The Wild Robot

When a cargo ship sinks in the middle of a hurricane, robot Roz is stranded on a wild island inhabited by unwelcoming animals. To survive, Roz must adapt to her environment and learn to be wild — with a little help from her new friends.

Science, ELAL, Wellness, and Social Studies curricular connections.

Author / Illustrator Peter Brown

Peter Brown is both an author and illustrator of children's books and has received many awards for his work, including a Caldecott Honor and a Horn Book Award. He studied illustration at the ArtCenter College of Design and worked on children's animated TV shows before writing and illustrating his first picture book, *Flight of the Dodo*. Since then, he's gone on to write and illustrate children's books for various ages, many of which have become *New York Times* bestsellers.

Historical Context: Written in 2016

Recommended for: Grades 3 to 7

Ideas For Reading *The Wild Robot* Together in the Classroom

- Ask students to illustrate Roz's journey as you read the book aloud to them. As the story continues, they can add pages to their drawing, making a long, illustrated timeline from her arrival on the Island, the Nest, the lodges, the goose migration, the three battles, and so on. Encourage deeper thinking about the details in the book by asking them to draw setting details, animal characteristics, label specific scenes, etc.
- Invite students to take turns reading aloud to the class — paragraphs or even a chapter of the book.
- Students may read independently but simultaneously, chapter by chapter, taking time to demonstrate comprehension by discussing it and reviewing each section afterward.
- Explore the concept of Readers Theatre by inviting role-play and improvisation. Assign different characters (or even trees, rocks, logs, etc.) to the students to improvise and act out the scenes as you read them. It can be fun because the actors, the audience, and the reader aren't quite sure what will happen next!
- Invite students to draw and label a character from the book illustrating what the character does, its skills, its likes and dislikes, its motivation, its family, etc.
- Why not go on a field trip and see *The Wild Robot* DreamWorks Animation movie when you are done? How does the movie differ from the book? What is unique about the movie's animation-style that is not in other DreamWorks Animation films?

Discussion Questions (all grades)

See where the conversation leads and encourage readers to ask questions of their own. They may write or draw answers in their journals, discuss in a pair-and-share or as a larger class.

- What is different about how the ROZZUM robots, like Roz, are made and designed to behave, compared to the RECO robots?

- How did the RECO robots impact life on the island? What changed when they left?

- When the book begins, Roz's aim is to survive. At the celebration in chapter 66, Roz tells the animals that they taught her how to live. What is the difference between living and surviving?

- In *The Wild Robot*, many of the characters, including Roz and Brightbill, do more than what is expected of them (or, in the case of Roz, what they are programmed to do!) and often surprise themselves by what they can do and how they feel.
  - When is a time that you surprised yourself, or someone else, by doing something that you were not sure you could or that was not expected of you?

  - What is a moment when you were proud of yourself?

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Grades 3 – 9: Robot Movement

Curricular Connections:

- Grade 3 Science Energy (Contact Force)
- Grade 6 Science Energy (Forces)
- Grade 8 Unit D Science: Mechanical Systems

Robots, like Roz and the RECO robots, are complex systems that are made of simple machines. Although robots are inspired by how living things move, they cannot always move as naturally because of their robotic joints.

If you use Ozobots, Micro:Bit, or Arduino in your class, you may be inspired by these simple robots your class can make with everyday materials: **cardboard.lofirobot.com**.

Even without an electronic or coding element, you can make simple robots using cardboard, metal brads or nuts and bolts, a small screwdriver such as for eyeglasses, elastic bands, hole punch, string, tape, disposable dishes and cutlery, and other building materials.

How might you use your materials to create robot body parts that are also simple machines? This could include:

- Lever
- Wheel and axle
- Pulley
- Inclined plane
- Wedge
- Screw

Taking It Further

In chapters 71, 72, and 73 of *The Wild Robot*, there are battles in the meadow, forest, and mountains. Natural and man-made forces affect the robots. What happens if you apply force to your robot or its parts?

Ways to apply a force to an object include stretching, pulling, squeezing, and pushing. What happens to your robot when you apply external forces such as spring, elastic force, or friction, or internal forces such as compression ? List your observations on what happens to your robot when different types of force are applied. Did your robot break? How might you make it stronger to handle these forces?

For a review of simple machines and other ideas, visit: **calgarylibrary.ca/simple-machines**

Grades 3 – 9: Etuaptmumk

Etuaptmumk is a Mi'kmaw word for Two-Eyed Seeing, a guiding principle shared with scientists by Mi'kmaw Elder Albert Marshall in 2004:

We often explain Etuaptmumk – Two-Eyed Seeing by saying it refers to learning to see from one eye with the strengths of Indigenous knowledges and ways of knowing, and from the other eye with the strengths of Western knowledges and ways of knowing ... and learning to use both these eyes together, for the benefit of all.

