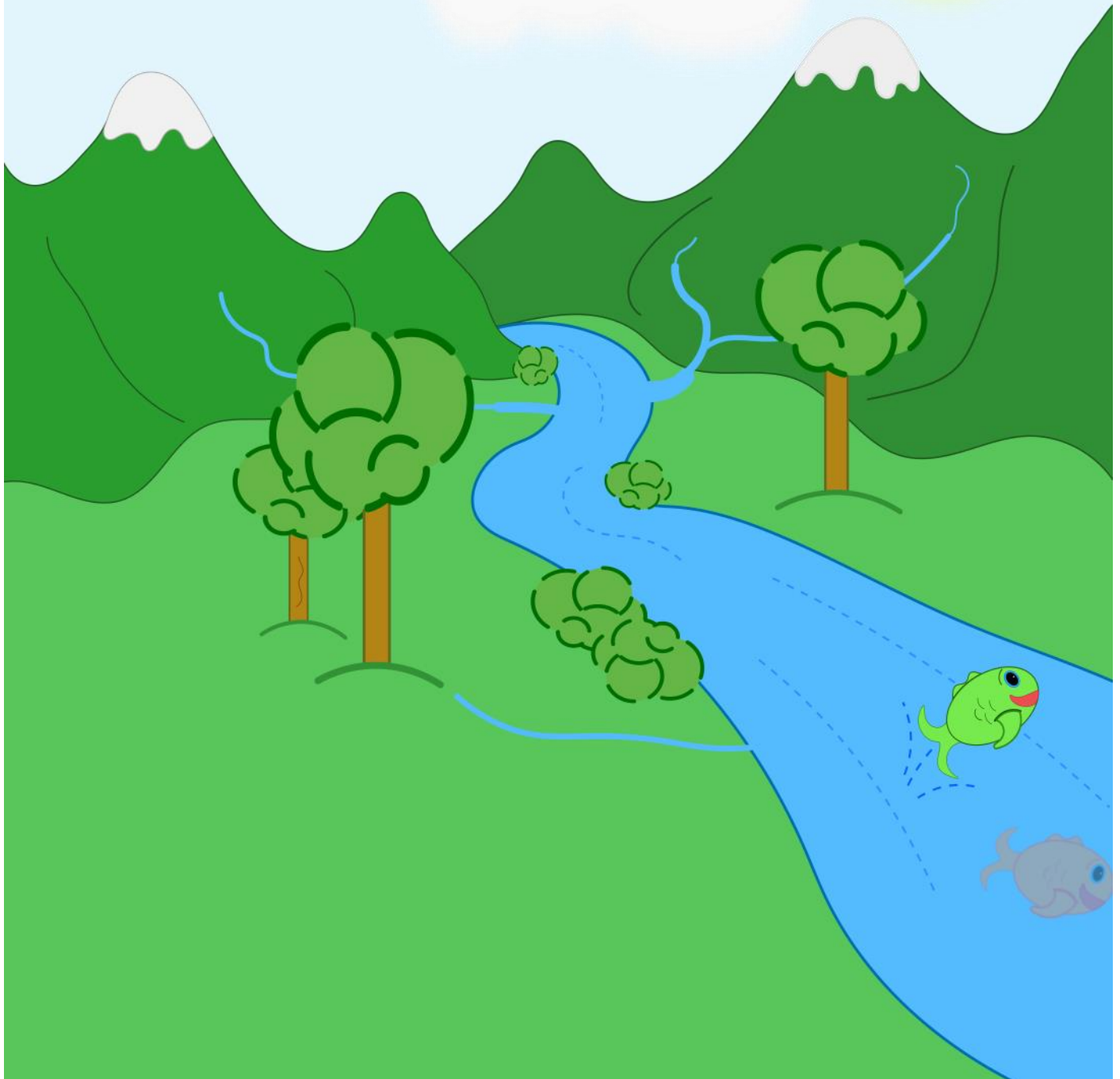


Ness' Watershed Detective Agency

A Water Quality Activity Book

Written and Illustrated by Greater Egypt
Regional Planning and Development Commission



