



ENGINEERS &
GEOSCIENTISTS
BRITISH COLUMBIA

DoodleBook

Shaping the world we live in through engineering and geoscience



For Parents/Educators:

This book is designed to be an interactive learning tool for your children/students to explore careers in engineering and geoscience. It includes a variety of activities that encourage kids to use their problem-solving skills and creativity, all while having fun.

If you would like to download a digital copy of this book, please visit egbc.ca/youth.

Who we are:

Founded in 1920, Engineers and Geoscientists British Columbia is the regulatory and licensing body for the professions of engineering and geoscience in BC. With over 34,000 members, we are one of the largest professional associations in BC. Our members maintain high academic, experience, and professional practice standards to keep the public safe.

For more information about Engineers and Geoscientists BC, please visit our website: egbc.ca.

Illustrated by Fernanda Ribeiro.



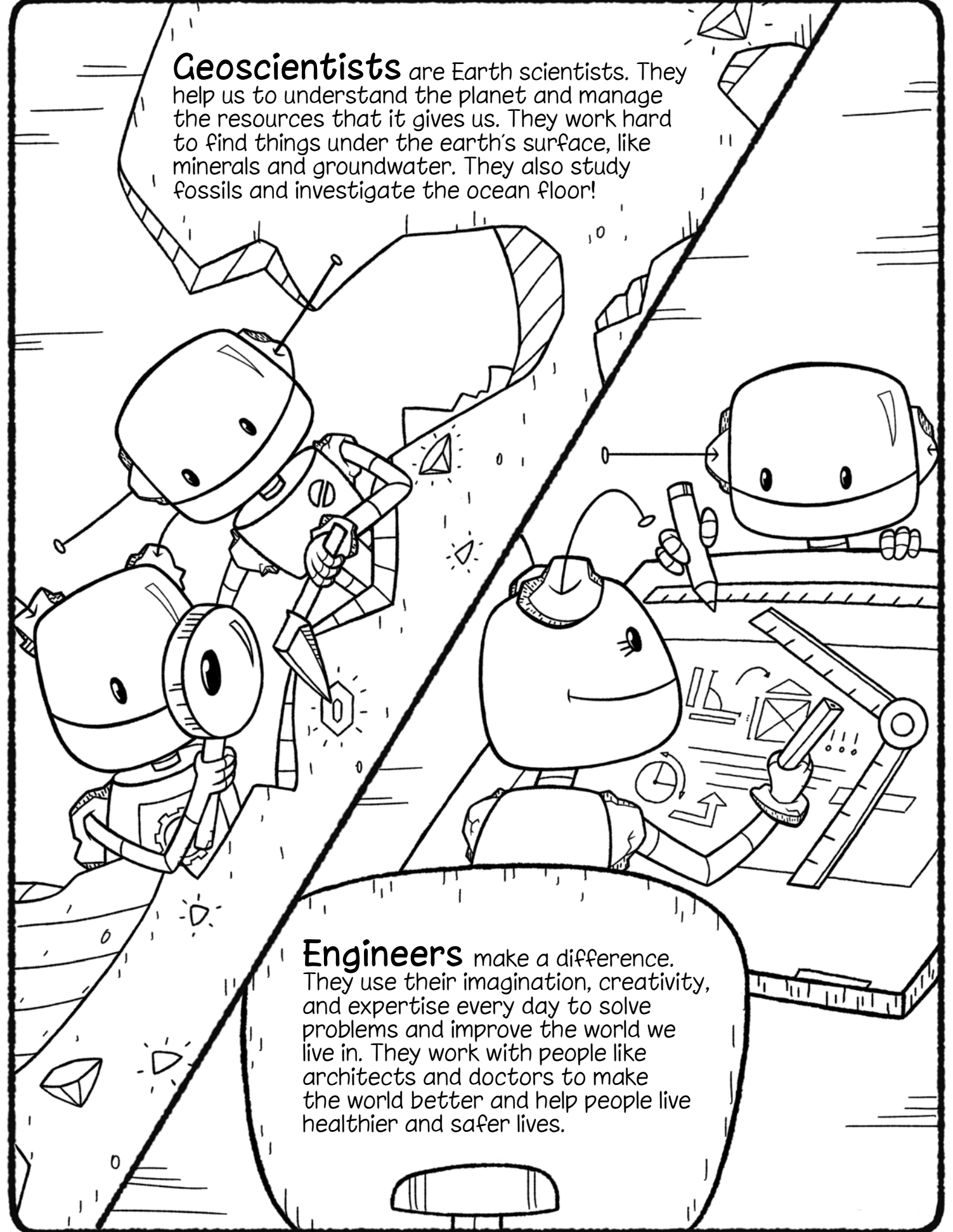
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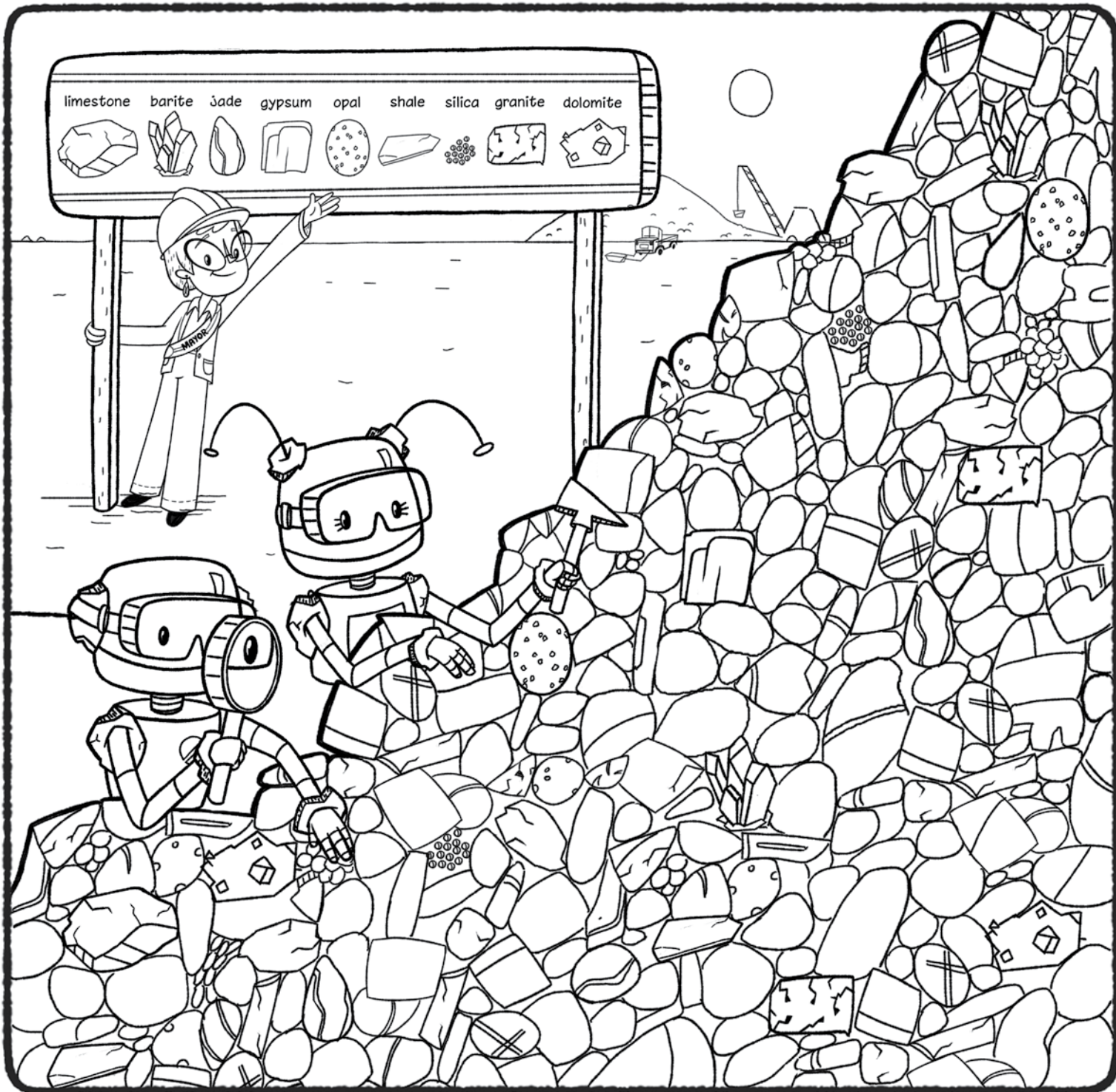
Hello there! This is Cog and Shaley. They are students in a little town called Innovatown, BC. They are curious to see the different kinds of engineering and geoscience at work. The mayor of Innovatown is overwhelmed with many different projects. She has asked Shaley and Cog to fix some projects around town that she can't quite figure out. Do you think you can help, too?



