Preview - Information

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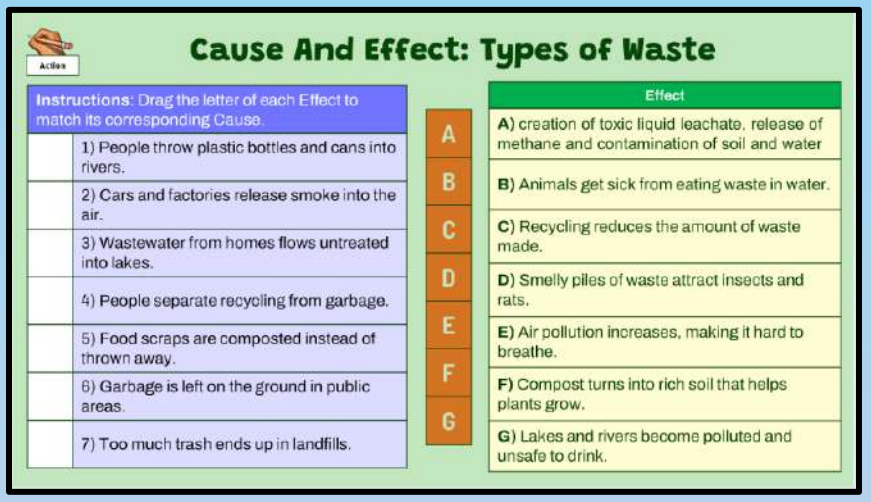
Google Slides Lessons Preview

Alberta Science Curriculum
Matter and Waste Unit – Grade 4

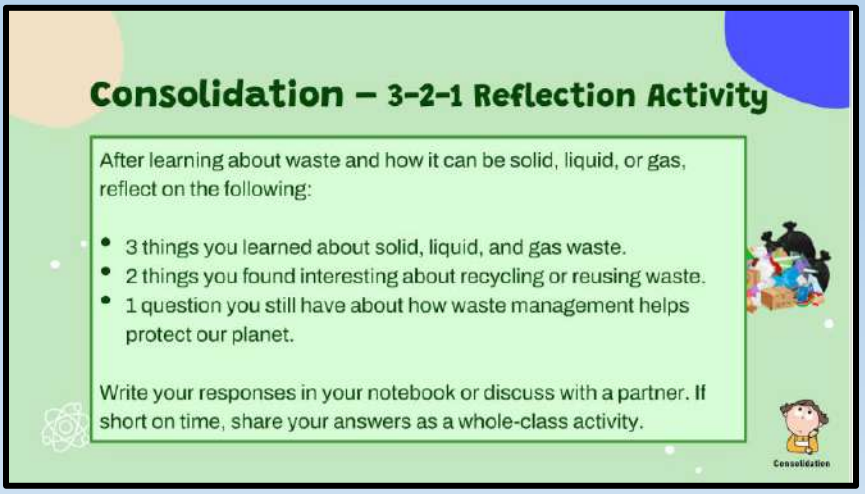
3-Part Lesson Format

Part 1 – Minds On!
- Learning Goals
- Discussion Questions
- Quotes
- And More!



Part 2 – Action!
- Writing
- Matching
- Drag and Drop
- Drawing
- And More!

Part 3 – Consolidation!
- Exit Cards
- Quizzes
- Reflection
- And More!



Alberta Science Curriculum
Matter and Waste Unit – Grade 4

Plant and Animal Waste – Multiple Choice

Write the correct letter (A, B, or C) in the Answer column

Question	A	B	C	Answer
1) What happens to leaves when they fall to the ground?	They disappear instantly	They decompose and turn into soil	They dry up and stay forever	
2) Which group helps break down waste in nature?	Consumers	Producers	Decomposers	
3) What does "biodegradable" mean?	Can be broken down naturally	Can only be used once	Can last forever without changing	
4) Why is animal waste important for plants?	It adds nutrients to soil	It blocks sunlight	It attracts animals	
5) Which of these is an example of organic material?	Plastic bottle	Metal spoon	Fallen leaf	
6) What happens when decomposers finish their job?	It turns into glass	The waste becomes soil	It stays the same	

Complete Each Sentence

Use the Word Bank Below to complete each sentence.)

Sentence	Missing Word
1) Saying "no" to things you don't need, like extra packaging, is to ___.	
2) Fixing a broken item instead of buying a new one is called ___.	
3) Giving something you no longer use to someone else is to ___ it.	
4) Paper, cans, and bottles can be collected and ___.	
5) Food scraps and leaves can break down and ___ into soil.	
6) Using something again, like a jar or container, is to ___ it.	
7) Choosing items with less packaging helps you ___ waste.	

Reuse, Return, Release, Repair, Regift, Recover, Refuse, Restart, Reduce, Recycle

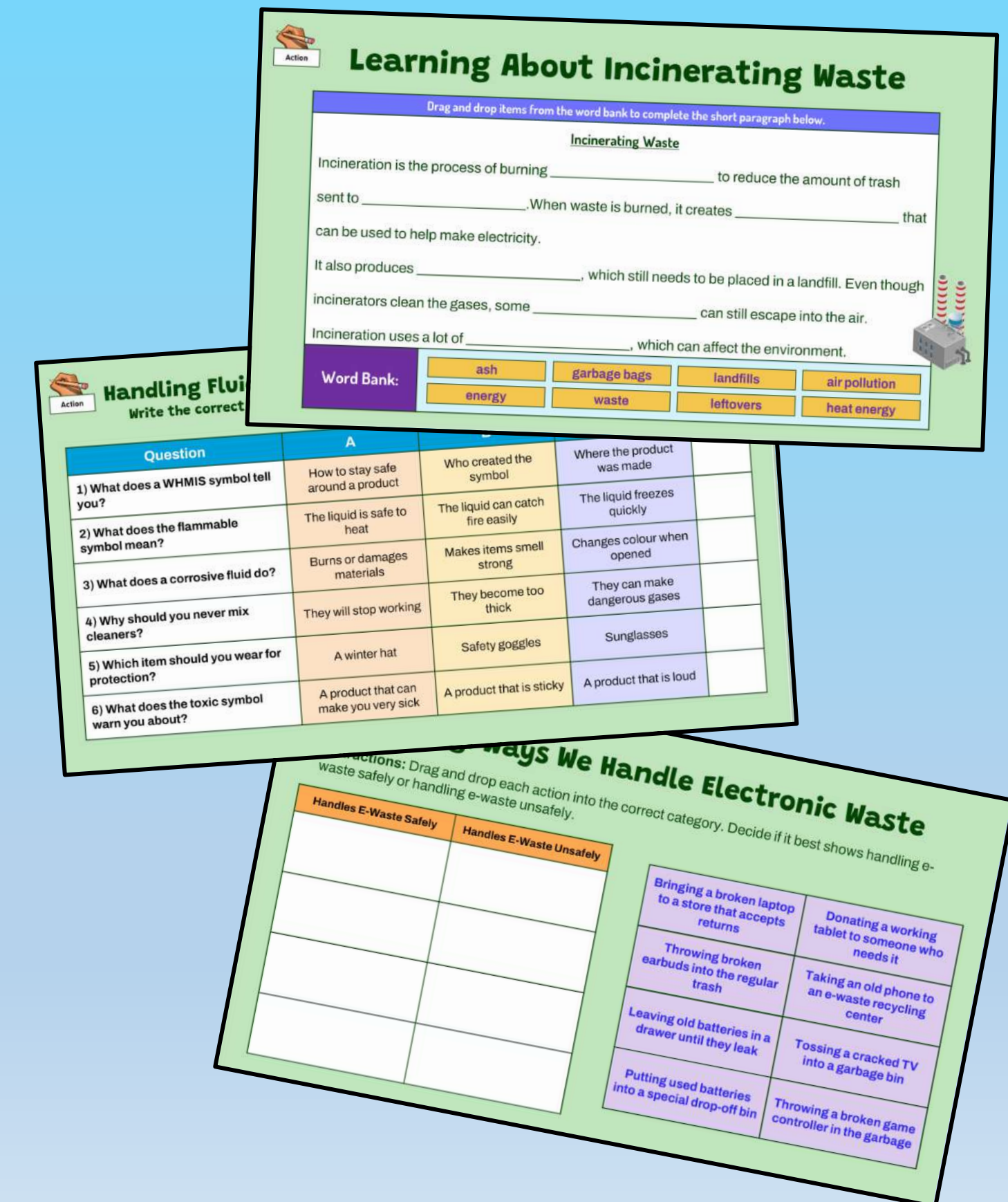
Word Search – Consume

T Q K S K W A S T E E Q J M R P R
A M Y I V G L R M M X M P U J R E
R O G D T E E A R A G O A N Z E S
U Z Q J V M E V N M T T P V Q U O
V W L I U C X E L D E E E S P S U
Q C Q S U O I G V X F T R V I E R
X G N D G A R B A G E I A I Y S C
D O E P L A S T I C I M L L A R E
C R P E D I V R R V C V Z L V L S
R E C Y C L E P A C K A G I N G S
Z B C A R D B O A R D P B T F V W

Find the words relate... consumerism, waste, and recy... hidden in the puzzle and circle them!

CONSUMER	RECYCLE
WASTE	REUSE
PACKAGING	REDUCE
LANDFILL	MATERIALS
GARBAGE	PLASTIC
PAPER	METAL
CARDBOARD	RESOURCES

Alberta Science Curriculum
Matter and Waste Unit – Grade 4



Learning About Incinerating Waste

Drag and drop items from the word bank to complete the short paragraph below.

Incinerating Waste

Incineration is the process of burning _____ to reduce the amount of trash sent to _____. When waste is burned, it creates _____ that can be used to help make electricity.

It also produces _____, which still needs to be placed in a landfill. Even though incinerators clean the gases, some _____ can still escape into the air.

Incineration uses a lot of _____, which can affect the environment.

Word Bank:				
	ash	garbage bags	landfills	air pollution
	energy	waste	leftovers	heat energy

Handling Flui

Write the correct

Question	A		
1) What does a WHMIS symbol tell you?	How to stay safe around a product	Who created the symbol	Where the product was made
2) What does the flammable symbol mean?	The liquid is safe to heat	The liquid can catch fire easily	The liquid freezes quickly
3) What does a corrosive fluid do?	Burns or damages materials	Makes items smell strong	Changes colour when opened
4) Why should you never mix cleaners?	They will stop working	They become too thick	They can make dangerous gases
5) Which item should you wear for protection?	A winter hat	Safety goggles	Sunglasses
6) What does the toxic symbol warn you about?	A product that can make you very sick	A product that is sticky	A product that is loud

ways We Handle Electronic Waste

ctions: Drag and drop each action into the correct category. Decide if it best shows handling e-waste safely or handling e-waste unsafely.