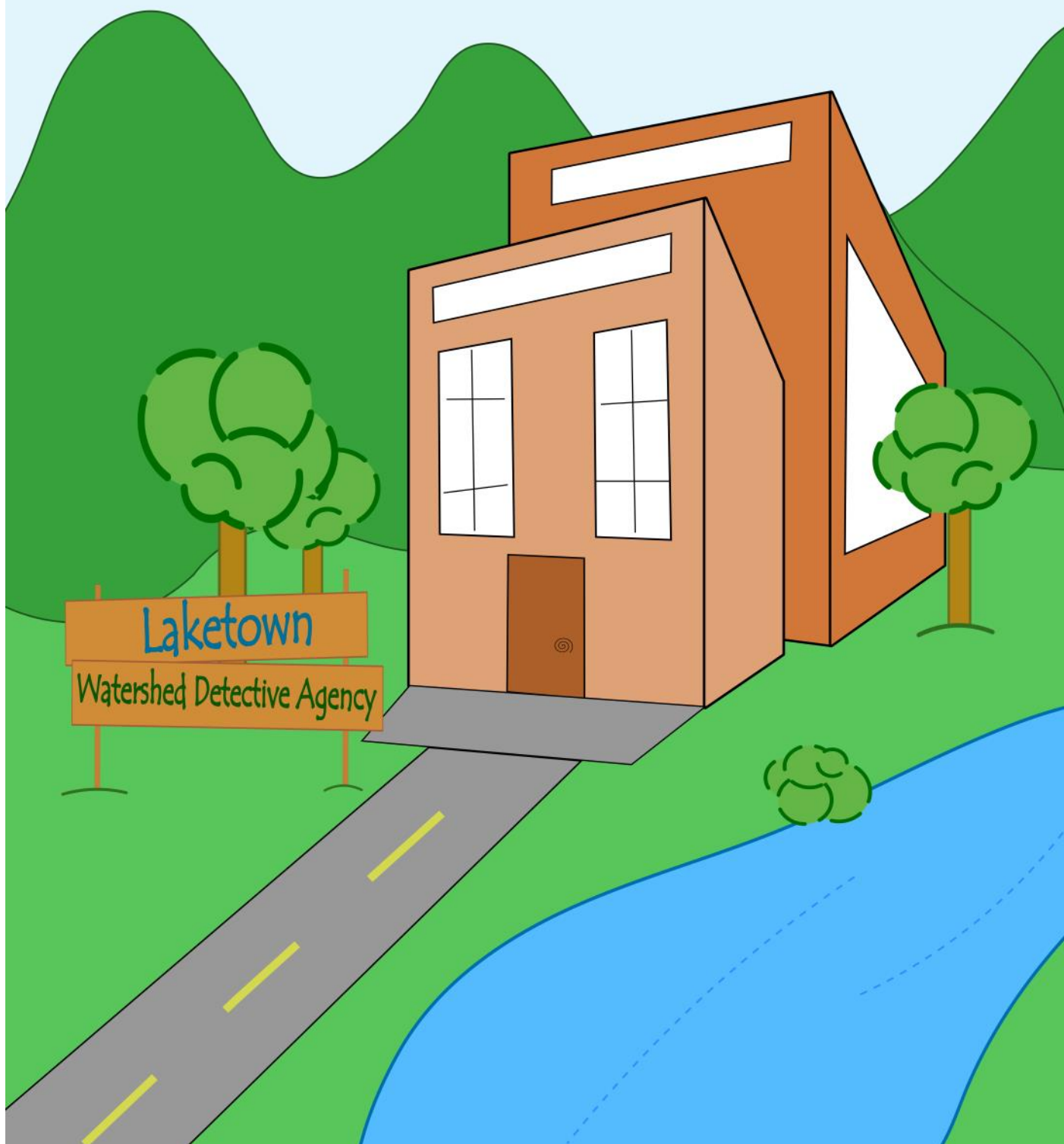
We all live in a watershed. A watershed is an area where all water flows to a certain point. This is usually a stream or lake.



Throughout this book, highlighted words will appear in the magnifying glass with an explanation!



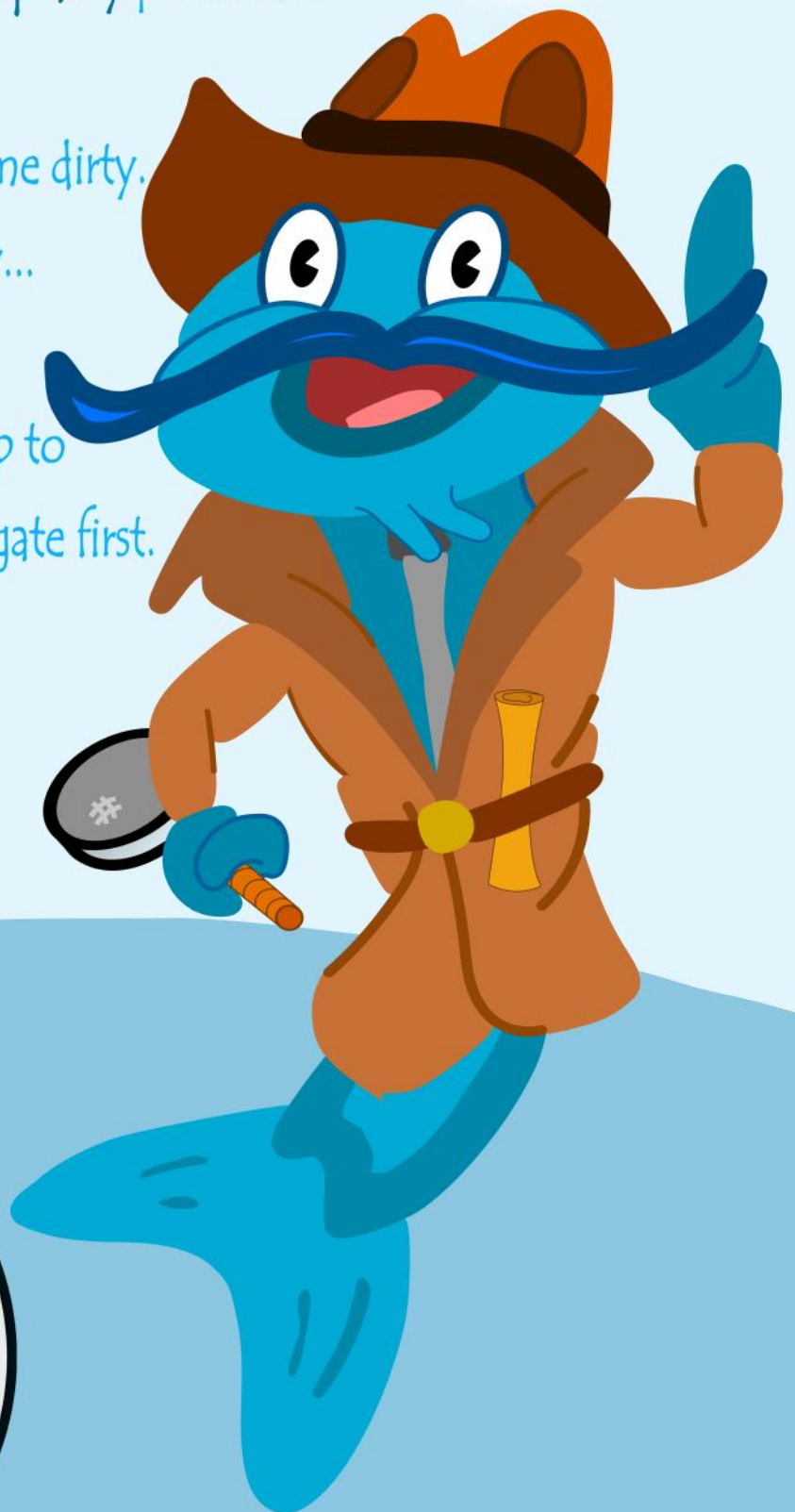
This is the Laketown Watershed Detective Agency.
Detectives in the agency solve the town's watershed problems.