Younger students in grades 3 – 6 can complete the worksheet, Etuaptmumk – Using Two-Eyed Seeing to Understand the Island, on the next page. Older students may also start with the worksheet and can take the learning further by examining multiple sources of media to reflect on Etuaptmumk in contemporary ecological practice.

Taking it Further for Older Students, Grades 7 – 9

As a class, watch this video called Two Sciences, from Native Counselling Services of Alberta, at **calgarylibrary.ca/two-sciences**. The video is a discussion about wetlands by world renowned wetland ecologist Dr. Suzanne Bayley and traditional Cree man Len Benson. Suzanne and Len discuss the difference between Western science and Indigenous science — and the benefits of bringing them together.

Read this article written by Jeffrey Mervis for Science (October 2023) "Can Indigenous knowledge and Western science work together?" at **calgarylibrary.ca/mervis**

To learn more about Indigenous Science in Canada, visit: **calgarylibrary.ca/indigenous-science**

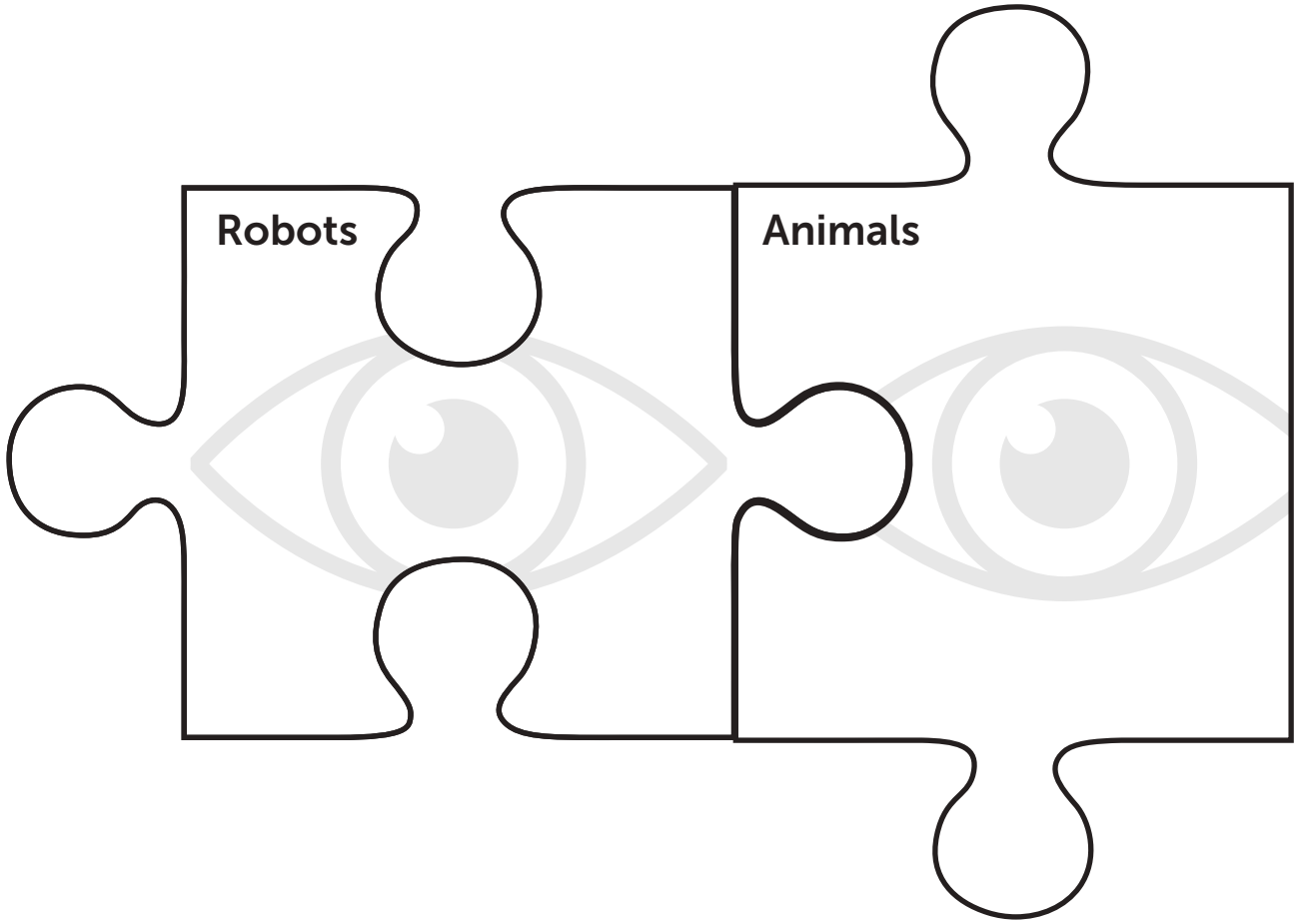
With your learning from the three resources above, reflect on the following questions:

1. How can Indigenous science help us understand our relationship with and responsibilities to the Earth?
2. In what ways can Indigenous knowledge and science contribute to the Earth's sustainability and the preservation of diversity?
3. How can Indigenous science and Western science work together?
4. Why is it important to view the natural world from more than one perspective?

Etuaptmumk – Using Two-Eyed Seeing to Understand the Island

Roz is programmed to understand things through facts, categories, and technology whereas the animals respond instinctively in response to their connection to the land and each other. Use Etuaptmumk (Two-Eyed Seeing) to better understand the Island in *The Wild Robot*.

1. In one puzzle piece, write any words you can think of that describe a robot's understanding of the Island.
2. In the other puzzle piece, write any words you can think of that describe the animals' understanding of the Island.
3. On the back of this paper or in your journal, share what you learned about the Island through Etuaptmumk (Two-Eyed Seeing) from the perspective of both the animals and the robots.



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Grades 1 – 6 Human Knot

- Physical Literacy, all grades
- Grade 3 Wellness (Growth and Development): Development is the process of becoming a unique person.
- Grade 4 Wellness (Character Development Perserverance and Resilience): How can a variety of life experiences influence resilience and perseverance?

In *The Wild Robot*, many of the characters, including Roz and Brightbill, do more than what is expected of them (or, in the case of Roz, do more than what they are programmed to do!) They often surprise themselves by what they can do and feel. Many of the characters must keep trying and trying to get the task right. The beavers are a great example of perseverance in the book — they don't give up building the Nest or Roz's boot even though it is tricky.

The Human Knot is a game that teaches teamwork, trust, builds leadership and communication skills, and teaches problem-solving and especially perseverance — you may have to fail, untangle, and try again!

No equipment is needed for this game. The approximate playing time is 15 to 20 minutes depending on the number of students. If more than 20 students, break into two groups. Clear away any obstacles or play in the gym.

Players stand in a circle and reach out to shake hands with other players, with each of their hands connecting to a different person, creating a "human knot". Then the players attempt to unthread their bodies without letting go of each other's hands.

Young children may find it difficult not to let go of their friends' hands, partly because they have short arms. It may be helpful to have them hold (or even tie on their wrists) the ends of different coloured rope, so they can more easily see who they are connected to and have more length to move over, under, through, around, etc. However, the human knot can become a real knot quickly! It takes real collaboration, perseverance, and patience to untangle it.

NOTE: Because of the amount of contact involved, please be mindful of cultural and gender differences when considering the suitability of this activity for your class.

Grades 1 – 6: Systems and Interaction Games

Curricular Connections:

- Kindergarten Science Energy (Movement of objects, animals, and humans)
- Grades 1 – 6 Science: Earth Systems and Living Systems

Living systems and interconnectedness are a big theme of *The Wild Robot*. When Roz first arrives on the Island, she encounters what she thinks is a colourful tree, only to discover it is made of beautiful monarch butterflies who all fly away on their migration path when she arrives. Later in the story, Brightbill is taught to fly so that he can join the other geese to migrate to their winter home.

Starting in Chapter 54: The Winter, most of the Island is hibernating or is dormant. Roz plays an important role in the animals' winter survival during an unusually harsh season. She helps the animals declare a truce that they will ignore their natural instincts while in the lodges so that predator and prey can live peacefully together, and all survive the winter.

Play these two games in the gym or outside to explore animal behaviour and interconnectedness.

Grades K – 6: Migration Simon Says

Inspiration Source: **calgarylibrary.ca/hummingbird**

Invite the students to spread out so they have room to move without bumping into anyone else. Tell the students they will be playing a game like Simon Says. Start with the basic "Simon Says" format where students touch their nose, touch their toes, jump up and down, or turn in a circle to remind everyone how it works.

For Migration Simon Says, they're going to act like migrating animals. Instead of calling "Simon Says..<ACTION>" the teacher will call "Migrating <animal name>...<ACTION>!". Like the typical game, the students need to listen for a change in your instruction. If the teacher says "Migrating <animal name>... REST!> the children are to sit or lay down like that animal would. You may choose to play that whoever is the last to rest is out or simply keep playing and have fun laughing.