Geoscientists are Earth scientists. They help us to understand the planet and manage the resources that it gives us. They work hard to find things under the earth's surface, like minerals and groundwater. They also study fossils and investigate the ocean floor!

Engineers make a difference. They use their imagination, creativity, and expertise every day to solve problems and improve the world we live in. They work with people like architects and doctors to make the world better and help people live healthier and safer lives.

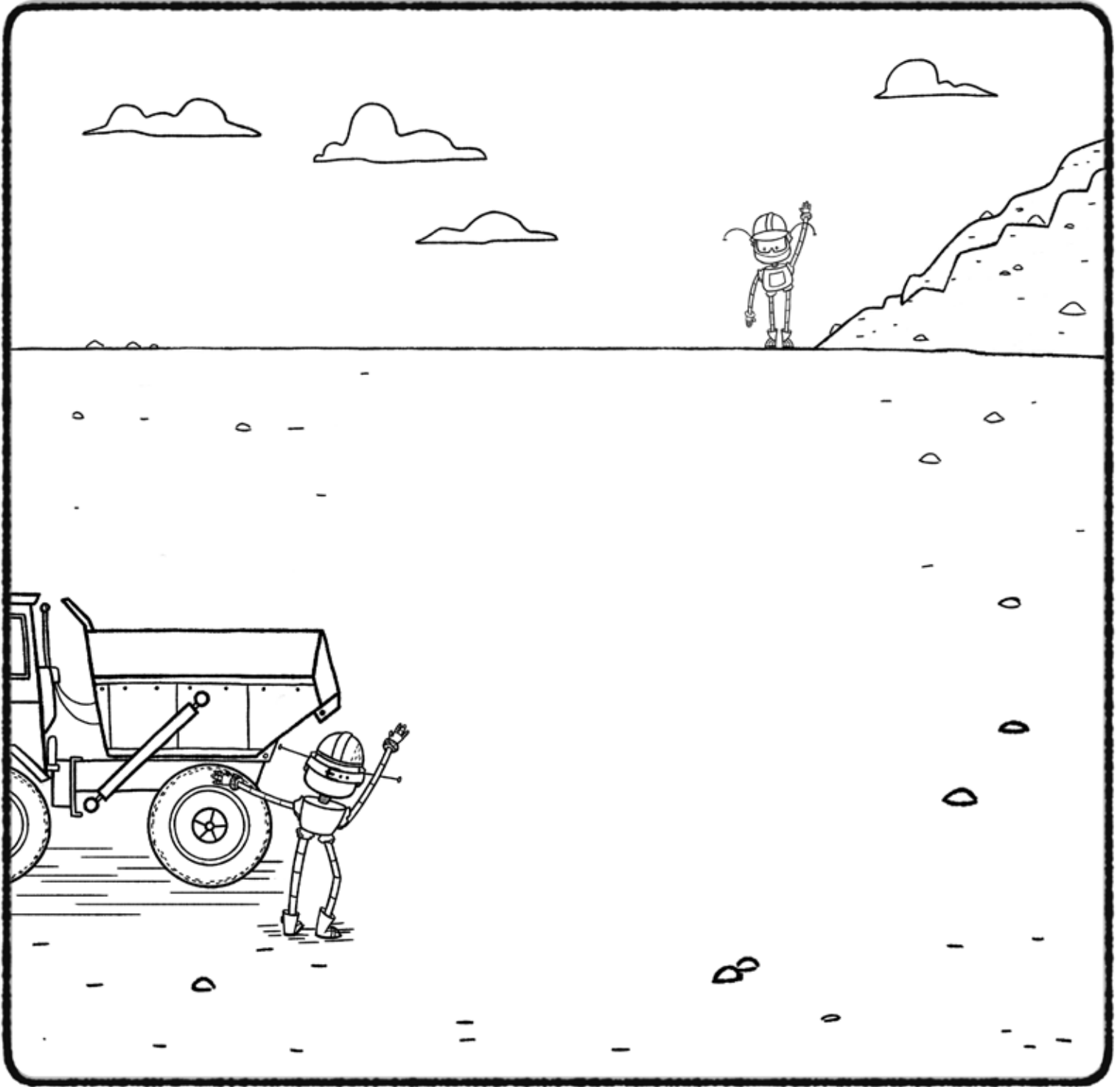
• GEOLOGY •



Geologists study the earth: how it was formed, what it's made out of, its history, and how it looks, kind of like Earth detectives! Use your detective skills to find and circle the rocks and minerals shown on the mayor's sign. Can you help Cog and Shaley identify them? Only certain rocks and minerals are going to be sent to the manufacturing centre to be processed and made into the materials that we use!



