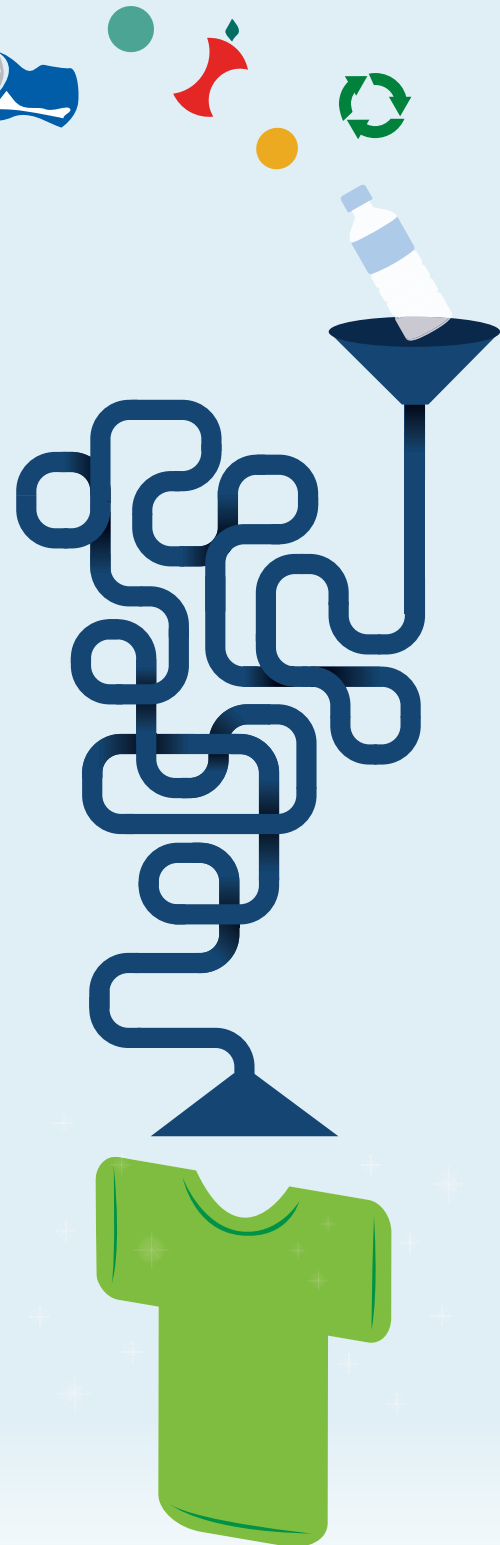


# 2015 TRASH TREK<sup>SM</sup> Topic Guide



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**COACHES:** Many of the resources listed here were designed for adults. *FIRST*<sup>®</sup> does not control or endorse the content of these external websites. They are provided as optional references only. Please preview all resources based on the maturity level of your team.



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# Resources

We provide these resources to help you start your TRASH TREK<sup>SM</sup> research, but do not limit yourselves to the list below. Your town may have a library, local government office, or trash processing facility where you can learn more.

## Video

- **Explore the Cycle** — Animation explains the basics of the recycling process from leaving your home to becoming new products.  
<https://livegreen.recyclebank.com/the-cycle>
- **Toss It, Baby** — For a little fun, here is one company's music video about single-stream recycling. Watch for some of the machinery used to sort recyclables.  
<https://www.youtube.com/watch?v=exhgrxpeQws>
- **Where Does Our Garbage Go?** — Video shows how some communities in Utah, United States manage all different kinds of trash.  
<https://www.youtube.com/watch?v=iPz5bJa9eOI>