Handles E-Waste Safely	Handles E-Waste Unsafely

Bringing a broken laptop to a store that accepts returns	Donating a working tablet to someone who needs it
Throwing broken earbuds into the regular trash	Taking an old phone to an e-waste recycling center
Leaving old batteries in a drawer until they leak	Tossing a cracked TV into a garbage bin
Putting used batteries into a special drop-off bin	Throwing a broken game controller in the garbage

Workbook Preview

Grade 4 – Science Unit

Organizing Idea: Matter: Understandings of the physical world are deepened by investigating matter and energy

Guiding Question: How can materials be managed safely?

	Learning Outcome – Students investigate the management of waste and dangerous materials and describe environmental impacts.	**Pages**
M.1	Methods of waste management that can negatively impact the environment include using landfills and burning.	9-17, 19-22, 59-66
M.2		67-75, 102
M.3	Waste materials may be solids, liquids, or gases.	6-8, 92-97
M.4	Dangerous materials include natural and processed materials that can be harmful to the health of individuals. Symbols are used to identify dangerous materials. Hazard symbols are used to identify dangerous materials, including those that are explosive flammable corrosive poisonous	76-88
Computer Science:		
CS.1	Students examine and apply design processes to meet needs.	18, 23-25, 53-55, 89-91

NAME: _____

WASTE

Name: _____ 6

Curriculum Connection
M.3

What is Waste?

What is Waste?

Waste is anything that we don't need or want anymore. We call it trash, rubbish, or garbage. But did you know waste isn't just old food or crumpled paper? Waste can also be a liquid or even a gas. Let's learn more!

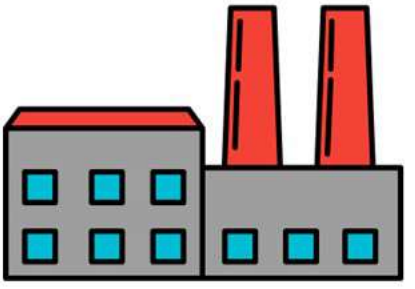
Solid Waste

When we think about waste, we often picture solid waste. Solid waste is stuff we can touch and see. It includes things like old toys, food scraps, or a broken pencil. This is the kind of waste we put in our garbage bin at home. Sometimes, if we recycle, solid waste like plastic bottles can be turned into something new!

Liquid Waste

Next, there's liquid waste. This is waste in the form of liquids. Spilled soda or used cooking oil are examples of liquid waste. But most common liquid waste is actually from our bathrooms. When we flush the toilet or drain the sink, that water is waste too. It needs to be cleaned at a water treatment plant before it goes back into the environment.

Gas Waste



Lastly, there's gas waste. This one's tricky because we can't see or touch it. But it's very real! When we burn fuels like gas, oil, or coal, it creates waste gases. These gases can pollute our air and harm our environment. Even burping cows create a gas waste called methane!

Name: _____ 7

Curriculum Connection
M.3

Type Which type of waste is it – solid, liquid or gas?

1) Soapy water	
2) Smoke from cars	
3) Used tires	
4) Old clothes	
5) Paper	
6) Sewa	
7) Pa	

8) Smoke from a factory	
9) Burp from a cow	
10) Oil spill	
11) Old table	
12) Food scraps	
13) Old coffee	
14) Fumes from gas	

Draw D d ent ty waste

Solid Waste	**Liquid Waste**	**aste**

Questions Answer the questions below using evidence fr

1) What is waste?

2) What things have you thrown out as waste in the last day or two?

Curriculum Connection
M.3

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Which type of waste is described.

1. Old toys and food scraps.	Solid
	Gas
2. Spilled soda.	Solid
	Liquid
3. Smoke from burning coal.	Liquid
	Gas
4. Used cooking oil.	Gas
	Liquid
5. Burping cows release methane.	Gas
	Solid

Name: _____

Which type of waste is described.

1. Old toys and food scraps.	Solid
	Gas
2. Spilled soda.	Solid
	Liquid
3. Smoke from burning coal.	Liquid
	Gas
4. Used cooking oil.	Gas
	Liquid
5. Burping cows release methane.	Gas
	Solid

Name: _____

Which type of waste is described.

1. Old toys and food scraps.	Solid
	Gas
2. Spilled soda.	Solid
	Liquid
3. Smoke from burning coal.	Liquid
	Gas
4. Used cooking oil.	Gas
	Liquid
5. Burping cows release methane.	Gas
	Solid

Name: _____ 11

Curriculum Connection
M.1

Composting

What is Compost?

Compost is decomposed organic material. This means that compost is broken down dead stuff! When something dies, like a plant, it will break down slowly into soil. The soil is actually compost, which is rich soil.

Decomposers

Decomposers are fungi, and other living organisms that eat dead plants and animals. They break down decaying matter so that it turns into soil to be used by plants.

When they break down dead animals, they release nutrients and mineral salts that go into the soil. This makes soil rich in nutrients for plants to grow. Examples of decomposers are molds, fungi, and worms that reuse and recycle materials that were formerly living.

Decomposers are alive. They get their energy from the nutrients in dead matter. Worms take in food through their mouths and pass a 'cast' through their rear end. The cast is very valuable fertilizer for the soil.

What to Compost

As a general rule, you can compost things that were once growing but are now dead. Some examples include fruits, vegetables, paper, coffee, tea, and eggshells. You shouldn't compost cheese, medicines, or glass.

When you compost the right things, decomposers will begin to break down the dead matter, so it turns into good soil!

Name: _____ 12

Curriculum Connection
M.1

Questions

Answer the questions below using evidence from the text

1) What are decomposers? How do they help create compost?

2) What c[illegible] compost and what shouldn't you compost?

Making Connections

h[illegible] does [illegible]ding remind you of?

Word Scramble

Unscramble the words below using the word bank

Compost	Soil	Worms	Bacteria	Fungi	Decay	Break	Down

IETCARAB		SWMRO	
DACEY		EKARB	
LOIS		COTPSMO	
WNDO		NIFGU	

Name: _____ 13

Curriculum Connection
M.1

Not all organic material can be composted. Check out the infographic below to learn more about the organic material that can be composted.

Making Connections

Share your expe s wit ing below

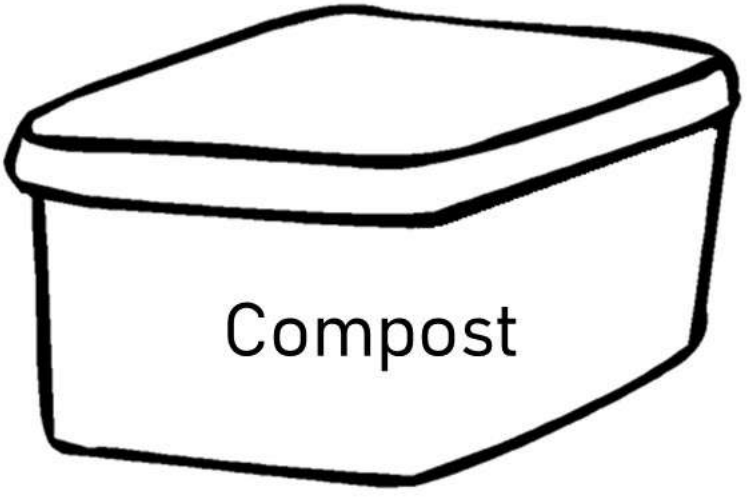
1) Have you ever used a composter? If so, what do you co

2) What kinds of things can you not compost? Why do you think you can't compost those things?

Name: _____ 14

Curriculum Connection
M.1

Directions	1) Colour the pictures that can be composted 2) Draw a line from the pictures that can be composted to the bin



Name: _____ 16

Curriculum Connection
M.1

Pop Bottle Composter

Background

What is this experiment all about?

How is compost made? How long does it take for organic material to turn into compost? These are the questions we will answer after our experiment is complete!

Materials

will you need for this experiment?

- Em 2-litre e
- Soil
- Leaves, grass, ne n fruits or vegetables
- Anything else you w to see ted

Method

How you will complete the iment

1. Cut the top off the 2-litre soda bottle.
2. Remove the label so you can see inside the bottl
3. Start with a layer of soil on the bottom
4. Add a layer of compostable material
5. Continue this process by alternating soil and organic material until the bottle is nearly full
6. Add water to the bottle to start the composting. The water will help rot the organic material
7. Put the composter in a place where it won't tip over and where it will get enough sun. The sunlight will also help rot the organic material
8. Monitor the progress of the composter by checking it once a week. As an option, you could take a picture each week to record what is happening

Name: _____ 17

Curriculum Connection
M.1

Diagram Draw a diagram of your bottle with each layer. Label the diagram

Questions Answer the questions below

1) Why won't the composter work if you don't add wa[illegible]t it [illegible]e sun?

_____

_____

_____

2) What did you notice happened to the organic material you put in the composter? What happened to it over time? How long did it take for anything to decay?

