

Tracks, LasERS, and Gorillas



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Thanks to the UB's Learning and Research Resources Centre (CRAI) for their collaboration.

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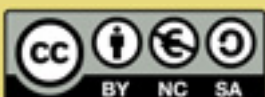
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Tracks, LasERS, and Gorillas



The week the Class 4B students went to the park to study primates started off with a trip to the zoo.

“It’s like looking in a mirror!”

“Look at those eyes!”

“Is it a girl or a boy?”

“He’s looking at me, he’s looking at me!”

“Hey! Do they comb each other’s hair?”

The class buzzed with excitement as they watched the gorillas.

“There’s a very old gorilla in this photo,” pointed out the ever-inquisitive Luciana.

“That’s a picture of Snowflake,” their teacher answered.

“Of who?”

“Snowflake. He was the most famous gorilla in the world.”

Realising she had captured their interest, Class 4B’s teacher, Maria, decided it was too good an opportunity to miss. She’d had an idea.



Once they were outside the gorilla area, Maria called for silence and spoke to the whole class.

“As you all seem to be so interested in gorillas, I thought we could do some research to find out more about them. And then we can put on an exhibition to tell everyone about what we’ve learned. I’ll ask the local library whether we can do it there.”

The class looked at her expectantly. They seemed excited by the idea.

“We’ll need to do a really good job though, and present everything we’ve learned in a way that’s clear and interesting. What do you think about the challenge?”

Everyone began speaking at once, asking questions about how they would go about it and the specific topics they would include. Maria smiled at the prospect of her class becoming a research team for the next few days. It was time to get to work on their new class project.



The class had spent a few days working in two separate groups. They had made a note of everyone's questions and each group had been searching for information to try to find the answers. Today, they were going to be sharing what they had learned for the first time. And Maria had a surprise in store.

"Snowflake didn't have white hair because he was old, he was born that way. He was an albino gorilla," said Zaynab, kicking things off.

"He's the only albino gorilla ever found," added Biel.

"His story has a bit of a sad start," explained Martina. "His whole family was killed by hunters and Snowflake only escaped by a hair's breadth."

"By a white hair's breadth?", chuckled Marcel, unable to help himself.

The class laughed. Martina grinned and went on with her story:

"Maybe you're right. It was because he looked so unusual that he was saved and sold to a Catalan naturalist, who was in the area studying gorillas at the time. His name was Jordi Sabater Pi and he was world renowned."

"And, in fact, this year, 2022, is the 100th anniversary of Jordi Sabater Pi's birth," concluded Biel.



Martina eagerly held up a drawing to show her classmates:

“Look at the pictures he drew! His drawings helped him remember things about the animals he studied. He sketched them into his field notebook, where he collected all the information from his research trips. He was careful to include all the tiny details. The drawings helped him understand the animals better.”

“We found a really beautiful quote by Jordi Sabater Pi,” added Biel. “Well, in fact, it’s not really a quote, more like five verbs you need to say in the right order: draw, observe, understand, love, protect.”

“And he didn’t just draw gorillas!”, Martina chimed in again. “He studied other animals as well, like chimpanzees. He discovered that they could make rods, which they used to open up the termite mounds. Then they picked the termites out with their hands and munched them. That is, they used tools, like us when we use a spade to dig in the sand on the beach. He also studied the world’s largest frog, the goliath frog, and a bird with a very long name: the lyre-tailed honeyguide.”

Maria glanced towards the classroom door, smiled playfully and cut in:

“Good work children. I’m sorry but we’ll need to put our information sharing session on hold for a moment because the surprise I’ve been arranging for you has just arrived.”

All eyes turned expectantly to the door. Who could it be?



“I’d like to introduce you to Jordi Galbany, a gorilla and chimpanzee researcher, who has spent a number of years living in Africa, in one of the places visited by Jordi Sabater Pi. Thank you very much for coming in to speak to our research team.”

“It’s a pleasure,” the visitor said with a smile. “Your teacher has told me that you might have some questions for me.”

A sea of hands shot up in unison.

“Why do we look so much like gorillas?”

“Because, in a way, they are our cousins in the animal kingdom. If you go back several million years, there was a great-great-great-great-grandmother, who would have been an ancestor to both gorillas and people. That’s why we resemble them, not just physically but also in the way we relate to each other. In fact, humans, gorillas and monkeys are all primates. We all share certain characteristics, such as having a large brain or particularly dexterous hands. That’s why studying them is so interesting.”



“Have you ever lived with them?”

“Well, I studied them every day, from very, very close by, yes.”

“Where were you?”

