

School Recycling Club SHIP

(Supporting Home Instruction Program)



Lesson Plan 4

Grade Level: 7-8

Lesson: I—What is Household Hazardous Waste?
What's Hazardous in the Home?

Source: *Teaching Toxics*

Activity/Craft: Toxic Showdown Booklet

Video Link: Household Hazardous Waste Facility (<https://www.youtube.com/watch?v=gJHHJYhy1wC>)

Earth Day Link: Cabin Fever Coloring Page (<https://www.crayola.com/free-coloring-pages/print/cabin-fever-coloring-page/>)



Northeast Resource
Recovery Association

School
Recycling CLUB



Lesson Matrix Grades 4-6

Teaching Toxics

Lesson	Concept	Objective	Common Core Alignments	Skills
7-8 What's Hazardous in the Home?	Products containing hazardous substances are commonly found in the home.	<ul style="list-style-type: none"> Become familiar with types and quantities of hazardous products in the home Conduct an inventory of hazardous products 	<p>Grade 7 CC.L.7.6 CC.RI.7.7 CC.SL.7.2 CC.W.7.1 CC.7.NS.3</p> <p>Grade 8 CC.L.8.6 CC.RI.8.8 CC.SL.8.2 CC.SL.8.4 CC.W.8.1</p>	<ul style="list-style-type: none"> Analyzing Evaluating Gathering data Interpreting
7-8 Hazardous Characteristics	A substance is considered hazardous if it is corrosive, reactive, flammable or toxic.	<ul style="list-style-type: none"> Become familiar with characteristics of a hazardous substance Perform a series of experiments 	<p>Grade 7 CC.RST.6-8.4 CC.SL.7.1 CC.W.7.7 CC.WHST.6-8.2</p> <p>Grade 8 CC.RST.6-8.4 CC.SL.8.1 CC.W.8.9 CC.WHST.6-8.2</p>	<ul style="list-style-type: none"> Carrying out investigations Collaborating Communicating solutions Observing
7-8 Pondering Percolation	Soil characteristics influence how substances move in the environment.	<ul style="list-style-type: none"> Observe how fast water moves through different soil types 	<p>Grade 7 CC.RST.6-8.3 CC.SL.7.2 CC.W.7.2</p> <p>Grade 8 CC.RST.6-8.3 CC.SL.8.2 CC.W.8.2</p>	<ul style="list-style-type: none"> Carrying out investigations Explaining Hypothesizing Observing
7-8 Toxicity: A Relative Term	The toxicity of a chemical is determined by its concentration, its amount and the individual characteristics of the person exposed to it.	<ul style="list-style-type: none"> Become familiar with what determines toxicity Perform a series of experiments 	<p>Grade 7 CC.L.7.6 CC.RST.6-8.3 CC.W.7.9 CC.7.RP.3 CC.7.SP.4</p> <p>Grade 8 CC.L.8.6 CC.RST.6-8.3 CC.W.8.9 CC.8.EE.2 CC.8.SP.1</p>	<ul style="list-style-type: none"> Carrying out investigations Explaining Hypothesizing Observing
7-8 The Battle of Baking Soda	Purchasing decisions are based on personal values.	<ul style="list-style-type: none"> Compare toxic and non-toxic cleaning products Examine the factors that influence how people choose cleaning products 	<p>Grade 7 CC.SL.7.4 CC.W.7.1 CC.W.7.10 CC.7.NS.2</p> <p>Grade 8 CC.SL.8.4 CC.W.8.1 CC.W.8.10 CC.8.EE.2</p>	<ul style="list-style-type: none"> Analyzing Communicating solutions Gathering information Observing

Checklist of Things To Do

What's Hazardous in the Home?

- ✓ Send home the Family Notification Letter (see 4 - 6 Hazardous Homes?)
- ✓ Order green product catalogs. See the Resource Section for a listing of where to obtain some catalogs.
- ✓ A useful resource for this activity is the Household Hazardous Waste Wheel. For ordering information, see The Environmental Hazardous Management Institute in the Resource Section (Environmental and HHW Management Organizations).

