

Textile Pollution Education Guide

A SEE-Informed Toolkit for Community
Education on Microfibers



The City of Ann Arbor -
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Table of Contents

The Purpose of this Guide	4
Use this Guide to	5
SEE Framework	6
What is Circularity?	7
What is Textile Pollution?	8
Clothing Swaps	9
The Use of Surveys	10
SEE-Informed Educational Materials	11
“ What’s in Your Wash? ” Cardboard Washing Machine Activity	11
“ Hang it Out to Dry: Laundry Fact or Fiction ” Clothesline Activity + Fact Checking	13
Things to Remember!	15



The Purpose of this Guide

This guide offers tools, background, and **easy-to-replicate activities** to help educators, sustainability leaders, and community organizers teach others **about textile pollution and solutions through circularity practices** like clothing swaps and conscious laundering of clothing.



Created through a lens of community engagement and behavior change, these activities are interactive, empowering and **informed by the SEE framework.**

Use this Guide to:

- Help you **replicate** educational textile pollution activities in your own community or classroom.
- Provide **clear, low-cost instructions** for engaging, hands-on learning experiences.
- Make sustainability approachable, **rooted in everyday behavior** like laundry and clothing use.
- Promote **circular thinking** and textile awareness through games, storytelling, and science.

- Incorporate into sustainability education programs.
- Build displays for public swaps or other events.
- Facilitate informal science learning through hands-on play.

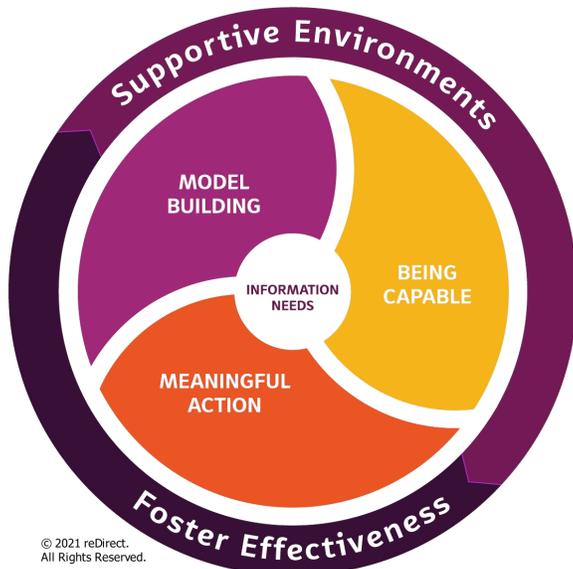


Guiding Framework:

Supportive Environments for Effectiveness (SEE)

SEE Framework:

The [reDirect's](#) Supportive Environments for Effectiveness (SEE) framework was utilized to create the educational material in this guide. This framework brings out the best in ourselves and organizations by:



Keep an eye out for these labels to better understand how the SEE framework informed the educational activities.



A Building Mental Models (Understanding):

Model Building is about helping people understand and explore the world around them.

B Being Capable (Bandwidth):

Being Capable means people feel confident, competent, and equipped with the skills, tools, and resources to take action.

C Taking Meaningful Action (Meaningful Engagement):

Meaningful Action is about ensuring people can participate in ways that matter to them and see the impact of their actions. When supported, respected, and listened to they're more likely to participate and stay involved.

What is Circularity?

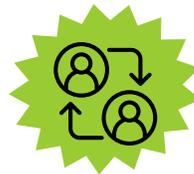


Circularity is about closing the loop and keeping items in circulation. It is about extending the life of products, designing out waste processes, and reducing the environmental impact of consumption.

For textiles specifically, it means:



Understanding the impact of different materials*



Swapping and sharing*



Reusing and Repurposing



Repairing instead of replacing

*Focused on specifically in this guide



Circularity promotes a [circular economy](#) where materials are reused, repaired, remade, or recycled in a continuous loop. It directly contrasts the take-make-waste model of a linear economy.

What is Textile Pollution?

Textile pollution is waste left behind by textile production, use, and discard. Clothes and other textiles are increasingly made of plastic and therefore **microplastic pollution** is growing.

Specifically, **synthetic microfibers**, small thread-like fragments from textiles, are often considered the worst microplastic polluter.

Laundering of textiles is a major source of microfiber pollution.