INDUSTRIAL ENGINEERING

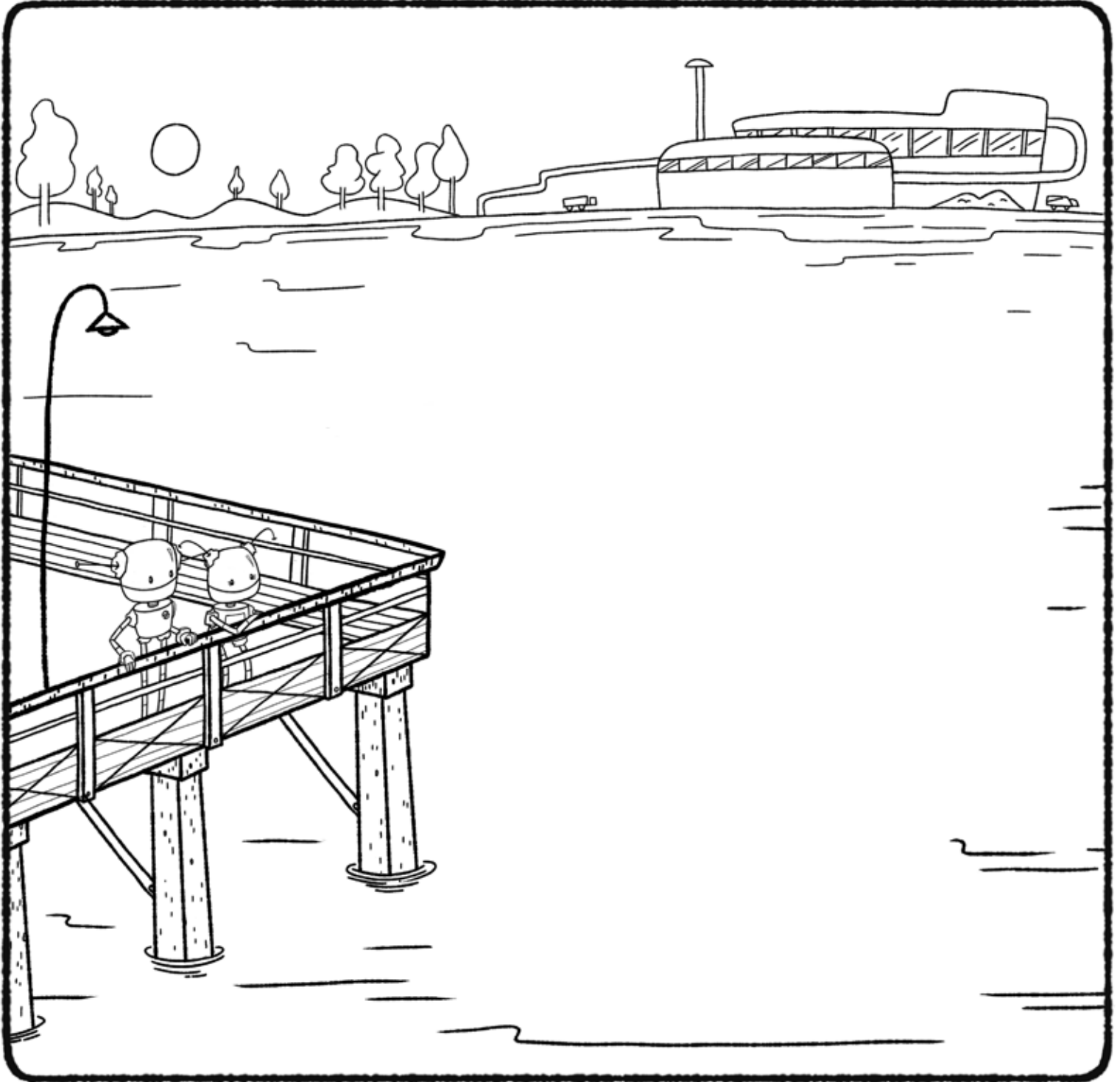


Industrial Engineers are the people who figure out how to make things better. They find ways to make tools, objects and other things smarter, better, faster, safer, and easier for the people and companies that need them. Shaley and Cog have noticed that the conveyor belt that moves the rocks and minerals from the quarry to the truck is very slow and old. Can you help them design a new one to transport the rocks and minerals from the quarry to the waiting truck?



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• MARINE ENGINEERING •

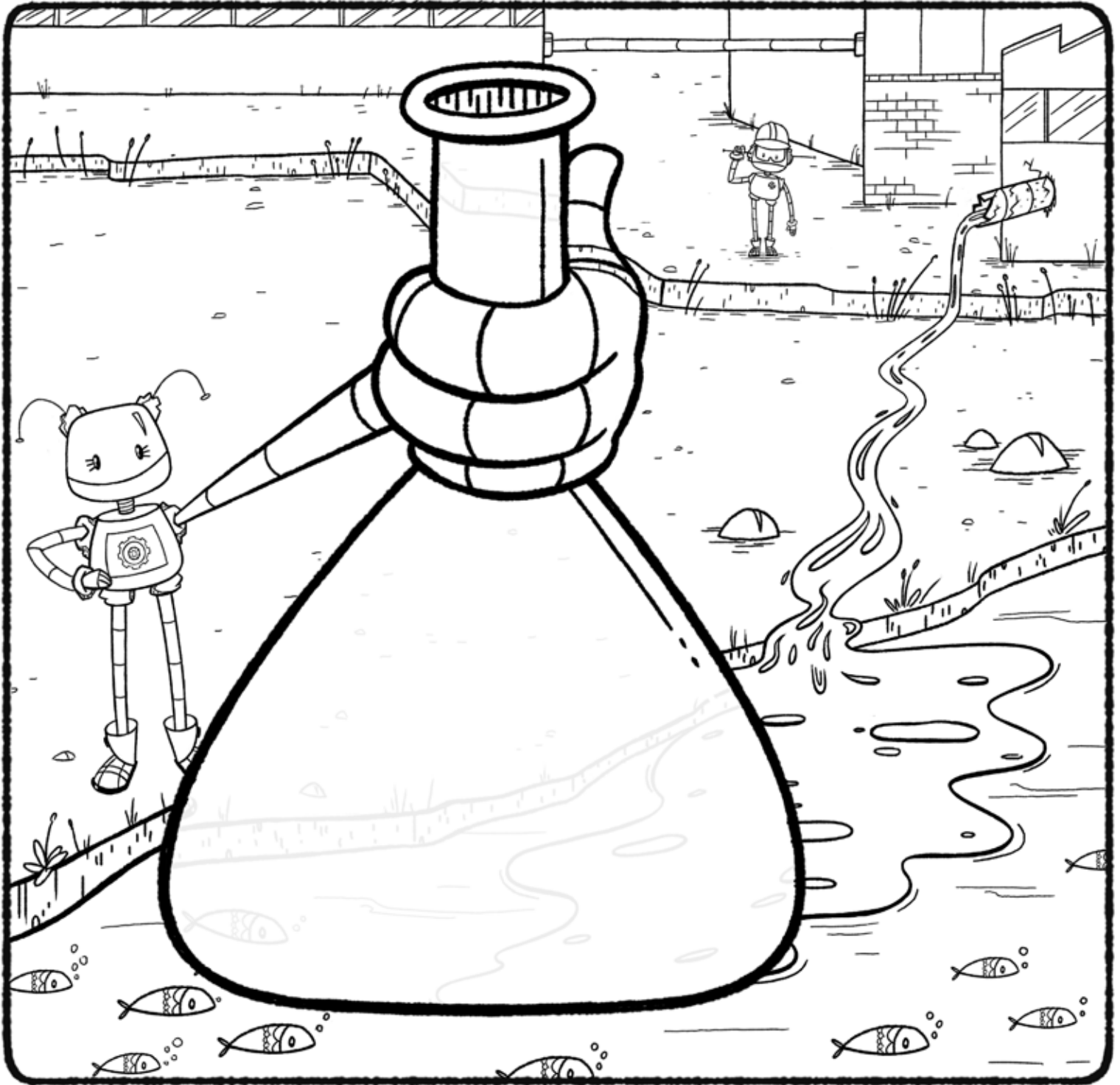


Did you know that water covers more than 70% of the earth's surface? **Marine Engineers** design and help build the equipment on boats that allow people and their cargo to cross through or under the water safely and efficiently. Can you help Shaley and Cog design a cargo boat that can transport materials from one side of the river to the other without having anything fall into the water? Don't forget the equipment to get the cargo on and off the boat!