_____

_____

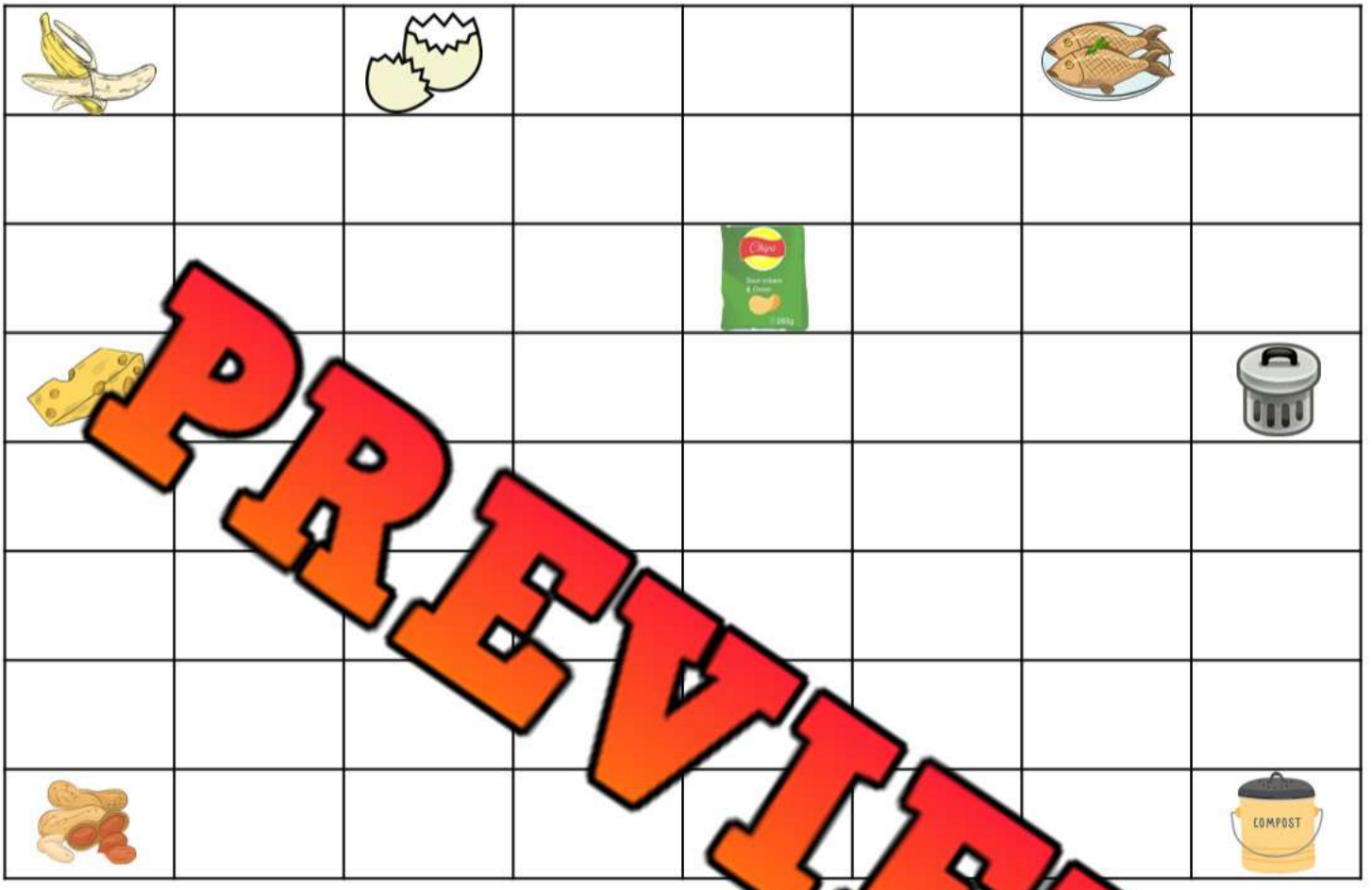
_____

_____

Name: _____ 18

Curriculum Connection
CS.1

Writing Code – Composting



Direction Write code to move the waste to the comp… the …ge can.
Example: move down 3, move right 6

Banana	Cheese	…lls
run program	run program	run program

Fish	Chip Bag	Nuts
run program	run program	run program

Name: _____ 21

Curriculum Connection
M.1

Types of Packaging

Different Types of Packaging Materials

Almost everything we buy comes in a package. Food, toys, electronics and more are usually wrapped in some form of package that protects the product inside. The problem is that all packaging is waste. This is because we don't buy the product for the packaging. The packaging is extra and unwanted. Some types of packaging are better for the environment than others. Check out the list below.

Plastic	
Advant	astic has a low cost, is durable, lasts a long time, is light-weight, and used in many different ways (shrink wrap, hard plastic covering, ot)
Disadvantages	biodegradable, which means it won't break down naturally. with uch plastic pollution. Some plastics can leak ls int

C d	
Advantages	Cardboard a a lo htweight for people to carry. Businesses can p th on ard. Cardboard can be easily recycled. Cardboard is iodegr
Disadvantages	Cardboard isn't as durable as pl f woo be damaged by water (rain). Cardboard does not pro e pro s well because it can be damaged (deformed) easily.

Aluminum	
Advantages	Aluminum is 100 percent recyclable. It can be repu d back in a store in as little as two months. Aluminum th st recycle rate at 68 percent. It is also inexpensive.
Disadvantages	Aluminum is a non-renewable resource, which means when we run out of aluminum, it is gone forever. To make aluminum, a lot of energy is burned. Some research suggests that aluminum could be bad for our health.

Glass	
Advantages	Glass keeps the contents fresh. No chemicals will leech into the food or drinks. Glass can store contents for a long time. Glass is 100 percent recyclable. They can be washed and reused as well.
Disadvantages	Glass costs a lot, which means the product costs more. It can be broken easily when being moved around. If glass is not recycled, it can take up to 1 million years to fully decompose.

Name: _____ 22

Curriculum Connection
M.1

Questions
Use information from the text to support your answer

1) What is packaging? What are the four main types of packaging?

2) Why is choosing packaging materials an important choice? Explain some of the advantages and disadvantages in your answer.

Reflection
Which packaging material is the best?

True or False
Circle whether the statement is true or false

1. Plastic is biodegradable and will break down naturally	True	False
2. Some plastics can be harmful to eat and drink out of	True	False
3. Cardboard is biodegradable and will break down naturally	True	False
4. Glass is biodegradable and better for the environment	True	False
5. All packaging needs to be recycled, especially glass, plastic, aluminum	True	False

Name: _____ 23

Curriculum Connection
CS.1

STEM Assignment - Product Packing Machine

Today, companies are trying to make everything as automated as possible. This means they want robots to do as much of the work as they can.

Your task is to create a robot that can measure the size and weight of a product and then package it accordingly.

For example

IF the pro[illegible]t has a volume less than 100 cm^3
THEN pac[illegible]e product in a bag

IF th[illegible]as [illegible]me between 100 cm^3 and 200 cm^3
THEN p[illegible]kage th[illegible] in a small box

IF/THEN Write [illegible]r yo[illegible]

If the product has a volum[illegible]an[illegible]

THEN

If the product has a volume between 100 cm[illegible]200

THEN

If the product has a volume between 200 cm^3 and 400 cm^3

THEN

If the product has a volume between 400 cm^3 and 800 cm^3

THEN

If the product has a volume greater than 800 cm^3

THEN

Name: _____ 24

Curriculum Connection
CS.1

Draw your packaging machine. Make sure you have:

- ✓ A place to put the product
- ✓ Where the packaging types will be stored (box, bag, etc.)
- ✓ A screen to tell you what is happening
- ✓ A start button
- ✓ A place for the package to go

Name: _____ 25

Curriculum Connection
CS.1

Questions Answer the questions about your machine below

1) How does your packaging machine work?

2) How does your packaging machine use code? Write one example line of code for the machine to package a product.

3) How much does it cost to make your machine?

4) Who will you sell your machine to?

5) How much will you sell it for?

6) If you sell 5 machines today, how much money will you make? Remember to subtract how much the machine costs to make!

Name: _____ 26

Curriculum Connection
M.1

Decreasing Waste - The Three R's

Decreasing Waste

We all know that waste is not good for our environment. When waste ends up in our environment, it is pollution that affects our air quality as well as our ecosystems. Plants and animals suffer when we produce too much waste. That is why we all need to work together to decrease the amount of waste we produce.

The Three

To keep th[illegible]ple, Canadians and people around the world have been learning about th[illegible]educe, reuse, recycle. By following the three R's, we can decr[illegible]aste we produce.

Reduce

We can reduce [illegible]e by [illegible] less. The less we buy, the less waste we will have. When we do b[illegible]hing[illegible]make sure we use them and try to choose packages that are biode[illegible]ble or re[illegible]e. For example, buying plastic water bottles and then throwing t[illegible]he[illegible]p[illegible]errible for the environment.

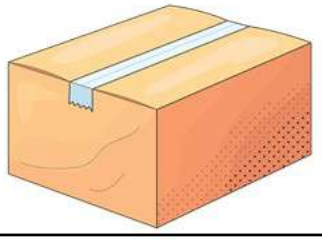
We should reduce the am[illegible]nt o[illegible]e purchase by buying a reusable water bottle. We can also t[illegible]onside[illegible]ing how many things we are buying. Sometimes we buy things we don't reall[illegible]ed, a[illegible]n we don't use them. Most of the time, these things end up as was[illegible]

Reuse

Reusing items instead of throwing them away is another way to reduce waste. When we buy new items, we throw out our older stuff, which adds to the landfills and causes pollution. You should consider reusing or [illegible]posing items before buying new. For example, you can reuse paper by writing on the back of a page or using scrap paper for less important things.

Recycle

Recycling is making new products out of already used materials that would have been otherwise thrown away. When we recycle materials, they are sent to factories to be sorted and eventually reused for new products. The recycled materials like plastic, cardboard, and metal are made into new products. This means those plastics, carboards, and metals never end up as waste, since they are always being used.



Name: _____ 27

Curriculum Connection
M.1

Questions Use information from the text to support your answer

1) What can we do to decrease the amount of waste we make?

2) Which [illegible] you need to work on the most?

Summarize What is the rea[illegible] all[illegible] rize using the important details

True or False Circle whether the statement is true or false

1. We need to decrease our waste to keep our environment healthy	True	False
2. Doing the three R's will decrease the amount of waste we make	True	False
3. We should recycle everything we are getting rid of	True	False
4. We can reduce the amount of things we buy	True	False
5. We don't need to worry about which type of package a product comes in	True	False

Name: _____ 29

Curriculum Connection
M.1

Activity - Build a Recycled Bird Feeder

Objective What are we learning more about?

To learn about recycling, repurposing, and helping animals.

Materials What do we need for our activity?

1) An [illegible]stic bottle
2) T[illegible]oons.
3) [illegible] or yar
4) Birdseed
5) Craft pa[illegible]d [illegible]ntbrus[illegible]ntional).

Method How do we co[illegible] the exp[illegible]?

1) Clean the plastic bottle and rem[illegible]y labe
2) Ask an adult to help make two pairs of ho[illegible]ppos[illegible] other halfway up the bottle, large enough for the spoons t[illegible]hr[illegible]
3) Push the spoons through the holes so that they [illegible] 'X' i[illegible]he bottle. The spoon handles will act as perches for the birds, a[illegible]d th[illegible] the birdseed.
4) Make two small holes near the top of the bottle and thread the s[illegible]ng through them. This will be used to hang the bird feeder.
5) Fill the bottle with birdseed until the seeds are level with the spoons.
6) Screw the cap back onto the bottle.
7) If you want, you can paint and decorate the outside of the bottle with craft paint.
8) Find a tree in your backyard or a park and hang the bird feeder on a branch.
9) Watch and see what kinds of birds come to visit your bird feeder!

Name: _____ 30

Curriculum Connection
M.1

Plan Draw your bird feeder below

Questions Answer the questi[illegible] bel[illegible]

1) What materials did you reuse?

_____

_____

_____

2) How did you help the environment with your bird feeder?

