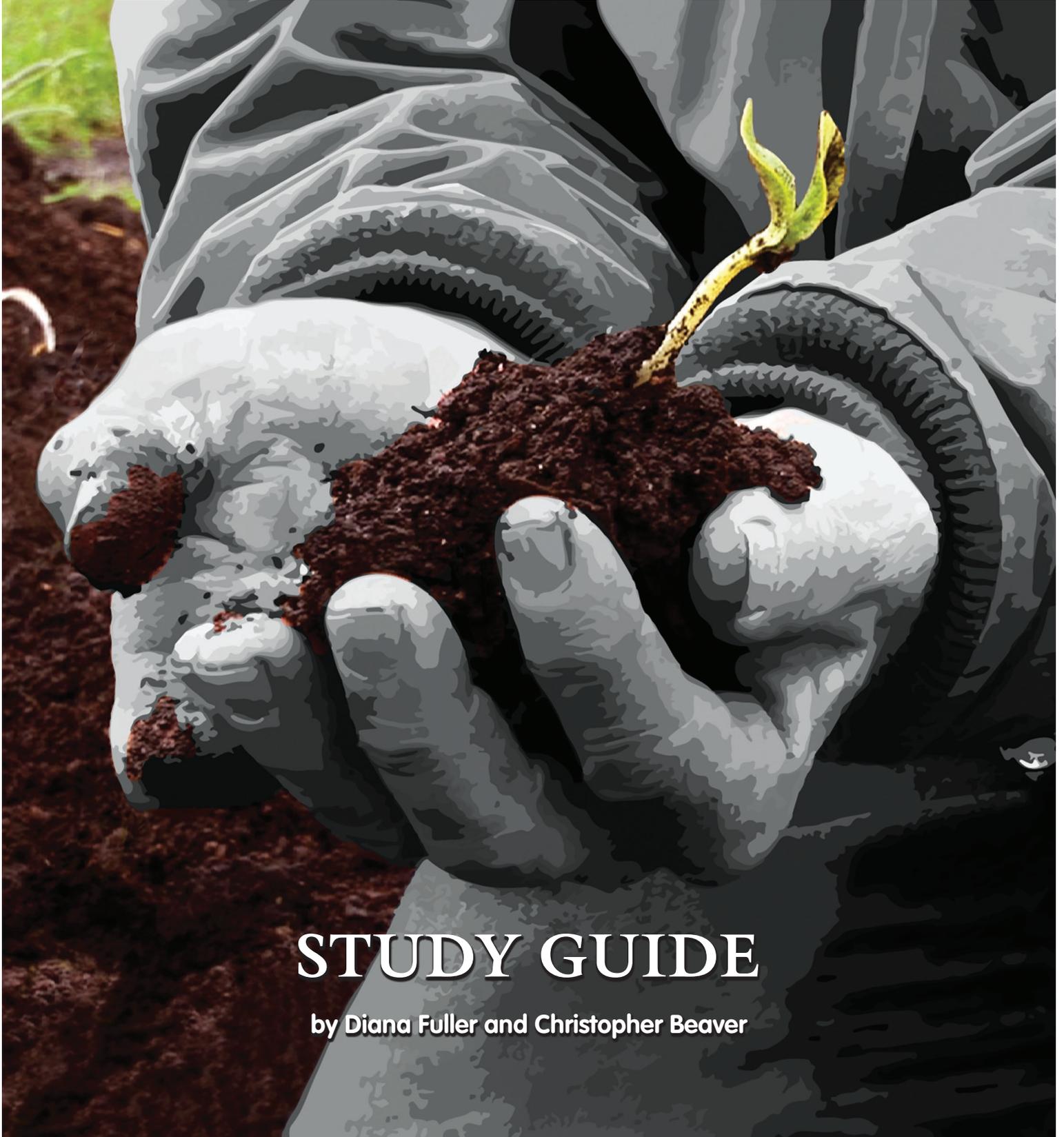


RACING TO ZERO

IN PURSUIT OF ZERO WASTE



STUDY GUIDE

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Introduction to the Film

Here are a few opening thoughts that might be used to introduce the film **Racing to Zero**. All of the topics in the background section are covered in more detail in the film. We have organized the Study Guide to coordinate with the chapters in the film. Please feel free to show selected chapters in order to follow specific themes, such as compost.

Trash, waste, and garbage refer to materials discarded as part of our daily lives. What are some examples of what we throw away?

This discarded material is then sent to a landfill, what is sometimes called a garbage dump. The decaying materials in landfills generate methane gas, a major cause of climate change.

Zero waste is the effort to “divert” or eliminate all used and discarded materials from landfills. Instead of throwing things away, zero waste views these materials and objects as resources. As the film says near the beginning, in the future the landfill section of our trash handling should contain nothing.

The reason for the effort to divert our used materials from landfills is to eliminate hazards and land use associated with landfills and to protect the environment by conserving and protecting natural resources.

Recycling is one part of a triangle of zero waste. By recycling we mean taking used materials and treating them as raw materials to produce new goods and objects for our use. What would be some materials that we could recycle?

