Measure to find the Treasure

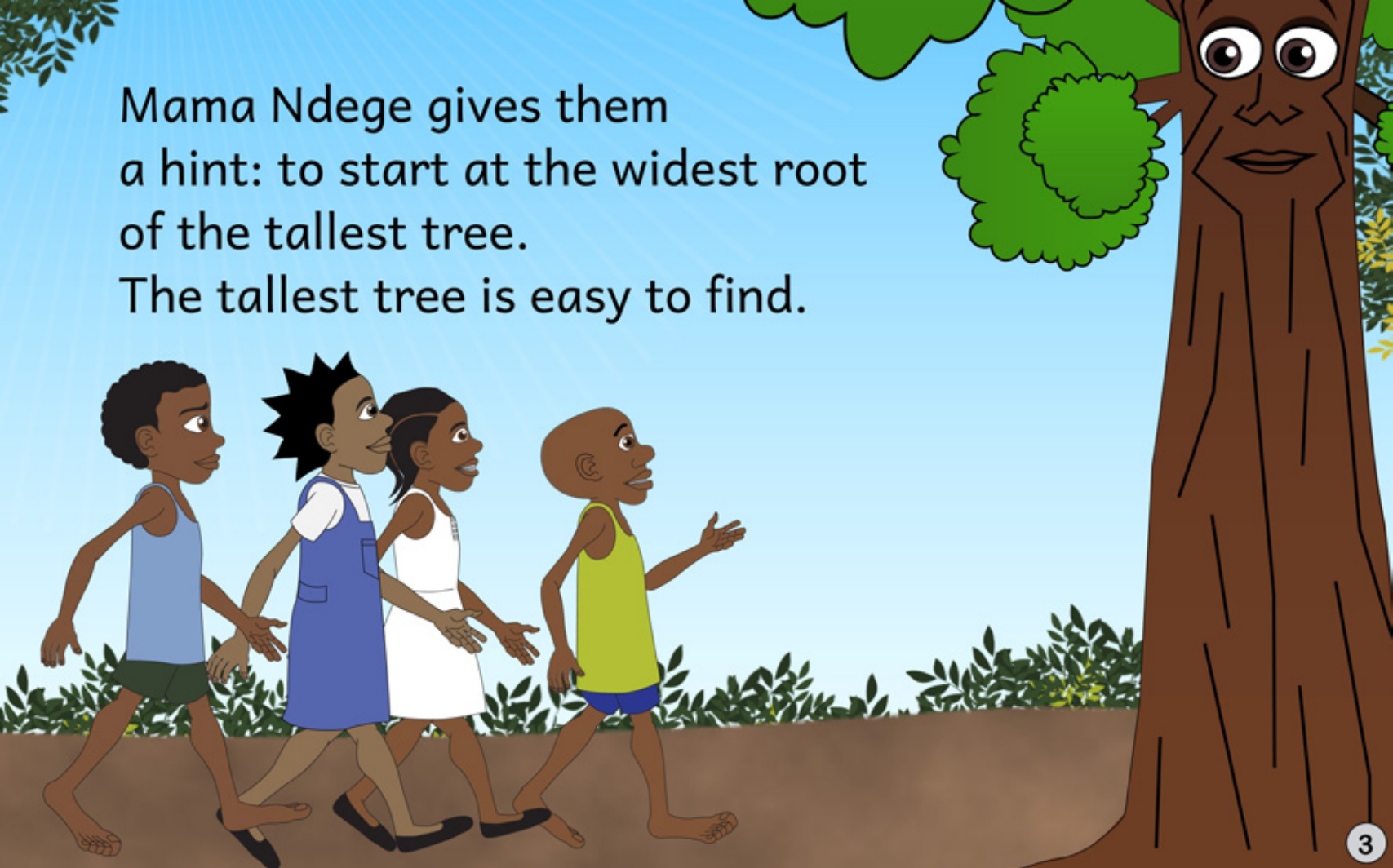
length & distance

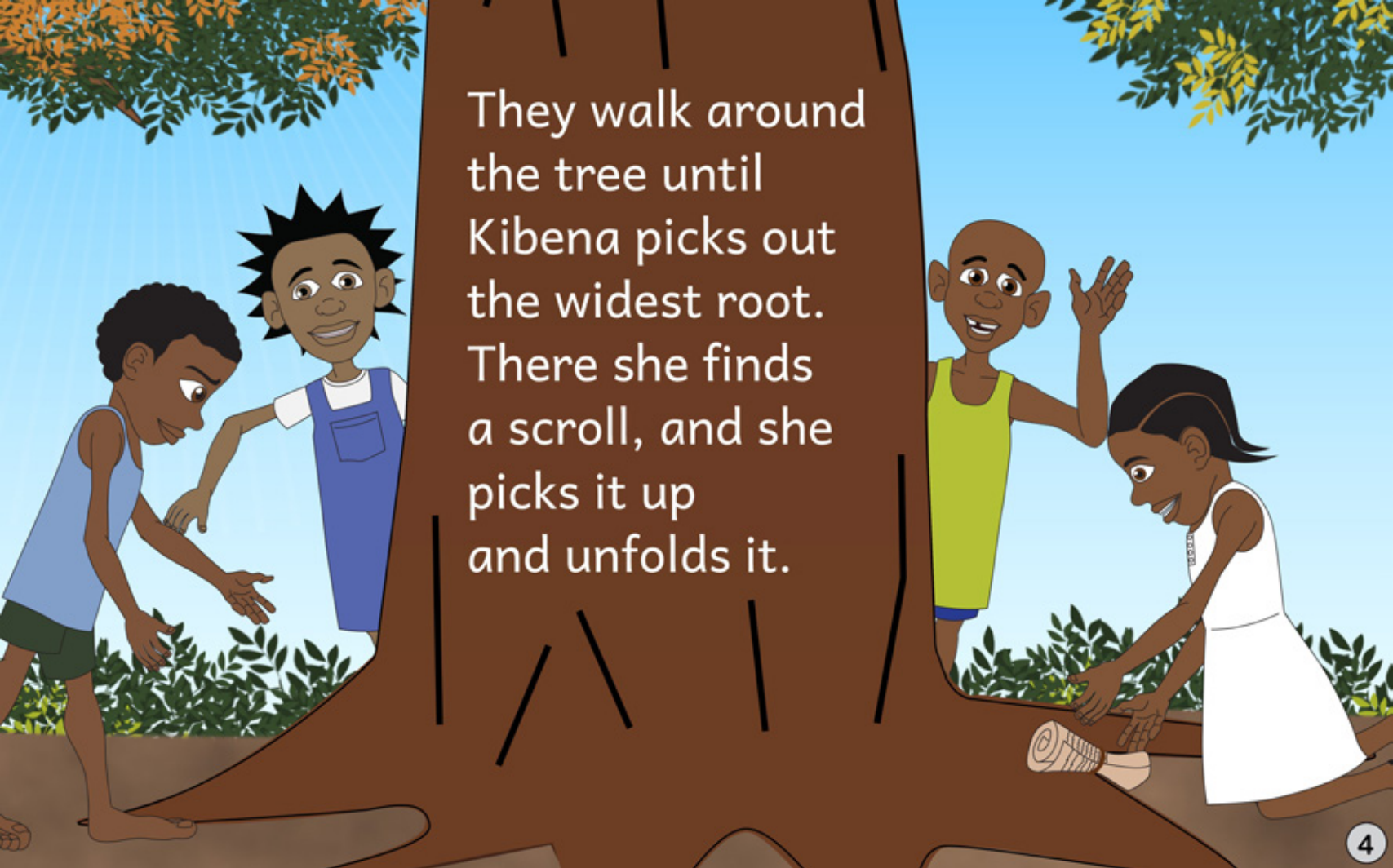
Age
Umri
7+

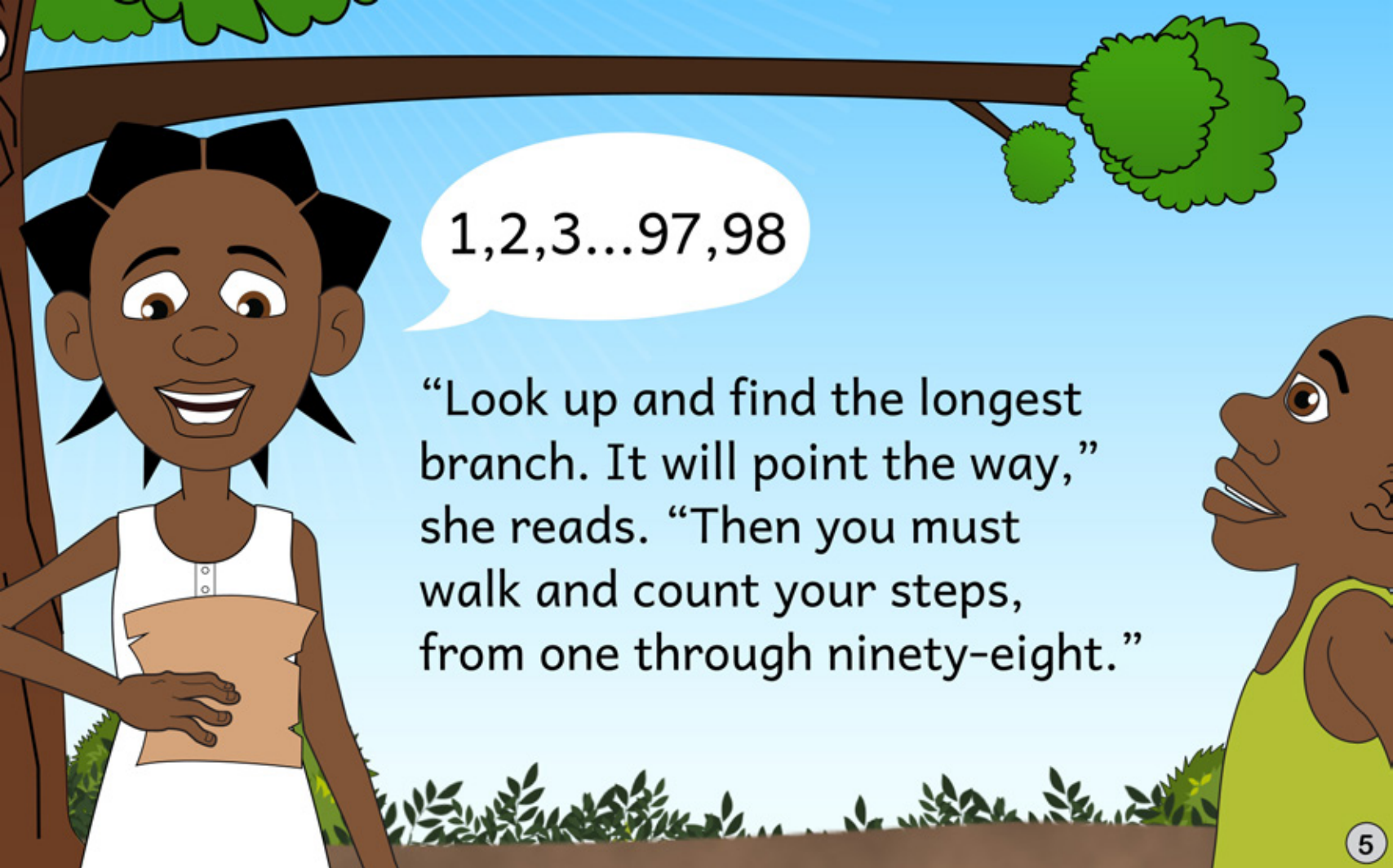
One day, Mama Ndege tells the children a story about a wise bird who hides some treasure. She tells them that only the cleverest of people can follow the clues and find the treasure.

Kibena, Kiduchu, Koba and Baraka think that they are clever enough to follow the clues... but they need to know where to start.
We're clever enough
Where do we start?
I'll use my ubongo

Mama Ndege gives them
a hint: to start at the widest root
of the tallest tree.
The tallest tree is easy to find.




They walk around
the tree until
Kibena picks out
the widest root.
There she finds
a scroll, and she
picks it up
and unfolds it.