_____

_____

_____

_____

Name: _____ 31

Curriculum Connection
M.1

Beyond the Three R's

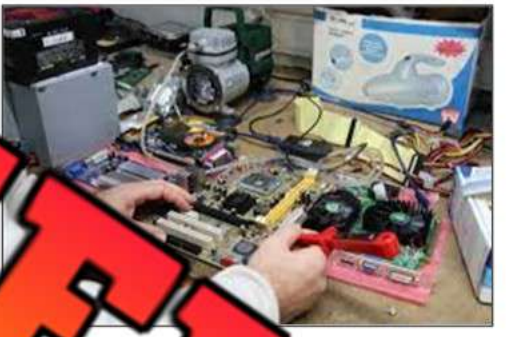
Beyond the Three R's

Waste is a big problem and the three R's are a great start to solving it. But there is more we can do to stop how much we are wasting. We should consider the new 7 R's! Calgary is the world's cleanest city, and they do it by having their residents follow the 7 R's. Beyond the three r's, we can add 4 more – Refuse, Repair, Regift, and Recover.

Refuse

The term refuse includes all things left over after use. It is similar to waste, but waste means things left over that cannot be recycled. When we buy things, we should consider the packaging waste that will be leftover after we use the item. We should ask questions like:

- Is this product available elsewhere else with less packaging?
- Do I need this product?
- Is this product recyclable?



Repair

We quite often buy new things because our old things have stopped working. To cut down on waste, we should consider repairing what we already have. For example, our old shoes can have new soles put on them to allow them to last longer. We could also get our TV or washing machines fixed before buying new ones.

Regift

If we have items that we don't like anymore, we shouldn't just throw them in the trash. Instead, we can regift them to someone who will appreciate them. If you post these items for free, you will quite often find someone who will love them. This means the item did not end up in the trash and it is helping someone else.

Recover or Rot (Compost)

We need to remember that organic waste is helpful for our environment. We should never throw away food scraps, glass clippings and other organic waste because we can compost it. Composting organic waste means the waste becomes nutrient rich soil. Allowing organic waste to rot in composters is good for our environment.

Name: _____ 32

Curriculum Connection
M.1

Questions
Use information from the text to support your answer

1) What can we do beyond the 3 R's?

2) Does th town you live in have thrift shops? Can you easily regift or sell some of your old

Making Connections
What do readi you of in your life?

True or False
Circle whether the statement is true or false

1. Letting organic material rot is good for our environment	True	False
2. Throwing out old food is okay because it is old	True	False
3. We can reduce waste by regifting or reselling our old stuff	True	False
4. Refuse is only the leftover waste that can't be recycled	True	False
5. You can repair your old things so you don't have to throw them away	True	False

Curriculum Connection
M.1

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Which type of waste is described.

1) Ben gives his old shoes away.	Regift
	Repair
2) Maya fixes her broken washing machine.	Refuse
	Repair
3) Liam posts free toys online.	Rot
	Regift
4) Ava composts fruit peels at home.	Rot
	Refuse
5) Emma says no to extra packaging.	Rot
	Refuse

Name: _____

Which type of waste is described.

1) Ben gives his old shoes away.	Regift
	Repair
2) Maya fixes her broken washing machine.	Refuse
	Repair
3) Liam posts free toys online.	Rot
	Regift
4) Ava composts fruit peels at home.	Rot
	Refuse
5) Emma says no to extra packaging.	Rot
	Refuse

Name: _____

Which type of waste is described.

1) Ben gives his old shoes away.	Regift
	Repair
2) Maya fixes her broken washing machine.	Refuse
	Repair
3) Liam posts free toys online.	Rot
	Regift
4) Ava composts fruit peels at home.	Rot
	Refuse
5) Emma says no to extra packaging.	Rot
	Refuse

Name: _____ 36

Curriculum Connection
M.1

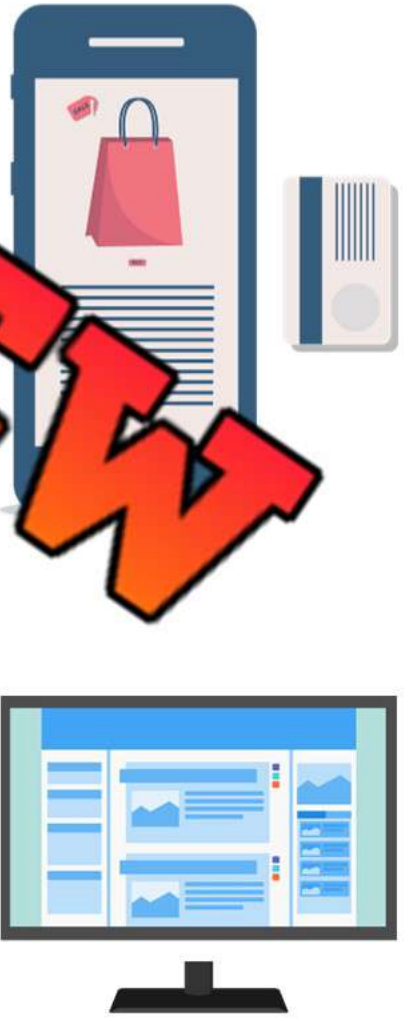
Reselling – Online Marketplace Assignment

Objective What are we learning more about?

Have you ever heard the saying, “one person’s trash is another person’s treasure?” Well, it is true! We shouldn’t throw our old things away. Instead, we can post these things for free or even for sale by using an online marketplace.

Instructio[illegible]d we complete the activity?

1) Ask each st[illegible]nk of one item they have at home th[illegible]nge[illegible]or want. It should be something [illegible]till in [illegible]dition and could be useful to some[illegible]el[illegible]
2) Discuss with student[illegible]cep[illegible]ng. Emphasize how this help[illegible]duc[illegible]e also help other people.
3) Once they have chosen their item, have the[illegible]eate an online marketplace post. They shou[illegible]de:
   - A title for their listing (e.g., "Gently [illegible] Bicycle for Sale")
   - A description of the item, including its condition, color, size, and any other important details.
   - A reason why someone else might want or need this item.
   - A 'pretend' price or, if they choose to give it away, they can list it as 'Free'.
   - They can also draw a picture of their item to go with their listing.
4) Once they've created their listings, have the students present their items and explain why someone else might want or need them.
5) Discuss how the activity can be applied in real life and the benefits of reusing, recycling, and regifting.



Name: _____ 37

Curriculum Connection
M.1

Plan | Plan your sale item posting

1) What will the title of your listing be? Example: "Gently Used Bicycle for Sale"

2) A description of the item, including its condition, colour, size, and any other important details

3) Why might someone wa[illegible] n[illegible]

4) What is the price for it?	5) Which city are you in?	6) Draw th[illegible]ject below.

Name: _____ 38

Curriculum Connection
M.1

Listing Create your listing below

Title	
Price	
Location	

Picture

Seller's Description

Condition	New	Used – Like New	Gently Used	Used	Damaged

Message	**Share**	**Save**	☒ **Report Listing**

Name: _____ 39

Curriculum Connection
M.1

Role-Play: The 7 Rs

Objective — What are we learning about?

Students will show how the 7 Rs reduce waste in daily life. By acting out short scenes, they will choose actions that protect the environment and explain why their choices matter.

Materials — ...ve need for our activity?

- Scenario ca... ...ere ...ituations) (provided)
- Props or costum... ...ptio...
- Timer or stopwatch

Instructions — How will we complete ou... ...ty?

1) Divide the class into small groups of 4 to 5 ... ...ts.
2) Provide each group with a scenario card that outli... ...ific sit... ...related to the topic being studied.
3) Give out roles to each student in the group, assigning them a ch... ...n within the scenario, or let them decide and take roles.
4) If available, distribute props or costumes that may help students embody their roles more effectively.
5) Set the timer to allocate a specific amount of time for the groups to discuss and act out their scenarios.
6) Allow each group to present their role-play to the class.
7) After all groups have presented, initiate a class discussion to reflect on the different approaches and outcomes observed during the role-plays.
8) Distribute reflection sheets for students to express what they learned and felt during the activity.

Name: _____ 40

Curriculum Connection
M.1

Criteria Use the criteria below to complete the activity.

Criteria	Description
Show the R	Your scene clearly shows one of the 7 Rs (reduce, reuse, recycle, refuse, rot, repair, regift). Say or show why it is the best choice.
Voice	Speak clearly and loud enough for all to hear. Use a voice that fits your character and the situation.
Actions & Props	Use simple, safe props and body movements to make the R easy to see and understand.
Stay	ur character from start to finish. Do not break role until the scen
Teamwork	re turns, and help each other. Start and finish on time to oth

Scenario Cards Cut o ics be

	Scenario	Description
1	**Reduce – Class Party Planner**	The class plans a party. Tw ces: s drinks and tiny snack bags, or big pitchers a ns. Students compare how much packaging each ake s: m ch less packaging, lower cost, fewer bins to empty. **Co** planning for allergies, someone must portion s Decide which choice reduces waste the most and why.
2	**Reuse – Art Club Supplies**	The art club needs containers and trays. Instead of buying new, students collect jars, yoghurt tubs, and boxes from home. They wash and peel off labels. **Pros:** saves money, keeps items out of the bin, sturdy containers last. **Cons:** sticky glue, time to clean, some lids don't fit or aren't safe for paint water. Choose which items can be safely reused.

Name: _____ 41

Curriculum Connection
M.1

Scenario Cards | Cut out the topics below.

3	**Recycle – Sports Day Stations**	After Sports Day, bins fill up with cans, paper programs, and food wrappers. Students run "recycling stations" and sort items using the town rules. **Pros**: metal, paper, and some plastics get made into new products. **Cons**: wrong items (like greasy pizza boxes) can spoil a whole bin; containers must be rinsed; not every plastic is accepted. Teams practise reading bin signs and fixing mistakes.
4	**R – Café and Fair Ch**	On a field trip, a café offers plastic straws and lots of napkins. At the vendors hand out free tiny toys. Students practise polite ways "No thanks, I don't need that." **Pros:** less clutter, less waste, a m age to businesses. **Cons:** may feel awkward, sometimes reusab n is available. Role-play refusing kindly and oosin ons.
5	**Rot (Compost) – School Garden Loop**	The class s a k for the school garden. They sort banana peels, ap , leav d tea bags into the green bin; foil and wrapper garba **s:** kes rich soil, less smell in garbage, fewer landfill trips **s:** nee right mix of greens and browns, can attract fruit ids s eat and dairy are not allowed. Plan how to ke
6	**Repair – Backpack Rescue**	A student's favourite backpack has a broken z rap. The group checks a repair kit, watches a quic and decides what they can fix. **Pros:** keeps a loved item resources and money. **Cons:** takes time and tools, some repairs need an adult or a shop, a fix might not last forever. Choose repair steps and when replacement is the better choice.
7	**Regift – Winter Warm-Up Drive**	Families clean closets for a community clothing drive. Students sort clean coats, boots, and mittens to match sizes and needs. **Pros:** items get a new life, helps neighbours, reduces buying new. **Cons:** must be clean and safe, not every item is needed, some things (like used helmets) shouldn't be regifted. Decide what to regift, what to recycle, and what to discard.

