Tulliniliara ᑐᓴᓂᓕᕆᓂᖅ

12

# Robot Day

This book is part of the Tulliniliara Reading Series, developed by the Department of Family Services in Nunavut. The Tulliniliara Reading Series is a unique, Nunavut-developed literacy initiative that infuses awareness of skills, interests, and careers into a culturally appropriate reading program.

The Tulliniliara Reading Series was developed to support the reading level guidelines outlined in Uqalimaariuqsaniq, the Department of Education's reading program. Uqalimaariuqsaniq is a sequential and progressive Inuktut reading program that supports students in their development as readers.

The Tulliniliara Reading Series informs readers about jobs available in their community. It also provides opportunities for readers to consider their own interests and skills when thinking about future work. Awareness of career possibilities at a young age will better prepare children to understand the opportunities that are open to them and the importance of staying in school.

These books represent the Department of Family Services' investment in the early development of our future workforce.

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## Book details

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| **Level:** | 12 |
| **Text type:** | Fiction |
| **Subjects/themes:** | Robotics, STEM (science, technology, engineering, math), teamwork |
| **Key features:** | 40 pages of text, dialogue |

# Robot Day

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Junior could not stop smiling as he walked into his classroom. He had been waiting for this day for a long time.

He saw that his friend Martha was back in class. She had been away for two weeks seal hunting with her family.

"Hi, Martha!" Junior said. "Guess what? It's robot day!"

Martha looked confused, but before she could ask any questions, their teacher, Helen, walked into the room.

"I know that you are all excited about today's challenge," Helen said, smiling. "It's not every day that you get to build robots!"

"Real robots?" Martha whispered to Junior.

"Yes!" Junior replied. "We've been getting ready for the last two weeks."

After morning announcements, the class went down to the gym. Junior noticed that lots of other classes were also participating in the activity. Two guests were standing at the front of the gym.

"Good morning, students," one of the guests said. "My name is Millie, and this is Alex. We are very excited to be in Igloolik. Welcome to the STEM challenge!"

Junior remembered what "STEM" meant: science, technology, engineering, and math. Junior definitely knew three of those words, but he wasn't sure what engineering was.

Alex said, "Today's challenge will be all about robotics! You will be engineers and build robots that can do different jobs. Engineers use science, technology, and math to build structures and machines, like robots."

"Each team will get a robotics kit with all the parts you need to build your robot," Millie said, showing them a kit. "Make sure you have all the parts before you start building!"

"But building the robot is only the first step," Alex said. "You will also learn about computer coding!"

*Coding?* Junior thought. He wondered what that meant.

"Computer codes are basically the instructions that a computer follows to do different things," Alex explained. "One of the parts in your robot kit is a computer. You'll write a computer code for your robot to make it do a task."

*Cool!* Junior thought.

Junior's teacher put them in pairs. Junior was paired up with Martha. He wasn't sure this was a good thing. She had missed all the days when Junior's class had learned about robots. Would she know what to do?

Junior and Martha went to the front of the gym to get their robotics kit. Then they found a spot in the corner of the gym and began to work on their robot.

"We should make sure we have all the parts," Junior said. But he could tell that Martha was not really listening. In fact, she had already begun putting some of the pieces together.

"Done!" Martha shouted, holding up the robot. "It's finished!"

Junior was upset. "That's not fair. I didn't get to do any of it!"

He looked closely at Martha's finished robot. It wasn't really finished.

"Where's the computer?" Junior asked.

"The what?" replied Martha.

"A robot needs a computer," explained Junior. "That's what makes it a robot. Helen taught us the parts of a robot last week. The computer is like the brain of the robot. It's what makes the robot able to do things on its own."

"Oh," responded Martha.

"You weren't even listening!" said Junior, feeling himself getting angry. "That's what I was trying to tell you. Millie said we needed to see if we had all the parts of a robot, and a computer is an important part of a robot!" He took the robot out of her hands. "I knew you wouldn't be good at this. You missed too much school!"

Martha looked hurt.

Junior stomped off to get a computer from Millie. It was a small box with a few buttons and a screen.