## Websites and Articles

- **Food waste** — This radio story may give you some “food for thought” as you think about food waste.  
<http://www.marketplace.org/topics/sustainability/food-waste-provides-fertile-ground-tech-innovators>
- **Garbage facts** — Idaho Public Television provides a simple fact page about what garbage is and where it may go.  
<http://idahoptv.org/sciencetrek/topics/garbage/facts.cfm>
- **Kids Go Green** — Caerphilly County Borough Council in Whales, United Kingdom wants local kids to “go green.” They provide a website with lots of information about recycling and other trash options.  
<http://your.caerphilly.gov.uk/kidsgogreen/>
- **Look local** — Your city, town, or county may have a Sanitation Department website. These sites usually tell residents how trash pickup works, what items you can recycle locally, and how to dispose of special types of waste. Here are some examples, but you can probably use a search engine to find a website for your local area.
  - Austin, TX: <http://www.austintexas.gov/resident/trash-and-recycling>
  - Chicago, IL: [http://www.cityofchicago.org/city/en/depts/streets/provdrs/streets\\_san.html](http://www.cityofchicago.org/city/en/depts/streets/provdrs/streets_san.html)
  - Portland, OR: <http://www.portlandoregon.gov/bps/41461>
  - Toronto, ON: <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=03ec433112b02410VgnVCM10000071d60f89RCRD>
- **Recycle City** — Visit Recycle City to learn new ways to reduce, reuse, and recycle from residents of this cartoon town.  
<http://www.epa.gov/recyclecity>
- **Trash Anthropologist** — In “What I discovered in New York City Trash,” Robin Nagle talks about her interest in trash and the people who clean it up.  
[http://www.ted.com/talks/robin\\_nagle\\_what\\_i\\_discovered\\_in\\_new\\_york\\_city\\_trash.html](http://www.ted.com/talks/robin_nagle_what_i_discovered_in_new_york_city_trash.html)
- **365 Days of Trash** — Sustainable Dave's blog about trying to produce no trash for a year. Dave provides tons of suggestions to reduce trash at home.  
<http://365daysoftrash.blogspot.com/>





## Books

- ***Garbology: Our Dirty Love Affair with Trash***  
Contains stories about how Americans produce trash and where it goes.  
By Edward Humes, Penguin Group (2012)
- ***Introducing Issues with Opposing Viewpoints: Garbage and Recycling***  
A variety of articles on trash disposal methods and recycling.  
Edited by Cynthia A. Bily, Greenhaven Press (2013)
- ***Recycling***  
Looks at both the challenges and benefits of recycling.  
By Eleanor J. Hall, Thomson Gale (2005)
- ***Recycling and Reusing Clothes***  
Explains what clothes are made from and how to dispose of them.  
By Ruth Thomson, Franklin Watts (2006)
- ***Waste Management***  
Looks at all different parts of the waste management process in a fun format.  
By Cheryl Jakab, Marshall Cavendish Benchmark (2011)





# Glossary

<b>Biodegradable</b>	Able to be broken down easily by bacteria and other organisms into basic materials which do not harm the environment.
<b>Composting</b>	A process where food and plant waste (like a banana peel, food scraps, or dry leaves) breaks down. The composted food becomes fertilizer you can use to help plants grow.
<b>Dispose of</b>	To dispose of something means to get rid of it or send it someplace else.
<b>Fertilizer</b>	Food for plants that helps them grow bigger and stronger.
<b>Hazardous waste</b>	Specific types of trash that may cause special harm to people or the environment, so they cannot be sent to a regular landfill. These include items like paint, chemicals used for cleaning, and some types of light bulbs. Hazardous waste must go to a special site.
<b>Incentive</b>	An offer or reward that motivates people to take a specific action. Incentives such as discounts are often used to encourage people to recycle or reduce waste.
<b>Incinerator</b>	A machine that burns trash. Incinerators often burn trash to create energy to power homes or businesses.
<b>Landfill</b>	A place where lots of trash is stored. Most landfills start with a hole in the ground which is covered with a protective lining, then with layers of trash, soil, and other materials.
<b>Leachate</b>	Liquid that passes through a landfill and now contains particles or substances from the landfill. Leachate may be caused by rain water entering the landfill from above or liquids inside the trash.
<b>Material Recovery Facility (MRF)</b>	An MRF is a recycling facility where recyclable materials are sorted and prepared. The sorted recyclables are usually sold to another company that makes them into something new. MRF is often pronounced "murf."
<b>Municipal Solid Waste (MSW)</b>	Name for normal trash produced in homes and businesses.
<b>Post-consumer waste</b>	A finished product that has been used for its intended purpose and is either disposed of or recycled. This is different from post-industrial waste, which is trash created during a manufacturing, building, or other business process.
<b>Recyclables</b>	Materials that can be broken down and made into something new, such as bottles, cans, paper, and cardboard.
<b>Recycle</b>	To process an item so it can be used to create something new. This usually involves cleaning, chopping or breaking down, and then melting or mashing.
<b>Sanitation</b>	Keeping clean and healthy living conditions by disposing of trash and sewage away from the places people live.