60%

of new clothing is actually **PLASTIC** or derived from a synthetic source



5.6 million metric tons

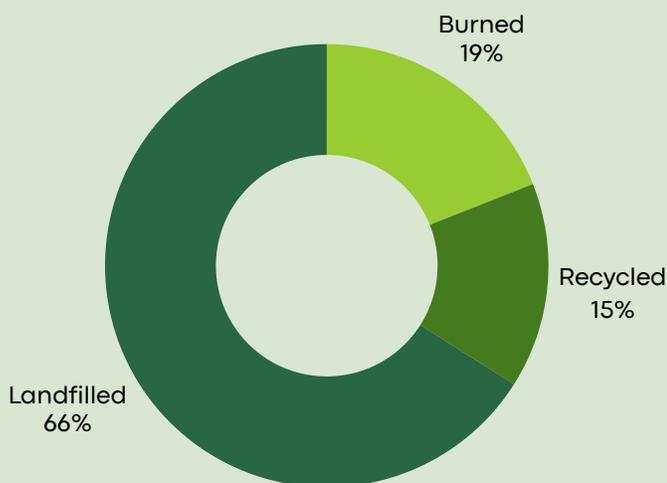
of synthetic microfibers emitted from laundering textiles between **1950 and 2015**



50%

of synthetic microfiber shedding during laundering textiles have been emitted in the **last 10 years alone**

What Happens to the 17 Million Tons of U.S. Textile Waste



TheRoundup.org, EPA

What Can You Do to Reduce Microplastics?

Wash clothes less often and only when needed

Air dry instead of machine drying

Choose natural fibers or blended fibers with lower shedding rates

Host swaps, donate wisely, and repair what you can

Sources:

[Fibers to Filters: A Toolkit for Microfiber Solutions- Ocean Conservancy](#)

Clothing Swaps

Swaps are more than just events for trading clothes. They can be an easy entry-point for sustainable behavior!

They can:

- Extend the life of clothes
- Prevent textile waste in landfills and local waterways
- Normalize secondhand fashion
- Promote joy and community connection in reuse



When paired with education (like **this guide's activities!**), swaps build community spaces for connection and creativity

The Use of Surveys

Surveys were used to inform the educational materials in this guide. The surveys collected specific metrics, such as:



- Type of items (i.e., top, bottom, accessory)
- Material composition (i.e., cotton, polyester, mixed)
- What participants were interested in learning about regarding textiles
- Why did they participate in the swap they attended

June-July 2025 Swaps	# of Respondents	Items Recirculated	Type of Items	Textile Pollution Prevented	Main Takeaways
City Hall Internal Swap	25 respondents	165 donated	- Majority tops (46) - Dominantly cotton (38) and/or polyester (24)	145 lbs	- Mending & repair desired - Learning how to care for clothes desired
A2Zero Ward Party Swaps (5 events)	90 respondents	482 donated	- Majority tops (160) - Majority cotton (182) and/or polyester (71)	300 lbs	- Mending & repair desired - Learning how to care for clothes desired
July Monthly Swap*	37 respondents 39 respondents	148 donated 162 taken	- Majority tops (29) - Majority cotton (25) and/or polyester (18)	100 lbs 116 lbs taken	- Majority came due to environ impact and decluttering - Mending & repair desired
Ann Arbor Pride (No survey)	500 participants	320 donated	N/A	150 lbs	50% of leftover clothing donated to Affirmations LGBTQ+ Community Center

*The July monthly swap had a check-in and check-out survey process

What's In Your Wash?

Cardboard Washing Machine Activity



Ever wonder what your clothes are really made of and where they end up after you wash them? This interactive washing machine lets participants explore the hidden world of fabrics, microfibers, and laundry habits.

Materials:

- Medium-large rectangular cardboard box
- Small plastic basket (optional)
- Clear plastic film
- White paper (optional)
- Twine
- Second-hand swatches of different textiles
- Second-hand buttons/container tops (optional)

Tools:

- Scissors
- Box cutter
- Hot glue gun and hot glue sticks
- Packing tape/duct tape

Instructions:

1. Tape the box closed on both sides with duct tape or packing tape
2. Use a bowl or a circle-shaped object to trace an almost complete larger circle. Make sure to leave approximately 3 inches to the left to allow for the door to hinge.
3. Trace a complete circle about 1 inch smaller to create the window of the washer door.
4. Cut out both circles with a box cutter.
5. Cut out the plastic film to a size that will cover the inner circle. Hot glue the plastic film to the ring of the door.
6. **Optional:** Cover the box in white paper or colored paper of choice, including the ring of the door.
7. **Optional:** Use a small scrap of cardboard, the length of your box and about 4 inches in height. Tape it to the back of the main box.
8. **Optional:** Hot glue buttons to the washer in desired locations or draw buttons.
9. **Optional:** Use tape or hot glue to secure a small plastic basket a little smaller than the washer door.
10. Cut swatches (~4x4 inches) of fabric and attach labeled info cards.

