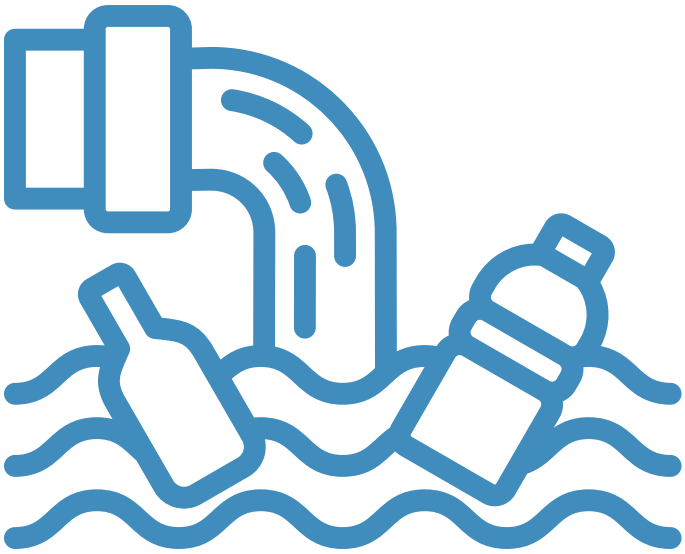
Junction Creek Stewardship Committee

Comité d'intendance du ruisseau Junction

# Stormwater Activity Book



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# Activity 1.1: What is a Watershed

## Overview:

This activity will introduce participants to the concept of a watershed while placing a focus on local watersheds.

## Learning Objective:

A**fter completing this activity, participants will be able to:**

- Define what a watershed is and identify what watershed they live in.
- Describe and identify the components of a watershed.

## Instructions:

1. Introduce the concept of a watershed.

**Prompt**: A large area of land that naturally absorbs water from rain and snow before draining into a nearby waterbody like a river, stream, or lake.

2. Provide participants with a copy of the DIY Watreshed Model sheet.

3. Ask participants if they know the name of their local watershed.

- Go to **https://shorturl.at/imX49** for an interactive map to find your local Sudbury watershed.
- Remind participants that even though we may not see water when we look outside our windows or walk down the street, we are always in a watershed that is connected to streams, rivers.

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## Instructions (cont.):

4. Ask participants to think about all the different things that might be found in a watershed.
• **Prompts**: Think of some examples of things that are living (e.g., people, plants, animals, bugs) and non-living (e.g., cars, parks, lakes, schools, houses, industry, farms, stores, storm drains). What about "things that are big and small" or "things that move and don't move"?

5. Introduce the topic of plastic pollution and litter in watersheds.
• Ask participants to think about the different kinds of plastic they use in their everyday lives.
• Explain to participants that these items can sometimes become litter, which means they can also be found in watersheds.
• **Prompts**: Think back to a rainstorm or a windy day, would it stay in the same spot? Is there something else that might happen?

6. Ask participants to complete the "Create Your Own Watershed Model" activity and follow prompts.

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# Activity 1.2: DIY Watershed Model

In this activity, you will be making a watershed model! Ever heard of a watershed? You may not realize it, but you are in one right now! A watershed is not only an area that we all live in, but it is a place that provides a habitat for wildlife on land and in water as well. It is a large area of land that naturally absorbs water from rain and snow before draining into a nearby waterbody like a river, stream or lake. The boundaries of a watershed are the mountains, hills, or other high points where land slopes toward the water.

## You will need:

- 2 sheets of A4 paper. Use paper from the recycling bin if you can!
- A spray bottle filled with water.
- Watercolour paint so the colours will run when they are wet - you'll need blue, brown, green, and red. Or substitute another colour if needed.
- A tray or towels to catch the water.

## Instructions:

1. Take one sheet of paper and crumple it up in your hands.

2. Open the paper, but do not flatten it. You want it to have some "relief" – some high and low places. The high places are hills, the low spots are valleys, and the wrinkles are streams and rivers.

3. With the blue paint, paint on the paper where you think the streams and rivers would be.

4. Check to see if you are right. Place the paper on a tray or towel. With the spray bottle, make it rain in the watershed.