This is Ness. He is the detective of Laketown.
He solves the town's water quality problems.

The lake has recently become dirty.
It is his job to find out why...

Ness looks at the town map to
figure out where to investigate first.



Water Quality describes the health of a waterbody such as a lake or stream. This could include how many pollutants are in a waterbody. It is important to have good water quality for drinking water!





Laketown

-  Residential Section
-  Golf Course
-  Factory
-  Farm
-  Watershed Detective Agency
-  Waterbody
-  Road
-  Bridge

Cocoa lives in the residential section of Laketown.
Ness asks Cocoa if she has seen anything unusual.

"When it rains, the stormwater runoff goes into the storm drain," she says.
"The water carries anything left on the ground including car oil and yard fertilizer."



Stormwater Runoff is water that moves across the ground from rain. This water can collect pollutants and chemicals and flow into storm drains. This eventually leads to waterbodies such as a lake.



Stormwater Runoff Word Search

Find the items that can be washed away by stormwater runoff!

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

CHEMICALS
LEAVES
OIL
SOAP

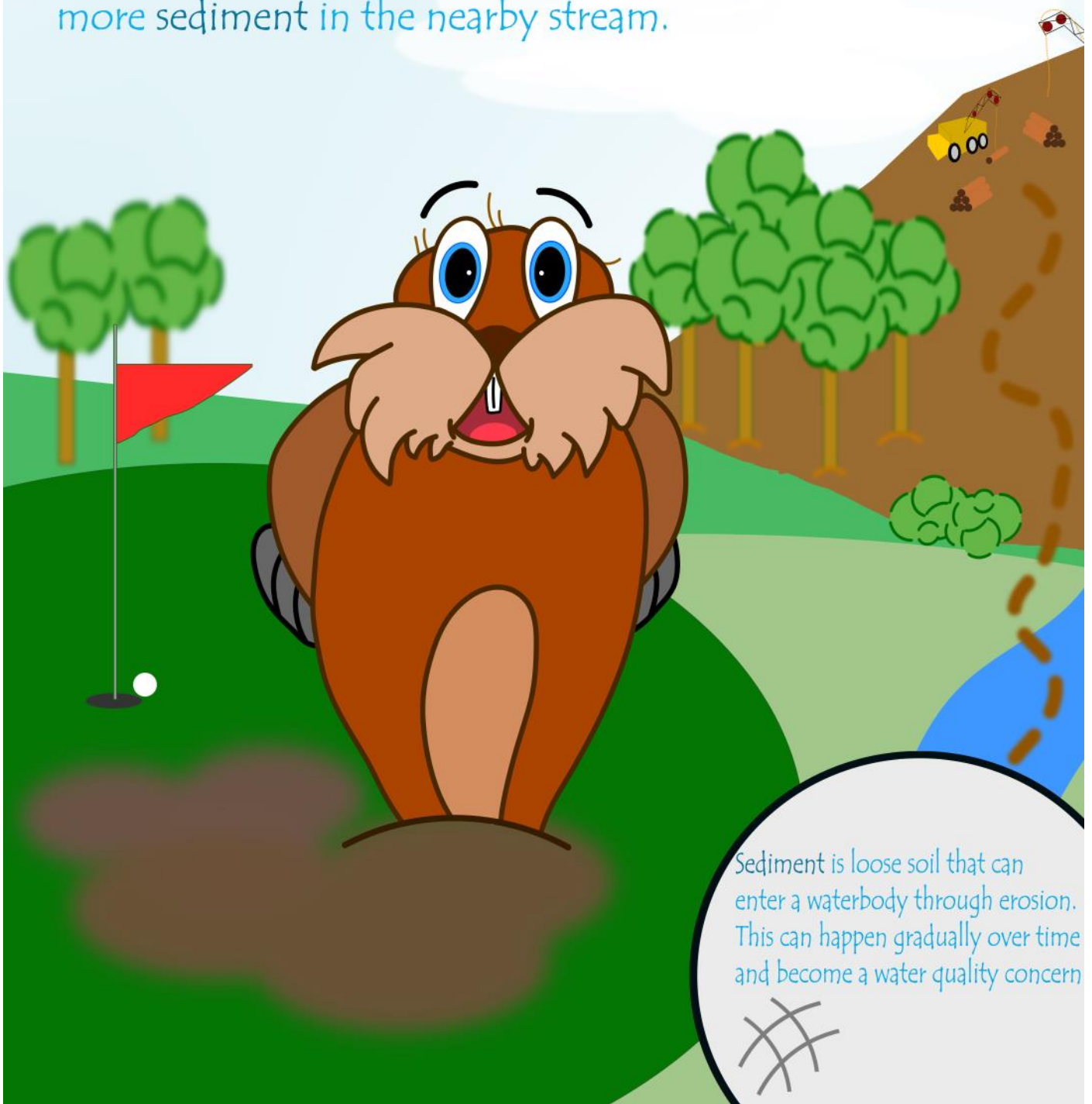
FERTILIZER
LITTER
PESTICIDES
POLLUTANTS

GAS
MANURE
SOIL
WASTE



Murray the Gopher lives on, or rather,
under the golf course.

Along with the noise from construction,
he has also noticed fewer trees which means
more sediment in the nearby stream.