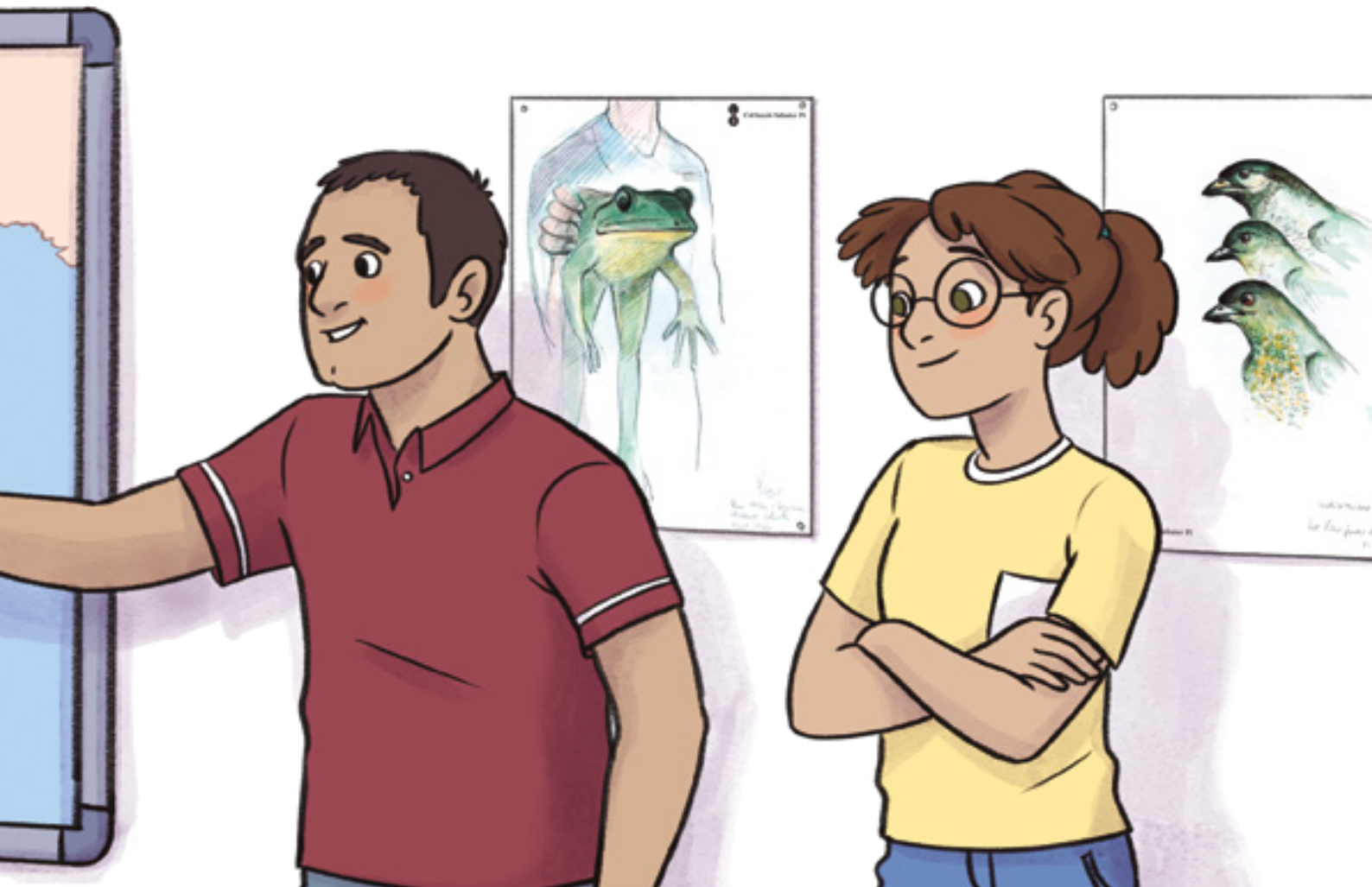
“Most of the gorillas I’ve studied are in Rwanda.”

“Is that where Snowflake was from?”

“No, Snowflake was from Equatorial Guinea. That’s where Jordi Sabater Pi came across him. There are differences between Guinean and Rwandan gorillas. I studied the ones in Rwanda, following in the footsteps of Dian Fossey.”

“We read about her when we were doing our research. She was very important, wasn’t she? She wanted to protect the gorillas she was studying and ended up being killed because of it,” said Aina.

“That’s right. Dian Fossey and Jordi Sabater Pi were both people who completely changed the way we understand, study and protect gorillas. The Karisoke Research Centre in Rwanda was founded by Dian Fossey in 1967. That’s where I spent several years studying gorillas. There are more than 120 people working at the centre now, most of them Rwandans. And today I’d like to introduce you to one of them.”



“Have you brought someone else with you? From Rwanda?”, Najat asked, wide-eyed with excitement.