Martha watched quietly as Junior attached the computer to the robot. Working on the robot was not as fun as Junior had hoped. He could tell he had hurt Martha's feelings with what he had said before, but he still felt that she had been wrong. Junior didn't really trust Martha to do a good job building the robot.

"All right, engineers," said Alex, "it's time to code! Each pair will get a tablet. On your tablet, you will see a screen with a bunch of commands. Commands are the things that you want your robot to do, like go or stop. You write a computer code by putting together different commands. I am going to write a code for our robot up here at the front."

Alex worked on his tablet and explained what he was doing while the students watched. "Now I just press the GO button on the robot."

The robot started moving on its own! It drove itself to the edge of the table. It looked like it was going to drive right off. Then it turned around and drove toward the other end of the table. Finally, it turned toward the audience and moved its arms up and down.

*So that's what coding does!* Junior thought. He was really excited to try writing a code for his robot.

After each pair received a tablet, Junior practised sending commands to his robot. He wrote a really long code for the robot, and then he and Martha watched the robot move around by itself for almost a full minute.

"Can I try?" Martha asked.

Junior was about to reluctantly hand her the tablet when Millie said, "Okay, engineers, it's time for our challenge."

Millie explained the challenge to the students. Each team had to make their robot drive out from its home base to pick up a block. Then the robot had to bring the block back to home base.

"Your robot will have two minutes to bring back as many blocks as it can," said Millie.

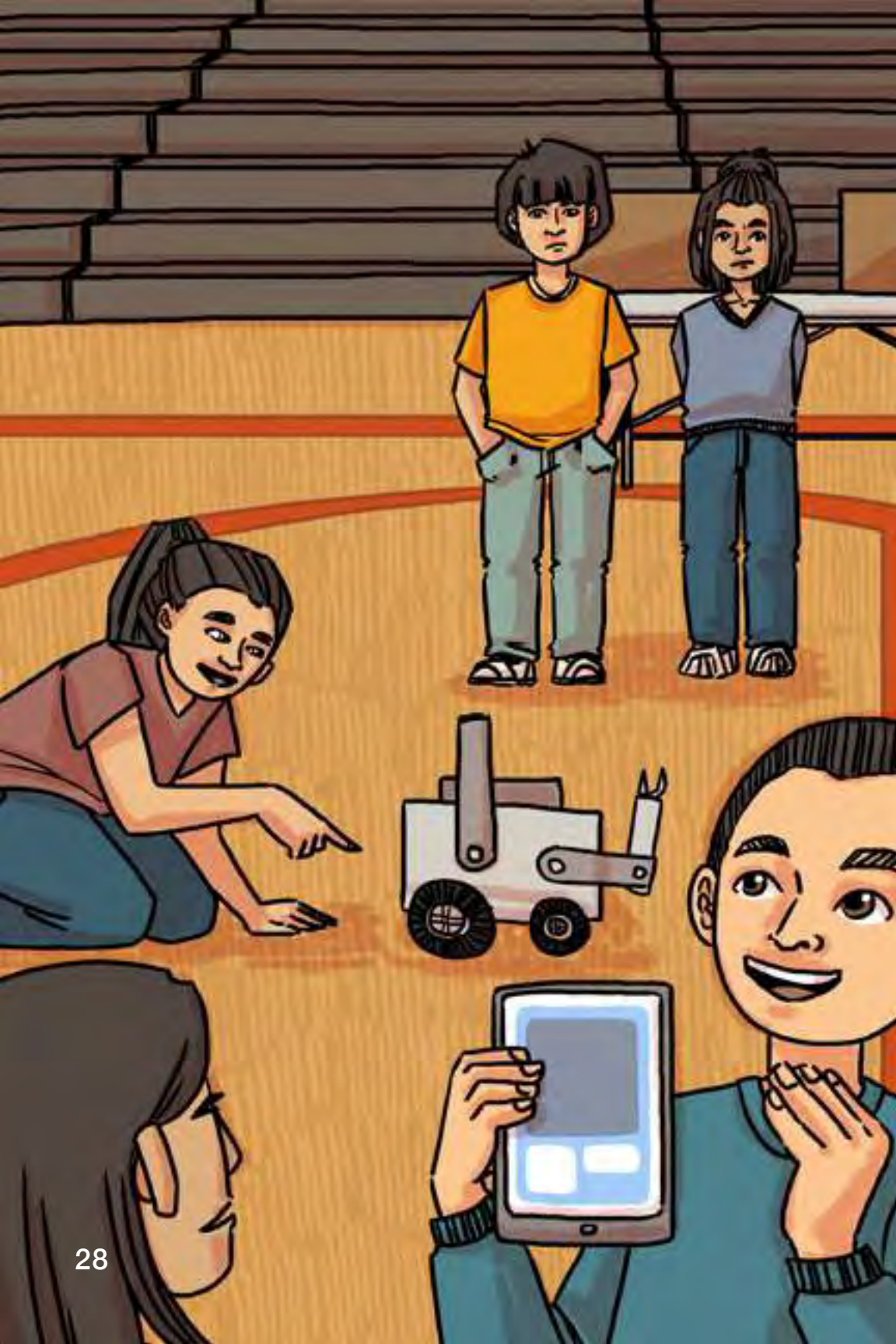
The teams got to work. Martha watched as Junior worked on the code on the tablet. Junior didn't want her making another big mistake.