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• ENVIRONMENTAL ENGINEERING •

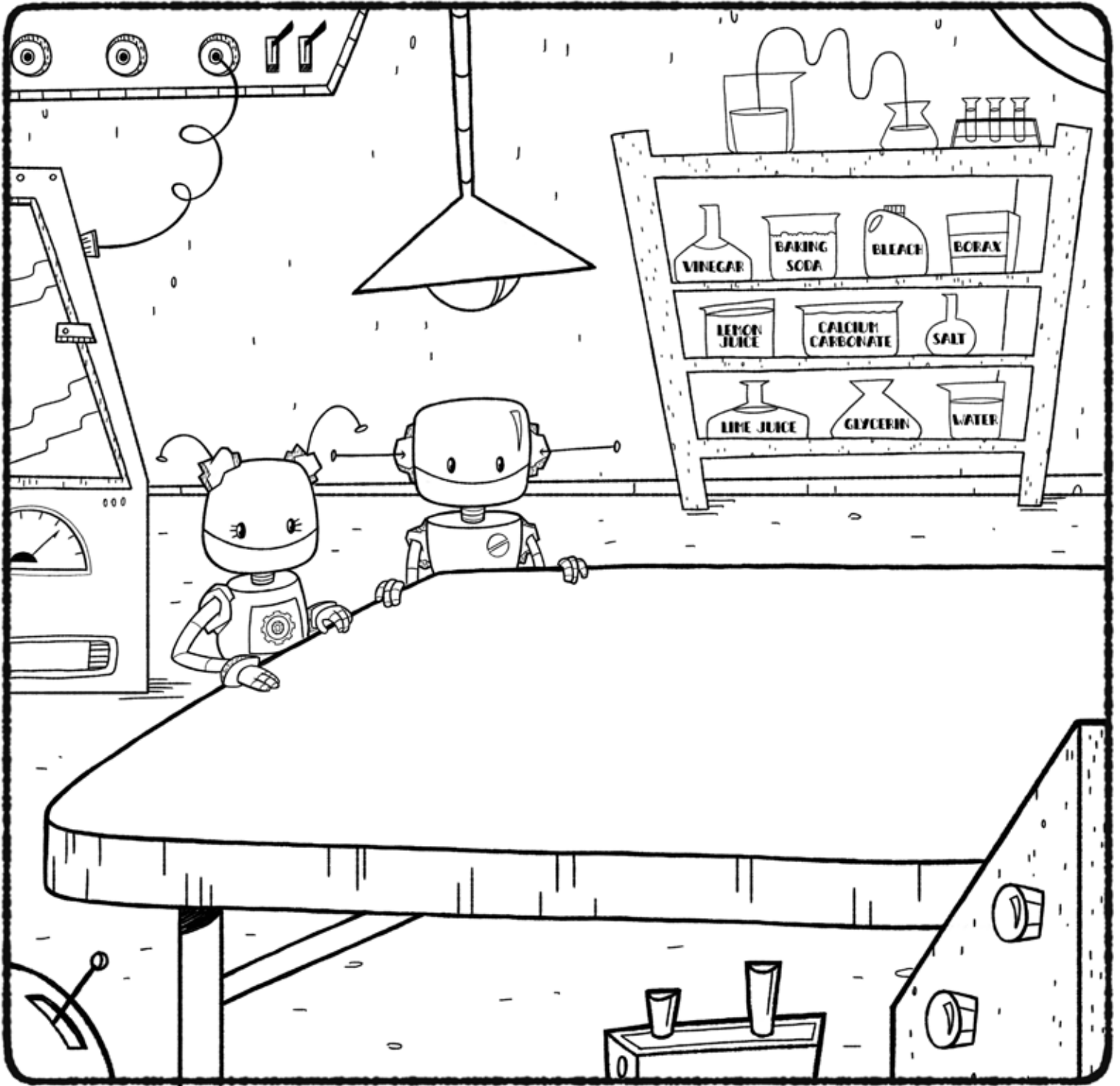


Oh no! An earthquake has struck the town, causing a pipe to rupture. Now the pipe is leaking into the stream where the salmon spawn! **Environmental Engineers** look for ways to keep our communities clean and free of pollution. They also look for new ways to recycle things, and the best way to clean up hazardous waste. After natural disasters, it is common for them to test the water that may have been affected. Cog and Shaley are taking samples from the stream. What kinds of things will they find in the water?



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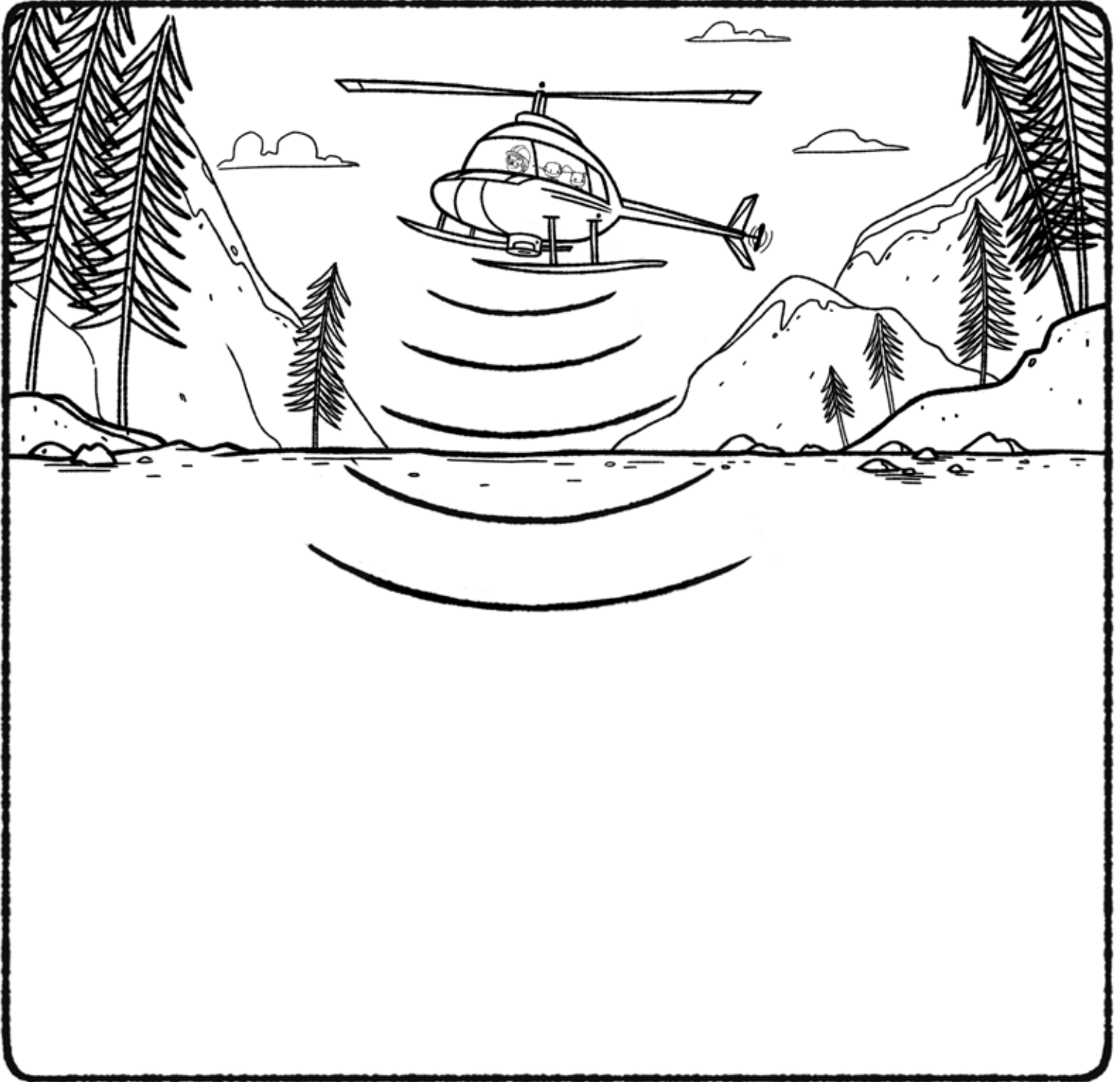
• CHEMICAL ENGINEERING •



Chemical Engineers use science to turn raw materials and chemicals into useful forms. They work with anything from food to clothing to cosmetics! Cog and Shaley are trying to create an environmentally friendly cleaning product to help clean the rust on the buses that transport the townspeople all over the town. What materials should they use, and in what order? Draw them above!