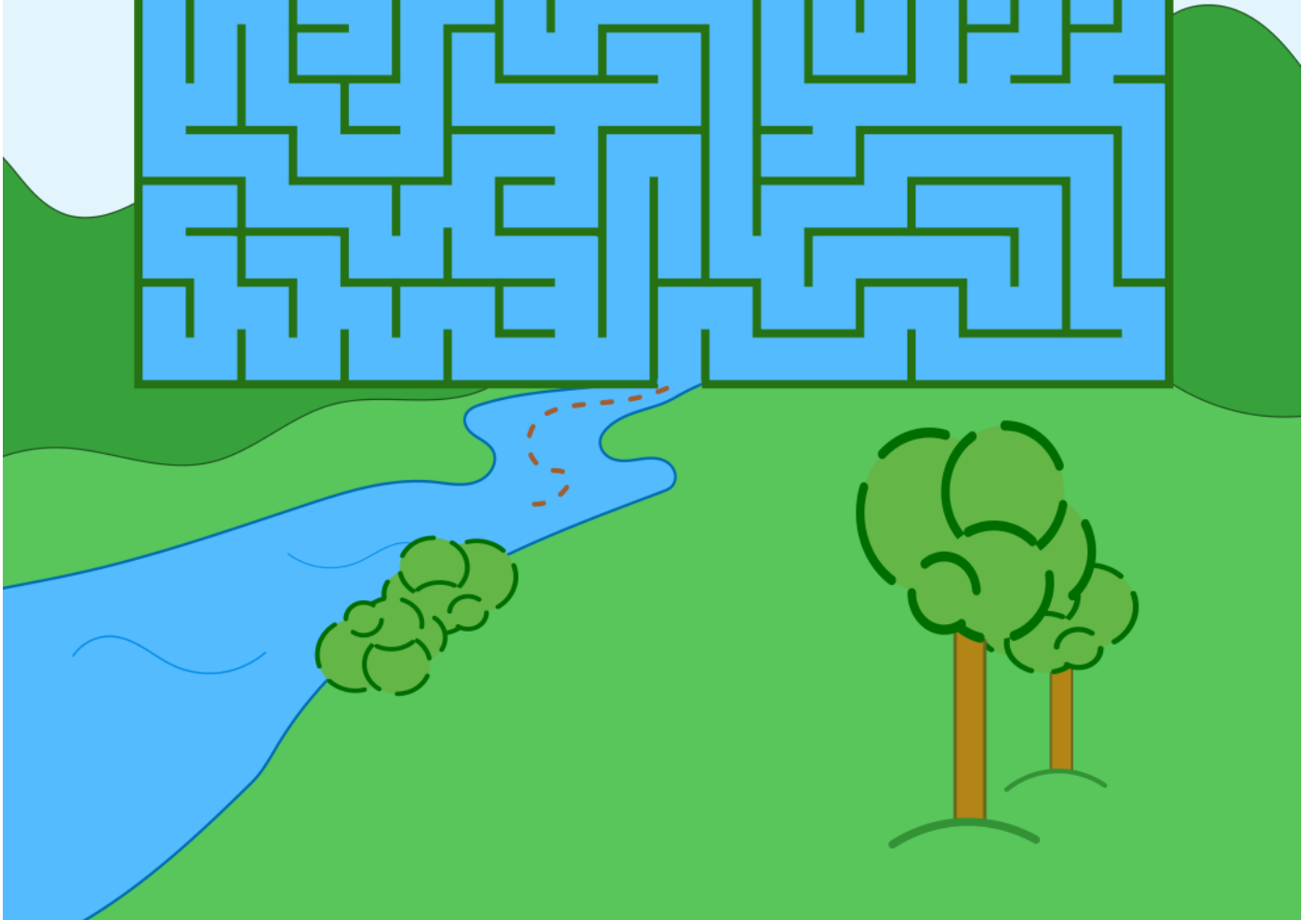
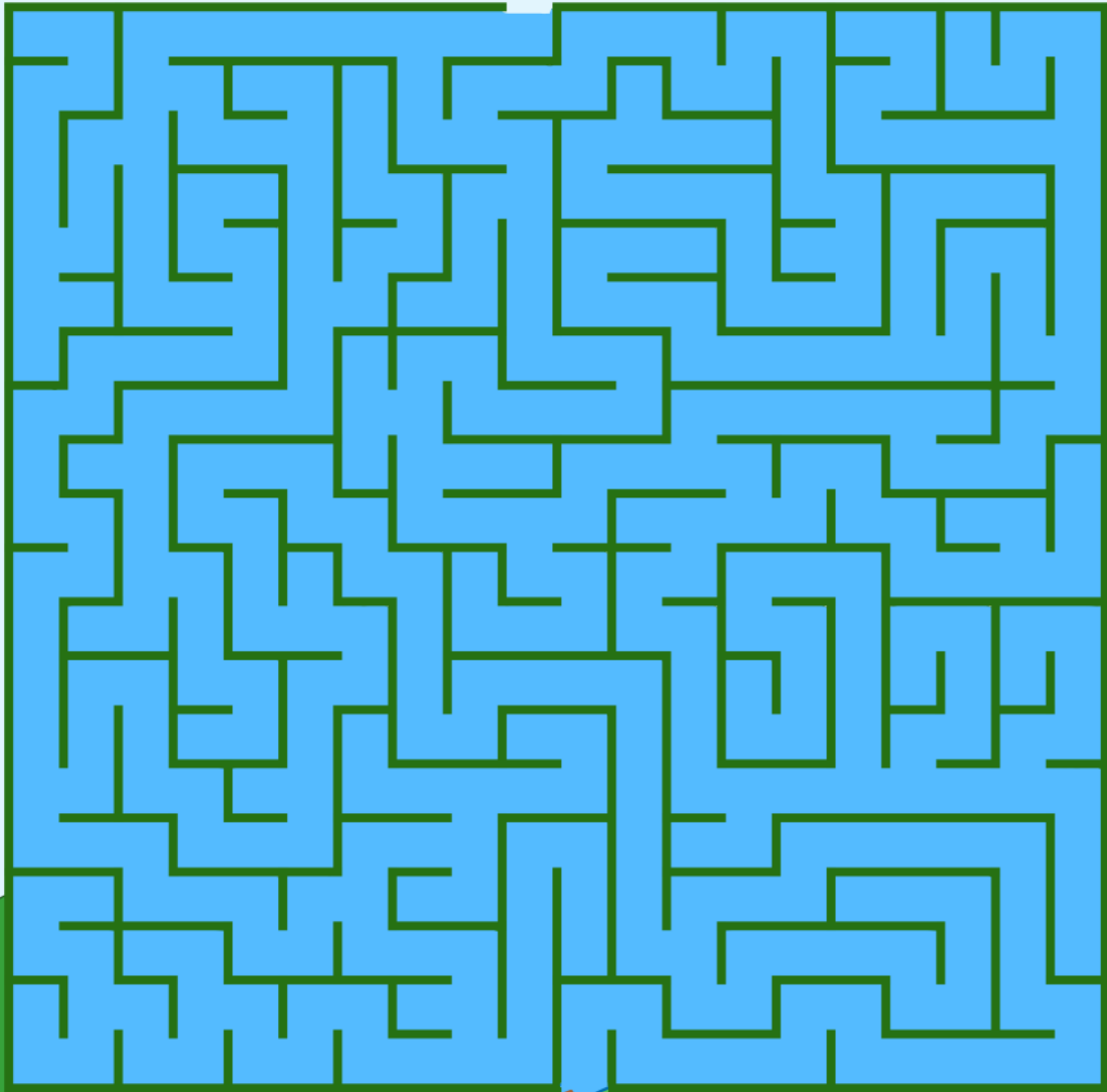
Sediment is loose soil that can
enter a waterbody through erosion.
This can happen gradually over time
and become a water quality concern