Hazardous Characteristics

- ✓ Set up Student Learning Stations.
- ✓ It is useful to have a chemical dictionary in the classroom.

Pondering Percolation

- ✓ Collect soil samples for each small group. Each group needs a sample of topsoil, sandy soil and clay soil, NOTE: lumpy clay soil should be avoided. Make sure these samples are dry.

Toxicity: A Relative Term

- ✓ This lesson contains two long-term experiments. Teachers must allow approximately two weeks to germinate lima bean plants (eight plants per small group). The plants need to grow to be 3" - 5" in height before conducting the experiment.
- ✓ These experiments require two to three weeks to complete. You may want to adapt this activity so that it requires less time.

The Battle of Baking Soda

- ✓ Collect the items listed in the Materials Section.
- ✓ Collect sample cleaning products used in the school.
e.g.: window cleaner, furniture polish, general cleaner

7-8: What's Hazardous in the Home?

Subjects

Social Studies, Science,
Language Arts, Mathematics,
Practical Skills

Skills

Analyzing, evaluating,
gathering data, interpreting

Materials

"Household Hazardous Product
Inventory" sheet, Family
Notification Letter (see 4 - 6
Hazardous Homes?), green
product catalogs

Time

One and a half class periods,
homework

Vocabulary

Trade secrecy, active, inert

Related Teaching Toxics Activities

- 7-8 What is a Hazardous
Substance?
- 4 - 6 Hazardous Homes?
- 4 - 6 Looking at Labels
- 9 - 12 Assessing Awareness
- 9 - 12 Hazardous Materials in
Your School



Concept

Products containing hazardous substances are commonly
found in the home.

Objective

Students will become familiar with the types and
quantities of hazardous products through conducting a
home inventory.

Background

See Information Section, pages 120, 127, 139.

Although hazardous product labels are regulated, they
do not provide the consumer with enough information
to make a fully informed decision. For example, product
manufacturers may be exempt from releasing the exact
identity of some chemical ingredients, if doing so might
cause them economic loss (referred to as 'trade secrets').
In addition, manufacturers often use generic terms,
rather than revealing the specific chemical identity of
ingredients. For example, petroleum distillates or organic
solvents are actually categories of chemicals and can
represent any one of hundreds of chemicals. Generic
information is not sufficient to determine how hazardous
a product actually is.

Procedures and Activities

Introduction to Hazardous Products

- List the five hazardous product categories on the
board (automotive, cleaning, paints, pesticides
and miscellaneous.) In small groups, have students
brainstorm a list of household hazardous products
included in each category.
- Ask students to put the products in order from the most
common to the least common and predict what is the
most common hazardous product in their homes.

Home Inventory

- Discuss the Household Hazardous Product Inventory
sheet on the following page and review specific
label terms (e.g.: active vs. inert ingredient, generic
ingredient terms.)
- Have students conduct the household inventory with
the supervision of an adult family member. Have
students note what information is missing from the
products they inventory, as well as what information is
given.
- After the inventories are complete, have student
groups discuss the questions below and design a way
to visually represent their data in an organized way.

Common Core Alignments

GRADE 7

CC.L.7.6

Language:

Vocabulary Acquisition & Use

CC.RI.7.7

Reading Informational Text:

Integration of Knowledge & Ideas

CC.SL.7.2

Speaking & Listening:

Comprehension & Collaboration

CC.W.7.1

Writing:

Text Types & Purposes

CC.7.NS.3

Mathematics:

The Number System

GRADE 8

CC.L.8.6

Language:

Vocabulary Acquisition & Use

CC.RI.8.8

Reading Informational Text:

Integration of Knowledge & Ideas

CC.SL.8.2

Speaking & Listening:

Comprehension & Collaboration

CC.SL.8.4

Speaking and Listening:

Presentation of Knowledge & Ideas

CC.W.8.1

Writing:

Text Types & Purposes

Suggested discussion topics for the small groups:

- What are the most common types of hazardous products?
 - What information on the label is most frequently excluded?
 - What are the most common hazardous product ingredients?
 - What are the most frequently used products?
 - What percentage of hazardous products are being stored according to their directions?
 - Are consumer information phone numbers always listed?
 - If students were able to call, were they satisfied with the information they received?
 - From your inventory results, what can you conclude about how we use hazardous products?
 - How would you describe your reactions to the survey?
 - How do your predictions compare to what you actually found?
 - Can this data be used to infer what hazardous products are used in the entire community? Why or why not?
- Have student groups present their findings to the class.

Managing What We Use

- From the inventory list, have students highlight which hazardous products they personally use and ask them to research less hazardous “green” products on the web. If no alternative exists, have students research proper use, storage and disposal of the hazardous product. (A useful resource for this activity is the Household Hazardous Waste Wheel. For ordering information, see The Environmental Hazardous Management Institute in the Resource Section.)

Extensions

- Discuss the Federal Hazardous Substances Act (see 4 - 6 Hazardous Homes). Have students survey the stores in their communities to see if the labels are where they should be. Students could survey shoppers to see if the shoppers notice the labels. In light of their surveys, have students develop a written evaluation of the law.
- Call your local waste management agency or department to find out if they have conducted a survey of household hazardous waste generation. If so, compare your results.
- Analyze the different advertising techniques used to sell green products. What audience is being targeted? How can you make sure the product claims are true?

STUDENT WORKSHEET

Household Hazardous Product Inventory

Families: We are asking your child to complete this activity with you for homework

Directions:

1. Complete the inventory with an adult family member.
2. Do not open any of the containers. All the information you need is on the product label.
3. Look in the rooms where hazardous products are stored and find out what types of hazardous products your family uses. If you find the product, put a check in the space next to the item. Count the number of containers and write the number next to the item.

Kitchen

- Oven Cleaner
- Floor Cleaner/Wax
- Scouring Cleanser
- Bleach
- Ammonia
- Drain Cleaner

List other products you found:

Bathroom

- Disinfectant
- Drain Opener
- Toilet Cleaner
- Tile Cleaner
- Air Freshener
- Fingernail Polish/Remover

List other products you found:

Other Supply Closets

- Furniture Polish
- Spot Remover
- Carpet Cleaner

List other products you found:

Garage/Work Room

- Glues
- Paint/Stains
- Paint Thinner
- Motor Oil
- Antifreeze
- Pesticides
- Gasoline