• GEOPHYSICS •

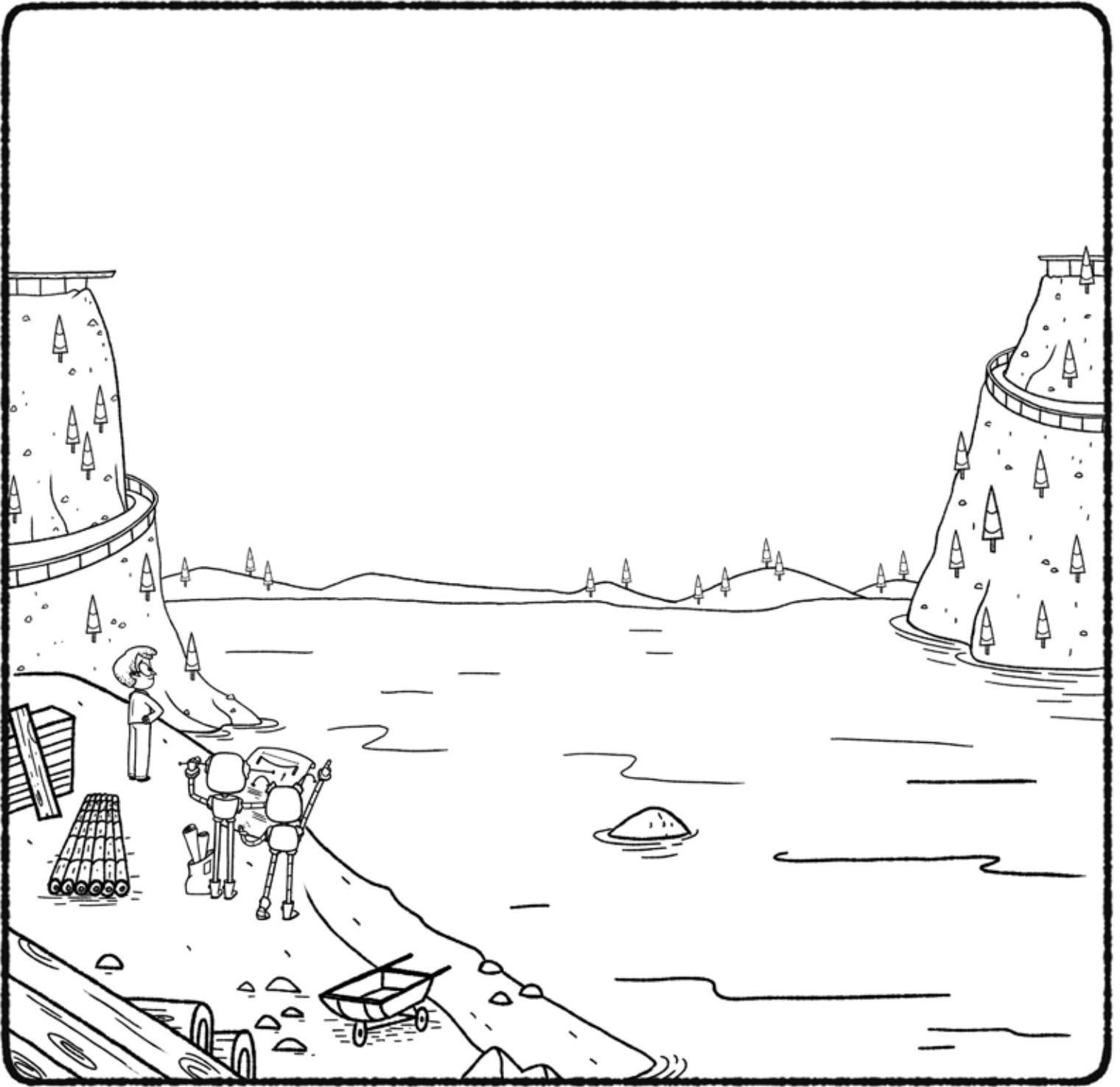


Geophysicists use physics, math, and chemistry to understand and study what happens above and below ground. They use different tools, like the sensor on the helicopter, to detect what's happening under the ground. The mayor wants to investigate what is beneath the ground near Innovatown. Can you help Shaley and Cog figure out what kinds of things they would see underground?



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◦ CIVIL ENGINEERING ◦

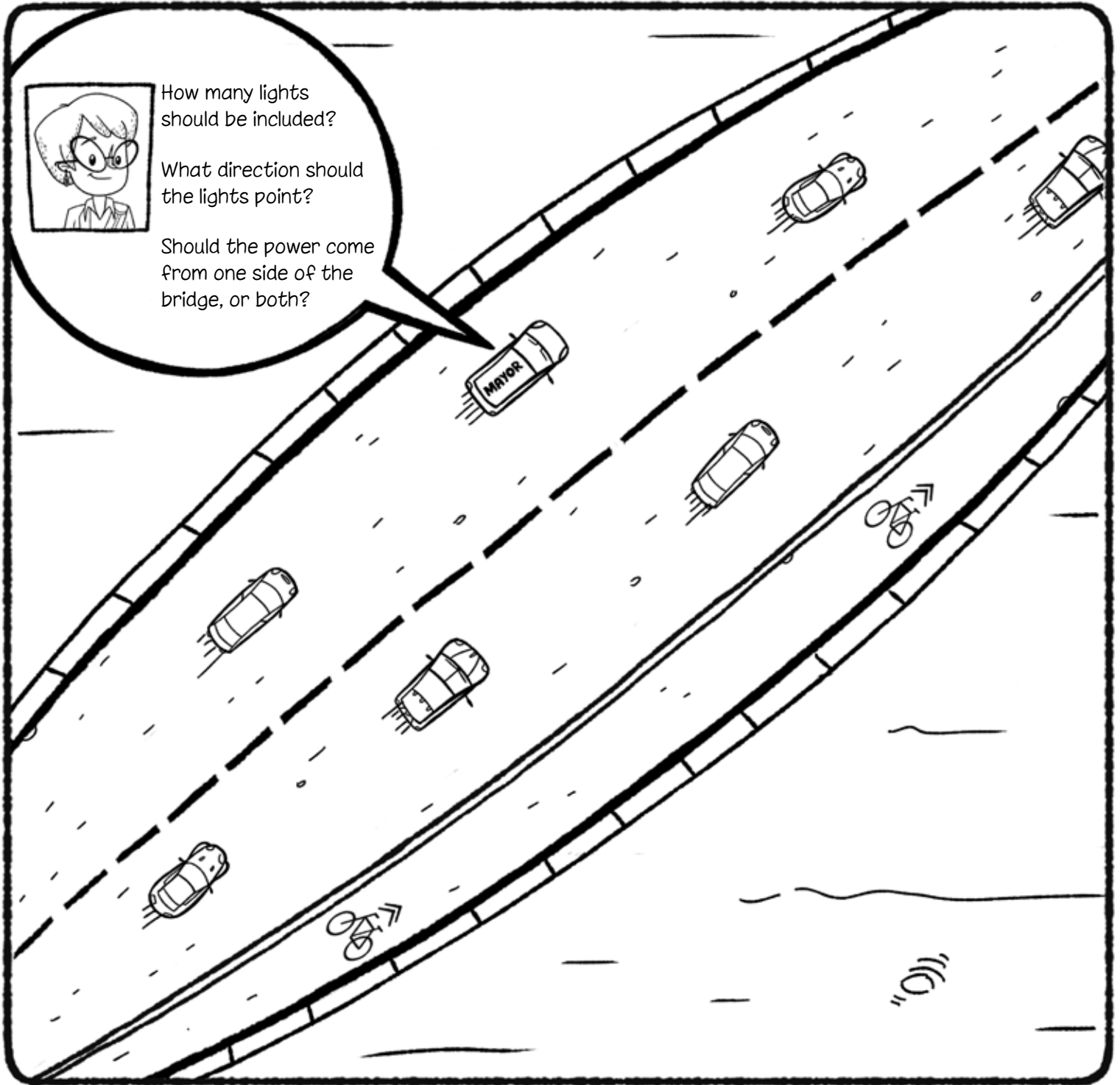


Civil Engineers design buildings like skyscrapers, bridges, apartment buildings, and other types of structures. They have to make sure that they are safe and don't fall. The mayor has asked for a safe bridge to replace the old wooden one. Can you help Shaley and Cog design and create a safe, sturdy new bridge for the town?