Sediment Maze

Track the sediment through the stream maze to see where it goes!

Start



Ness thinks about the information
from Cocoa and Murray.

"Where could all of the runoff and
sediment be going?" Ness wondered.



Fill in the Blank



Help Ness remember the information to complete the puzzle!
Use the words in the word bank to fill in the blanks.



Word Bank

Sediment

Storm Drain

Fertilizer

Watershed

Stormwater Runoff

Waterbody

Water Quality

Question

1. A _____ can be a lake, stream, or pond.
2. When it's raining, _____ flows to a storm drain or can be carried into a waterbody.
3. _____ is used on grass and can be washed away by stormwater runoff.
4. A _____ receives water when it is raining.
5. _____ refers to the health of a waterbody.
6. A _____ is a large area where all water flows into a larger body of water, such as a lake or creek.
7. _____ can flow into a stream because of erosion.

Ness heads to the factory to get more clues. There, he meets Dana.

"The pollution discharging from the factory is making it hard to swim and breathe," said Dana.

Ness notices the polluted water is being carried down the stream.

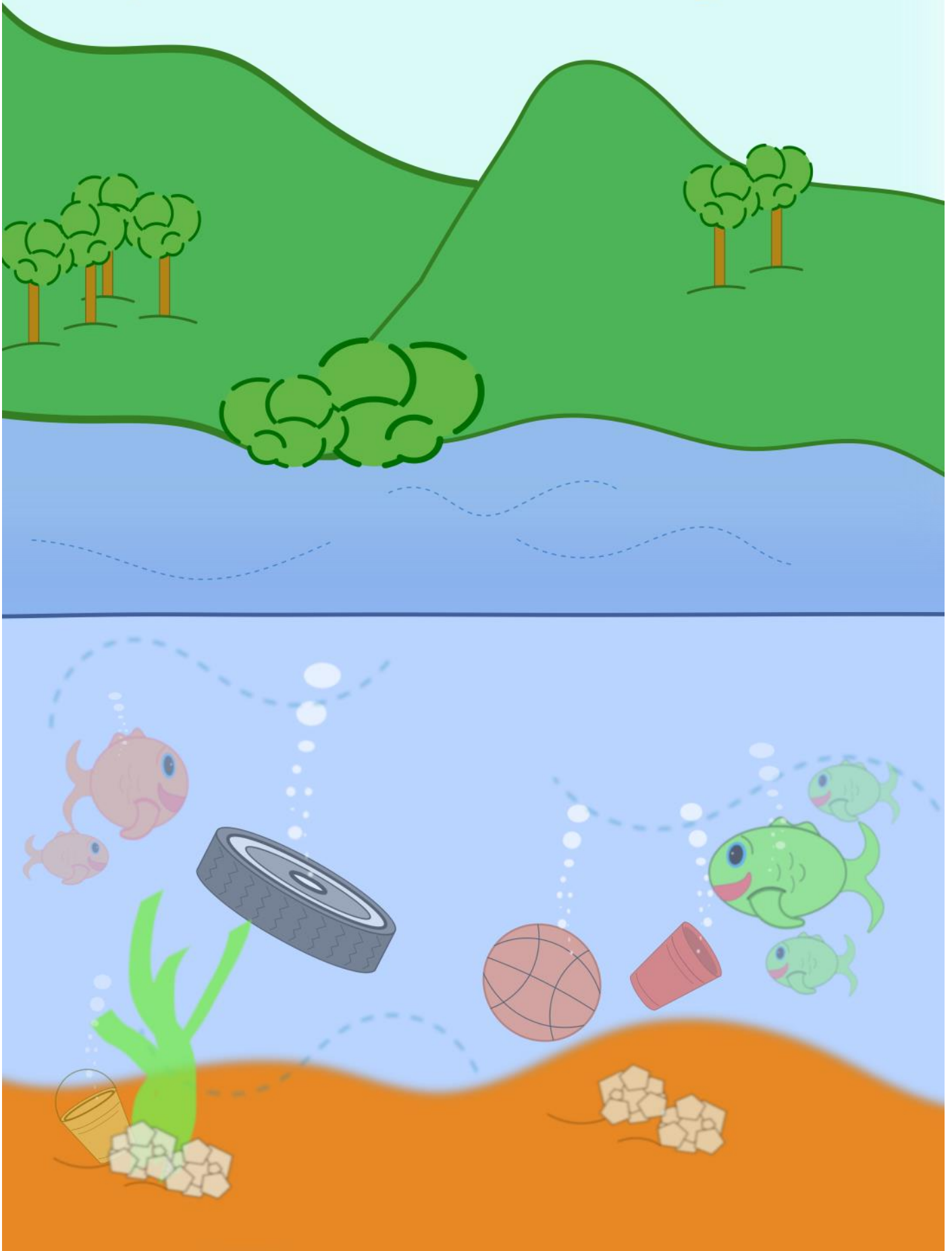


Discharge is water that usually comes from a pollutant source. This could be a factory, coal mine, or water treatment plant. The discharged water sometimes contains pollutants.