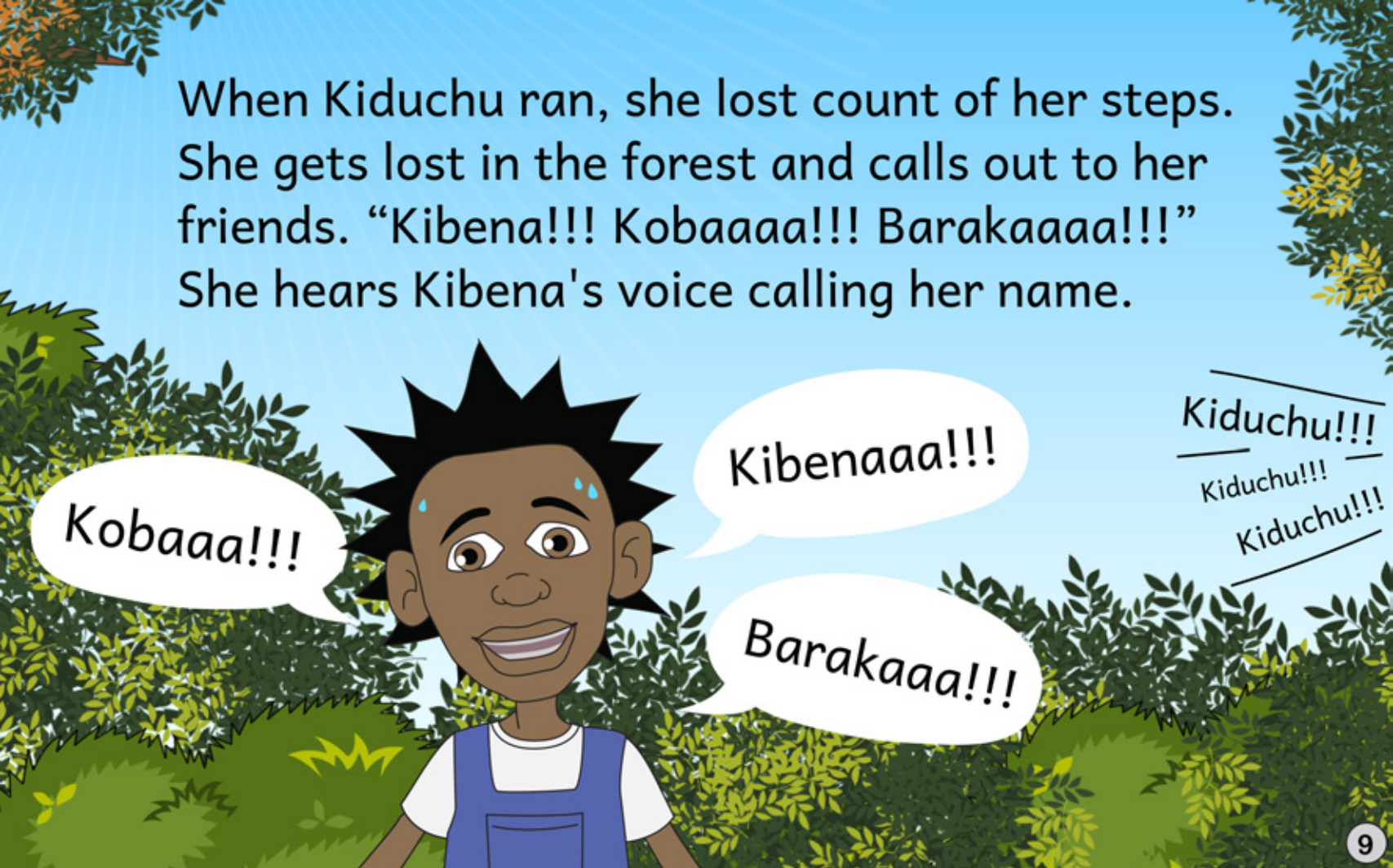

1,2,3...97,98
"Look up and find the longest branch. It will point the way," she reads. "Then you must walk and count your steps, from one through ninety-eight."

After finding the longest branch, the kids start out in the direction it points, counting their steps as they go. “One, two, three, four,” they count, but Kiduchu gets impatient and runs ahead.

"...ninety-six, ninety-seven, ninety-eight!" Koba, Kibena and Baraka have each counted ninety-eight steps. They end up in slightly different places because they each have different stride lengths!

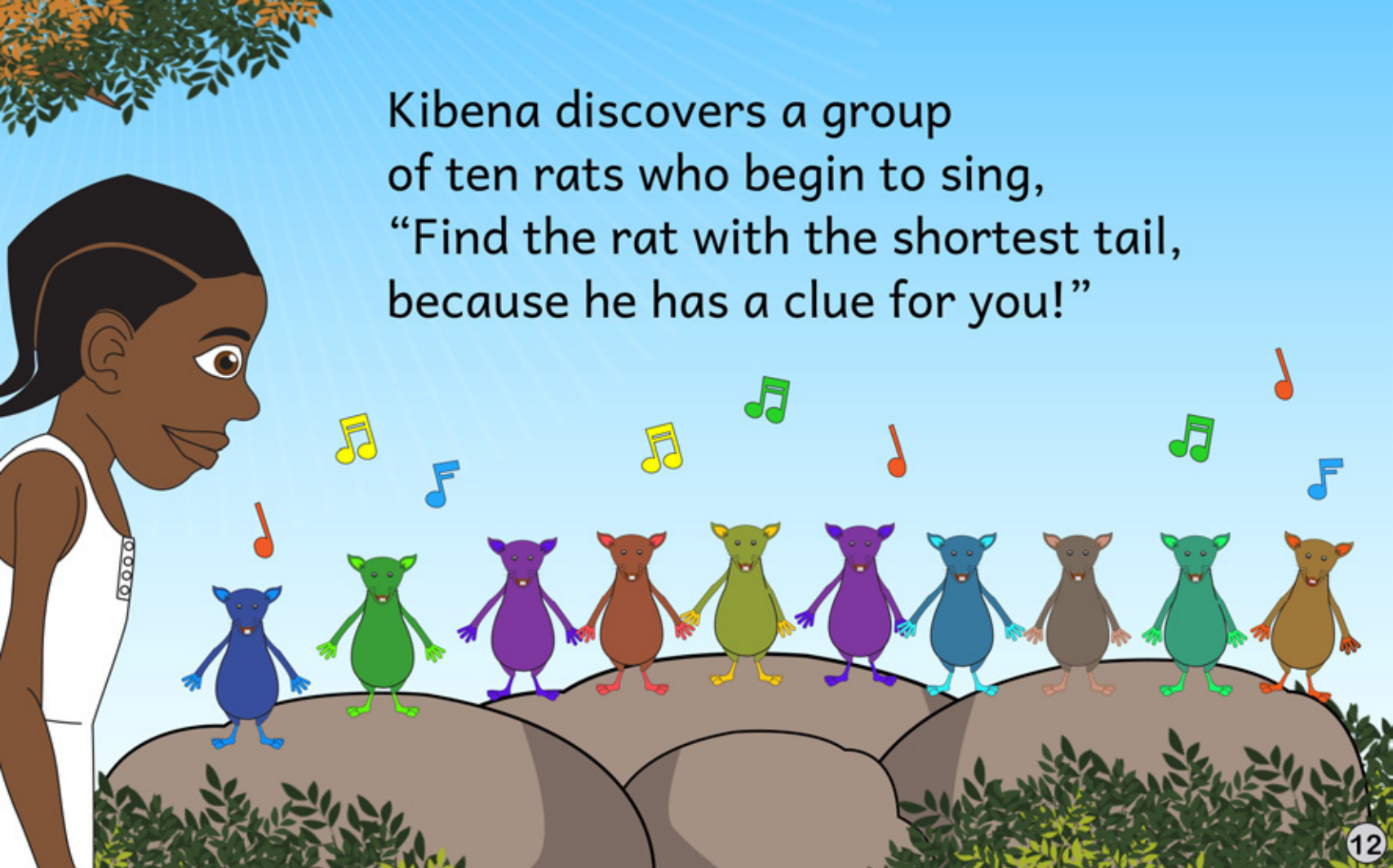
“Where should we look?” asks Baraka.

When Kiduchu ran, she lost count of her steps. She gets lost in the forest and calls out to her friends. “Kibena!!! Kobaaaa!!! Barakaaaa!!!” She hears Kibena's voice calling her name.