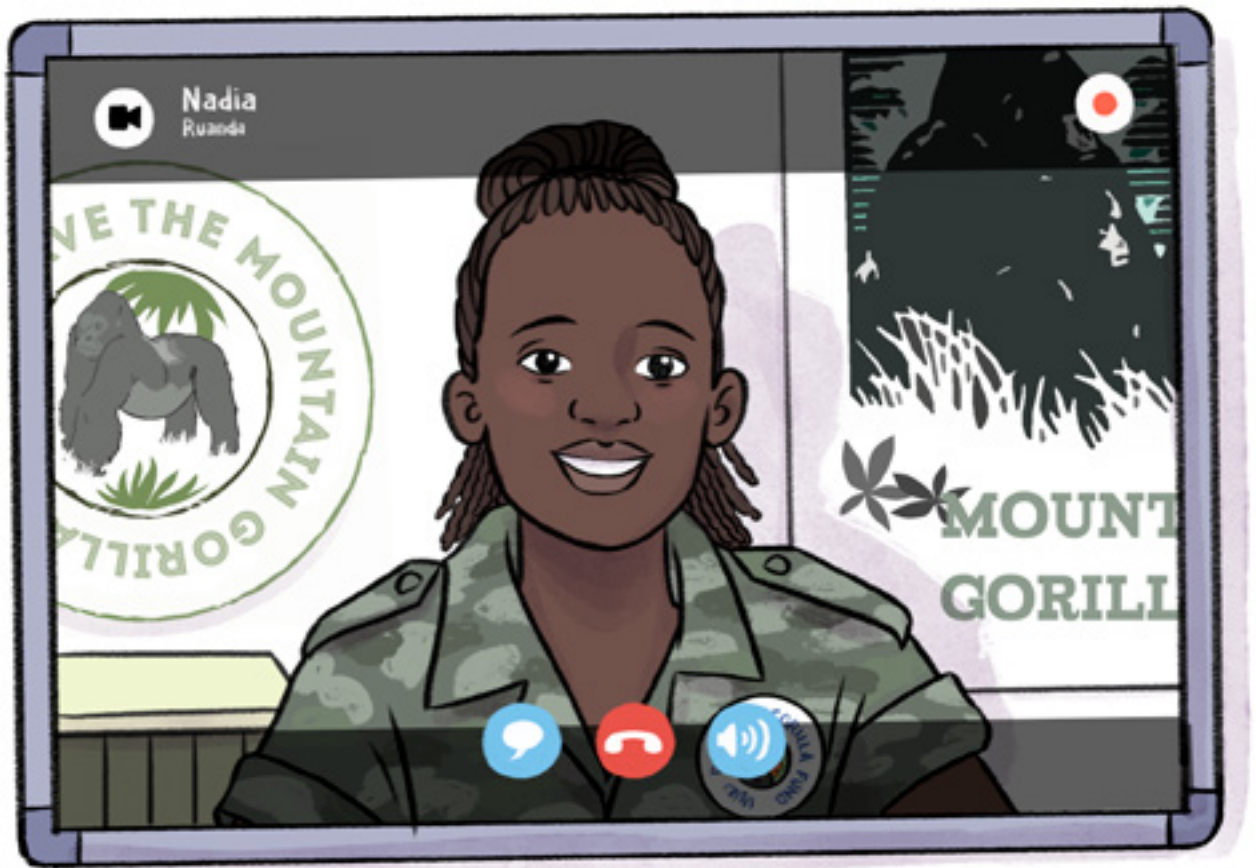
“Not quite. But we’re going to be able to speak to her online,” Jordi explained, setting up the computer. “She’s in Karisoke at the moment but she really wants to meet you all. Hello, Nadia!”

“Hello everyone!”, Nadia said as her smiling face appeared on the screen.

“Nadia Niyonizeye is a young Rwandan researcher. She hangs out with the gorillas almost every day. She’ll be able to answer many of your questions better than I can,” said Jordi, handing over to Nadia.

No sooner had he said that than the sea of hands went up again. Maria pointed to Pablo, who immediately asked:

“How do you know where the gorillas are? We learned that they live freely in the jungle and that they move from one place to another. So, do you have to follow them around day and night?”



“Not exactly, we follow them during the day, but when it starts to get dark we go back home to sleep. Very early the next morning, we get everything we need ready and then, before seven, we drive to the Volcanoes National Park, which is where the gorillas live. That’s when the trackers set to work. They’re the ones who search for the tracks from the previous day and follow them to the nests that the gorillas build for the night.”

“Nests? Like birds?”, said Najat with surprise.

“Wait, I’ll share my screen and show you some photos,” said Nadia. “As you can see, they’re much larger than bird’s nests and can only fit one gorilla, or a gorilla and a small baby. They build them every day to sleep or rest in, always in a different place. They usually build them on the ground, using plants and ground vegetation.”

“So, once they’ve found the nest site,” Nadia went on, “they start looking for more signs to see where the gorillas went. They look for footprints, droppings, food scraps or trampled vegetation. And that’s how we find the gorilla group. On a good day it might only take us ten minutes to find the gorillas, but on other days, we can be there for hours.”



“Can you play with the gorillas?”, asked Jan, whose hand had shot up again.

“Ha, ha, ha,” chuckled Nadia. “It wouldn’t be a very good idea. Apart from anything, one of the things we study is the way the gorillas behave within the group. If we became friends with a specimen, we would be interfering with our own research.”

“Ah, of course,” nodded Jan, “so, you always have to stay hidden?”

“Well, no. Hiding isn’t a good idea either. In fact, it can be very dangerous. We might scare them and they could attack us. Jordi Sabater Pi, who also spent a season here working closely with Dian Fossey, did a lot of research on precisely that subject. In the past, people saw gorillas as terrifying monsters. But after analysing all the documented attacks, Jordi Sabater Pi found that gorillas actually only resort to violence when they feel threatened. And you have to realise that, for them, an invasion of their territory or getting too close to their young is like an attack. You have to be very careful.”