Hidden Objects

Help Dana circle all of the items that do not belong in the stream!



Ness decides to visit the Laketown Farm.
While investigating, he meets Patty.

"Have you noticed anything unusual with the water?" asked Ness.

"When I play in the stream, it seems to get pretty dirty.
Waste from the other animals also
gets into the stream," said Patty.



Waste is made from all animals. Also referred to as "poop", waste can be very bad for water quality if it gets in a stream or lake.



Secret Message

Uncover the secret message by using the clues below

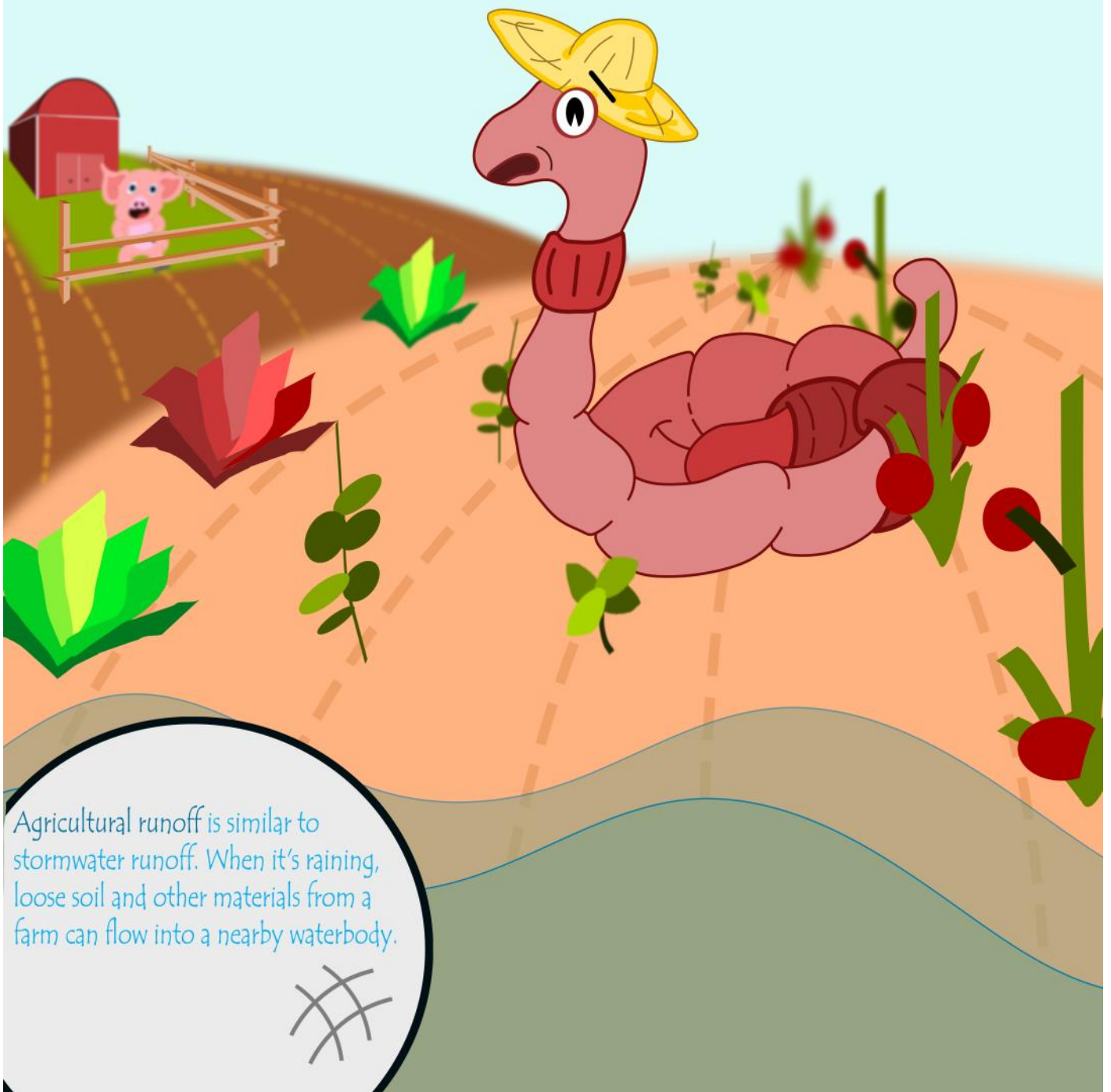
A	B	C	D	E	F	G
H	I	J	K	L	M	N
O	P	Q	R	S	T	U
V	W	X	Y	Z		



While on the farm, Ness visits Willy.

“The soil from the fields is eroding and ending up in the lake!” said Willy.

Ness explains to Willy that this is called agricultural runoff.