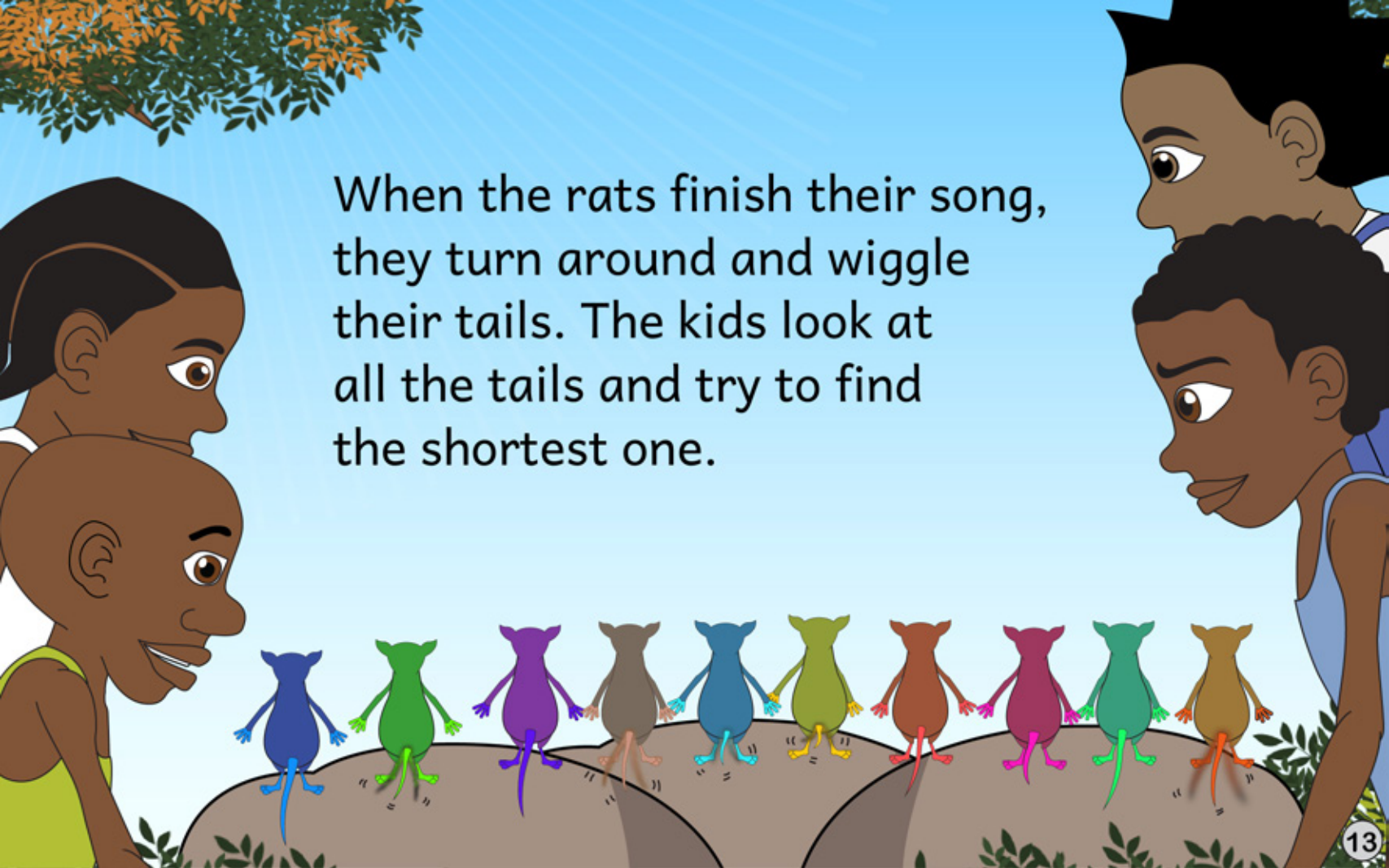


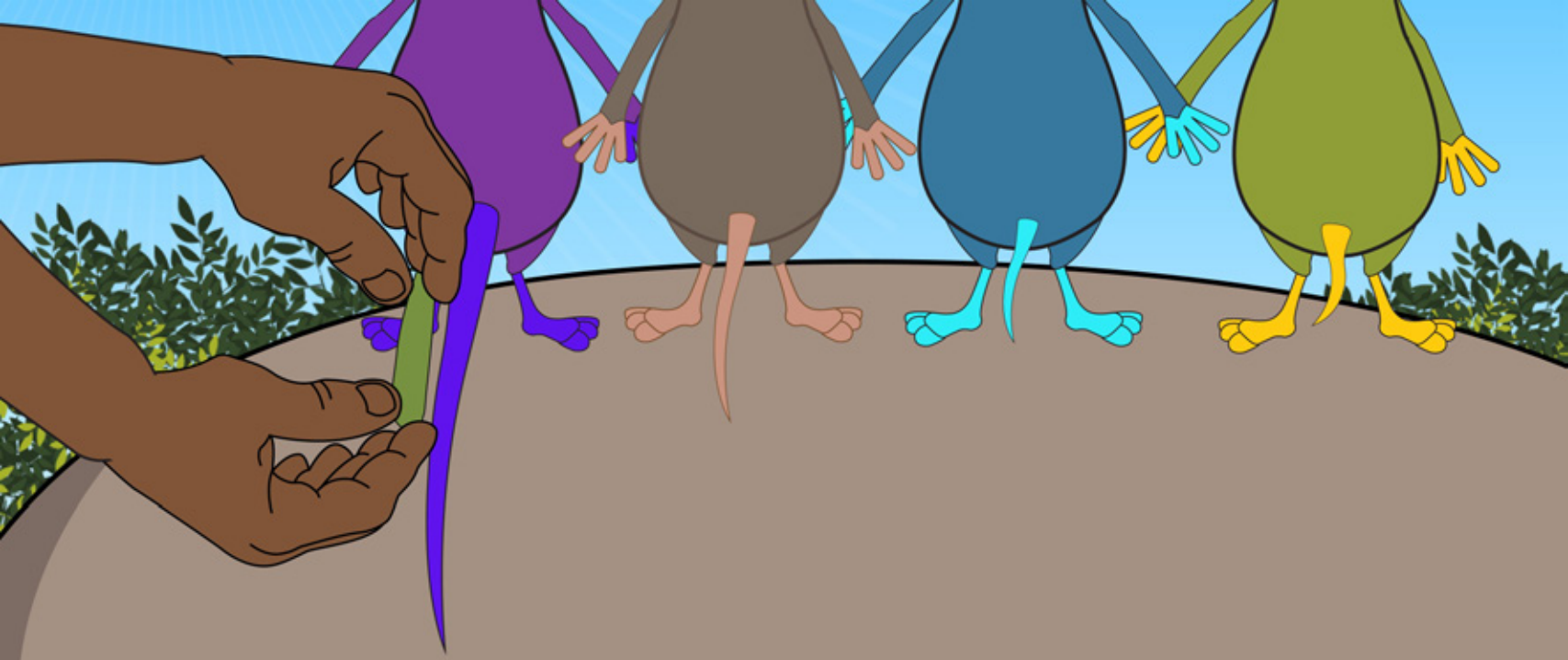
Kiduchu finds the others, and they explain to her that their steps were different lengths.

Kiduchu was no help at all, because she had lost count of her steps. They wonder what to do, and they all start to look around.

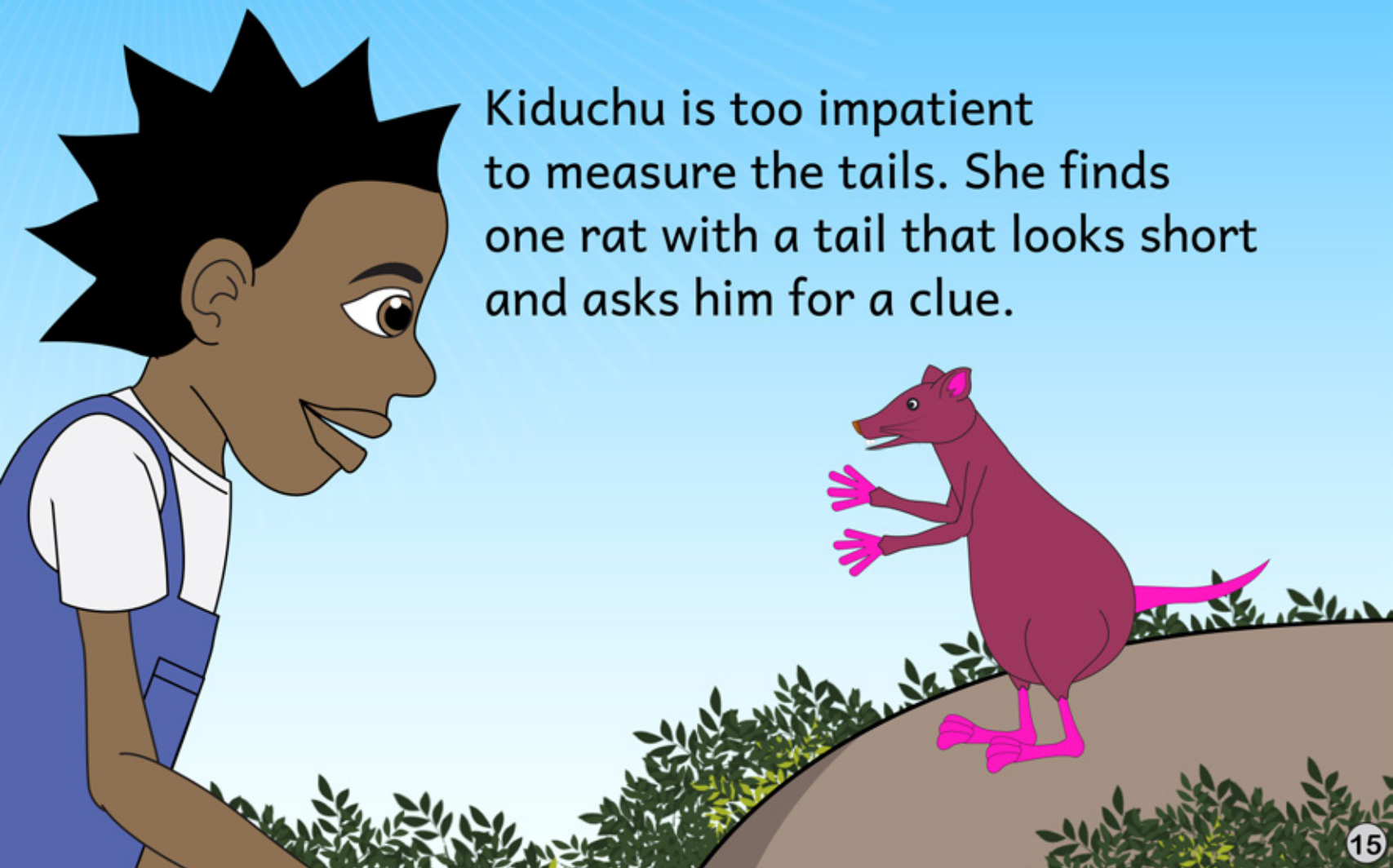

Kibena discovers a group
of ten rats who begin to sing,
“Find the rat with the shortest tail,
because he has a clue for you!”

When the rats finish their song, they turn around and wiggle their tails. The kids look at all the tails and try to find the shortest one.

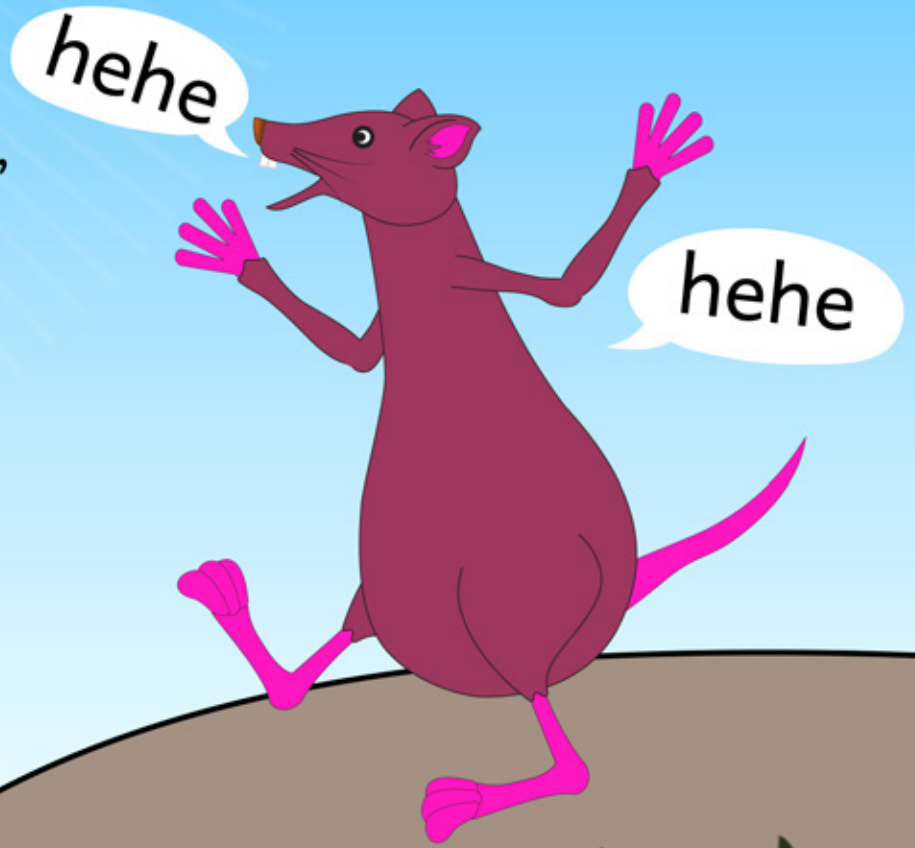




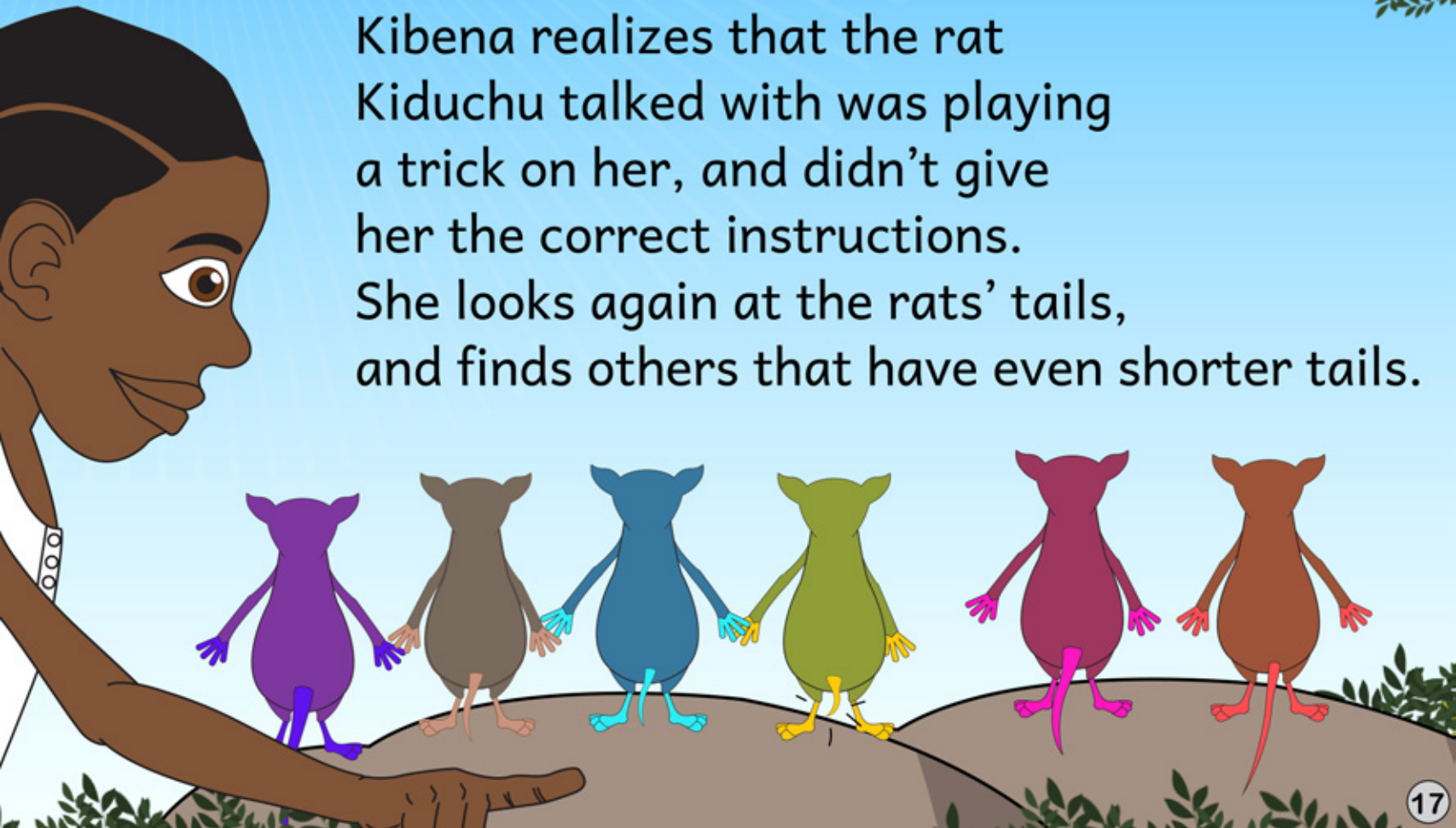
Kibena thinks that they need to find a way to measure the lengths of the tails. Koba picks up a pea pod and says, “Let’s use this to measure!”