Compost is the second part of the triangle. “Compost” means taking plant-based materials and allowing them to decay into useful products to enrich our soil. Can you think of things made out of plants that could be used for compost?

Reduce is the third part of the triangle. This means reducing the materials and objects that we have been discarding. Can you think of ways to reduce what we call trash and garbage?

A key element in zero waste is to replace the words trash and garbage in our thinking. Instead, what would happen if we used the word RESOURCE to replace the word GARBAGE? That’s what the film **Racing to Zero** is all about.

Prologue — Redwood Landfill

It's just rotting and leaching into this bay.

Information Point

- ✓ A zero waste approach can reduce nearly 40% of the greenhouse gases released by the US into the atmosphere.

What is a greenhouse gas? What is methane? Where do greenhouse gases come from and how are they involved with our daily lives? Why would we want to reduce greenhouse gases released to the atmosphere?

Where is your local landfill, sometimes also known as a garbage dump? What do you already know about landfills? How long do they last? What are some of the problems associated with landfills?

Information Point

- ✓ American has more landfills than any other developed country.

In 2009, Americans sent 242 million tons of material to landfills, or more than four pounds of garbage per person per day (including food).

Zero Waste is the Goal

San Francisco is racing to 100% zero waste.

Information Points: San Francisco as a case-study

- ✓ The Mayor of San Francisco has pledged to achieve zero waste.
- ✓ The city has achieved 80% of its goal, meaning 80% does not go to landfill.
- ✓ San Francisco is still landfilling over 400,000 tons per year.
- ✓ The official city goal is to recycle, compost, reduce and reuse with no incineration of garbage.
- ✓ The population of San Francisco is 800,000 people.

Black Bin Goes to Landfill

Information Points

- ✓ Material put into black bins goes to landfill. There is no sorting or processing of this material, most of which is plastic.
- ✓ What you do with what you THROW OUT instead of RECYCLING makes a big difference.

Recycling, Construction Debris and a Visit to City Hall

It's going to take all of us.

Information Points

- ✓ 100% of the concrete will be recycled into new construction.
- ✓ What materials are in construction debris and how might they be re-used?
- ✓ Wood, cardboard, chairs, and what else?

On Location: Visit to San Francisco's City Hall

Information Points

- ✓ Doing something for people and for the environment are linked.
- ✓ Chip bags are difficult to recycle because of the way they are made. Industrial responsibility is at fault here.
- ✓ San Francisco passed resolutions to achieve 100% no waste by the year 2020.

How good a job is being done by San Francisco's City Hall? How could they do better?

Collecting Garbage in San Francisco's Chinatown

How is garbage collected in Chinatown?

Where do you put your waste? Who picks it up? Where does it go? Is it separated? How is it recycled? How much more recycling could you do?

Three Bins Explained: Blue, Green, and Black

We've created a simple, convenient program with three "streams:" Recycling, composting, and trash. There could be more bins. Separation at the street level means a cleaner resource with more complete recycling.

Footnote: The three bin colors are: **Blue** is for recycling; **Green** is for compost; **Black** is for landfill.

Blue Bin Goes to Recycling

On Location: Recycling Plant for Blue Bins

Information Points

- ✓ Recycling means taking discarded materials and giving them a new life.
- ✓ Every recycled ton eliminates the need to process 70 tons of new material. This process protects people and the environment.

What goes into the blue bin?
Paper, bottles, and aluminum cans.

On Location: Neighborhood Recycling

Information Points

- ✓ Glass bottles and plastic bottles should be separated by color.
- ✓ Recycling goes on twenty-four hours a day.
- ✓ People can make money by recycling.

On Location: Glass Recycling

Information Points

- ✓ Recycling glass produces income.
- ✓ Glass can be recycled over and over again.

What does cradle to cradle mean? What does closed loop mean?

Inspection of Neighborhood Bins

Creating the culture of San Francisco.

What is neighborhood inspection of bins? Why would a city or town inspect trash, recycling, and compost bins?

Information Points

- ✓ If paper is wet or food-soiled, you should compost it.
- ✓ If paper is clean, you should recycle it.

What should be done with food scraps?

Apartment and Event Recycling

Zero waste is a goal; it's a direction.

On Location: Individual apartment resident and Earth Day event

What goes where? What do you think? What do you do at home and school? How about where your relatives live?

What are some of the items that seem difficult to recycle or compost? For example, what do you do with chewing gum?

Information Points

- ✓ WASTE makes TRASH which becomes GARBAGE which should be finally seen as RESOURCES.
- ✓ Out of sight is NOT out of mind.

Compost in Chinatown

This restaurant has a compost and recycle rate of almost 90%.

Information Point

- ✓ The Far East Café in San Francisco's Chinatown has achieved a diversion rate of nearly 90%, one of the highest rates in the world.

What are some of your ideas about how to improve recycling and composting where you live?

Green Bin Goes to Compost

Compost is loaded with life. It's magic.

What is compost? Why is it important?

On Location: A Farm in Sonoma, California

Information Points

- ✓ Compostable plastic bags can be put in compost. Other plastic bags interfere with compost.
- ✓ In nature there is no waste. Everything is food for something else.