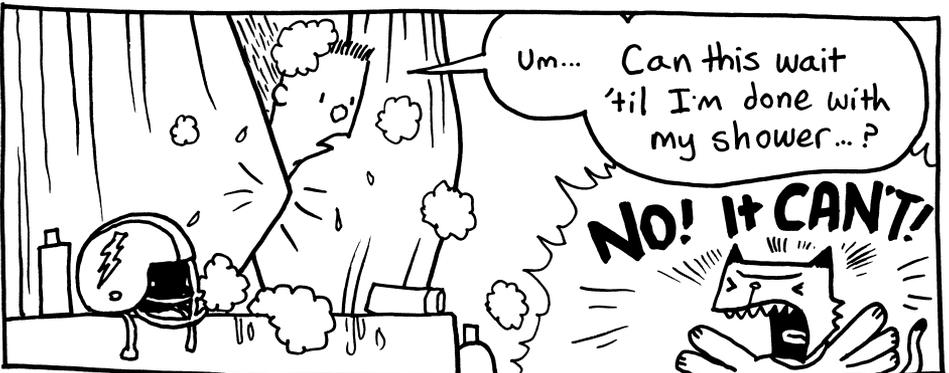
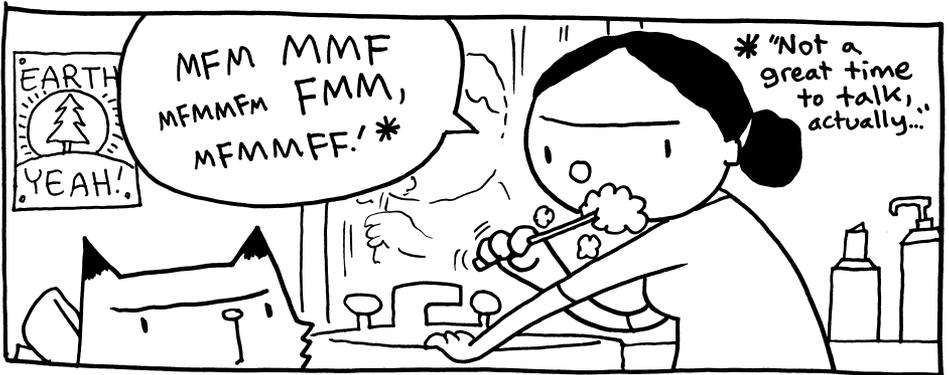
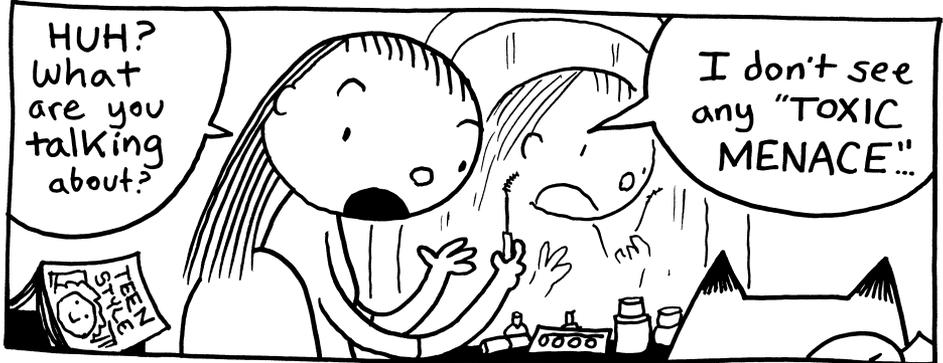
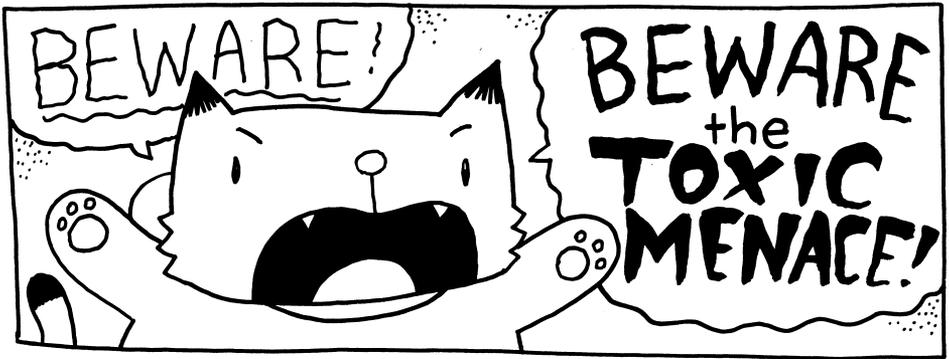
List other products you found:



TOXIC SHOWDOWN



**DISCOVER the DANGERS LURKING in
YOUR PERSONAL CARE PRODUCTS!**



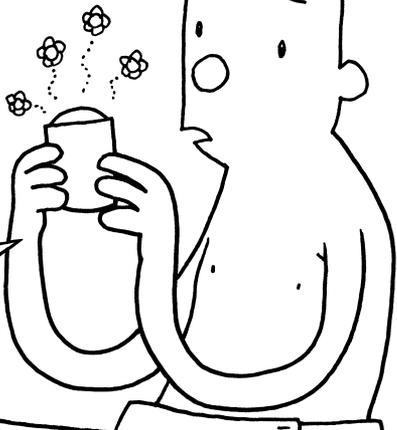


GET THE FACTS.