Kiduchu is too impatient
to measure the tails. She finds
one rat with a tail that looks short
and asks him for a clue.

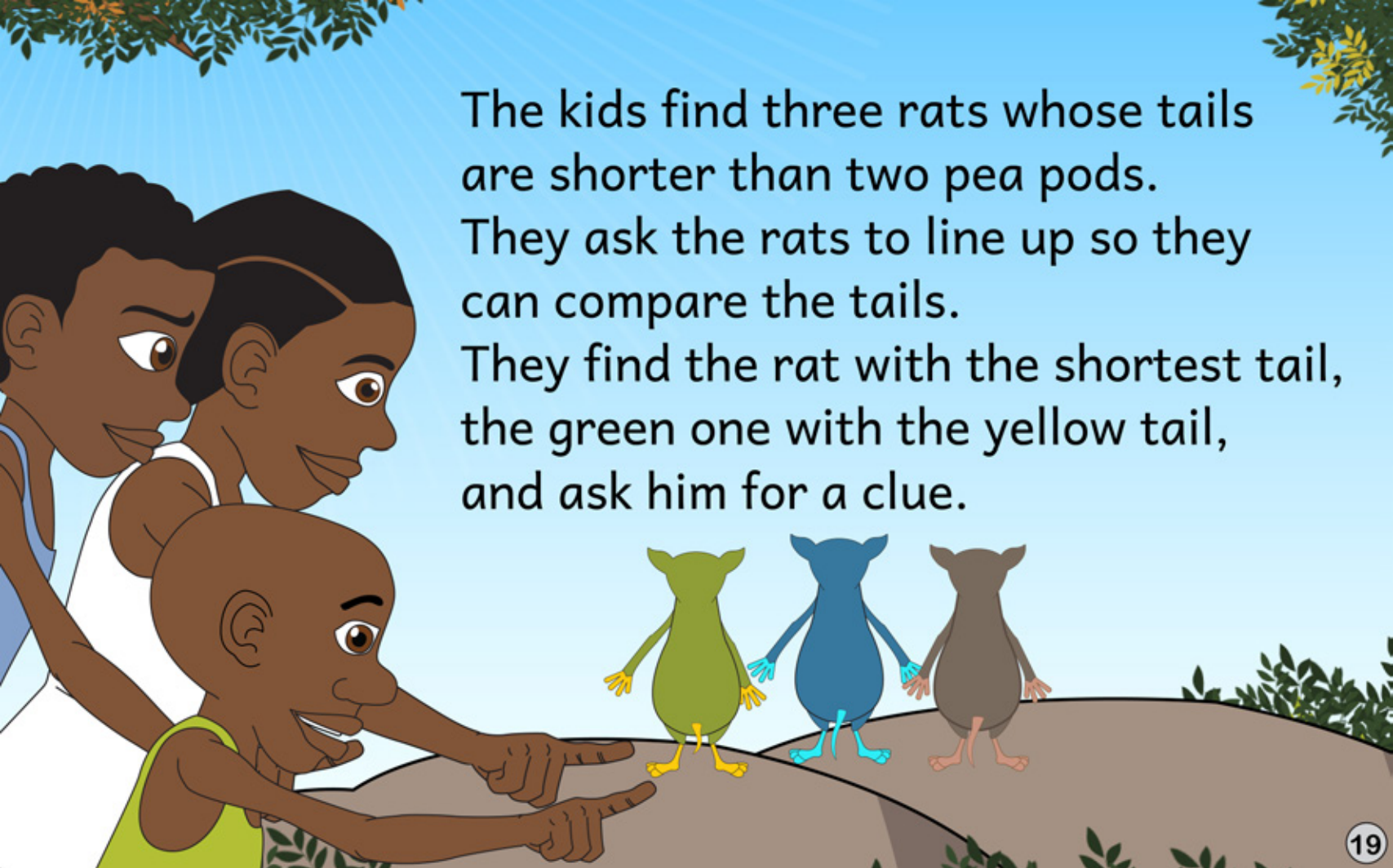
"Run one way
for seven hundred steps,
then left for fifty-two.
Next, jump three times
and spin around
sixteen times.
Then, walk forward
twenty steps,
and finally sit down
and use your BRAIN!"



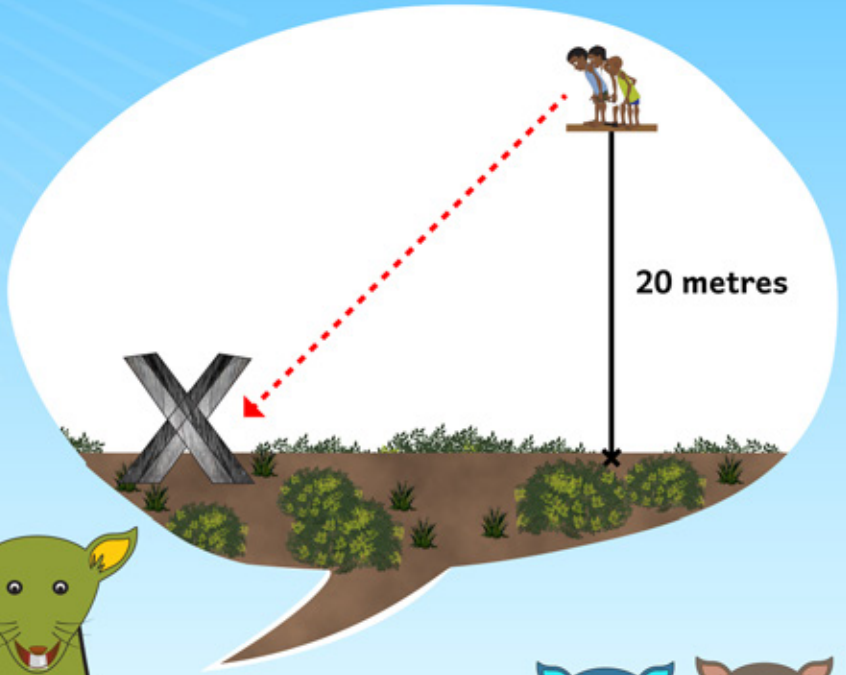
Kibena realizes that the rat
Kiduchu talked with was playing
a trick on her, and didn't give
her the correct instructions.
She looks again at the rats' tails,
and finds others that have even shorter tails.



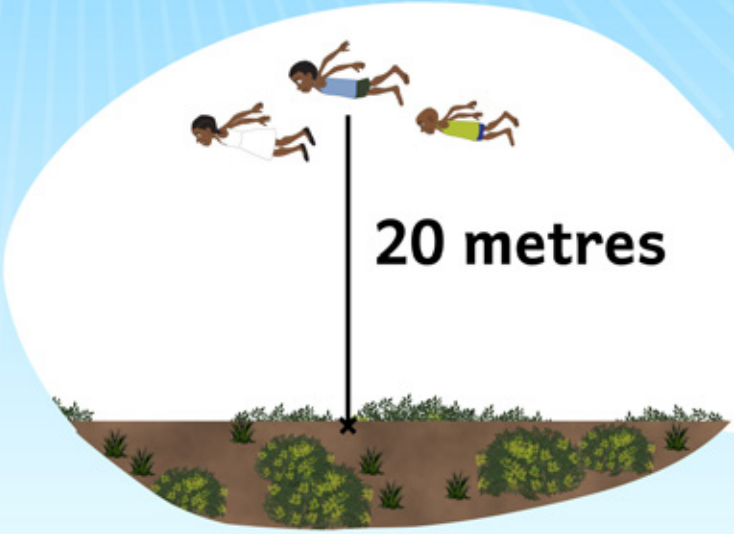
They try to call Kiduchu to come back,
but she is already gone.


The kids find three rats whose tails
are shorter than two pea pods.
They ask the rats to line up so they
can compare the tails.
They find the rat with the shortest tail,
the green one with the yellow tail,
and ask him for a clue.
19

The rat tells them that the next clue can only be seen from up in the air.
"When you are 20 metres above the ground, you will see an "X" that marks the spot."



“How are we going to get twenty metres up in the air?” asks Koba. “We can’t fly!”

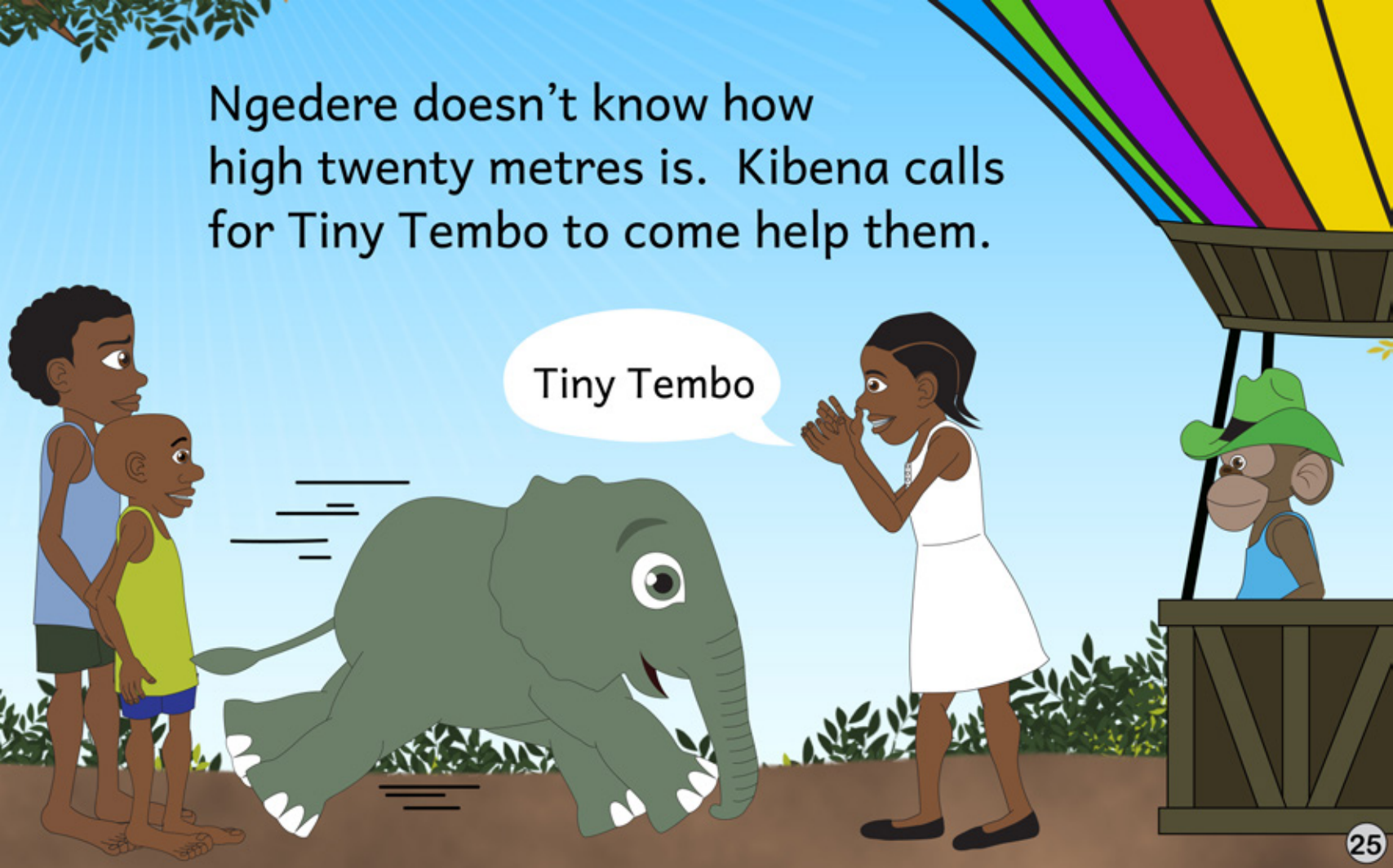


But Baraka spots a hot-air balloon in the sky. “Balloooon!!!” the rats shout, before clapping their hands and running off.