Why would non-compostable plastic interfere with compost? How can you tell the difference between compostable plastic bags and regular plastic bags? What about other plastics in compost?

How are food scraps turned into compost? Short answer: Microbes and worms eat the compost and leave healthy soil, which is a product of a microbe's gut.

Does your home, town, or city compost?

Electronics Recycling

A solution for the global crisis in electronic waste.

What do we mean by electronics? What kinds of electronics can be recycled?

Information Point

- ✓ When not done properly, 80% of our electronic waste goes to countries outside the United States and harms people.

Where are two places where electronics recycling can harm people because it's not being done properly? China and Africa as seen in the documentary. But where else? How much improper disposal of electronics do you think occurs in the United States?

Information Points

- ✓ Everything in the world can be recycled. It's a question of how much it costs to do the recycling.
- ✓ The better you separate materials, the better the material can be recycled.

Why is it important to separate materials into different categories instead of throwing everything into a black bin?

Plastics Recycling

We look at plastics as a resource.

Information Points

- ✓ Plastics can be recycled but the process must be commercially viable.
- ✓ There are advantages to plastic, but also problems.

What are some of the advantages of plastic? What are some of the problems?

What are plastic "pellets?" Where do they come from?

Textile Recycling

What is the right question to ask about waste?

On Location: Goodwill

Have you ever thought when you buy something, “Where does that object come from, and where does it go?” How do you find the answer to these questions?

Information Points

- ✓ The question “How do I get RID OF THINGS?” should be replaced by “How can I get MORE USE OUT OF THINGS?”
- ✓ To help protect people and the environment, manufacturers need to make products that last longer and are easier to recycle.

What are some of the ways we can reuse products?

What can be donated to Goodwill, the Salvation Army, St. Vincent de Paul and other organizations that recycle textiles, clothing, and other products?

Information Point

Extra Important information point: No cloth or clothing should ever go to landfill. Old cloth and clothing can be made into completely new thread and then made into a new garment or cloth.

How to Handle Toxic Materials

There should never be toxic materials in the trash.

Do you read labels on bottles, cans and boxes? Why would you read labels? What information do you get?

Information Point

- ✓ At the beginning of the film, San Francisco was diverting 78% of its garbage from landfill. By this point in the film San Francisco had achieved another two percent of diversion, bringing the total to 80%.

Information Points

- ✓ **Extra important information:** With household cleaners, read the label.
- ✓ It's better if the label says "caution" rather than "danger." These are actually legal terms that define the level of hazard from household cleaners and other chemicals that we use or might be exposed to in our daily lives.
- ✓ "Wet cleaning" using water rather than "Dry cleaning" using chemicals is safer and has less negative effects on people and the environment.

What are toxic materials? Where do we find them? How can we reduce or eliminate toxic materials from landfills?

Information Points

- ✓ San Francisco has twenty-four places where residents can dispose of unused and unwanted medicine. Has your town tried this?
- ✓ Footnote: medicines should be separated from the plastic containers. The medicines need to be incinerated and the plastic recycled.
- ✓ Incineration should be a garbage disposal option only when there is absolutely no other source such as with toxic medical waste.

What should we do with old medicine?

Looking to the Future

I'm very realistic about steps we can take now.

On Location: Bio-Digester

What is bio-energy? What are the benefits of bio-digesting?

On Location: Corporate Composting of Tomatoes

How are tomatoes connected to compost and vice versa?

What makes good compost?

"Cradle to Cradle" Concept

We have to get back to the "cradle to cradle" concept.

What is the "cradle to cradle" concept?

On Location: Children's Day School

What would you say if someone asked you the question, will we be all right in the future?
Why do you say that?

Why is it important to save and emphasize the word RESOURCE? Because we are using up natural resources and could use the tons of discarded materials that get wasted in landfills.

What sort of potential does zero waste offer for jobs and businesses? List what kinds of jobs might be produced by a zero waste approach.

Art Made from Trash, End Credits

What are some of your ideas for making art from trash and garbage? Can you see anything in your classroom that could be reused, recycled, or composted?

What are some of the things we can do to change people's perceptions from thinking about TRASH into replacing the word trash with the word RESOURCE?

What do you think about the questions asked by the filmmakers? Can we achieve zero waste in the future? How far in the future? What are your ideas about how to achieve zero waste?

Explain terms used in the film that help us understand recycling and compost:

THREE BINS: GREEN, BLUE, AND BLACK
TRASH/RESOURCE
CRADLE TO CRADLE
CLOSED LOOP SYSTEM
FULL CIRCLE

CONCLUSION

These are just a few of the steps that are being taken to recognize the need to create a life style that reflects the closed loop system without which we may never be able to create a sustainable world.

San Francisco has a mandatory system for recycling and compost — collecting, separating, selling, recycling, composting — which goes on around the clock every day of the year, 24/7.

What is the most important message that you have gotten out of this film? Do you have a community-wide system of recycling and composting?

Please, always try to remember: what we used to call **GARBAGE** is actually a **RESOURCE**. This is the **most important point** from the entire film. Thanks for watching!