What's In Your Wash?

Cardboard Washing Machine Activity

Instructions Example:

How to use

WHAT'S IN YOUR WASH?

This interactive washing machine lets you explore the hidden world of fabrics, microfibers, and laundry habits.

Every time we wash synthetic clothes, tiny plastic fibers can slip through the pipes and end up in rivers like the Huron. But small choices, like how we wash and what we wear, can make a big difference.

- Open the Door**
Pull out a tag
- Check the Tag**
It will tell you what the fabric is, its impact, and actions to reduce its microfiber shedding
- Rinse and Repeat**
Pull another tag and learn more!
- Check out "Hang it Out to Dry"**
See if some common ideas about laundry are fact or fiction

This page provides further design inspiration and [access to the designs](#) initially created.

- Instructions sheet
- Examples of clothing tags
- Clothing tag key
- Optional:
 - Glossary of terms
 - Laundry tips

Clothing Tag Key:

- = Derived from synthetic sources
- = Derived from plants or animals
- = Promising more sustainable textile alternatives

Clothing Tag Examples:

Cotton

Description: Natural plant fiber. Breathable, soft, used in t-shirts, jeans, basics.

Impact: Water intensive to grow and relies on heavy pesticide use (especially conventional cotton).
Minimal to none microplastic shedding.

Action: Look for organic or recycled cotton; avoid over-washing

Mixed

Description: Many modern pieces of clothing are a blend of several textiles for cost savings and clothes performance.

Impact: Mixed pieces are nearly impossible to properly recycle due to their varying blends. Likely still releases microplastics.

Action: Choose secondhand when needed, and wash less.

Piñatex

Description: A leather alternative made from pineapple leaves, which is usually discarded when the fruit is harvested!

Impact: Compared to leather, Piñatex requires no additional raw materials. However, it is not biodegradable since it contains some petroleum.

Action: Consider this option before buying common leather or vegan leather items!

Sources:

[A Guide to the Most and Least Sustainable Fabrics](#)
[Environmental Impact of Clothing](#)

Hang It Out to Dry: Laundry Fact or Fiction

Clothesline Game + Fact Checking

Participants read a laundry statement and decide whether it fact or fiction before flipping the “piece of clothing” to reveal the answer. This challenges misconceptions in a fun way!

Sample statements:

- ✘ • You need to wash your clothes after every wear
- ✘ • Hot water gets clothes cleaner
- ✔ • Less detergent means cleaner clothes
- ✘ • All clothes shed microfibers the same
- ✘ • Microplastics come from only cheap clothes

- ✘ = Fiction
- ✔ = Fact



Materials:

- String/twine to act as a clothesline
- Clothespins
- Printed out “clothes” (double-sided)
 - One side with statement
 - The other with the answer/explanation

Tools:

- Tape or something to secure the line where it will be displayed
- Scissors
- Glue

Instructions:

1. Cut twine to the desired length.
2. Print out and cut or make “clothes” with statements.
3. Print out instructions and activity sign.
4. Pin up the clothes and have fun!

Hang It Out to Dry: Laundry Fact or Fiction

Clothesline Game + Fact Checking



This page provides further design inspiration and [access to the designs](#) initially created

- Instructions sheet
- Examples of statements
- Examples of corresponding answer



HANG IT OUT TO DRY: LAUNDRY FACT OR FICTION

Pull down a piece of clothing from the line and see if you can guess if the statement is a laundry fact or fiction!

Clothing Examples:



Sources:

[Sustainable Laundry Practices- Colorado State University](#)

[Fibers to Filters: A Toolkit for Microfiber Solutions- Ocean Conservancy](#)

Things to Remember!



Focus on local connections over global doom



Celebrate what people are doing right

Make sustainable choices visible, simple, and shared



Circularity is for everyone

Make not only a fashion statement with your clothes but a sustainable one!