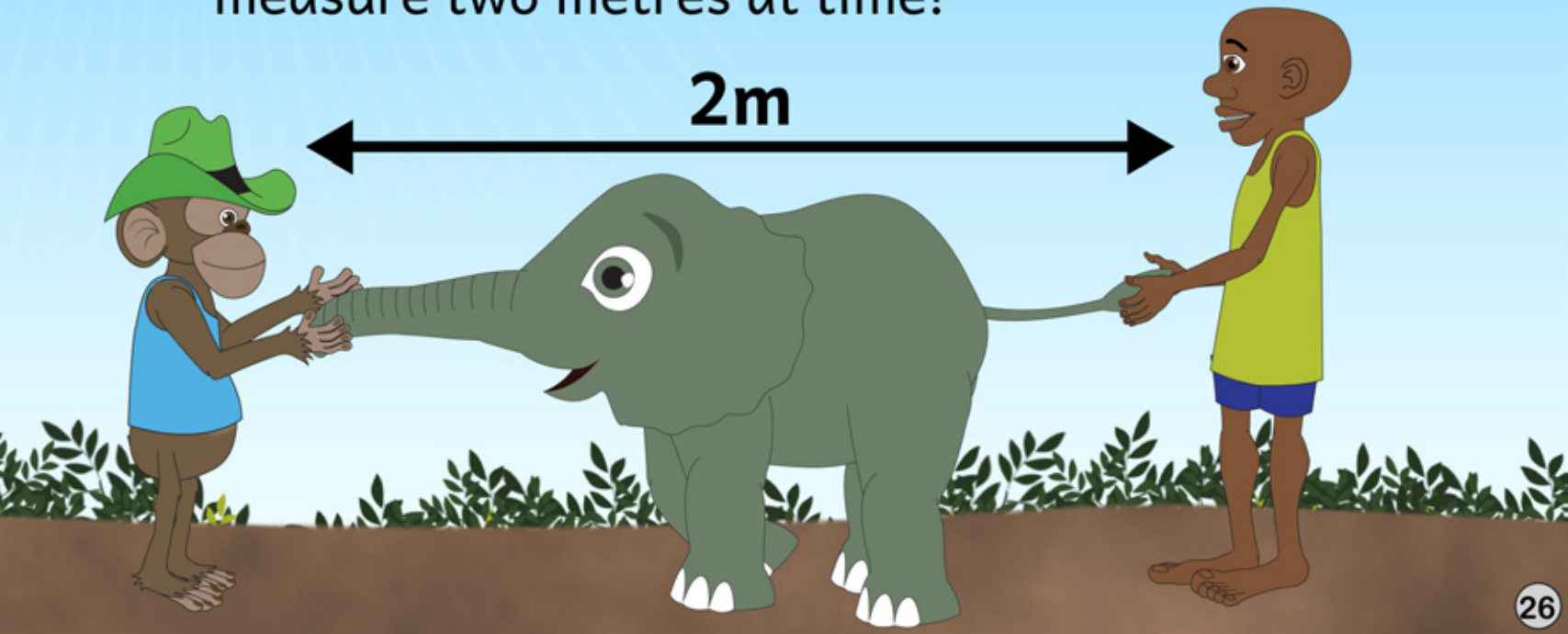
The balloon lands
and Ngedere
is in the basket!
“I heard you guys
needed a lift!”
Ngedere says.

“Can you take us
up to a height
of twenty metres?”
Kibena asks.

Ngedere doesn't know how high twenty metres is. Kibena calls for Tiny Tembo to come help them.



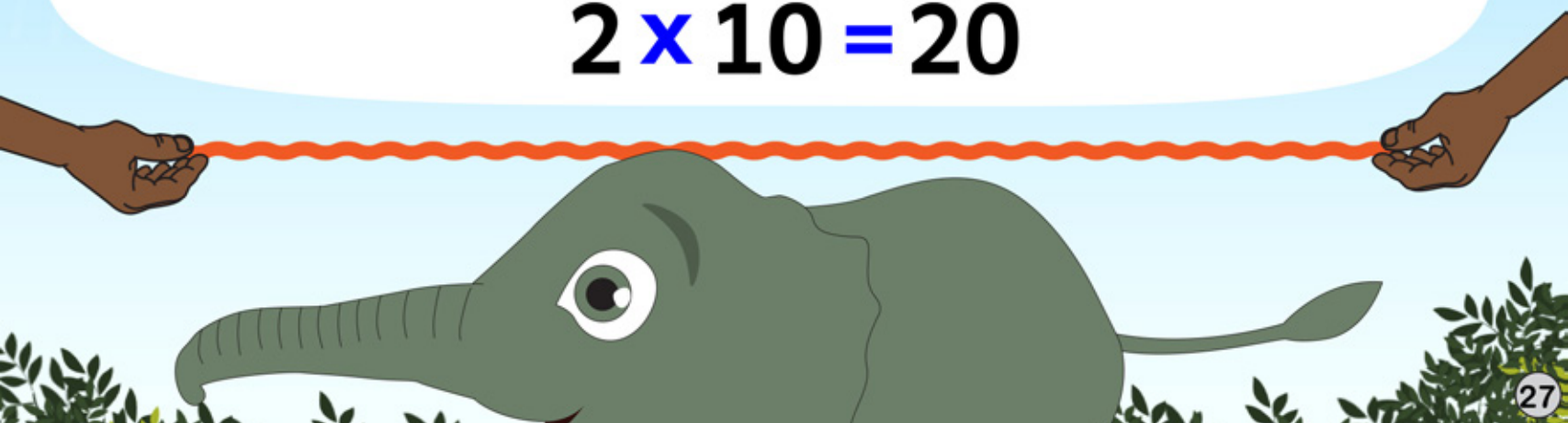
Tiny Tembo stretches out his tail and his trunk and says, “I know that from tail to trunk I am exactly two metres. You can use me to measure two metres at time!”



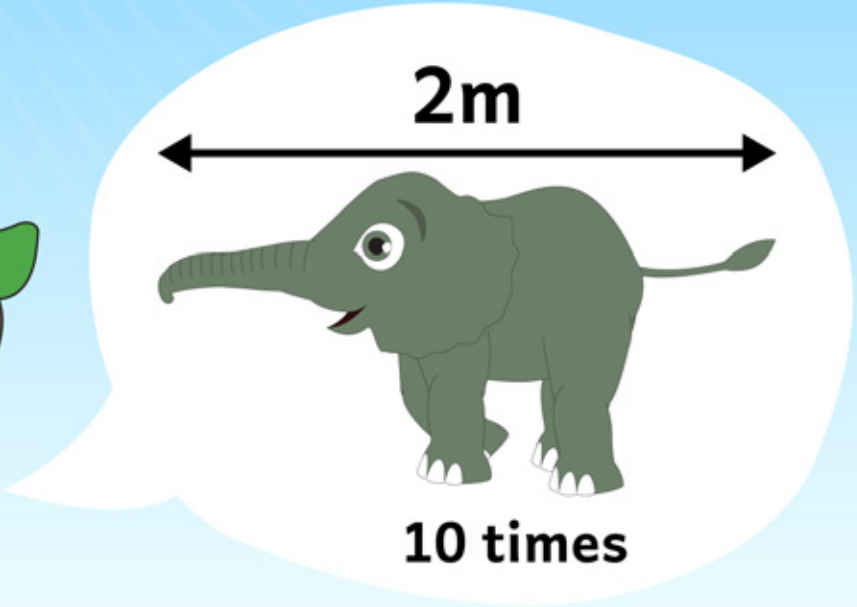
Koba puts one end of the rope at the tip of Tiny Tembo's trunk. Baraka holds the rope and stretches it out to the tip of Tiny Tembo's tail. They do the same thing ten more times.

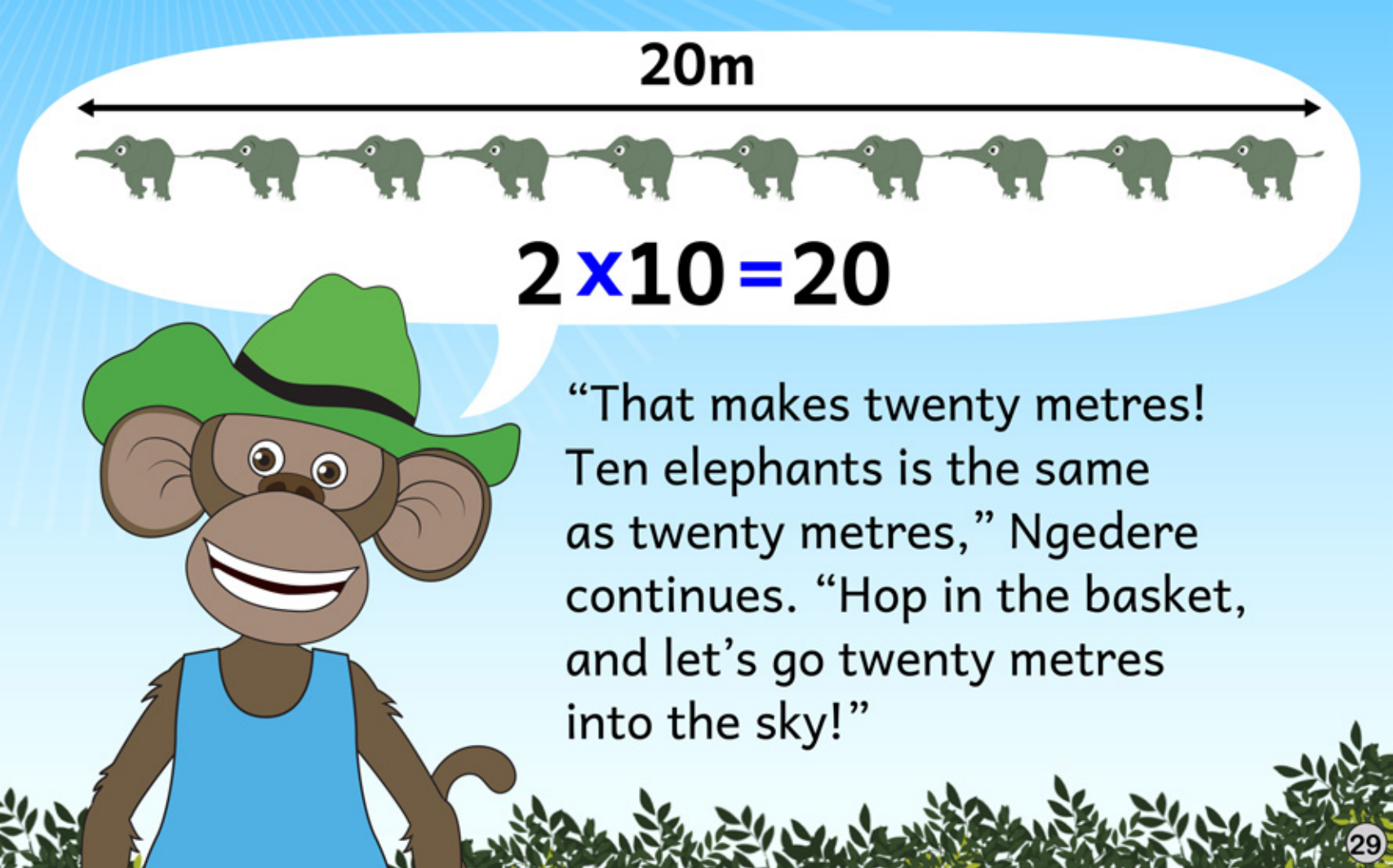
$$2m + 2m + 2m + 2m + 2m + 2m + 2m + 2m + 2m + 2m = 20m$$