Huh... This stuff smells kinda nice...

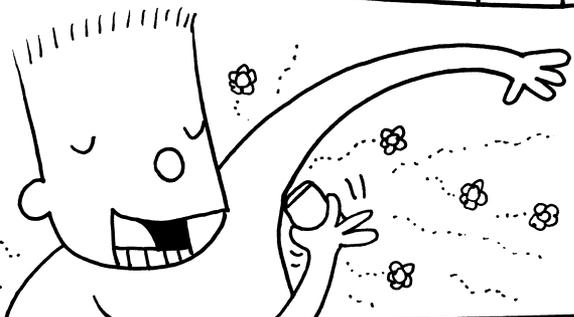
What's in it.?

Well, it says, uh...
"CONTAINS:
FRAGRANCE."

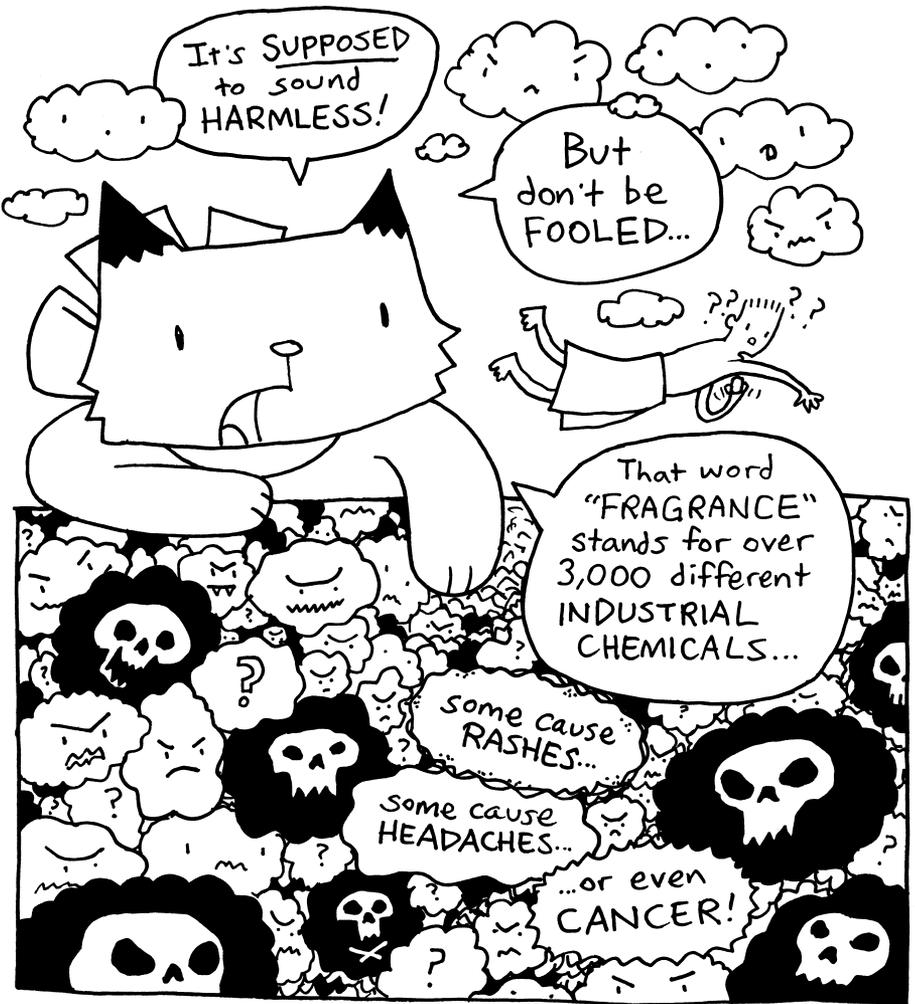


SNIFF...!