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## Instructions (cont.):

5. Squirt a fine mist over the watershed model, enough to make water flow down the "hills". Did you draw the streams and rivers in the right places? Do you have a lake? This is how watersheds function, the water is shed by the land into streams, rivers, and lakes.

6. Now do the same thing with the second piece of paper, crumple it, then open it up but not too much.

7. Draw the streams and rivers with the blue paint. Maybe include a lake or two.

8. Next, use the brown paint and draw along the tops of the hills. With a green marker, you can draw in trees, grass, crops or pastureland. Use the red paint to draw towns, houses or businesses.

9. Place the "watershed" on a tray or towels and squirt it with water. You'll see streams again. But you'll now see a lot of other stuff (colours) running into the streams along with the water.*
Be sure to clean up when you are finished with your watershed models

*If this were a real watershed, the brown could be dirt from bare soil, the green could be grass clippings or leaves, and the red could be oil from leaky cars or fertilizer someone spilled on a driveway. That's what happens when things on the ground are picked up by stormwater runoff, they end up in streams or rivers – just like Junction Creek – and move down the watershed.

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# Activity 2.1: Stormwater & Pollutants

## Overview:

This activity will introduce what pollutants are and how they can make their way into our local waterwaysa. Participants will discover different sources of pollution in storm drains.

## Learning Objective:

- Understand what a pollutant is and provide examples.
- Identify the sources of plastics and other pollutants in their local waterways.
- Describe examples of common pollutnats and what type of sources they might originate from.

## Set-up:

- Print the accompanying worksheet and grab a pen or pencil.
- Print a copy of the 2-sided game pieces (included below), cut them out
  - There are 10 game pieces in total.
  - Matched sources are directly below the pollutants


*Matched sources are directly below the pollutants

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## Instructions:

1. Ask participants if they have heard of a pollutant before and ask them to share what they think it might be before sharing the actual definition.

2. Introduce the concept of pollution and pollutants to participants.
**Prompt**: Pollution is the introduction of harmful materials into the environment. These harmful materials are called pollutants – they can be natural or created by human activity, such as litter or runoff.

3. Ask participants to write down on their worksheets how they think pollutants enter waterways such as Junction Creek.
**Prompt**: Pollution enters water bodies in a number of ways, including our city's storm drain system.

4. Explain that litter can be an example of a pollutant and remind participants of the 3D watershed model they made in Activity 1 – the different colours can also be causes of pollutants.

5. Ask participants to think of some examples of litter in stormwater and write them down on their worksheets.

6. The next activity will be a game where participants will match pollutants to their sources.

7. Explain that these types of pollutants are commonly found in Sudbury's storm drains and can come from things they might find in their homes or schools!

8. Ask participants to match the types of litter to their sources.
Did you know that cigarettes are a type of plastic pollution?

9. Did you get it right? If not, don't worry, you can always play again!

10. Ask participants to complete the reflection on the included worksheet.

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# Activity 2.2: Watersheds & Pollutants

In a watershed, you can see many examples of litter, in a lot of different places. The types of litter we find can give us clues about where they came from and how they got there!

**How do you think pollutants enter waterways such as Junction Creek?**

**What are some common types of litter you think can be found in a watershed?**

**REFLECTION: What are some other litter items you may find in Sudbury and where might they have come from?**

**REFLECTION: What are YOUR most common sources of litter and how can you reduce them?**

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# Activity 3.1: Solutions to Plastic Pollution

## Overview:

This activity will introduce participants to ways they can reduce their environmental impact when it comes to plastic pollution.