$$2 \times 10 = 20$$

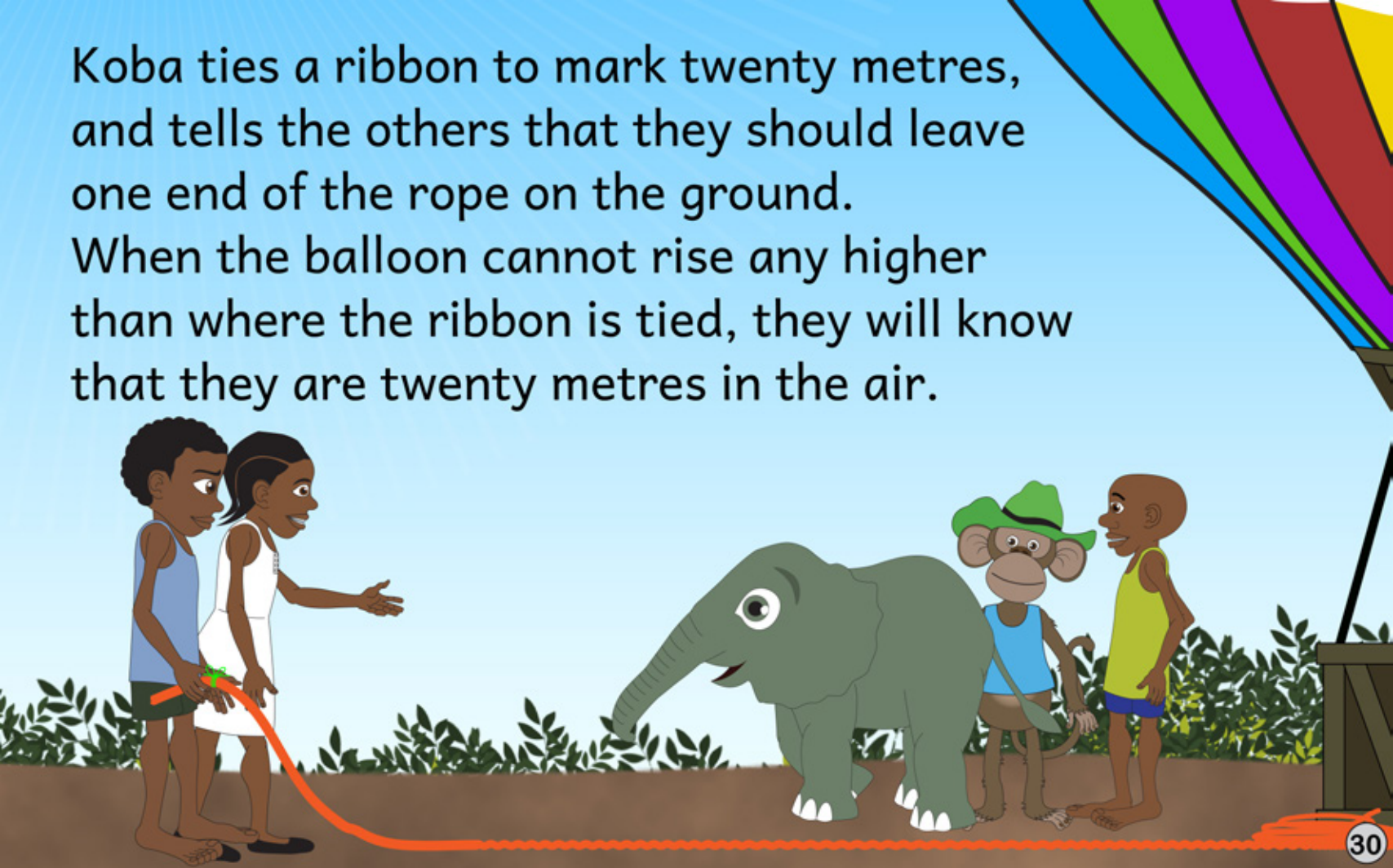


“I get it!” says Ngedere. “Tiny Tembo is two metres long. And you took ten Tiny Tembo lengths.”

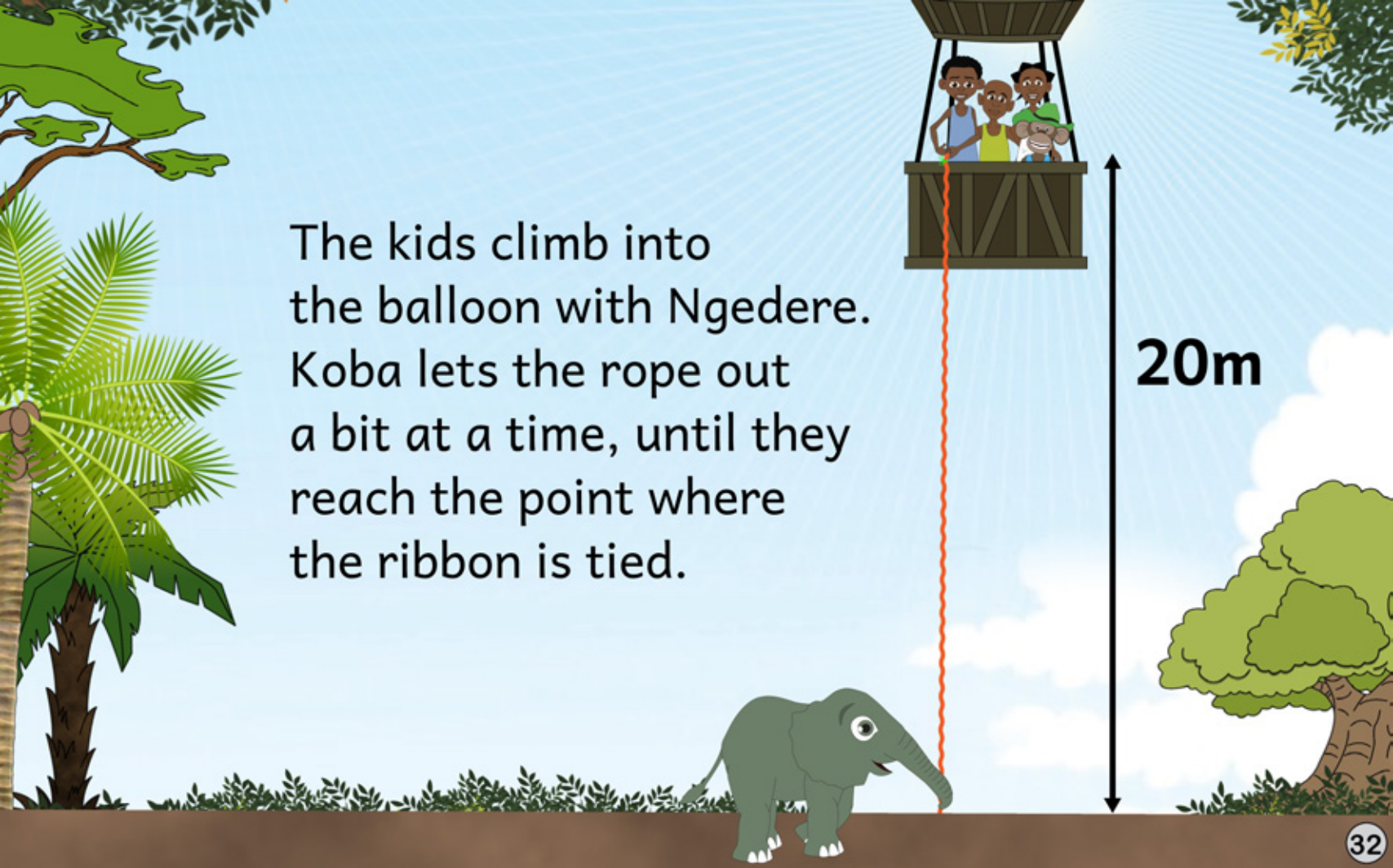


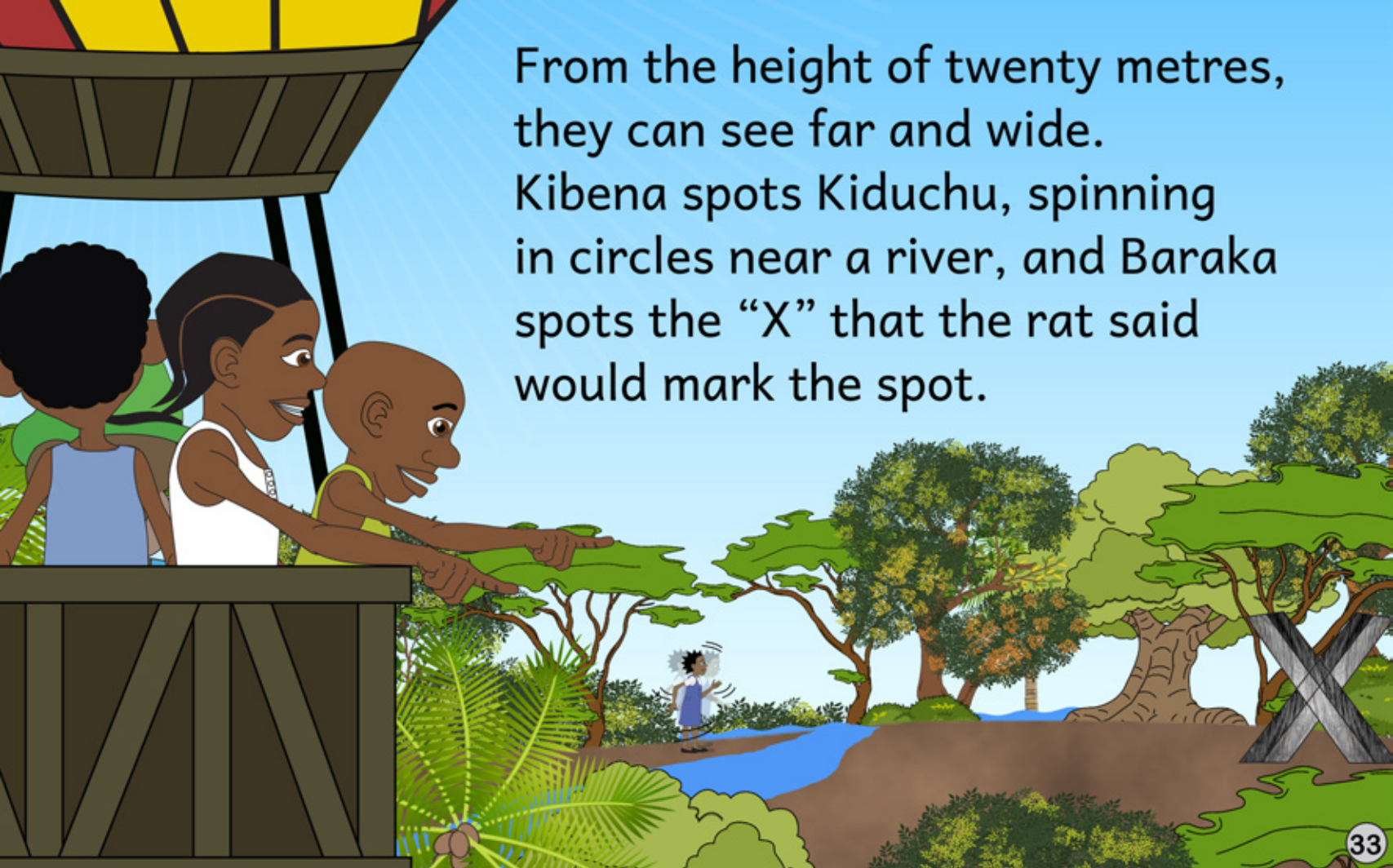

20m
2 x 10 = 20
"That makes twenty metres! Ten elephants is the same as twenty metres," Ngedere continues. "Hop in the basket, and let's go twenty metres into the sky!"