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Curriculum Connection
M.1

My Role Draw a picture of what your character did during the role-play.

Name: _____ 43

Curriculum Connection
M.1

Rubric How did you do on the activity?

Criteria	1 Point	2 Points	3 Points	4 Points
Show the R	R not shown or wrong; no reason.	R shown a little; reason unclear.	R is clear with a simple reason or example.	R is very clear; strong reason and a useful real-life tip.
Voice	Too quiet or hard to hear.	Sometimes clear, not steady.	Clear and fits the character.	Loud, clear, and very expressive.
Acti… Pr…	…ons; …ops…	Some actions; props helped a bit.	Actions matched the R; props helped understanding.	Many clear actions; props used safely and very well.
Stay in Role	…le o…	…metimes.	Mostly stayed in role.	In role the whole time.
Teamwork	Did not help or listen.	Helpe…	…elped, shared, …stayed on …ti…	Included everyone, shared, listened, and kept the group on time.

Teacher Comments

…rk

Student Comments – What Could You Do Better?

Name: _____ 44

Curriculum Connection
M.1

How Long Does Garbage Take To Decompose?

Questions

Answer the questions below

1) What surprised you about how long garbage takes to decompose?

_____

_____

2) How does this graphic show the importance of recycling? What happens when we don't?

_____

_____

_____

Name: _____ 45

Curriculum Connection
M.1

The Journey of Recycled Plastic

The Journey of Recycled Plastic
Have you ever wondered what happens to the plastic bottle after you toss it into the recycling bin? It goes on a fantastic journey to become something new!

Step 1: Co n
Our recy ney begins at your housel p ur plastic bottle into cycling b recycling truck co es to c ese trucks go around yo g ood, ng up all the recyc ste.

Step 2: Sorting
Next, the collected waste go recycling center. Here, workers and machines sort out different materials separa er plastic, glass, and metals. Our plastic bottle is grouped with other plastic it

Step 3: Cleaning
Now, it's bath time for the plastic! The plastic waste is to ge f any food, dirt, or other stuff that might be on it. It's important to ha an ext step!

Step 4: Shredding
Once the plastic is clean and dry, it goes into a big machine that shreds it into tiny pieces. These pieces, or flakes, are easier to handle and process.

Step 5: Melting and Reshaping
The flakes are melted in a big oven. The melted plastic is then shaped into small pellets. These pellets can be used to make all sorts of new things!

Step 6: Making New Products
Finally, the pellets are sent to factories. There, they can be used to make new products like clothing, toys, and even new plastic bottles!

Name: _____ 46

Curriculum Connection
M.1

Poster Draw a poster below that outlines the steps plastic takes to be recycled

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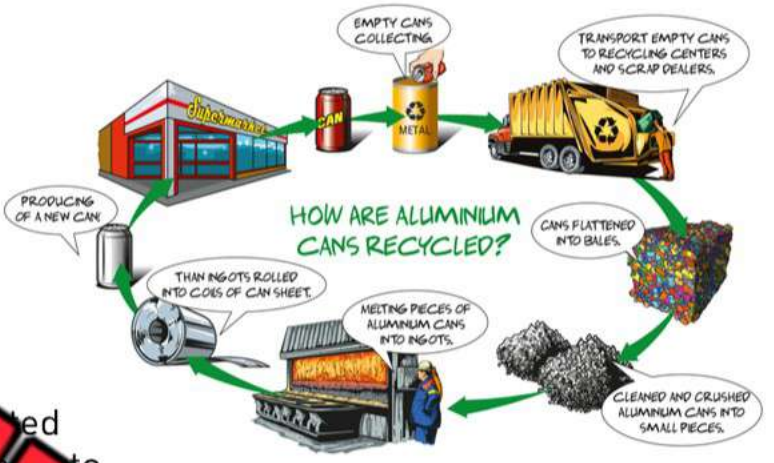
Curriculum Connection
M.1

The Journey of Recycled Metal

The Marvelous March of Recycled Metal
Metal is an amazing material that can be recycled over and over again without losing its strength. Let's see how a piece of metal goes from trash to treasure!

Step 1: Collection
The adventure begins at home! When you finish with a metal item like a soda can, you put it into your recycling bin. A special recycling truck will come to your home and take all the collected items to a recycling center.



Step 2: Sorting
At the recycling center, the metal is separated from other materials and then sorted into different types, like aluminum, steel, or copper. This is important because different types of metal need different methods for recycling.

Step 3: Shredding
The sorted metal items are shredded into smaller pieces. This makes it easier to process and melt down. It's kind of like how it's easier to melt a small ice cube than a big one!

Step 4: Melting
The shredded metal is then placed in a large furnace and heated up. Different metals melt at different temperatures. For example, aluminum melts at a lower temperature than steel.

Step 5: Purification
The melted metal is then purified. This step removes any remaining impurities so that we have clean, pure metal ready to be made into new things.

Step 6: Forming
The clean, melted metal is then poured into moulds where it cools and hardens. The metal might be shaped into big blocks called ingots, or into thin sheets, or even into wire.

Step 7: Making New Things
The new metal pieces are then ready to be used to make brand new items! This could be new soda cans, parts for a car, or even parts of a bicycle!

Name: _____ 52

Curriculum Connection
M.1

Poster Draw a poster below that outlines the steps metal takes to be recycled

Name: _____ 53

Curriculum Connection
CS.1

STEM Assignment - Recycling Sorting Machine

Much of the sorting of recyclables is done by machine. Here is how.

1) All recycling moves by magnets. The magnets separate the metal before being sent to the metal pile.
2) Cameras with artificial intelligence can separate paper from the rest
3) The rest of the materials are put in water. Glass will always sink to the bottom, which separates it from floating materials
4) Some plastics will float and others will sink. Therefore, the rest of the material that will be plastic.
5) The glass and anything on the bottom will be separated by humans

Imagine a machine that sorts recyclables. Finish the If/Then statements below to explain where the recycling goes and how it will be moved. Perhaps air jets?

IF/THEN Write code for your artificial intelligence

If the recycling is magnetic

THEN

If the cameras detect paper

THEN

If the recycling sinks to the bottom of the floatation tank

THEN

If the recycling floats

THEN

If the human detects glass

THEN

ELSE

Name: _____ 54

Curriculum Connection
CS.1

Draw your invention or sorting assembly line. Make sure you have:

- ✓ A place to put the recycling
- ✓ Where the recycling will go
- ✓ The magnets, floatation tank, and cameras to separate the recycling

Name: _____ 55

Curriculum Connection
CS.1

Questions

Answer the questions about your machine below

1) How does your recycling sorting machine work?

2) How does your machine use code? Write one example line of code for the machine to sort recycling.

3) How much does it cost to make your machine?

4) Who will you sell your machine to?

5) How much will you sell it for?

6) If you sell 3 machines today, how much money will you make? Remember to subtract how much the machine costs to make!

Name: _____ 59

Curriculum Connection
M.1

Waste Management Issues

Waste Management

With the global population growing, the waste we produce is also growing, but at a much higher rate. People now have access to more material goods that they consume and then need to dis

Th rious problem for our envir t, as th is getting out of control. Waste ref the methods we use to handle the waste.

Waste Disposal Site

In many countries around wast ted at the source (home, business) and sent to a waste disposal site. Th rbag ese waste disposal sites is most often incinerated. **Incineration** means t bage is re Many of the incinerators around Canada burn up to 200 truckloads of gar day. n reported that up to 50% of the waste that goes into the incinerator co ave

Landfill Sites

Most people call a landfill site a dump. This is the opposite of a sani se it involves dumping the garbage in a huge pile. The issue with landfill sites i ney are often fire hazards that can cause wildfires and forest fires. Dumps are also the ideal feeding grounds for rats who carry diseases that can spread to humans.

Sanitary Landfill

The other way the garbage is dealt with is through the use of sanitary landfills. At a sanitary landfill, a thin layer of waste is put into a trench alongside a layer of soil. This layering continues until the trench is full. A full trench looks like a large hill. Once the sanitary landfills are full, these places can be repurposed as golf courses or toboggan hills because of the hilly landscape.

Name: _____ 60

Curriculum Connection
M.1

Questions
Use information from the text to support your answer

1) Why is waste management needed? Why is it becoming more challenging?

2) What do you think is the best way to manage waste?

Visualizing
Draw what you were picturing while you were reading

Multiple Choice
Circle the correct answer

1. Landfills can be repurposed for	Golf	Ponds
2. Most garbage is	Incinerated	Piled
3. Sanitary landfills layer garbage and...	Waste	Soil
4. A landfill site is commonly called a...	Heap	Dump
5. Dumps are feeding grounds for	Rats	Deer

Name: _____ 61

Curriculum Connection
M.1

Environmental Effects – Incinerating Waste

Why Do We Incinerate Waste?

We incinerate waste mainly because it helps reduce the amount of garbage we send to the landfill, and it can also produce energy. The process of burning waste, or incineration, can convert waste into heat energy. This heat energy can be used to make electricity that powers homes and cities!

How Does Incineration Work?

Incineration works in a few big steps:

1) First, trucks bring the waste to the incinerator.
2) The waste is then put into a big, hot furnace where it gets burned. This burning turns the waste into ash and gases.
3) The ash falls to the bottom of the furnace and is collected to be put in a landfill. The gases rise into the atmosphere.

What Happens to the Environment?

Incineration can be helpful because it makes a lot of waste smaller. For example, burning 3 bags of trash can create just 1 bag of ash! But incineration can also have some problems. Here are a few:

- Air Pollution: Even though the gases are cleaned, some pollution can still escape into the air. This pollution can include chemicals that are bad for our health and the health of animals.
- More Waste: The ash from incineration still needs to go somewhere, usually a landfill. So, we're still making waste.
- Energy Use: Incineration needs a lot of heat, which means using a lot of energy. This energy often comes from burning fossil fuels, which can add to climate change.