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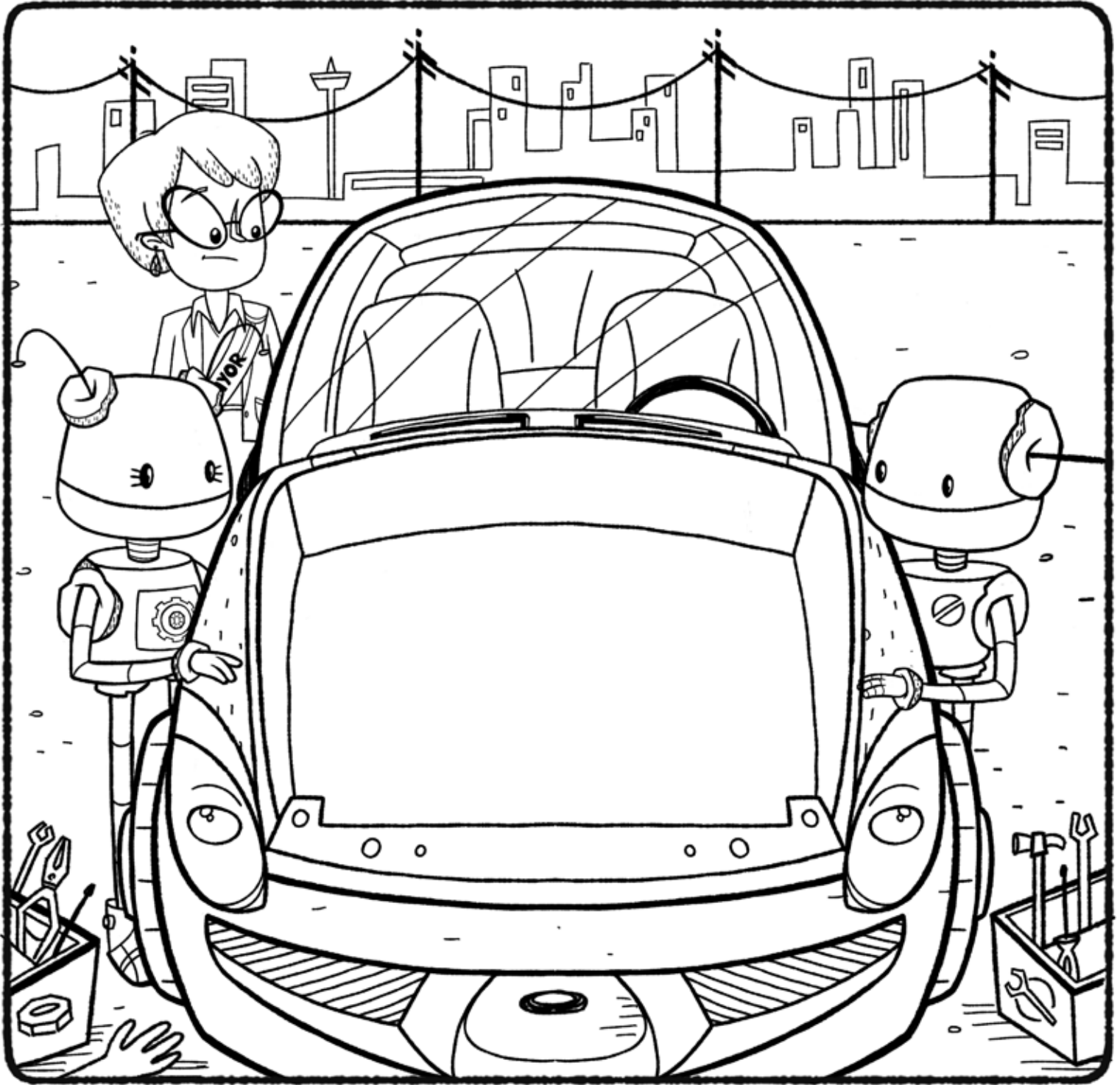
ELECTRICAL ENGINEERING



Electrical Engineers design systems that bring electricity to homes and buildings, but also work within teams that send rockets into space! They need to make sure that everything is done safely and meets the user's needs. The mayor has asked Shaley and Cog to create a lighting system for the brand new bridge. Can you help? Make sure the wires connect to a power source!