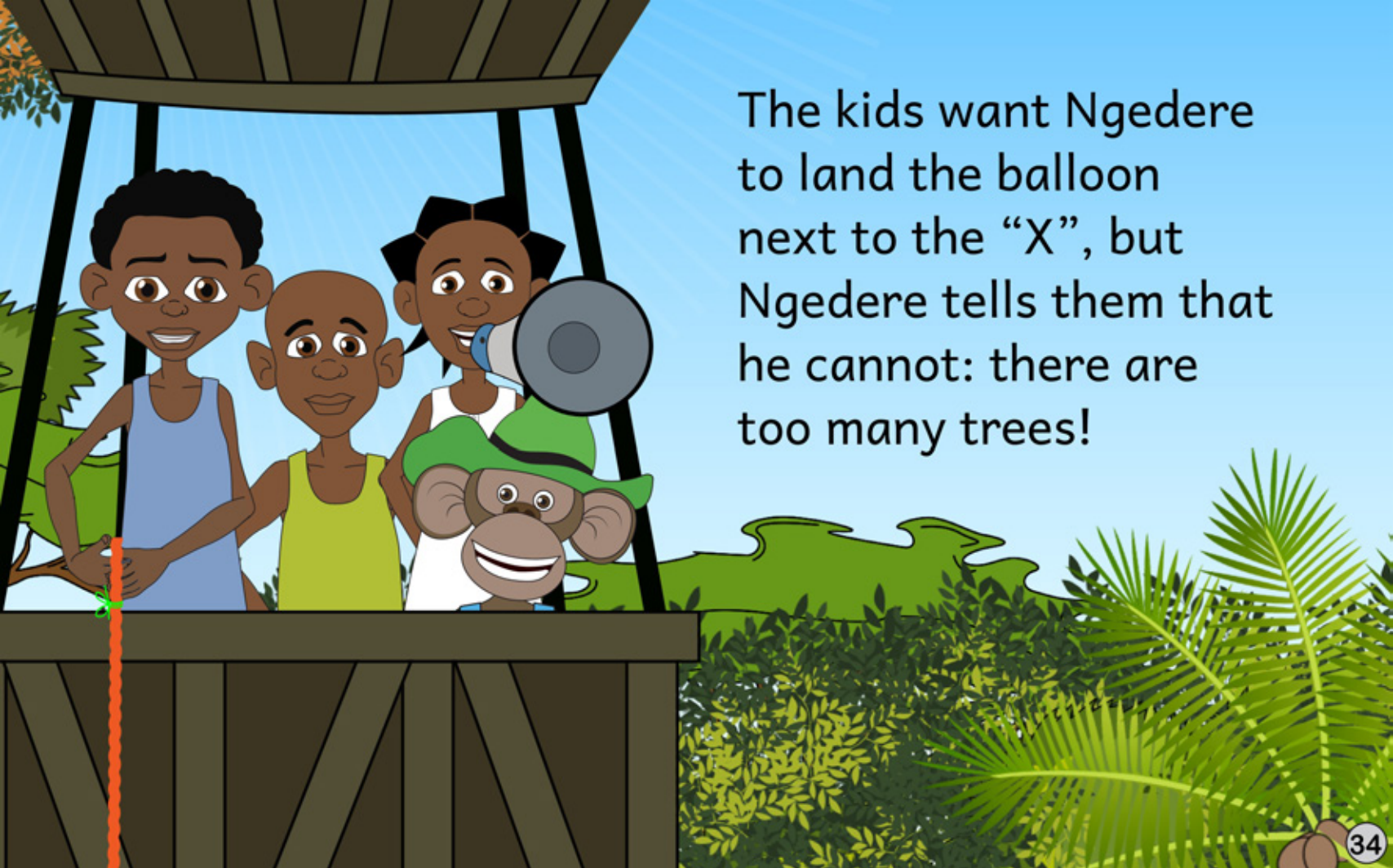
Koba ties a ribbon to mark twenty metres, and tells the others that they should leave one end of the rope on the ground.
When the balloon cannot rise any higher than where the ribbon is tied, they will know that they are twenty metres in the air.

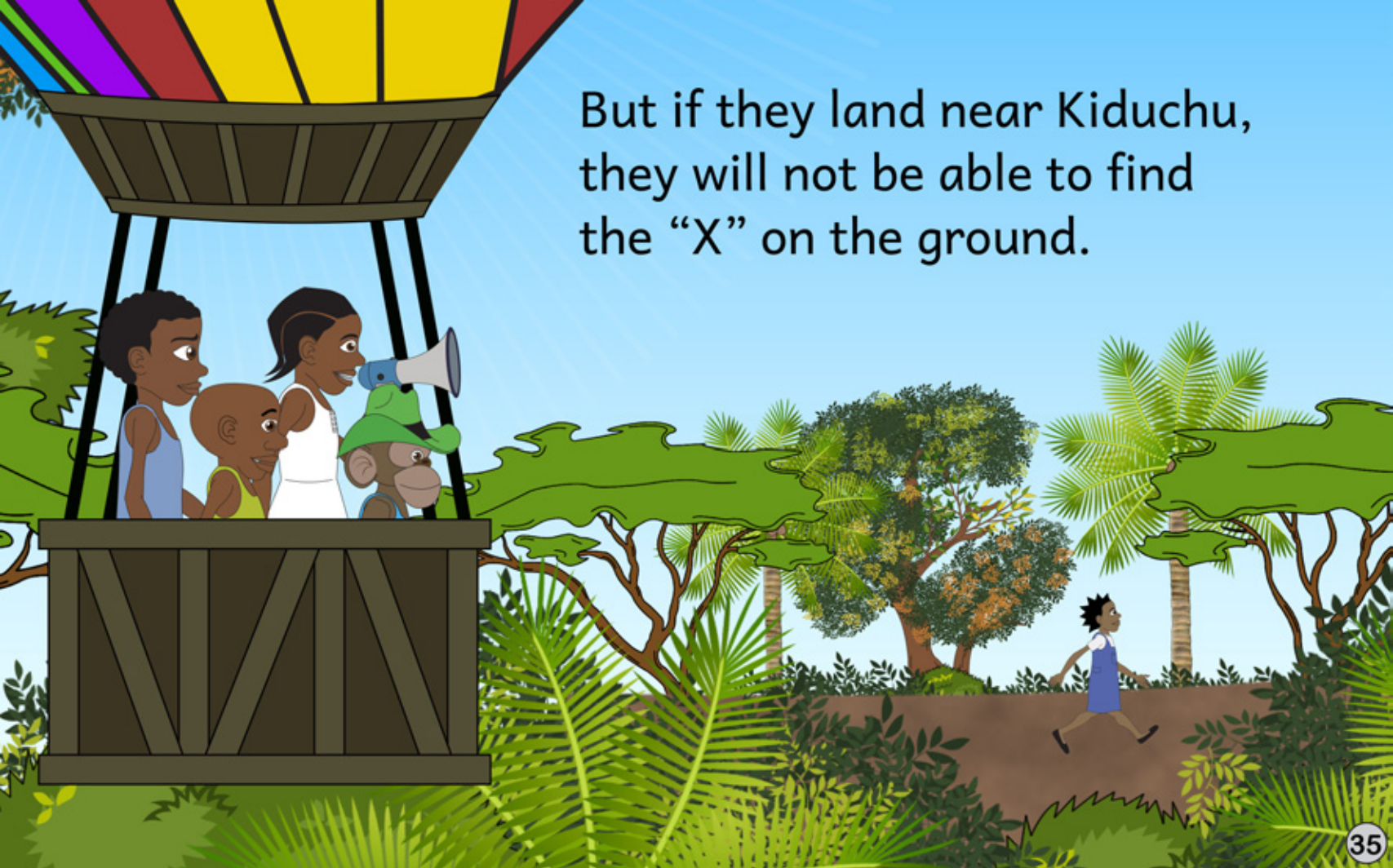


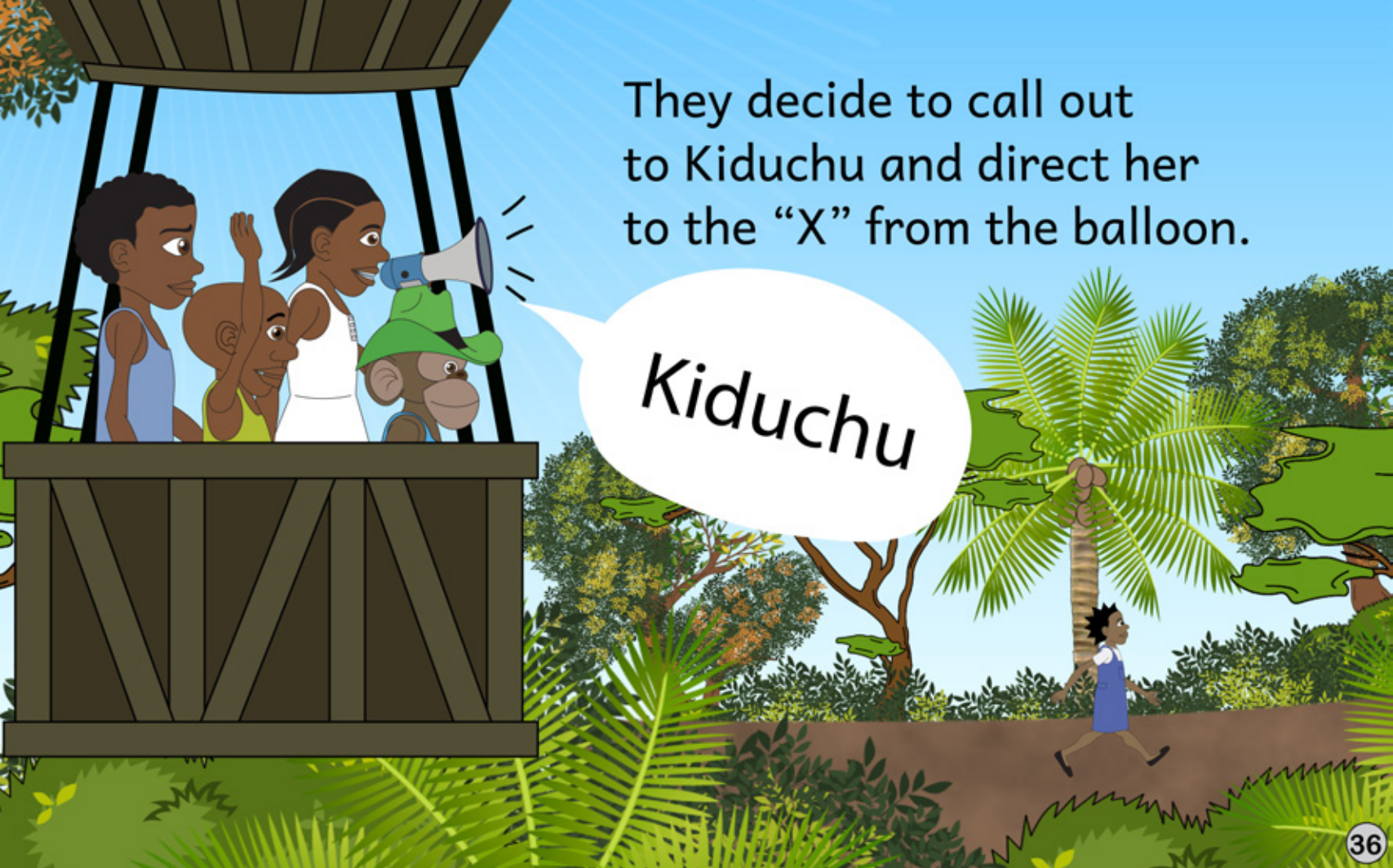
Tiny Tembo offers to hold the end of the rope on the ground. “I don’t think that the balloon will fly with the weight of an elephant inside,” he says. “I will keep my feet firmly on the ground.”