“So, how do you go about studying them?”, asked Àlex, looking nervous.

“What we do is get them used to our presence,” replied Nadia. “We want them to behave normally, as if we’re not there, but aware that we are. Dian Fossey was the great pioneer of that approach. She knew that in order to study gorillas she had to be able to recognise them individually. She had to be able to observe them very closely. So, to get them to get used to her, what she did was imitate them: making the same gestures, the same noises, walking like them (like this, on her knuckles), and even eating the same as they did.”



“How can you tell the gorillas apart? They all look the same to me,” asked Yihan with interest.

“It’s true that they can look very similar to us and you need to have a very trained eye to recognise one from another. But there are some differences that are very easy to spot. For example, males are much larger than females. In fact, they can weigh twice as much.”

“Wow, twice as much?”, said Yihan, astonished.

“A male can weigh as much as 180 kg. Males and females grow at more or less the same pace until the age of eight, which is when they enter adulthood. From then on, females start to grow more slowly, while males keep growing very rapidly until the age of fourteen.”

“In fact, that’s precisely one of the things we study in the park: the growth patterns of the gorillas,” said Jordi. “Now here’s a question for all of you. Does your family measure your height each year to see how many centimetres you’ve grown?”



“Yes, mine do,” said Martí, excited to have something in common with the gorillas. “My mothers make us stand very straight up against a wall and mark our height with the pencil. They do it every year, on our birthday.”

“Great! And you probably get measured when you go to the doctors as well, don’t you? That’s more or less what we do, except for one small detail, we can’t take the little gorillas to the surgery every time we want to measure them. We have to do it out in their natural habitat, and from quite far away. That’s why we use lasers.”

“Like in space movies?”, asked Pol, who was a big film buff.



Jordi got up and took a laser pointer out of his pocket.

“More like these little ones you can find in the shops,” he explained, demonstrating how it worked by aiming the beam at the wall. “We aim two parallel lasers at the baby gorilla (don’t worry, it doesn’t hurt them at all, they don’t notice anything), and then we take a photo. We can measure the distance between the lasers in the baby’s hair and then calculate its exact size. Being able to use these lasers has had a huge impact on my area of research. There wasn’t anything like that around in Jordi Sabater Pi’s time. With everything he achieved, just think what he could have done if he’d had access to all the technology we have today!”

“We measure lots of different babies,” said Nadia. “We want to see whether they are growing at the correct rate or whether something is affecting their growth. Maybe they are finding it hard to find food. Or maybe they have a very young mother.”

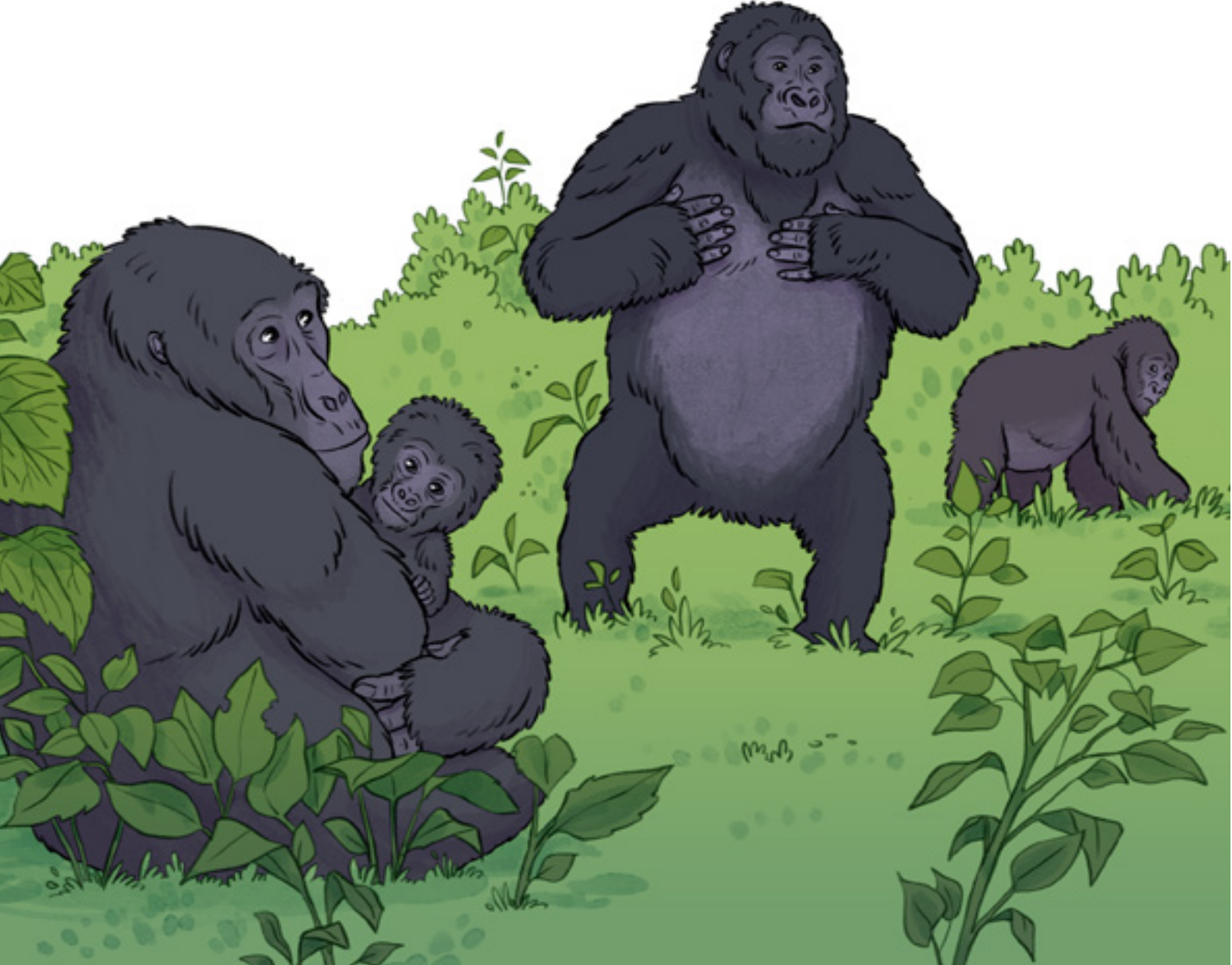
“Nadia, our group read that you can also tell how big a gorilla is by the noise it makes when it beats its chest. But we didn’t really understand how it works,” asked Biel.