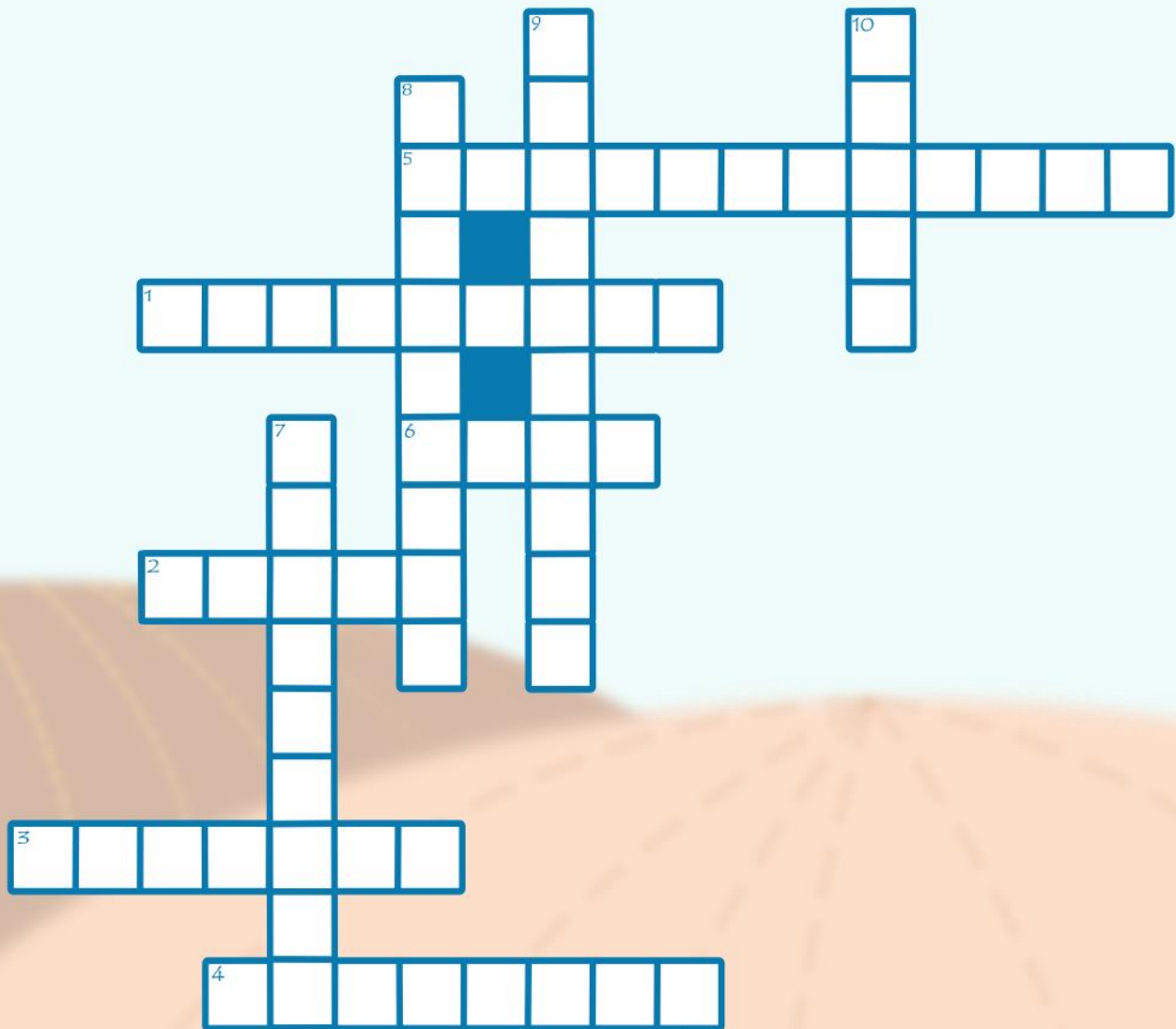


Agricultural runoff is similar to stormwater runoff. When it's raining, loose soil and other materials from a farm can flow into a nearby waterbody.



Crossword

Use the clues to figure out the words in the puzzle!



Across

1. The part of lake where the water meets land.
2. This can be trash but also something that all animals create.
3. A process that gradually degrades a streambank.
4. Eroded material that can be carried down a stream.
5. Type of runoff that is carried by rain over a farm field.
6. Material on a farm's surface that can be eroded by heavy rainfall.

Down

7. This keeps bugs off of crops and can also be washed away by rain.
8. The area of land that drains to a waterbody.
9. Nutrients for plants that can also be washed away by rain.
10. The health of a waterbody, such as a lake or stream is called _____ quality.

Ness thinks about all of the places he's investigated...

Stormwater runoff from the house...



Sediment from construction...



Discharge from the factory...



Waste from the barn...



Agricultural runoff from the farm...



"There must be a link between these events and the lake's water quality", Ness wondered.

"AHA!" Ness exclaims.

He takes out the map to draw where the water goes.

Connect The Dots

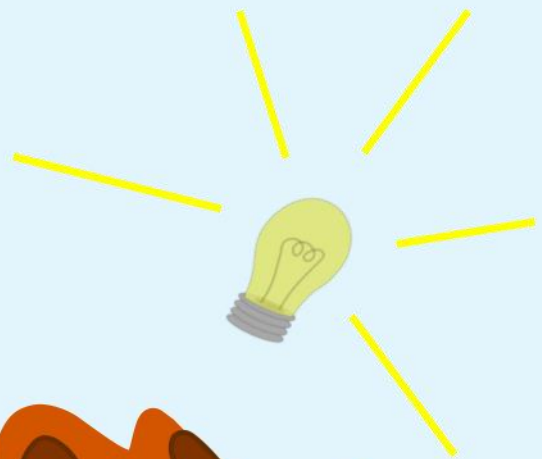
Help Ness connect the dots to find out where the water is draining!



"All of the water in our watershed drains to the lake. Anything that is put in the streams will end up in the Laketown lake," Ness explained.

Ness has some tips for the lake to stay healthy...