Name: _____ 62

Curriculum Connection
M.1

Questions Answer the questions below using evidence from the text

1) Why is waste incinerated? What are the advantages?

2) What ar awbacks to incinerating waste?

Diagram Write the steps nen to be incinerated. Then draw a picture of each ste

Curriculum Connection
M.1

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Circle the word that fits on the blank.

1) We _____ waste to make less garbage.	incinerate
	recycle
2) Burning waste can produce _____ for cities.	compost
	energy
3) Incineration turns waste into _____ energy.	heat
	light
4) This _____ can make electricity for homes.	heat
	light
5) Some _____ pollution can still escape.	water
	air

Name: _____

Circle the word that fits on the blank.

1) We _____ waste to make less garbage.	incinerate
	recycle
2) Burning waste can produce _____ for cities.	compost
	energy
3) Incineration turns waste into _____ energy.	heat
	light
4) This _____ can make electricity for homes.	heat
	light
5) Some _____ pollution can still escape.	water
	air

Name: _____

Circle the word that fits on the blank.

1) We _____ waste to make less garbage.	incinerate
	recycle
2) Burning waste can produce _____ for cities.	compost
	energy
3) Incineration turns waste into _____ energy.	heat
	light
4) This _____ can make electricity for homes.	heat
	light
5) Some _____ pollution can still escape.	water
	air

Name: _____ 64

Curriculum Connection
M.1

Landfills - Benefits and Drawbacks

What are Landfills?

Landfills are like giant bins for our waste. They are places where we put things that we don't want or need anymore. From old toys to food scraps, lots of different waste can end up in a landfill.

The Benef[illegible]andfills

Landfill[illegible]od things abou[illegible]. Here a[illegible]ple:

- ☑ Space for [illegible]: [illegible]lls [illegible]e a place to put our garbage. Without landfills, our garbage might [illegible]p in [illegible]s [illegible]we live, work, and play.
- ☑ Energy Production: S[illegible]fills c[illegible]t and use the gas produced by rotting garbage to make electricity[illegible]s ca[illegible]r homes and cities!

The Drawbacks of Landfills

But landfills also have some not-so-good thin[illegible]ut th[illegible]e a few:

- ☒ Takes up Space: Landfills use a lot of land, and w[illegible]e that[illegible]or other things, like parks or homes.
- ☒ Pollutes the Environment: As garbage rots, it can make harmf[illegible]se gases aren't collected, they can escape into the air and hurt the env[illegible]nent.
- ☒ Harmful to Wildlife: Landfills can be dangerous for animals. They might eat things that are bad for them or get stuck in the garbage.

Conclusion

Landfills play a big role in handling our waste. They have benefits, like providing space for our garbage and sometimes making energy. But they also have drawbacks, like taking up land and hurting the environment and wildlife. So, remember to reduce, reuse, and recycle to help cut down the amount of waste we produce!

Name: _____ 65

Curriculum Connection
M.1

Think What are the advantages and disadvantages of using landfills?

Advantages	Disadvantages

Making Connections How do y[illegible]et ri[illegible]ge? Where does it go?

True or False Is the statement true or false?

1) Only food scraps can end up in a landfill.	True	False
2) Landfills don't use much land.	True	False
3) As garbage rots, it can make harmful gases.	True	False
4) Landfills are safe for animals.	True	False
5) Landfills can't be used for making energy.	True	False

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ Mark

What are the benefits and drawbacks of landfills?

Benefits	
Drawbacks	

Name: _____ Mark

What are the benefits and drawbacks of landfills?

Benefits	
Drawbacks	

Name: _____ Mark

What are the benefits and drawbacks of landfills?

Benefits	
Drawbacks	

Name: _____ Mark

What are the benefits and drawbacks of landfills?

Benefits	
Drawbacks	

Name: _____ 67

Curriculum Connection
M.2

Life of a Consumer Product - Flowchart

Life of a Consumer Product
Check out the flowchart below to see the life of a consumer product (Xbox). Notice the different disposal methods.

Start Here

Id... x

Build... Xbox
Materials
- Plastic
- Metal

Xbox is Used
Xbox is purchased and played until it is old, breaks, or a new one comes out

Repaired
The broken Xbox is repaired and works again. No need to throw it away!

Incineration
Xbox is incinerated. The burning of the plastic and metal emits toxic fumes into the air. These ...issions are ...g our planet ...ving our environ...

Landfill Site
The Xbox will sit in a landfill site for millions of years. Other trash will pile on top of it. It will be part of a huge pile. The pile of trash may light on fire or it may be a home for rats that carry diseases.

Dispos...
Xbox is re... and needs to be disposed of

Recycled
The Xbox is recycled properly. It is sent to an electronics recycling depot. The metals and plastics are reused to make new gaming systems and other things that use plastic and metal as materials.

Regifted
You don't need the Xbox anymore, but someone else will enjoy it. The Xbox stays out of a landfill and is not incinerated.

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Curriculum Connection
M.2

Instructions	Create your own flowchart like the one about the Xbox. Choose your own consumer product and be creative with your flowchart.

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Curriculum Connection
M.2

Story - Journey of Robo the Robot

Draw Illustrate the story by adding pictures to the book

The Journey of Robo the Robot

Once upon a time, there was a shiny robot named Robo. Robo was made from all sorts of materials like plastic, metal, and even some special electronic parts. Robo lived with a girl named Emma. Emma loved to play with Robo. They would go on pretend adventures together, solve puzzles, and sometimes, Robo would help Emma with her homework.

As the years passed and Emma grew older, Robo started to break. First, it was Robo's screen that went blank, then his arms started to grind, and finally, one day, Robo just stopped working altogether. Emma was very sad.

Name: _____ 70

Curriculum Connection
M.2

But Emma was a smart girl. She knew that tossing Robo in the [illegible] best solution. Emma knew that if Robo was thrown away, he could end up in a landfill, where he would sit and rot for hundreds of years. Not only that, but the harmful substances inside Robo could leak into the ground and harm our earth. Emma also knew that incinerating, or burning Robo, would release toxic gases into the air. She didn't want Robo to harm the environment in any of these ways.

So, Emma and her mom decided to take Robo to a special place called the electronics recycling center. There, they met a kind lady who explained to Emma how they would help Robo start a new life.

Name: _____ 71

Curriculum Connection
M.2

Robo was first sorted based on its materials: the plastic was separated from the metal and the electronic parts were taken out. Then, these materials were cleaned and processed. The plastic was melted and turned into pellets, which could be used to make new toys or household items. The metal was also melted and could be used to make new electronics or even parts of a car.

Robo's e[illegible]ic parts were the most special. They were carefully taken apart to remov[illegible] metals like gold, silver or copper which can be used again in n[illegible]ectroni[illegible]

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Curriculum Connection
M.2

In this way, even though Robo was broken, its parts didn't end up in a landfill or get burned in an incinerator. Instead, they were given a new life in new products.

Emma felt happy knowing that Robo was helping to create new things and not harming the environment. She knew that Robo's adventure was not over, but it was just beginning anew. This made Emma understand the importance of recycling and how it helps to keep our environment clean.

Name: _____ 73

Curriculum Connection
M.2

Spelling Bee: Waste Management Vocabulary

Objective — What are we learning about?

Students will learn and spell key words about waste and waste management (e.g., landfill, recycle, compost, e-waste, incinerator). This builds vocabulary, supports understanding of how we handle waste, and increases confidence speaking in front of others.

Materials — What will we need for our activity?

- Pre-prepared spelling words (provided)
- Bell or buzzer for announcing spellings
- Timer (optional)

Instructions — How will we complete the activity?

1) Prepare a list of key words that connect to the theme we have been learning. (provided)
2) Divide participants into teams or have them compete individually, depending on class size and dynamics.
3) Clarify the rules, including turn-taking, scoring, and handling of misspelled words.
4) Begin the bee by having the first participant spell a word from the theme list, noting their attempt on the board.
5) Use a signal device to indicate correct or incorrect responses and display the correct spelling for any mistakes.
6) Progress through participants, allowing multiple attempts and cycling through the word list.
7) Tally correct spellings to determine scores for each participant or team.

Name: _____ 74

Curriculum Connection
M.2

Spelling Terms | List of words for the Spelling Bee:

Easy	Moderate	Hard	Very Hard
waste	landfill	incinerate	gasification
trash	rubbish	incinerator	pyrolysis
gar	refuse	leachate	sustainability
	organic	hazardous	circularity
bin	com	contamination	responsibility
bag	ing	biodegradable	municipality
dump	collection	ver post	conservation
reuse	sorting	aerob	decontamination
reduce	cleanup	dig	agulation
recycle	battery	microplastics	
sort	sewage	photodegrade	sequestration
paper	methane	stewardship	remanufacture
plastic	dumpster	segregation	biodegradation
glass	upcycle	recovery	incineration
compost	odour	remediation	reclamation

Name: _____ 76

Curriculum Connection
M.4

Toxic Waste

What is Toxic Waste?

Waste is anything we need to get rid of. **Toxic waste** is any waste that is harmful to people, plants, or animals. When we get rid of toxic waste, we need to be careful as it could hurt other living things.

Toxic waste is often made by factories, construction sites, hospitals, and farms. Toxic waste can be flammable, corrosive, or reactive.

- Flammable – will burn easily. Examples: gas, oil, grease
- Corrosive – will burn, rust, or react with materials. Example: battery acid
- Reactive – will explode easily. Examples: explosives, pressurized cans

Examples of Toxic Waste in our Households

At home, it is important to be careful with toxic waste. We cannot throw away old batteries in the garbage or dump oils down the drain. Doing so will harm the environment because these materials can cause fires, explode, or cause burns and rusting.

When living things in our environment come in contact with toxic waste, they can get sick by consuming it.

Cleaning supplies are usually forms of hazardous waste. Most cleaners are chemicals that are not natural. They do not break down in our environment and they can get into our drinking water and make humans and other animals sick. When we pour chemicals down the drain, we are making our drinking water toxic!

Name: _____ 77

Curriculum Connection
M.4

True or False

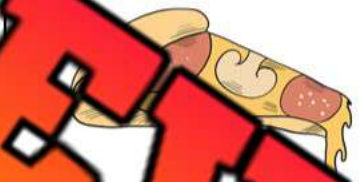
Is the statement true or false

1) Throwing out bread is toxic waste	True	False
2) Old batteries are toxic waste	True	False
3) Many house cleaners are toxic waste	True	False
4) Toxic waste can make living things sick	True	False
5) We sho throw out toxic waste	True	False

Toxic?

ic or not?