**Single stream or zero sort recycling**

A method of collecting recyclables where a person puts all of his or her recyclables into one bin instead of sorting them by material. The company that collects the recyclables uses machines and people to sort the recyclables after they are collected.

**Transfer station**

A place (usually a building) where trash is stored for a short time after being collected from homes and businesses. A larger truck usually picks up the trash from the transfer station and transports it to a recycling facility, landfill, or other location.

**Trash**

Anything you throw away because you are done with it. Trash might also be called garbage, rubbish, waste, or debris by different people.

**Textile**

Woven or knitted fabric used to make clothes.

**Waste stream**

The total amount of trash produced from a specific area or source. For example, “the residential waste stream” would be all the trash produced in peoples’ homes.





# Ask a Professional

Talking with professionals (people who work in the field of this year's Challenge theme) is a great way for your team to:

- Learn more about this season's theme.
- Find ideas for your TRASH TREK<sup>SM</sup> problem.
- Discover resources that might help with your research.
- Get feedback on your innovative solution.

## Examples of Professionals

Consider contacting people who work in the following professions. See if you can think of any other jobs to add to the list. Many company, professional association, government, and university websites include contact information for professionals.

Job	What they do	Where they work
<b>Account Manager</b>	At a waste company, an Account Manager works with customers (often businesses) to plan where their trash will go and how to transport it there.	Waste companies
<b>City Planner</b>	Plans how a whole city or town will handle important systems like collecting trash.	Government agencies, private firms
<b>Environmental Consultant</b>	Makes sure companies follow all the environmental laws and looks for ways to reduce environmental impact.	Companies in fields such as construction, agriculture, and waste
<b>Environmental Engineer</b>	Works to solve or prevent environmental problems caused by trash. An environmental engineer may also solve other problems that affect the air, water, or land in a community.	Corporations, government agencies, landfills, architecture firms, building contractors
<b>Facility Manager</b>	Manages a location such as a Material Recovery Facility or Transfer station. Sets goals for the facility, oversees the work, and troubleshoots problems.	Waste companies, government agencies
<b>Sanitation worker</b>	Collects or sorts trash, recyclables, or compost. They may also plow roads or do other jobs in the town.	Waste companies, government agencies
<b>Scrap dealer</b>	Buys and sells recyclable materials.	Private companies
<b>Sustainability Manager</b>	Plans how to handle different types of waste. Looks for ways to reduce waste and make a location more environmentally friendly.	Government agencies, university campuses, large businesses, military installations, sports arenas



## Who Do You Know?

One of the best recruiting tools for your Project is your own team. **Think about it.** Who do you know? Chances are you know a professional who works with trash in some way. Ask your family, your Coach, or your teachers if they know anyone who works on trash problems.

Think about the people who collect, sort, and manage trash. Think about the technology that people use to turn trash into something new. Who makes that technology? Use the list of professionals above to help you brainstorm ideas.

Make a list of people you might want to interview.

## How Should You Ask?

As a team — talk about your list of professionals and choose one or more who you think could help your team learn about trash. Do a little research about each person. Find out how the professional works with this year's theme and think about what questions you might want to ask in an interview.

Next, ask your Coach or Mentor to help you contact the professional you chose. Explain a little about *FIRST*® LEGO® League and what you are researching this season. Also, tell the professional about your goals and ask if you can interview him or her. Make sure you suggest a day for the interview when your Coach, Mentor, or another adult is available to attend too.

## What Should You Ask?

Prepare a list of questions before you interview any professional. When you think about questions to ask:

- Use the research you have already done to brainstorm questions about the professional's area of expertise. You want to ask questions that the person can answer.
- Keep your Project goal in mind. Ask questions that will help you learn more about your topic and design an innovative solution.
- Keep your questions short and specific. (Say what you want to know as clearly as possible.)
- Do NOT ask the professional to design an innovative solution for you. Your team's solution must be the work of team members. If you already have an innovative solution though, it is okay for the professional to provide feedback on your idea.

At the end of the interview, ask the professional if your team may contact him or her again. You might think of more questions later. Maybe the person would be willing to meet with your team again or give you a tour. Don't be afraid to ask.

And finally, show your Gracious Professionalism® during the interview; remember to thank the professional for his or her time!