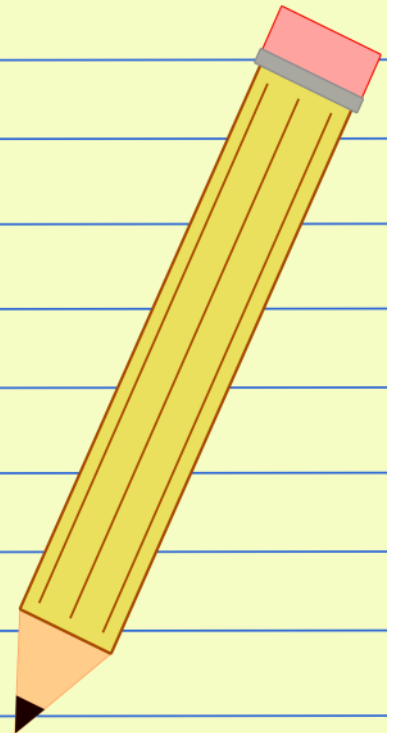
1. Watch out for stormwater runoff. Pollutants can drain into streams and eventually go to the lake.
2. Construction sites should create a barrier for sediment.
3. Discharges should be monitored to make sure the water is clean.
4. Pick up after animals so their waste does not runoff into waterbodies.
5. Farmers should use fertilizer and pesticides sparingly.





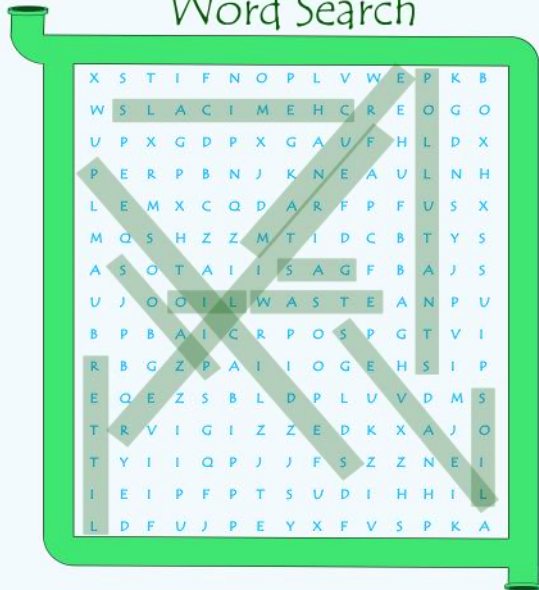


Notes

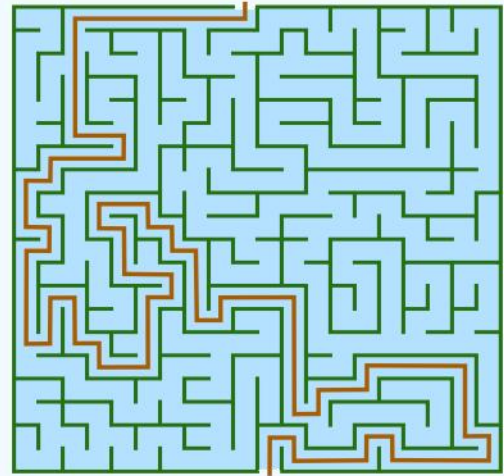


Puzzle Answer Key

Word Search



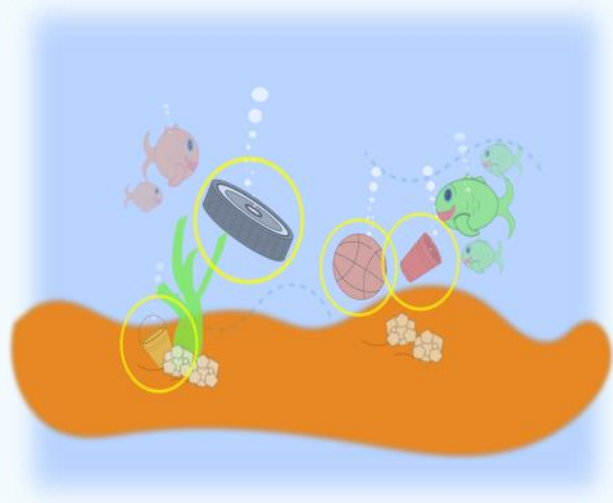
Maze



Fill in the Blank

- 1.) A waterbody can be a lake, stream, or pond.
- 2.) When it's raining, stormwater runoff flows to a storm drain or can be carried into a waterbody.
- 3.) Fertilizer is used on grass and can be washed away by stormwater runoff.
- 4.) A storm drain receives water when it is raining.
- 5.) Water quality refers to the health of a waterbody.
- 6.) A watershed is a large area where all water flows into a larger body of water such as a lake or creek.
- 7.) Sediment can flow into a stream because of erosion.

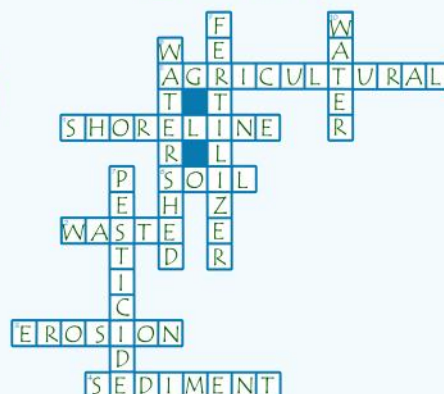
Hidden Objects



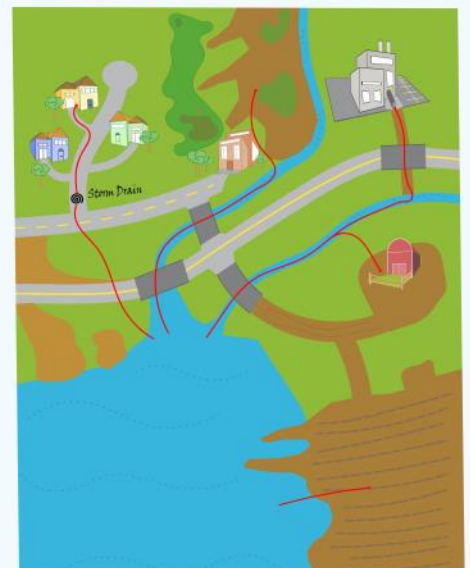
Secret Message

CLEANING UP WASTE
FROM ANIMALS CAN
IMPROVE WATER
QUALITY

Crossword



Connect The Dots





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