Yes | No



Ye | No

Yes | No

Yes | No

Yes | No

No

Visualizing

Draw what you were picturing while you were reading. Explain the picture

_____

_____

_____

_____

Curriculum Connection
M.4

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ | Mark

Is the waste toxic? Yes or No?

Old batteries	Yes	No
Banana peels	Yes	No
Leftover paint in a can	Yes	No
Used motor oil	Yes	No
Plastic water bottle	Yes	No
Broken glass jar	Yes	No
Empty pesticide bottle	Yes	No
Food scraps	Yes	No
Old medicine pills	Yes	No
Bleach from cleaning bottles	Yes	No

Name: _____ | Mark

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Name: _____ | Mark

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Food scraps	Yes	No
Old medicine pills	Yes	No
Bleach from cleaning bottles	Yes	No

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Curriculum Connection
M.4

Medicine - Types and Disposal

Liquid and Solid Medicines

Most medicines come in liquid and solid forms. We take medicine when we don't feel well. The type of medicine we take depends on how we feel. When we have a headache, we might take a pain reliever. When we have a bad cough, we might take cough syrup. If we have a runny nose, we could take allergy medicine.

Taking Medicine Properly

There are two types of medicines – prescription medicine and over-the-counter.

Prescription Medicine

When we get medicine from a doctor, it is prescription medicine. You cannot buy prescription medicine from a store without a doctor saying you need it. It would be very dangerous to take a prescription medicine that a doctor is not telling you to.

It could make you very sick because the amount of medicine and type of medicine was not made for you. This is why you should never take medicine without a trusting adult.

When we get rid of a prescription medicine, we should not just throw it out. Instead, we should take it to a drug take back program. If we throw it in the garbage, someone else could find it and take it. Also, when it rains, the medicine will dissolve into the water. This means our drinking water could have medicine in it.

Over the Counter Medicine

When you get a cough or a headache, your parents might give you an over-the-counter medicine that they can buy from the store. This medicine can still be dangerous to take if you do not need it. Most medicines say to take it for only a few days because it can harm you if you use it everyday.

Never take an over-the-counter medicine without a trusting adult. There may be side-effects to taking it without food or taking too much. An adult can help you.

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Curriculum Connection
M.4

True or False

Is the statement true or false

1) Prescription medicine is made just for you	True	False
2) Over-the-counter medicine can be bought at the store	True	False
3) You need a doctor to give you over-the-counter medicine	True	False
4) It is okay to take over-the-counter medicine by myself	True	False
5) Over-th ter medicine is not dangerous	True	False

Making

have you taken medicine before?

Questions

Answer the questions below

1) What is the difference between over-the-counter medicine and p dicine?

2) Why should we not throw out medicine?

Name: _____ 81

Curriculum Connection
M.4

Handling Fluids Safely - WHMIS

What is WHMIS?

WHMIS stands for the Workplace Hazardous Materials Information System. It is Canada's national hazard communication standard. WHMIS is needed to tell people about the fluids they will be han[illegible]any fluids we use at home or at wo[illegible]ul if used incorrectly, handl[illegible]orrectly[illegible]ed of incorrectly.

To keep pe[illegible]ad[illegible]tablished the WHMIS progr[illegible]sure [illegible]and workers receive consis[illegible]mpre[illegible] health and safety informatio[illegible]e h[illegible]ducts they may be exposed to. When someone gets a new job, they will likely [illegible]omp[illegible]WHMIS training, which teaches them how to read symbols put on the lab[illegible]of dang[illegible]s flu[illegible]

WHMIS Symbols

Explosive	Explosives are highly unstable subst[illegible]t coul[illegible]ode
Compressed Gas	Gas is stored under pressure – be careful h[illegible]dlin[illegible]a disposing
Irritant	Will immediately irritate skin, eyes, or respiratory tract
Flammable	Will self-ignite when exposed to water or air
Corrosive	Will cause corrosion/burns or eye damage on contact
Health Hazard	A cancer-causing agent or substance that causes damage over time
Oxidating	Chemicals that facilitate burning or make fires burn hotter/longer
Toxic	Substances, such as poisons that have an immediate and severe toxic effect
Environmental Hazard	Chemicals toxic to aquatic wildlife

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M.4

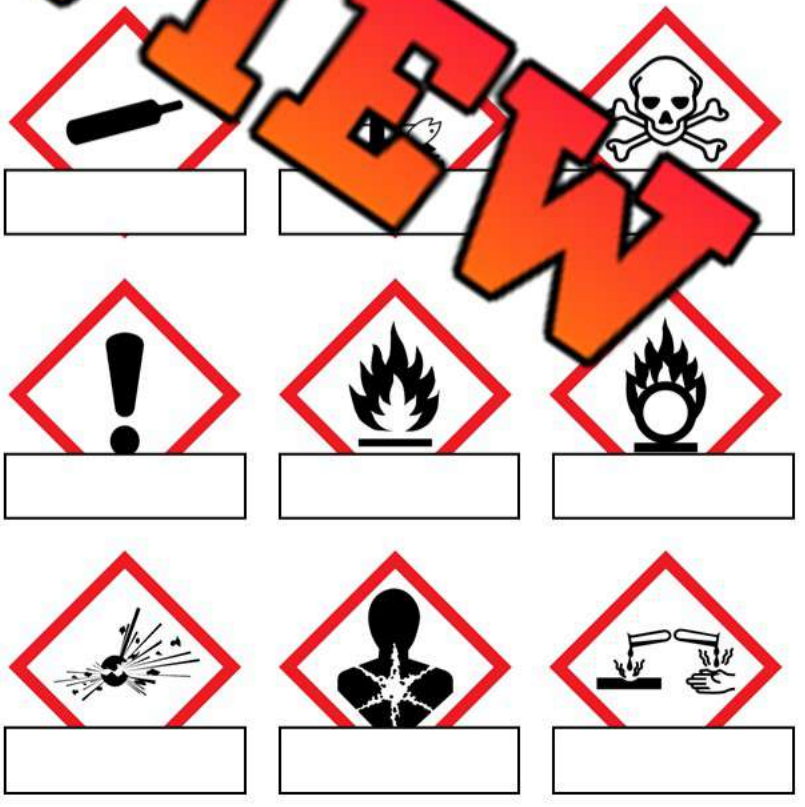
Questions Use information from the text to support your answer

1) What is WHMIS? Why was it created?

2) Before W S was created in 1998, what issues could have happened in the workplace?

Instructions Label each W mbols

Explosive
Compressed Gas
Irritant
Flammable
Corrosive
Health Hazard
Oxidating
Toxic
Environmental Hazard



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M.4

Matching

Match the description to the name of the safety symbol

Answer	Safety Symbol	Description
	Explosive	a) Will cause corrosion/burns or eye damage on contact
	Compressed Gas	b) Gas is stored under pressure – be careful handling, storing, and disposing
	Irritant	c) Substances, such as poisons that have an immediate and severe toxic effect
	able	d) A cancer-causing agent or substance that causes damage over time
	rosive	e) Will immediately irritate skin, eyes, or respiratory
	Healt	f) E es are highly unstable substances that cou
	Oxidating	g) aquatic wildlife
	Toxic	h) emicals acili urning or make fires burn hott er
	Environmental Hazard	i) Will self-ignite ex osed t r or air

Word Search

Find the words from the word bank in the

Explosive	Gas
Compressed	Hazard
Environmental	Oxidating
Irritant	Toxic
Flammable	Health
Corrosive	Hazard

Q	H	R	T	P	G	L	E	C	K	N	X	V	C	Z	P	U
Y	F	L	A	M	M	A	B	L	E	I	R	M	O	T	T	Q
H	A	Z	A	R	D	H	A	Z	A	R	D	W	M	O	E	F
O	X	I	D	A	T	I	N	G	Y	Z	B	K	P	X	I	X
Q	F	V	H	R	B	B	D	F	M	V	W	E	R	I	A	U
I	R	R	I	T	A	N	T	I	W	G	N	T	E	C	S	I
K	J	W	H	I	L	A	U	E	X	P	L	O	S	I	V	E
Y	P	M	H	E	A	L	T	H	T	T	G	A	S	J	D	V
E	N	V	I	R	O	N	M	E	N	T	A	L	E	G	I	P
C	O	R	R	O	S	I	V	E	X	C	T	R	D	G	F	P

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Curriculum Connection
M.4

Many products we buy are hazardous chemicals that need to be used properly and disposed of properly.

Your task today is to find different products online that have the safety symbols below. You can go online to a hardware store where chemicals are sold. Search for different cleaners, oils, batteries, fireworks, and acids.

Find	Answer the questions below

1) Find a product that is flammable. Draw the symbol, product name, and picture of the product.

Symbol	Product Name	Picture of Product

2) Find a product that uses compressed gas. Draw the symbol, product name, and picture of the product.

Symbol	Product Name	Picture of Product

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Curriculum Connection
M.4

Find Answer the questions below

3) Find a product that is corrosive. Draw the symbol, product name, and picture of the product.

Symbol	**Product Name**	**Picture of Product**

4) Find a product that is toxic. Draw the symbol, product name, and picture of the product.

Symbol	**Product Name**	**Picture of Product**

5) Find a product that is explosive. Draw the symbol, product name, and picture of the product.

Symbol	**Product Name**	**Picture of Product**

Name: _____ 86

Curriculum Connection
M.4

Electronic Waste

What is E-Waste?

Electronic waste, also known as e-waste, is any electronic device that is no longer wanted or is broken. This can include things like televisions, computers, phones, and even video games.

Why ... to ... of E-Waste Safely?

- It's Harmful: ... be dangerous. Some electronics have harmful things inside them, ..., mercury, cadmium. If these get into our environment, they can make pe...
- It Takes Up Space: Electro... can t... of space. If we throw them away with our regular trash, they fill up ... landfills ...
- It Wastes Resources: Inside your electroni... are ... metals like gold, silver, and copper. By recycling, we can use the...

How to Get Rid of E-Waste Safely

We can keep e-waste out of the trash by doing these things:

- Recycle: Many cities have e-waste recycling programs. They have special bins at recycling centers where you can drop off your old electronics. Some electronics stores even have bins where you can bring in old gadgets.
- Donate or Sell: If your device still works, consider donating or selling it. There are many charities or people that would be happy to have it.
- Return: Some companies let you return their products when you're done with them. They'll make sure it's either recycled or properly disposed of.

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Curriculum Connection
M.4

Questions Answer the questions below using evidence from the text

1) Why is it important to get rid of e-waste properly?

2) How can you get rid of your e-waste?

Draw Draw pictures of electronic waste below

True or False Is the statement true or false?