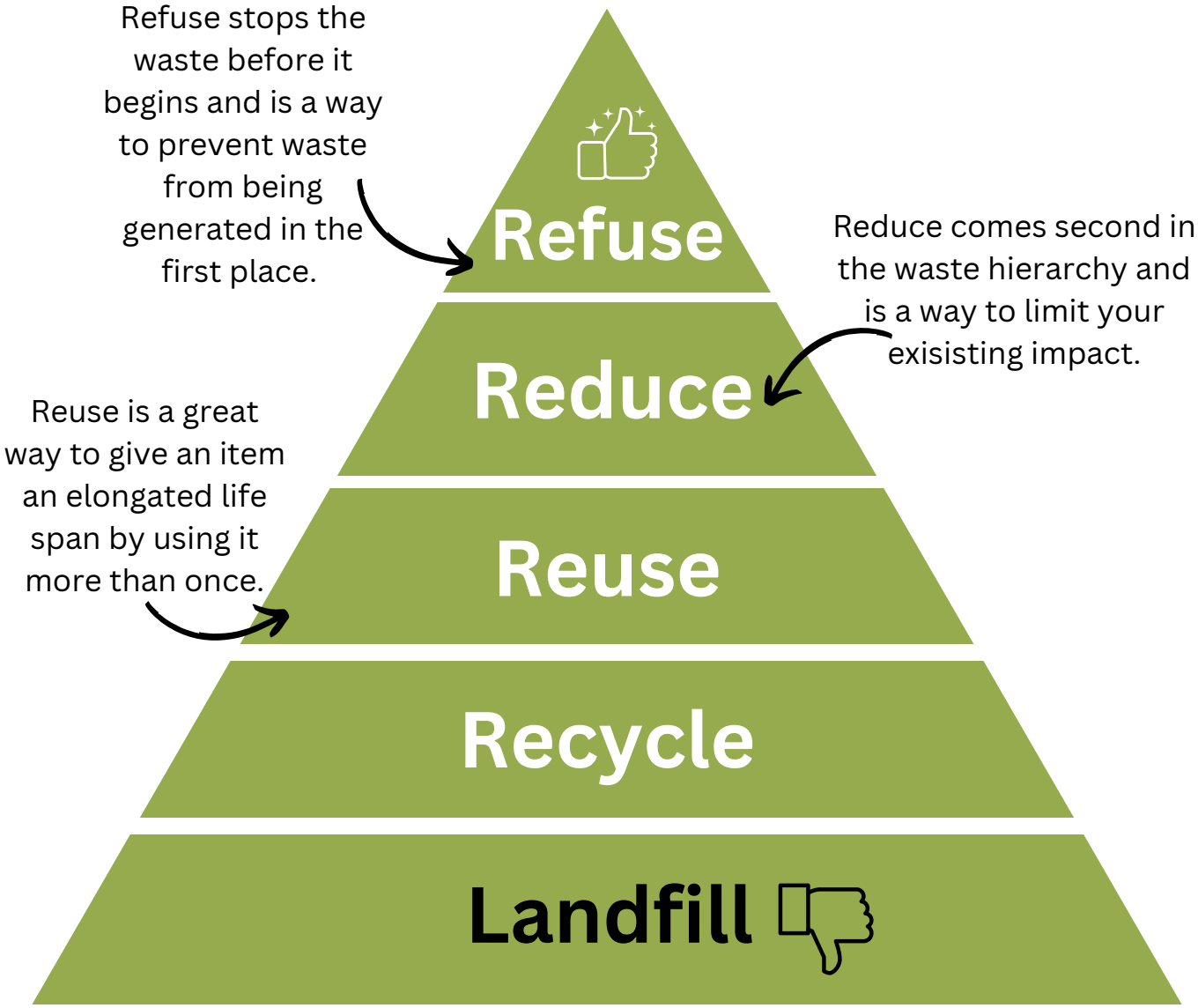
## Learning Objective:

A**fter completing this activity, participants will be able to:**

- Track how much waste they produce in their everyday lives.
- Identify ways they can reduce their own plastic pollution.

## Instructions:

1. Introduce the waste heirarchy (included below).
**Prompt**: All actions are impactful, try to do your best to stay in the top four sections of the heirarchy!
2. Ask participants to identify which level they use most frequently.
3. Share JCSC's "Cleaning up Junction Creek" and emphasize the impact of plastic pollution.
**Watch**: https://bit.ly/JCSCcleanup
4. Provide a copy of the "Junk-free Creek Challenge".
5. Try out the challenge and see how much waste you produce!
6. Once you've completed the challenge, go back to the waste heirarchy and see if your habits have changed.