The kids climb into
the balloon with Ngedere.
Koba lets the rope out
a bit at a time, until they
reach the point where
the ribbon is tied.
20m

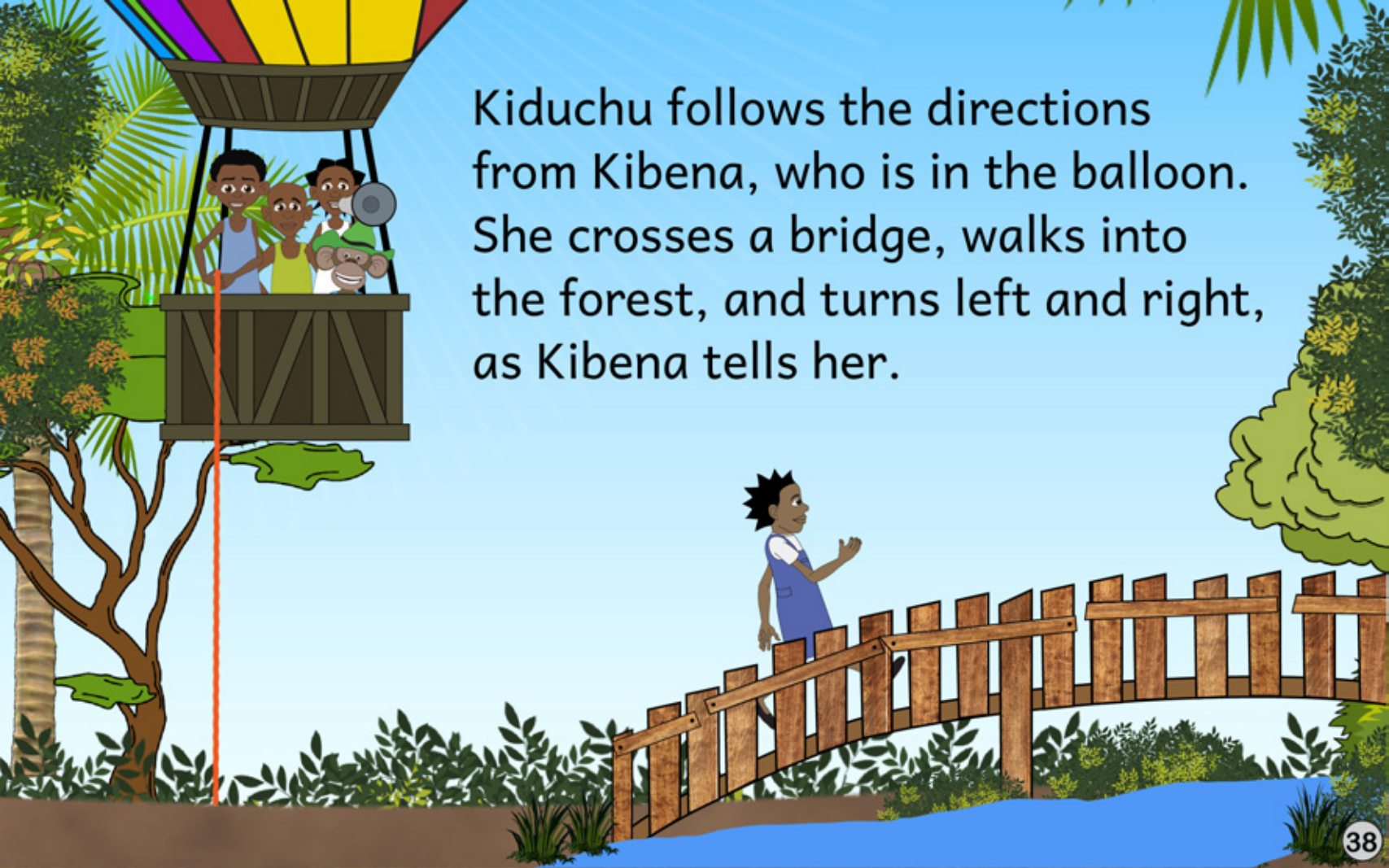

From the height of twenty metres, they can see far and wide. Kibena spots Kiduchu, spinning in circles near a river, and Baraka spots the “X” that the rat said would mark the spot.


The kids want Ngedere to land the balloon next to the “X”, but Ngedere tells them that he cannot: there are too many trees!

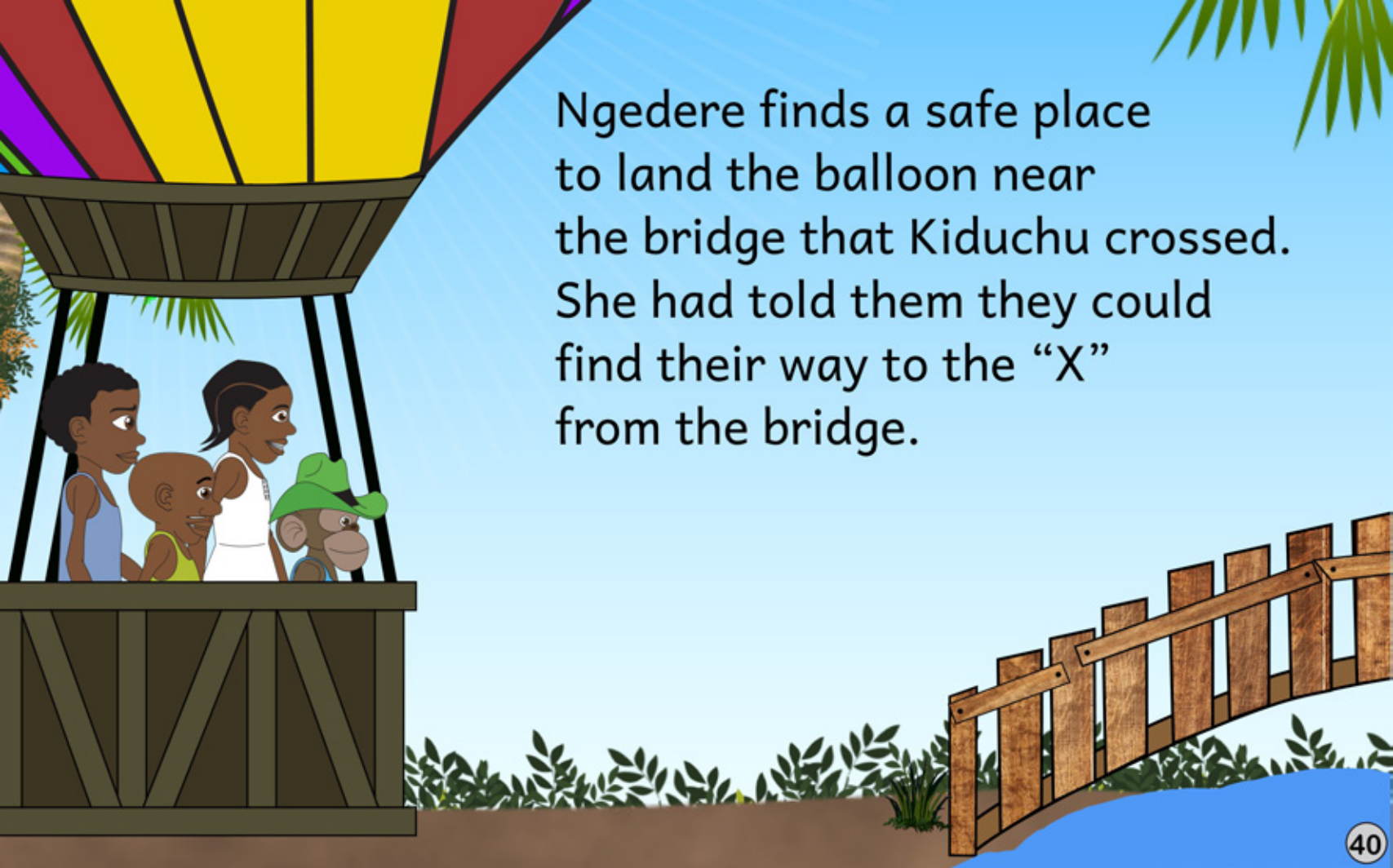

But if they land near Kiduchu,
they will not be able to find
the “X” on the ground.

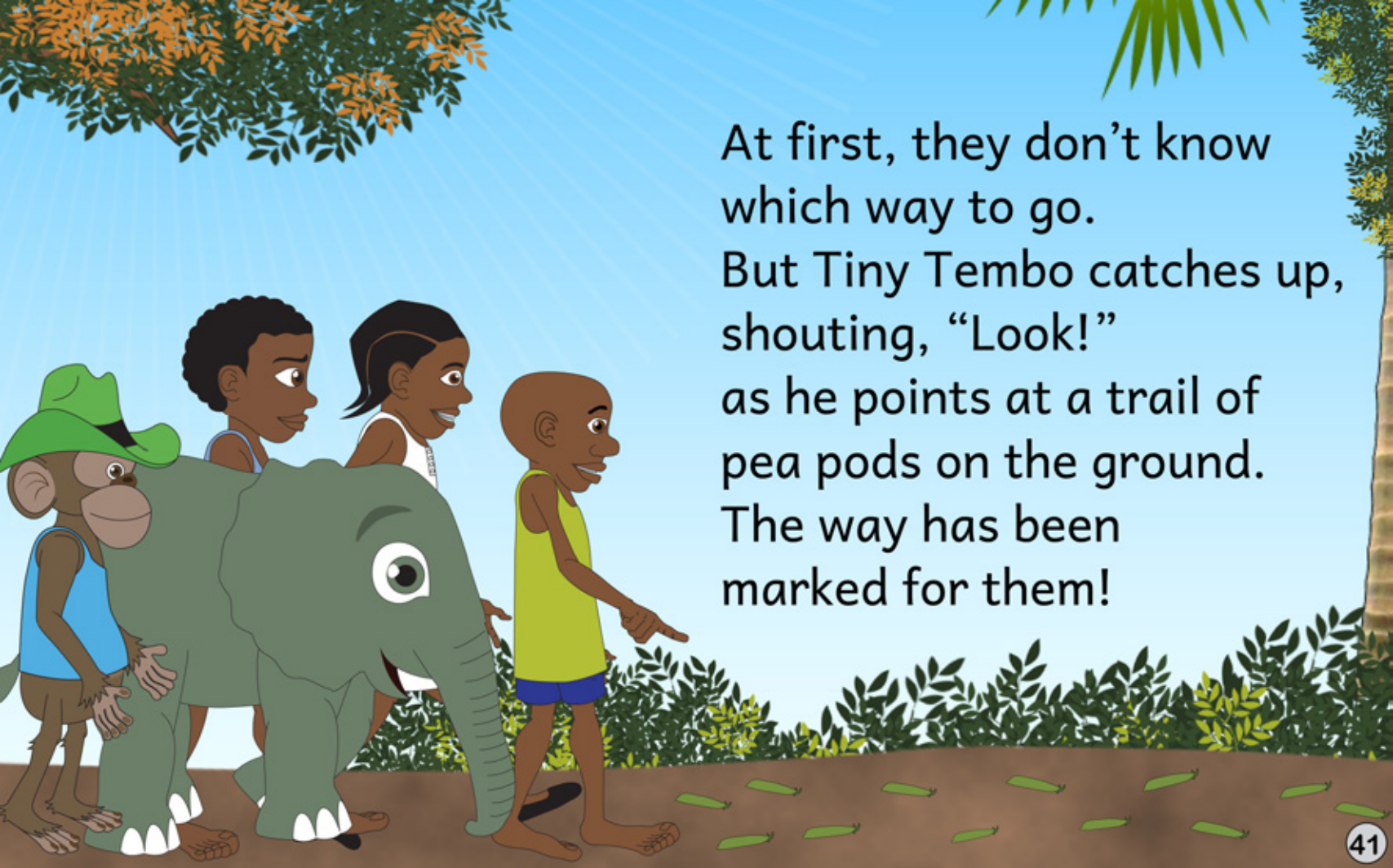

They decide to call out
to Kiduchu and direct her
to the “X” from the balloon.
Kiduchu

Kiduchu
Kiduchu
Kiduchu
Kiduchu
Kiduchu hears someone calling her name. It is Kibena, calling to her from the balloon with a megaphone. Kibena explains the plan to Kiduchu.


Kiduchu follows the directions from Kibena, who is in the balloon. She crosses a bridge, walks into the forest, and turns left and right, as Kibena tells her.

yay
yay
Kiduchu finds the “X”!
The kids in the balloon all cheer.


Ngedere finds a safe place
to land the balloon near
the bridge that Kiduchu crossed.
She had told them they could
find their way to the “X”
from the bridge.


At first, they don't know
which way to go.
But Tiny Tembo catches up,
shouting, "Look!"
as he points at a trail of
pea pods on the ground.
The way has been
marked for them!

When they reach
the clearing,
they ask Kiduchu
where the treasure is.
“I waited for you guys,”
she says.

“Finding a treasure
alone isn’t any fun!”
So they all
work together
to pull the “X” aside.

Underneath the logs is a hole with a big treasure chest in it! They pull out the chest and try to guess what might be in it. Gold coins? Candy? Football boots?

They open the chest to find...measuring sticks!
"What kind of treasure is that?"
demands Ngedere with disappointment.

Mama Ndege tells them that it is one of the most valuable treasures of all: the **treasure of measure!**

Mama Ndege hands
a stick to each of them.

The sticks are different colours, but they are all the same length. "It's a metre stick," explains Mama Ndege. "A metre is always this long, no matter where you are or who you are."

Mama Ndege asks them to imagine building a house for Uncle T. “How high does the roof have to be?” Mama Ndege asks. Kiduchu imagines measuring the height of Uncle T with her metre stick.

“If Uncle T is five metres tall, then you know the roof of his house has to be higher than five metres,” Mama Ndege explains.

Tiny Tembo says that it is better to use metres sticks to measure, rather than elephants. When he tries to stand on his tail and put his trunk in the air to measure two metres, he falls over.

All the kids laugh. They are happy
to have their treasure of metre sticks!

The End

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