1) E-waste means unwanted electronic devices.	True	False
2) E-waste can include video games and televisions.	True	False
3) It's safe to throw e-waste in regular trash.	True	False
4) E-waste can contain harmful things like lead.	True	False
5) There are precious metals like gold in electronics.	True	False

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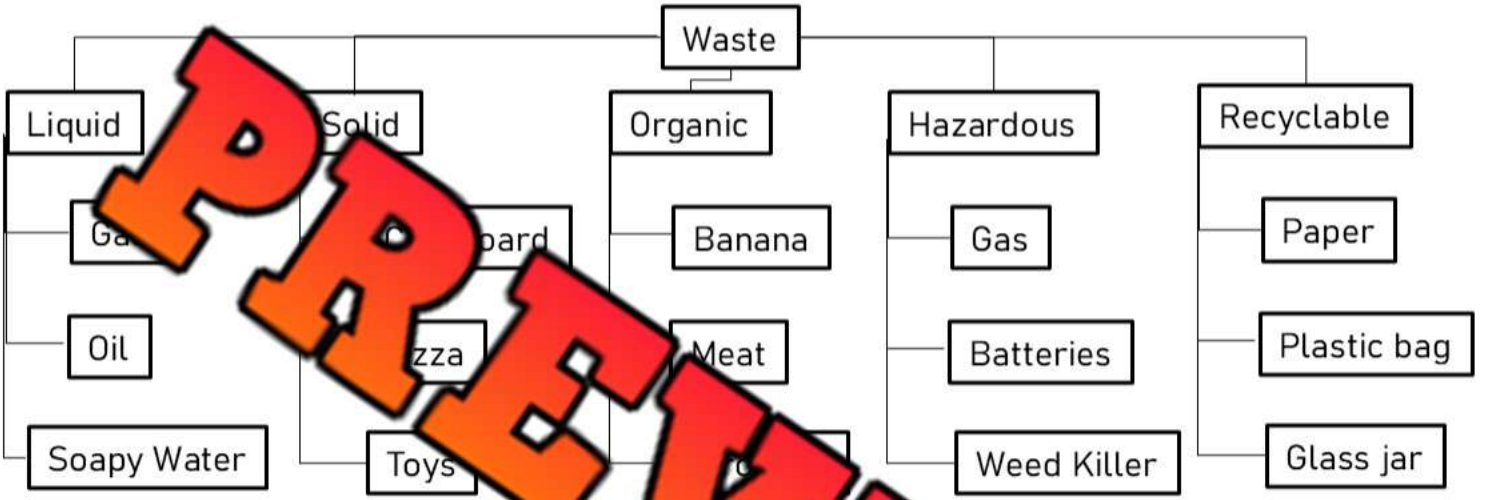
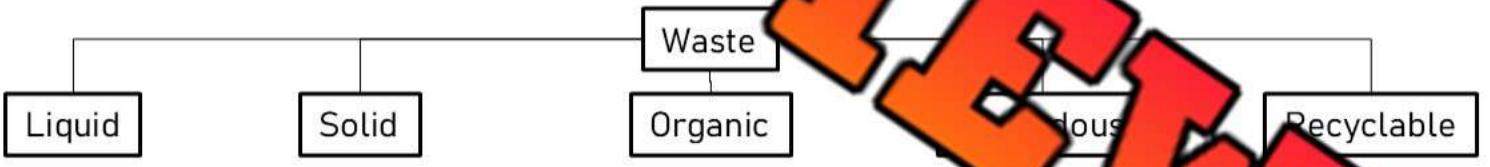
Curriculum Connection
M.3

Classifying Types of Waste

Classifying Types of Waste
All waste can be classified into one of the following 5 categories: liquid, solid, organic, hazardous, and recyclable. Some waste belongs to more than one category. For example, carboard is recyclable and is also a form of solid waste. Check out the example below of how waste can be classified.



Your Turn Come up with some examples of the forms of waste below



Did any of the waste you chose belong to two different categories of waste? Explain.

_____

_____

Name: _____ 93

Curriculum Connection
M.3

Identify the Types of Waste

Directions Circle the type of waste it is. There may be more than one option to circle.

 Soa[illegible]	Liquid Solid Organic Hazardous Recyclable
 Motor Oil	Liquid Solid Organic Hazardous Recyclable
 Pizza	Liquid [illegible] [illegible] [illegible] [illegible]
 [illegible]rdboard Box	Liquid Solid Organic Hazardous Recyclable
 Tin Can	Liquid Solid Organic Hazardous Recyclable
 Appl[illegible]	Liquid Solid Organic [illegible]azardous [illegible]able
 Old TV	Liquid Solid Organic Hazardous Recyclable
 Juice	[illegible] Solid Organic Hazardous Recyclable
 Glass Jar	Liquid Solid Organic Hazardous Recyclable
 Meat	Liquid Solid Organic Hazardous Recyclable

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Curriculum Connection
M.3

Memory Game – Match Terms and Definitions

Objective

What are we learning about?

Students will review and understand key terms by playing a memory match game. Each card shows either a vocabulary term or a short definition. Students will match the correct pairs and e[illegible]in the meaning in their own words.

Materi[illegible]

[illegible]u need for the activity?

- Set of Mem[illegible]a[illegible] cards [illegible] group (provided)
- A small table or clear [illegible]e flo[illegible]

Instructions

How will you complete [illegible]ivity?

1) Divide the class into groups of 3 or 4. Give e[illegible]roup [illegible]ry Game cards. (provided)
2) Have each group lay all the cards face down in a grid o[illegible]ble.
3) The students take turns flipping over two cards at a time, trying [illegible]ching term and its definition.
4) If a student finds a match, they remove those cards from the grid and keep them.
5) If the cards do not match, they are turned back over, and the next student takes a turn.
6) The game continues until all the cards have been matched.
7) After the game, review the terms and definitions with the class.
8) Discuss why these terms are important to understand and how they relate to the topic.

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Curriculum Connection
M.3

Cards | Memory Game Cards

liquid waste	Waste in liquid form, like wastewater, oils, or chemicals, needing treatment to protect nature.
so[illegible]e	Everyday trash we can touch, like wrappers, toys, paper. Some gets reused or recycled.
organic waste	[illegible]ural leftovers from pla[illegible]nimals, like food s[illegible]s a[illegible]es. Great for [illegible]p[illegible]g.
hazardous waste	Dangerou[illegible] batteries, paint, o[illegible]emicals that can harm people, animals, and water.
recyclable waste	Items that can be processed into new products, such as paper, glass, metal, and some plastics.

Name: _____ 96

Curriculum Connection
M.3

Cards | Memory Game Cards

e-waste	Old or broken electronics, like phones, computers, or TVs, needing special recycling to remove metals.
[illegible]	Canada's system of symbols and rules that teach safe handling of hazardous products at work.
toxic waste	[illegible] of hazardous waste th[illegible]ns living things; [illegible]ds c[illegible]storage and [illegible]sp[illegible]
landfill	A large, en[illegible]e where garbage is [illegible]ed and covered to protect soil and water.
incinerating waste	Burning waste in special furnaces to reduce volume and sometimes make energy; can cause pollution.

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Curriculum Connection
M.3

Cards | Memory Game Cards

consumerism	The habit of buying more and more things, which often creates extra packaging and waste.
co…g	Turning organic waste into nutrient-rich soil by letting it break down in a compost bin.
decomposers	…things like worms, f…d bacteria that b… do… matter into …nts.
biodegradable	Able to br… naturally int… …ess materials, often …th help from decomposers and moisture.
waste management	How communities reduce, collect, sort, recycle, treat, and safely dispose of different wastes.

Name: _____ 98

Curriculum Connection
M.2

Wasted Materials in the Classroom

When students bring a lunch from home, they often have things to throw out after lunch. If you look in the garbage after lunch, what things will you find? Are there any materials in there that could have been recycled?

When you put things in the garbage, it is either burned or put in a landfi[illegible]arbage goes to a landfill, it stays there forever, until it decomposes.

Questi[illegible]th[illegible] you see in the garbage after lunch?

	[illegible]me
1)	
2)	
3)	
4)	
5)	

Draw things you see in the garbage

Question Are there things that could have been recycled?

	Name
1)	
2)	
3)	

Draw things that could have been recycled

Plan – Less Waste in Our Class

Waste is not good for our environment. To make less waste in your class, here are some ideas you could do.

1) No waste lunches – bring only food that you will eat and eat all your lunch!
2) Use environmentally friendly packaging – get your parents to pack your l... with no single-use plastics. Instead, use reusable bags.

3) Set ... put food scraps in the compost, not the garbage
4) Use ... ss pap... ur teacher to print on both sides and use scrap paper for notes. Kee... G... S. bin ... is paper that is Good On One Side.

5) Use only reusab... ex... use a reusable water bottle
6) Don't throw things out, ... ins... you have things you don't want anymore, don't throw them ... stead ... em to other people.

Plan What can your class do to make l... aste?

	Ideas
1)	
2)	
3)	

Name: _____ Date: _____

Unit Test – Matter: Waste Unit

Multiple Choice /10

1) Compost can be made from: a) Fruits b) Metals c) Plastic d) Glass	2) Worms in compost help to: a) Eat b) Swim c) Sleep d) Decompose
3) E-W…es a) Appl… b) Tables c) Computers d) Books	4) Incineration means a) Using a landfill b) Recycling waste c) Using less …Burning waste
5) Plastics should be… a) Recycled b) Thrown in the garbage c) Incinerated d) Used a lot for packages	…ater is what type of waste? a) Li…Vast… b…wast… c) Ga…W… d) Hazardo…
7) Batteries are what type of waste? a) Liquid waste b) Solid waste c) Gas waste d) Hazardous waste	8) Cheese should be… a) Recycled b) Thrown in the garbage c) Incinerated d) Composted
9) Which is not one of the 7 Rs? a) Reduce b) Reuse c) Require d) Repair	10) Which can't be recycled? a) Chip bags b) Cardboard c) Tin can d) Plastic bottle

Define What do the terms below mean? Each question is worth 1marks.

Mark / 3

Term	Definition – What does it mean?
Waste	
Hazardous Waste	
Flamma Mate	

Short Answer qu s below – Each question is worth 2marks.

Mark / 6

1) Why is it helpful to re oys o s?

2) What is the role of the Lieutenant-Governor in A

3) Give 2 examples of each of the types of waste:

Solid:	
Liquid:	
Gas:	

Long Answer Answer the questions below – Each question is worth 5 marks.

Mark
/ 10

1) What can you do to reduce the amount of waste you make? Give at least 5 ways.

2) How is waste managed? Where does it go? Why is it bad for the environment?