• MECHANICAL ENGINEERING •

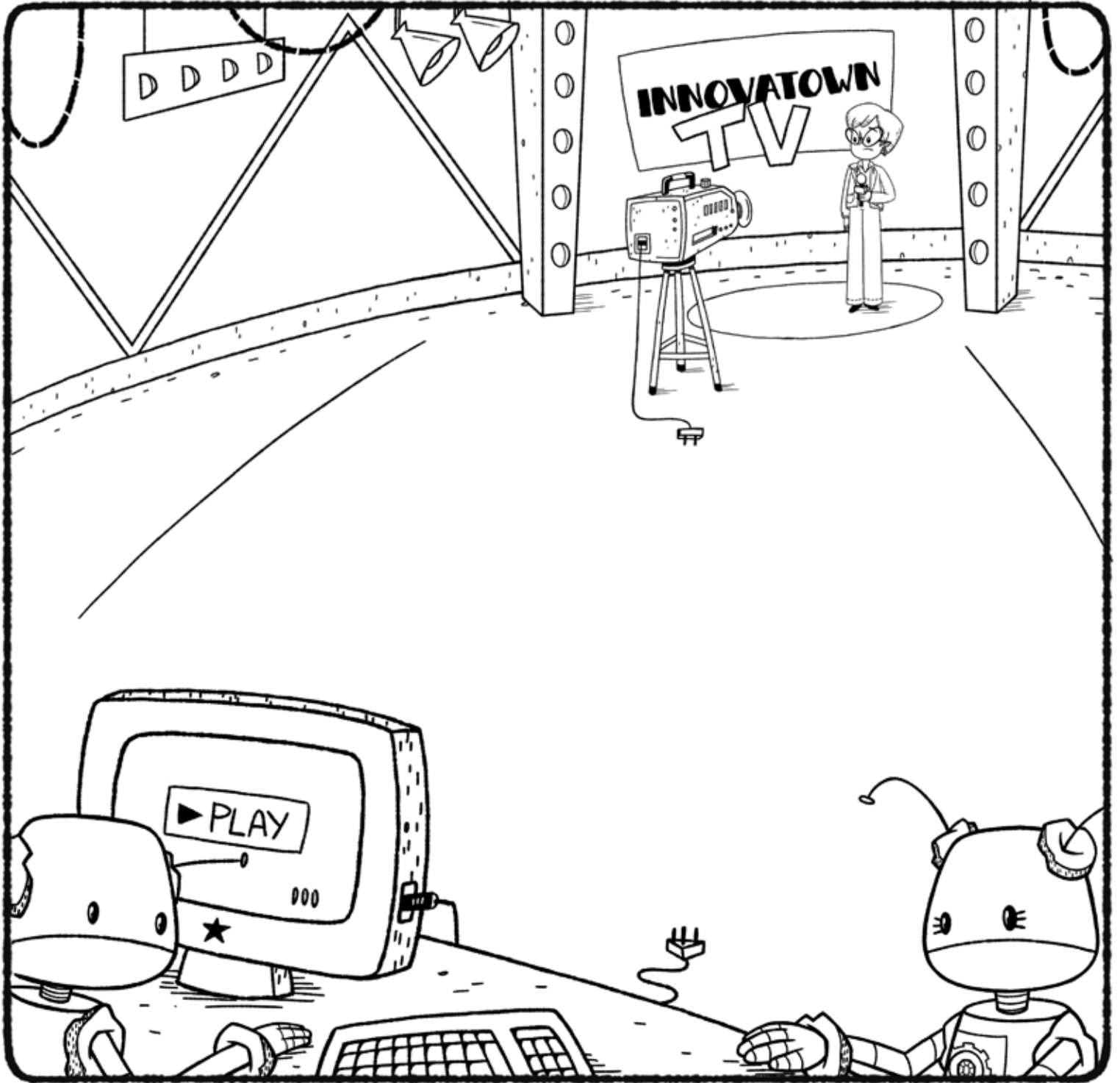


Oh dear! It looks like the mayor's car has broken down and she needs to get to the TV station to announce the opening of the new bridge to the people of Innovatown. She has asked Cog and Shaley to design and replace the motor with a brand new one. Can you help them? The mayor has asked that it runs on clean energy! This is the type of job a **Mechanical Engineer** would do. They love to design and create things that move!



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• COMPUTER ENGINEERING •



Hooray! The new bridge has been built - with your help! The mayor needs to broadcast the exciting news to the townspeople, but the computer is broken in the TV station. Can you help Shaley and Cog to create a storage device that can transport the video from the TV camera to the computer? This is the type of problem a **Computer Engineer** would solve. Hurry! The mayor goes live in an hour!



• WORD EXPLORER! •

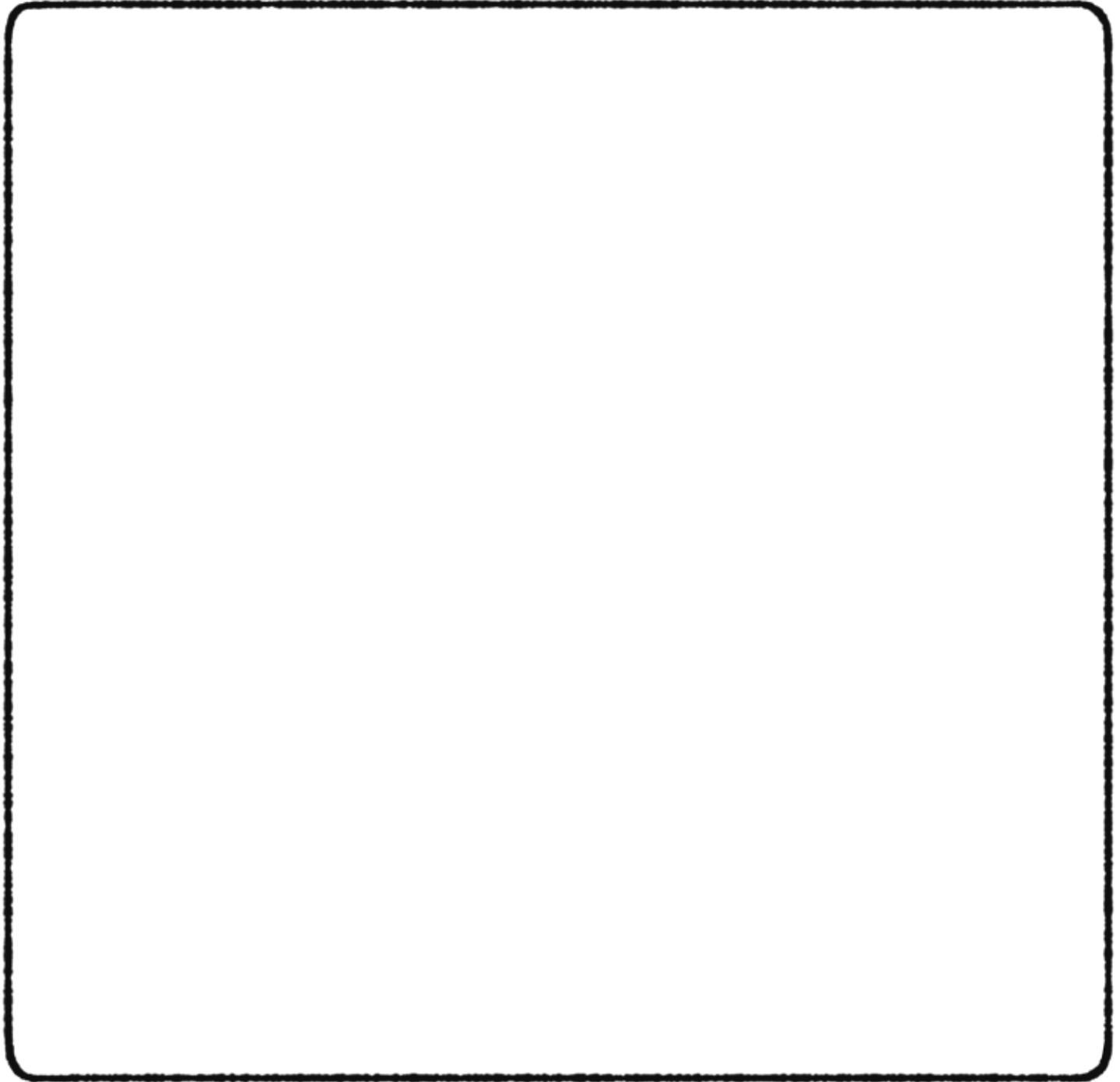
Congratulations! You have helped Shaley and Cog through some pretty tough engineering and geoscience jobs. Now, use your new skills to find these words below:

CHEMICAL - COG - COMPUTER - ELECTRICAL - ENGINEER - ENVIRONMENTAL
GEOLOGY - GEOSCIENTIST - HYDROLOGY - INDUSTRIAL - INNOVATOWN
MARINE - MAYOR - MECHANICAL - MINERAL - QUARRY - ROCK - SHALEY