“Wow, great research! Before I answer though, I’m going to let you in on a secret. Did you know that almost everyone gets their gorilla imitations wrong? Normally people beat their chest with their fists closed but when gorillas do it they actually have their hands open so their palms are flat.”

Maria had to ask the class to quieten down after that, because most of the children had started beating their chests like gorillas.

“Gorillas use chest bumps to communicate with each other,” Nadia went on when things were calmer. “And to answer your question, the bigger a gorilla is, the louder the sound it makes when it beats its chest. That way, the other gorillas can get an idea of how big the male is from quite a distance and make decisions, such as whether to run away or go and meet him.”



“My group found out that gorillas are herbivores. What’s their favourite food?”, Pablo asked.

“That’s right, gorillas are herbivores,” confirmed Jordi. “They’re very lucky because they are surrounded by food they really like. It’s like living inside a big salad bowl.”

“How boring to always have to eat salad!”, Àlex said, pulling a face.

“Not for them, I assure you,” replied Nadia, smiling. “They love to eat a plant called bedstraw, as well as thistles and wild celery. Oh, and tender bamboo shoots, although they have to go foraging for those in the lower areas of the park.”

“Do you draw animals too, like Jordi Sabater Pi did?”, asked Martina, who loves anything to do with art.



“I wish I could draw like him! No. In general, we take photographs. And note down our observations. We collect lots and lots of data on gorillas. To give you an example: we watch one particular individual for an hour and record what they’re doing every ten minutes. Then, we switch to another gorilla and do the same, and so on, all day long, every day of the year. We note down whether they are eating, walking, resting or playing. And we also record anything out of the ordinary, like a fight between two groups or whether they are mating.”

“Thanks to these ongoing observations,” Nadia continued, “we discovered that the gorillas always sit in a certain way when they are resting as a group. The leader, which tends to be a ‘silver back’ male, stands in the middle of the group. The females sit around him, with the rest of the males a little bit further away. Imagine what we are able to learn just by looking at the way they sit.”

Maria clapped her hands: “Ok everyone, you can ask Nadia one last question, it’s almost time to wrap things up.”



“Is living in the jungle dangerous?”, asked Laia, a timid girl by nature.

“Well, a little bit, yes. There are some very deep ravines here in the park and if you lose your way and fall, it can be very difficult to get out. There are also some animals that can be dangerous and problematic. Bees, for example, don’t really like to be disturbed...”

“I’m scared of bees,” said Laia, now flapping her arms around to frighten off any potential imaginary bees.