"There," Junior said. "It's finished."

"Already?" said Martha. "I didn't even get to help. Shouldn't we check it to make sure it works?"

"Nah," responded Junior. "It's fine. We followed the instructions."

"But when we went seal hunting," Martha continued, "we checked all our equipment to make sure that it was working before we started driving."



"Well, this isn't seal hunting," said Junior as he put down the tablet. "Let's go watch everyone else."

Millie and Alex had started visiting teams and judging their robots. Junior loved watching the robots move blocks back and forth. He wondered if the community could use robots like these to move cargo at the airport, especially on those cold, dark nights when it was –50° Celsius.

Millie and Alex finally came over to Junior and Martha's robot. "So, how do you think your robot will do?" Alex asked.

"It's going to be perfect!" boasted Junior, putting the robot at home base. Martha stayed quiet as Junior pressed a button on the robot's computer.

The robot started moving toward a block. But then something happened! The robot started veering off the path.

"What's going on?" said Junior, looking up at Millie and Alex.

The robot stopped moving, but it was nowhere near the block. The robot did the command to lift up its arms, waving them through empty air. Then it turned around and came back to home base.

"That wasn't supposed to happen. What's wrong with my code?" asked Junior, showing the tablet to Millie.

"Don't you mean *our* code, Junior? You and Martha are a team, right?" replied Millie.

"I think I know what's happening," said Martha, picking up the robot and flipping it over. She looked closely at the wheels. Then she turned the robot toward Junior and pointed at one of the wheels.

"Oh," said Junior, embarrassed. "There's a piece of tape stuck to the wheel."

"That made it turn instead of going in a straight line," explained Martha. "It's like when we check the skis on our snow machine before we go out. If they don't grip the ice, the snow machine won't turn properly. That's why I said we should check the robot beforehand."

"So why didn't you check it?" asked Alex.

"Well," started Junior, turning red, "I sort of took over everything because Martha made a mistake at the beginning. She forgot the computer, so I thought she would just mess up again. I didn't listen to her."

"Working together is really important in engineering, and especially in robotics," explained Alex. "Engineers get much more work done when they share ideas with each other."

"Can we try again?" asked Martha.

"Of course," said Alex.

"Here, Martha," said Junior as he handed her the tablet. "Do you want to check the code? I will double-check the robot!" He reached for the robot but then paused. "I'm sorry for being mean to you and not trusting you earlier."

"I'm sorry too," said Martha. "I should have listened to you when we started building the robot. I guess I'm lucky to be on a team with someone who knows so much about robots!"

"Thanks, Martha," Junior replied, looking closely at the robot. "Now, did you learn anything else on your hunting trip that we can use with our robot?"

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