AHH!



"FRAGRANCE" sounds pretty HARMLESS, don'tcha think.?





THAT'S CALLED. **BIOACCUMULATION!**

Many mainstream cosmetics deliver **DAILY DOSES** of poisons directly to your SKIN!



You might feel some of the **HEALTH IMPACTS** RIGHT AWAY...

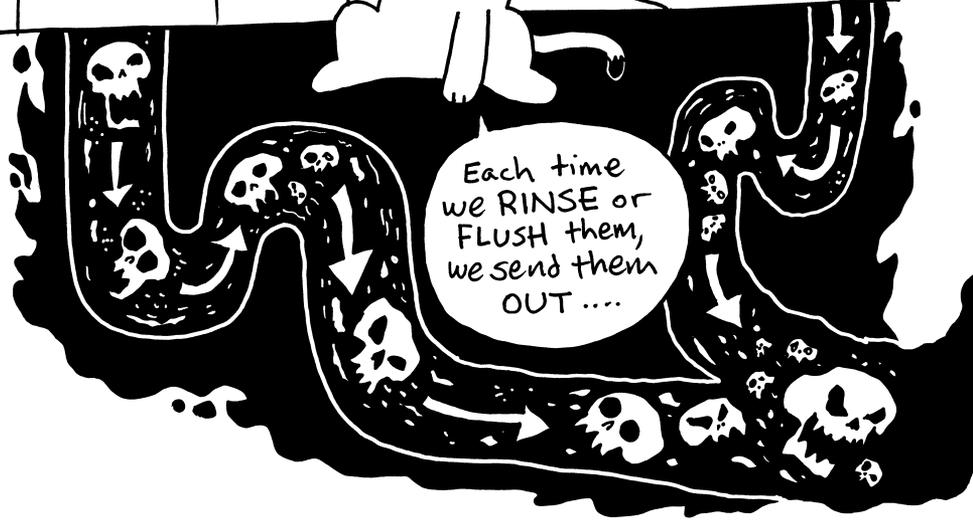


...Others might show up as **HEALTH PROBLEMS** only **YEARS LATER**.



NOW'S the time to **REDUCE** YOUR USE!





...to WREAK
some serious
**ENVIRONMENTAL
DAMAGE,**
too!



WHOA.

yeah.

Definitely
NOT COOL.



Here's a
CHART of
CHEMICALS
to watch
out for...



DANGEROUS COSMETICS INGREDIENTS* ...AND WHAT THEY DO TO YOU & to the ENVIRONMENT:

 PRODUCTS that use them

① FRAGRANCE

3000+ unspecified chemicals
Found in MOST MAJOR
COSMETICS PRODUCTS!



ALLERGIES,
SENSITIVITIES,
IRRITATION

CANCER

ENDOCRINE
DISRUPTION

② PHTHALATES



CANCER

REPRODUCTIVE
HARM
& DAMAGE to
OFF-SPRING

ALTERED
BEHAVIOR
+ CHEMICAL
PROCESSES



GENETIC
DAMAGE
(physical and
mental
defects)



For more information about
product ingredients and
their related health &
environmental concerns:

www.ewg.org/SkinDeep

* Some of these chemicals are broad categories and have several alternative names...
 Be vigilant when shopping & always check unfamiliar ingredients before assuming they're safe!

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CANCER

LUNG + THROAT IRRITATION

ORGAN SYSTEM TOXICITY

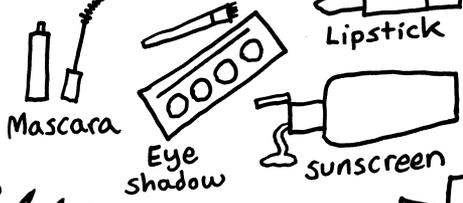
HORMONE DISRUPTION

DEVELOPMENTAL DISORDERS

BACTERIA resistant to ANTI BIOTICS!