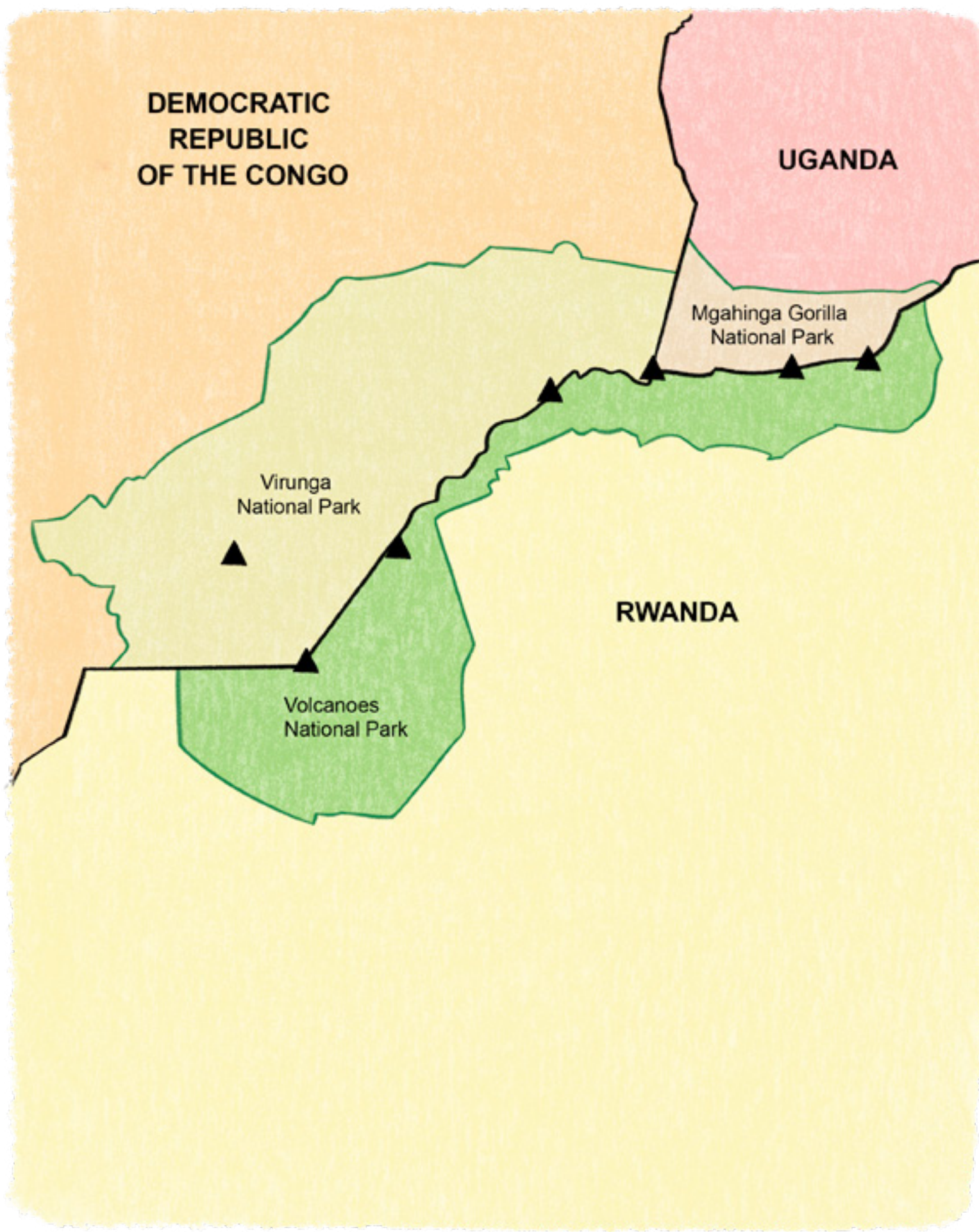
“You see, that’s something else we have in common with gorillas. They don’t like them at all either and they run away scared if there are any around,” said Nadia, laughing.

“I thought there would be some bigger dangerous animals,” said Àlex with some disappointment.

“There are! Buffaloes, for example, like to hide among the vegetation and can give you a good scare,” joined in Jordi. “And elephants, but they’re only around in the summer and you don’t normally see them. And humans are dangerous too. Unfortunately, there are still poachers who want to kill gorillas and other animals.”

This last piece of information sparked great indignation among the classmates.





DEMOCRATIC
REPUBLIC
OF THE CONGO

UGANDA

Mgahinga Gorilla
National Park

Virunga
National Park

RWANDA

Volcanoes
National Park

“One of our main goals here in the park is the successful conservation of the species,” Nadia reassured them. “We want to ensure the gorilla population in Rwanda thrives. It’s a difficult job because the national park is very small and surrounded by villages and agricultural land, which means it can’t be extended. You could say that the gorillas live in ‘forest islands’. Gorilla groups need more space for their populations to increase and to stop the species being under threat of extinction. And that’s one of the biggest challenges we need to overcome in the future.”

“In fact, this conservation work started back in Jordi Sabater Pi’s time and he himself was a great champion of that,” Jordi added. “In his case, having used planes to look at a variety of regions in Guinea, he was able to identify those areas that should be protected.”

“Time’s up I’m afraid, children. Thank you so much, Nadia and Jordi, for all the information you’ve given us, our exhibition is going to be amazing.”

“Absolutely! I really want to see how it turns out. Send me some photos! Goodbye everyone!”, said Nadia, signing off.

“Bye, Nadia! Hope to see you soon!”, added Jordi before closing the computer and also saying his farewells to the children.

When the bell rang, all the gorilla cousins in the class packed up and headed home.

“Hey, it’s Tuesday, does anyone fancy going to Parc dels Pins?”, asked Martina.

“Yes, great! Why don’t we play a game. We can imagine we’re researchers in the park here, just like Jordi Sabater, Jordi Galbany and Nadia Niyonizeye?”, suggested Zaynab.

“But there aren’t any gorillas in our park,” said Àlex, somewhat grumpily.

“No, but we can study some of the people we find there. Jordi said that we’re all primates. If they are our cousins, they can’t be so different!”, replied Martina.

“Or, if not, we can always imagine that they’re gorillas!”, joked Zaynab.