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



◦ MAKING THE IMPOSSIBLE POSSIBLE ◦



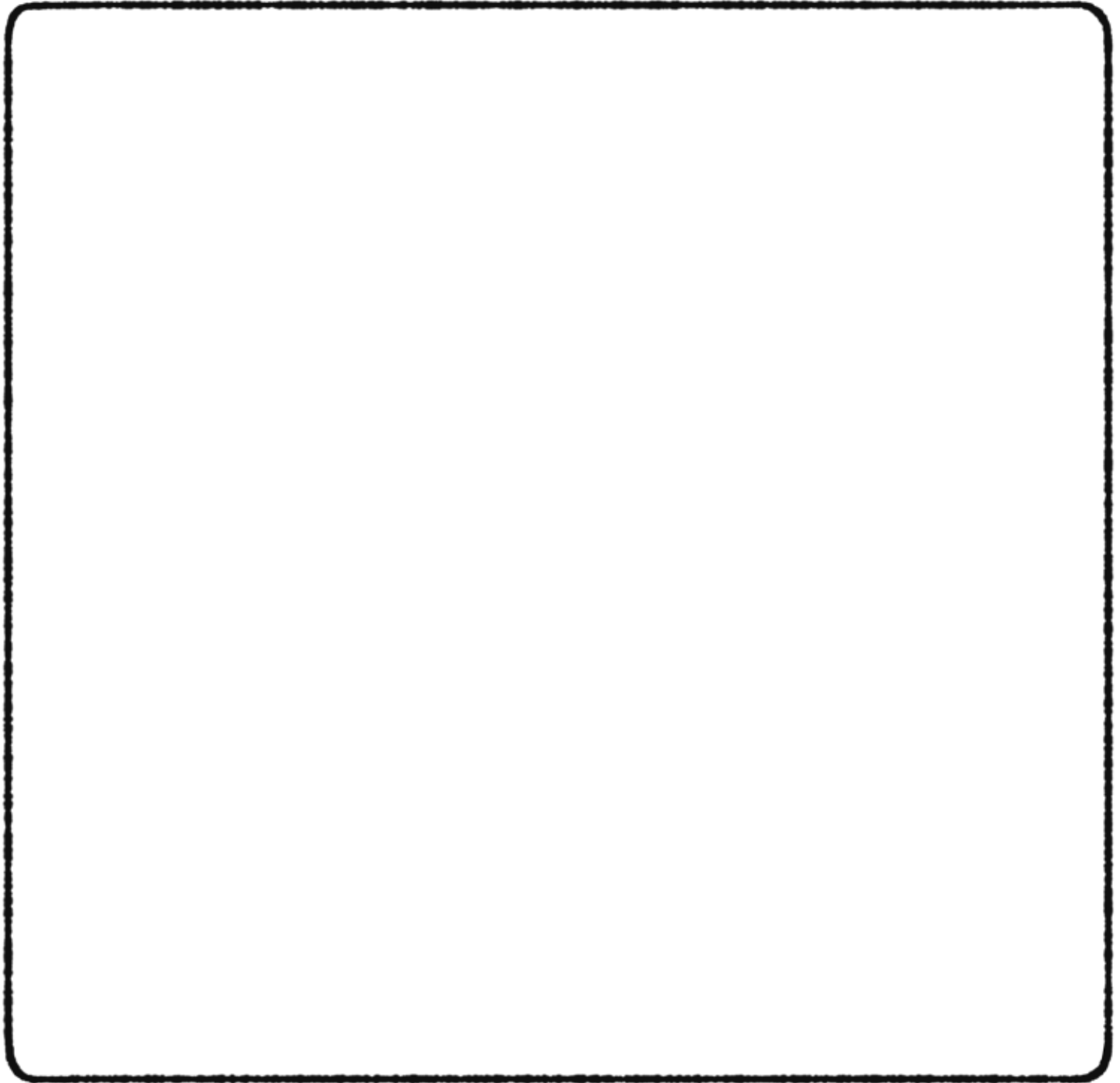
Engineers help create the world you live in. From the hot water in your tap to the roads you take to get around town, an engineer had a hand in it. Geoscientists study the world you live in. They learn about everything from the volcanoes and mountains towering above us to the minerals buried deep beneath our feet. Along with Cog and Shaley, you have made the impossible possible through engineering and geoscience!

Draw something in the space above that used to be impossible but is now possible, thanks to science!



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◦ HOW WOULD YOU MAKE A DIFFERENCE? ◦



Geoscientists are explorers. They study things like volcanoes, earthquakes, and the ground beneath your feet. Geoscientists use their knowledge of the earth to help people. Engineers are problem solvers. They create things, both big and small. From the tallest building to a cellphone and everything in between, engineers use their knowledge to create things that help people. Just like how Shaley and Cog helped the mayor, engineers and geoscientists use their skills to help people around the world.

Shaley and Cog would like to know what you would do to improve the world we live in if you were an engineer or geoscientist. Draw it above!



Want More Information?

Want to find out more about our Career Awareness Program? Looking for science-based activities to do with your children/students? Interested in having one of our volunteers come to your classroom or group?

Engineers and Geoscientists of BC has several resources available for educators, and parents to help you encourage students to explore math and science.

Engineers and geoscientists use their technical expertise, ingenuity, and vision to create solutions and improve the world we live in. If encouraged to develop math and science skills, students soon learn how to become real-world problem solvers - the foundation for a career as an engineer or geoscientist.



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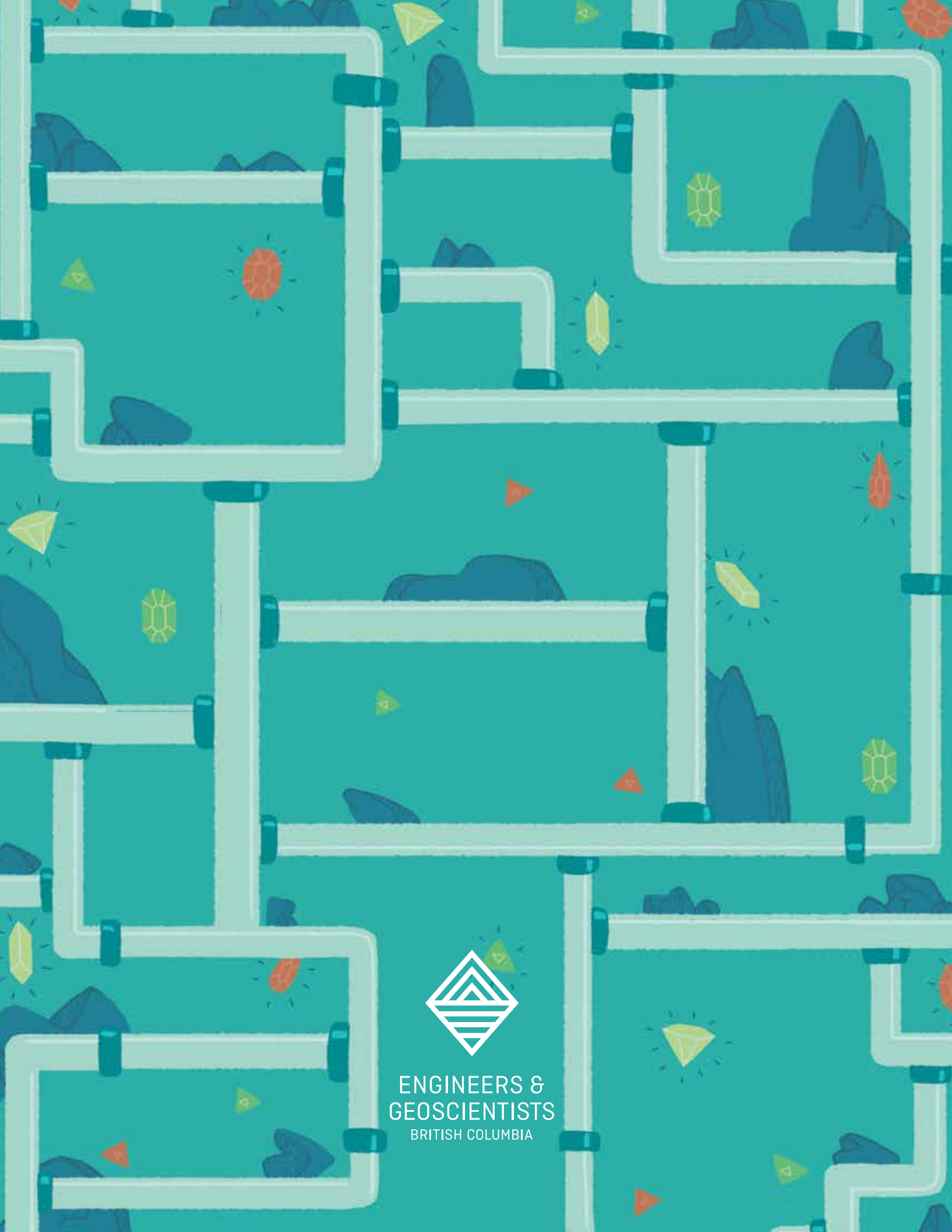
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