③ B.H.A.

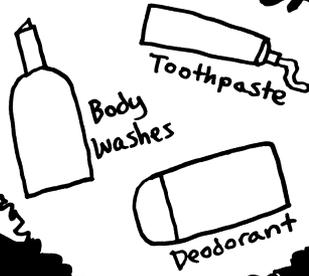
(BUTYLATED HYDROXYANISOLE)



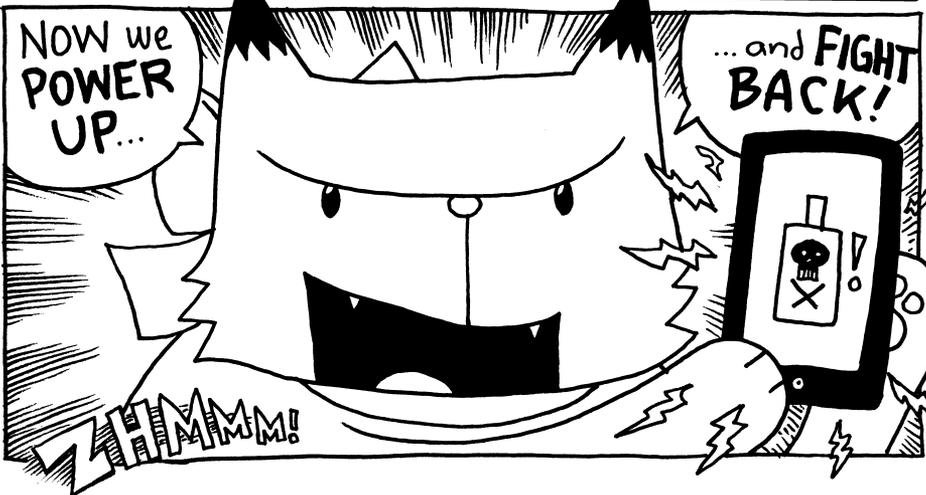
④ PARABENS



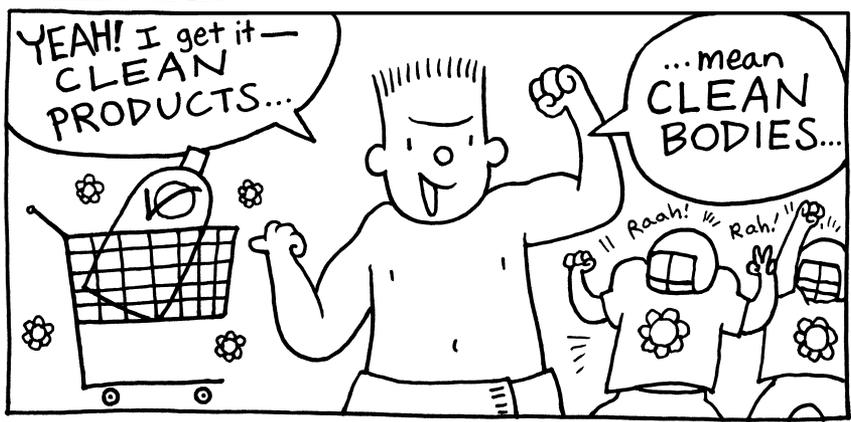
⑤ TRICLOSAN



CHEMICAL BUILDUP (Bioaccumulation)
ENVIRONMENTAL TOXICITY
 etc. **ALL 5!**



CHOOSE CLEAN!





SPREAD THE WORD!!

about CLEAN GREEN COSMETICS
to ALL our
FRIENDS and
FAMILY!



Share this comic & related projects = www.uvlsrc.org
EWG's Skin Deep Cosmetics Database = www.ewg.org/guides/cleaners
Download the EWG "Healthy Living" app = www.ewg.org/apps



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