“Sounds fun! Count me in!”, said Biel enthusiastically. “When I grow up I want to be like Nadia and go to Africa to study animals.”

A few hours later, the group were together in the park, hidden behind some bushes.

“Okay. We’re at the entrance to the jungle, I mean the park, ready to start our expedition,” announced Martina. “Now, what was the first thing that Jordi and Nadia told us?”

“I remember! First we have to be trackers,” piped up Zaynab. “Did you bring the magnifying glass? Remember, we have to look for scraps of food, footprints, trampled grass. Start searching everyone!”

After a few seconds of serious searching, two of the children called out:

“I’ve found something! I’ve found a trail. Look, sunflower seed shells on the path leading to the basketball court.”

“There are more tracks here! This one is long and thin. It looks like wheels. They’re heading towards the children’s park.”

What should they do?



Follow the trail of sunflower seed shells.
Go to Page 24



Follow the tyre tracks
Go to Page 29



“What do we do now?”, asked Martina.

“I don’t know. There are so many people in the park, it’s almost full. It’s crazy! We need more space!”, complained Àlex.

“We’re experiencing the same situation as the gorillas in Rwanda, we need a bigger park,” Zaynab pointed out.

“But there’s no way of making it bigger when it’s surrounded by streets and buildings,” said Biel.

“When I grow up, I’m going to become mayor and I’ll make sure that there are lots more parks full of trees and plants for everyone to enjoy,” announced Martina.

“Sounds like a good plan!”, agreed Biel. “But right now, we need to go home, it’s almost time for dinner. See you tomorrow!”



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The children followed the trail of sunflower seed shells as far as the basketball court, where they spotted a group of teenagers huddled around a bench on the other side of the court.

“Look! There’s a group of specimens we can study. And we already know something about them – they don’t throw their sunflower seed shells in the bin,” Zaynab pointed out disapprovingly.

“We could ask them if they want to play a match,” Martina suggested enthusiastically, “See, they’ve got a ball with them.”

“What are you talking about? I vote we hang around next to them and pretend to play among ourselves so they forget we’re here,” countered Àlex.

What should they do?



Play basketball with the group of teenagers.
Go to Page 30



Play a game near the group of teenagers to get them used to their presence.
Go to Page 28



The group went over to the man with the baby and Martina stepped forward to ask for the information they needed, explaining that they were doing a science project for school.

“He measures 75 cm and he’s 9 months old; he’s quite tall for his age,” the man answered, smiling.

Then it suddenly dawned on them that they had broken one of the golden rules Nadia had given them – not to interact with the specimens they are studying!



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“Come on, let’s get a little closer and take the picture,” whispered Martina. “Zaynab, position the lasers in front of the camera, pointing towards the baby, like this. Let’s see, I think it’s a bit smaller than the distance between the two sticks, I mean between the two lasers.”

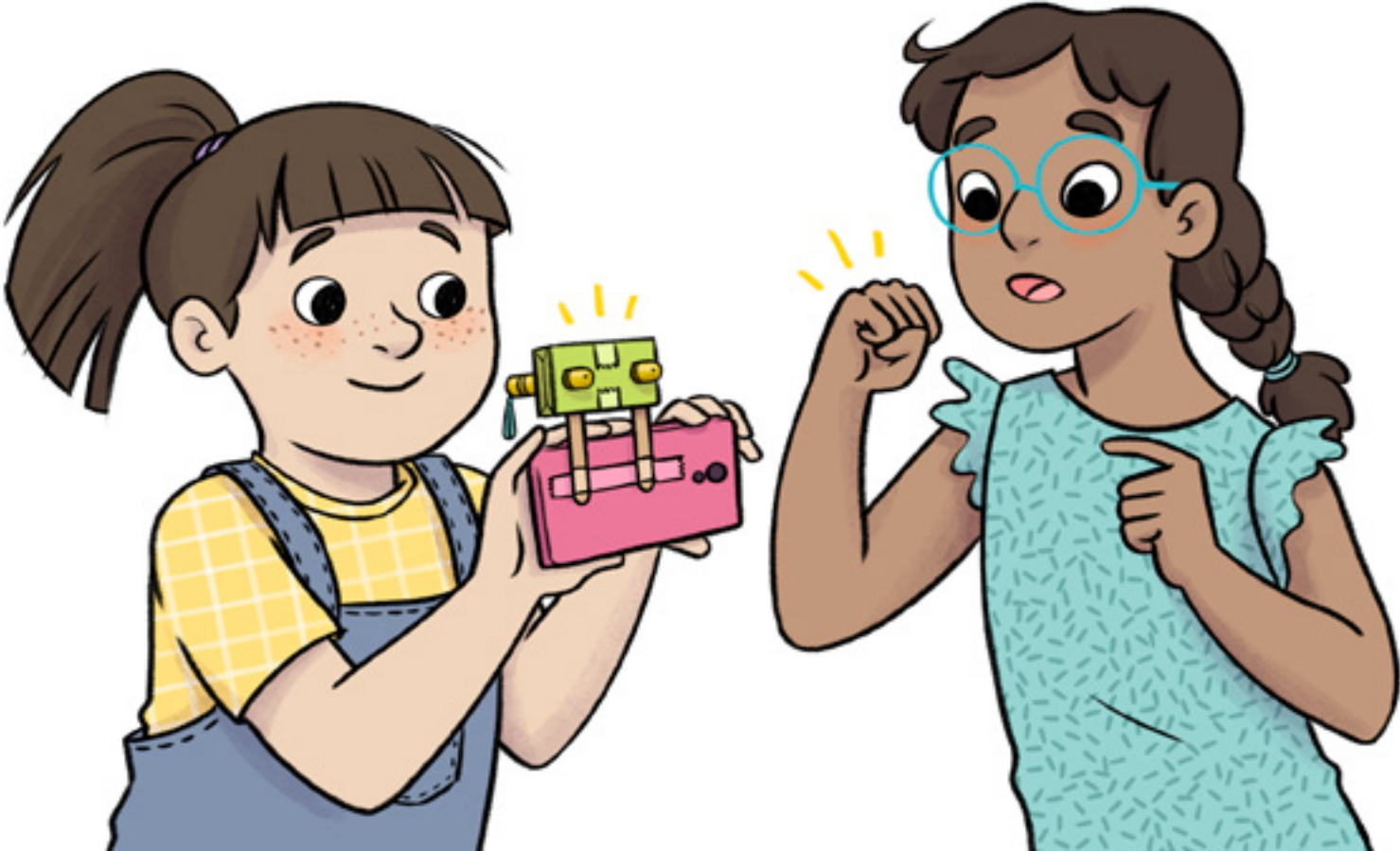
“Wait, don’t move!”, cried Zaynab. “We have to measure the distance between the lasers, remember? It’s pretty much the same size as my fist.”