Before the game, engage the class in coming up with movements for the following animals (or any animals you choose to add) and their actions:

1. Migrating Monarch Butterfly...flap!
2. Migrating Sea Turtle...scuttle!
3. Migrating Canada Goose...glide and honk!
4. Migrating Pacific Salmon....swim upstream!
5. Migrating Caribou...prance!
6. Migrating Whale...jump and blow!

Variation for Kindergarten and Grade One:

You may choose to leave out the advanced concept of migration and instead focus only on the movement of the animals. i.e.: Frog…hop! For extra challenge you can add a variety to the movement such as "Frog hops back and forth!"

Variation for Grades 2+

As review for the Science organizing idea, Earth Systems, and the unit on migration, you might add the extra challenge of the children identifying animals that migrate and those that do not. Instead of using "Rest" as the word to listen for, students will listen for animals that do not migrate. If the teacher calls "Migrating Grizzly Bear…growls!" and some children growl, they are out. Use this as an opportunity to confirm understanding with the group and ask what grizzly bears do instead of migrating (answer: hibernation).

Grades 3 – 9: Predator and Prey

A simplified version of the classic game with the goal of surviving in the natural world. The game is essentially an unequitable game of tag and a good entry point for conversations about the food chain, roles in an ecosystem, difference in animal population sizes, fairness and equity, etc.

Players take the roles of herbivores, omnivores, or carnivores. Omnivores can eat herbivores, carnivores can eat both omnivores and herbivores, and herbivores can't eat anyone.

Start by identifying a herbivore (i.e.: rabbits). Most of the players will be herbivores. Their job is to simply run away from the taggers (the omnivores and carnivores). Then choose a small group to be the omnivores, i.e. foxes. The foxes will be chasing down the herbivores to try to tag them but cannot tag a carnivore. They can be tagged by a carnivore, however. But then you will also choose a carnivore (no more than two) at the top of that food chain, i.e. a wolf. The carnivore is able to chase after either the foxes or the rabbits and tag them. It is helpful to give each omnivore and carnivore an identifying colour such as a bib or a ribbon around their wrists. When players are tagged, they are out. An option to sitting out is to go to the teacher at the "edge of the forest" to perform a predetermined quick exercise or answer a quick science question to get back into the game.

To add a challenge, the teacher might introduce a sudden change of environmental condition such as drought or forest fire, whereby some of the carnivores and omnivores are removed due to habitat destruction, not being able to cross water, burrow underground, etc.

Check out these Library Resources to learn more about animal migration, hibernation, food chains and seasonal change from both a Western and Indigenous science perspective:

- **calgarylibrary.ca/perseverance**
- **calgarylibrary.ca/migration**

Visit PBS Kids and download this lesson plan book on Migration, including worksheets for your students and more fun physical literacy games: **calgarylibrary.ca/migration-challenge**

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Taking It Further for Older Students, Grades 7 – 9: Migration Influencers

Inspiration Source: **calgarylibrary.ca/animal-migration**

- Assign a migratory animal to each student, or they may work in small groups of 3 – 5. Allow time for the students to research and understand their animal's migratory behaviour:
  - Which animals in the species migrate? All? Young stays behind?
  - Migration route (to, from, stops along the way)
  - Why they are migrating?
  - Predator species they may encounter
  - Natural challenges they may encounter including extreme weather and climate change
  - Resources and preparation required for migration
  - Season and timeline of migration
  - Type of movement (flying, swimming) and how (special formation)
  - Roles of individuals during migration

- Explain to your students that they are animal social media influencers trying to convince other animals in their species to migrate with them to help prepare them for the journey. They may choose to make a meme, GIF, TikTok video, X post (formerly "tweet"), poster, radio ad, TV commercial, etc.

Grades 2 – 9: Camouflaged Robot

Roz survives in the beginning partly by camouflaging herself with mud, leaves, and grass. Design your own robot camouflage for different environments. How might a robot hide themselves in the sandy desert? In the snowy arctic? On a Canadian prairie?

Think of items you could use to camouflage your robot, such as leaves from your yard, collages, yarn, or recycled materials. Draw your own robot, download a robot template at **calgarylibrary.ca/family-reading-pick**, or make your own camouflaged robot in 3D.

Complete this activity and invite your students to bring their robot artwork back to the Library to collect a prize. We will hang it up in an art display!

Or share a photo of your class' robots with the Library on social media @calgarylibrary. No faces of students please, but we would love to know your school name, teacher's name, and grade in your post!

Use this label template to attach to your robot artwork before bringing it into into any Library location, excluding Rocky Ridge Library or Prototype: Skyview.

First Name: _____ **Grade:** _____

I read *The Wild Robot* with my _____

(family, classroom, grandmother, parents, dog, etc.)

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