# Waste Heirarchy

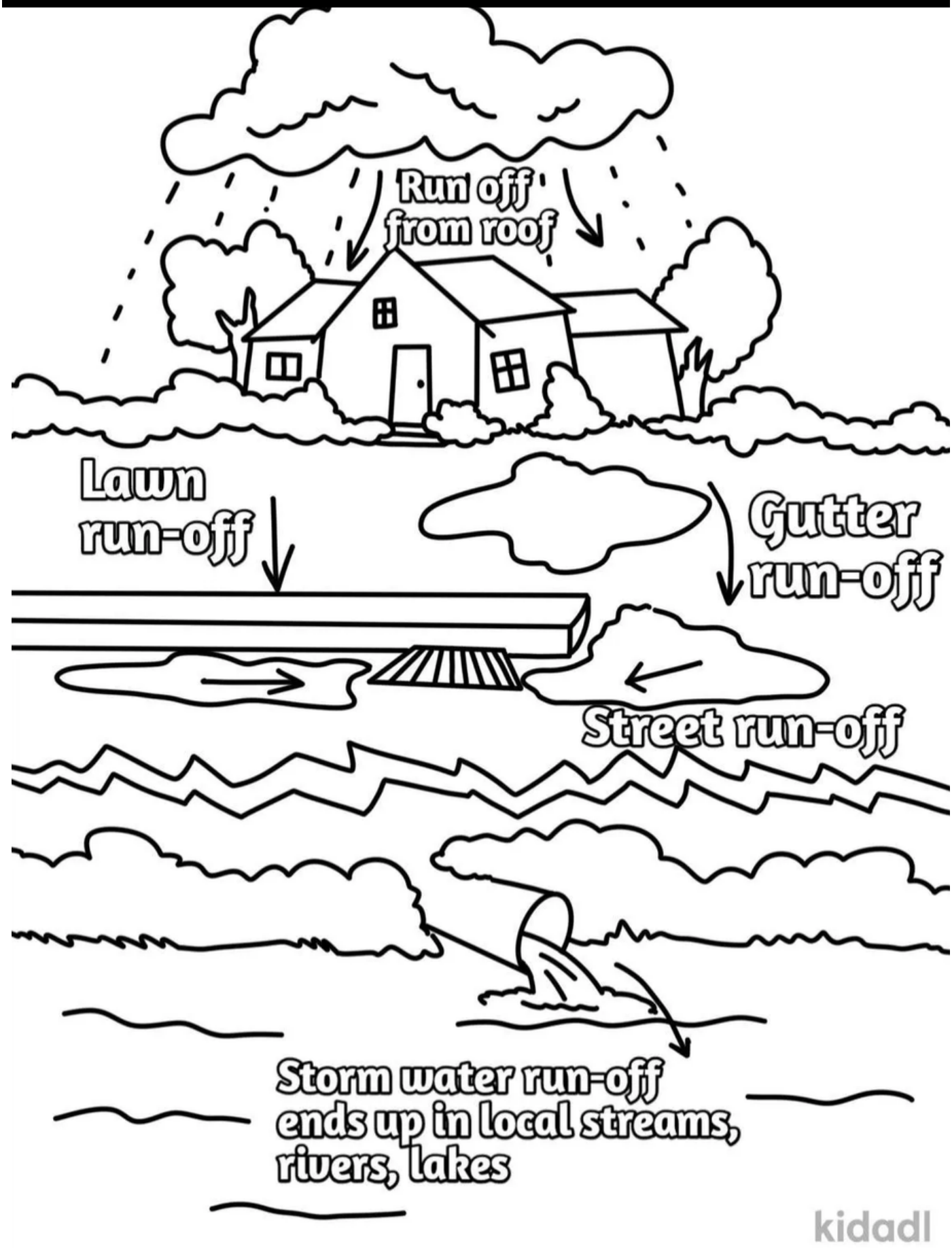
# COMMON LITTER FOUND IN STORMWATER

JUNCTION CREEK STEWARDSHIP COMMITTEE

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

Gum
Processed wood
Rubber
Soft plastic
Cigarettes
Glass
Ploystyrene
Fabric
Hard plastic
Paper
Metal foil
Food wrappers

# Storm drains flow directly into local waterways



# Ways to reduce stormwater pollutants at home