“OK, I’ve recorded it in the field notebook!”, confirmed Biel.

“Come on! Let’s take some more measurements. Remember Nadia told us that you always need to take lots and lots of measurements!”, said Zaynab.

The classmates spent quite some time measuring the height of various children in the park, ignoring the slightly strange looks they got from bemused parents.

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“What are they doing?”, asked Biel, who was sitting with his back to them.

“They’re talking and looking at a mobile phone. It’s very odd, there’s one girl in the middle of the group and the others are gathered around her.”

“She must be the leader,” suggested Zaynab.

“What are they talking about?”, Biel insisted. “I can’t hear, there’s too much noise.”

“It’s impossible to hear. Their music’s turned up too loud!”

“And it’s not only them... Here comes someone else listening to loud music while they’re running.”

“Haven’t they ever heard of headphones?”

“And listen to that trail bike going down the next street! What a racket!”, grumbled Àlex.

“The gorillas make lots of noise too, beating their chests,” Martina reminded them. “Maybe that’s like people making noise in the street?”

They thought about it for a moment, suddenly aware of the amount of noise they are surrounded by every day.



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“What shall we pretend to play?”, asked Biel.

“Marbles? I’ve got mine with me,” Zaynab suggested.

The children began playing marbles, rolling them closer and closer to the group of teenagers so that they could get a better view. At first, some looked at them suspiciously. At one point they even looked as though they might be about to tell them to get lost but, after a while, they forgot all about them.

“We did it,” Martina whispered happily. “They’ve got used to us. Now we can study them up close.”

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The classmates followed the tyre tracks until they reached the children's park, where a man and his baby were playing in the sandpit (their pushchair parked close by).

"Look, a human child. We need to measure it to find out whether it's growing at the correct rate," Martina reminded them.

"I brought the camera," said Biel, making a rectangle with his fingers as if framing a shot.

"And I have the lasers," called Zaynab, hastily picking two twigs up off the ground.

"But wouldn't it be easier just to go and ask the baby's father?", asked Àlex. "Surely he would know."

What should they do?



Take a photograph.
Go to Page 26



Ask the baby's father.
Go to Page 25



Martina went over to the group of teenagers to ask whether they would like to play a game of basketball. Despite not being keen at first, eventually they formed two teams and began bouncing the ball up and down the court.

Biel had his doubts about the idea. Nadia had specifically said they shouldn't interact with the specimens they wanted to study. But he did also think a game of basketball might be fun.

“Okay!”, he said with a shrug. “But let's play the jungle quest game another day, alright?”

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At school the next day, the children began working on their exhibition with the rest of their classmates.

Nadia and Jordi had sent them some beautiful photos and the students had also found lots of drawings they could use from the University of Barcelona Jordi Sabater Pi Collection. Their idea was to turn the library into a jungle, complete with plants and animal sounds. They wanted everyone in the local area to be able to wander in, meet the gorillas and learn why they need to be protected.

Maria looked on proudly as they worked... When it comes to understanding and explaining the world around them, the Class 4B students... always choose science, choose research.





Class 4B gets a very special visit that will allow the students to dive into the most cutting-edge gorilla research being carried out in Catalonia and Africa. On their adventures, they'll learn about Jordi Sabater Pi, a Catalan naturalist who studied the behaviour of a wide range of animals. Finally, they'll choose the research that will lead them to discover that people are much like gorillas, our evolutionary cousins.



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