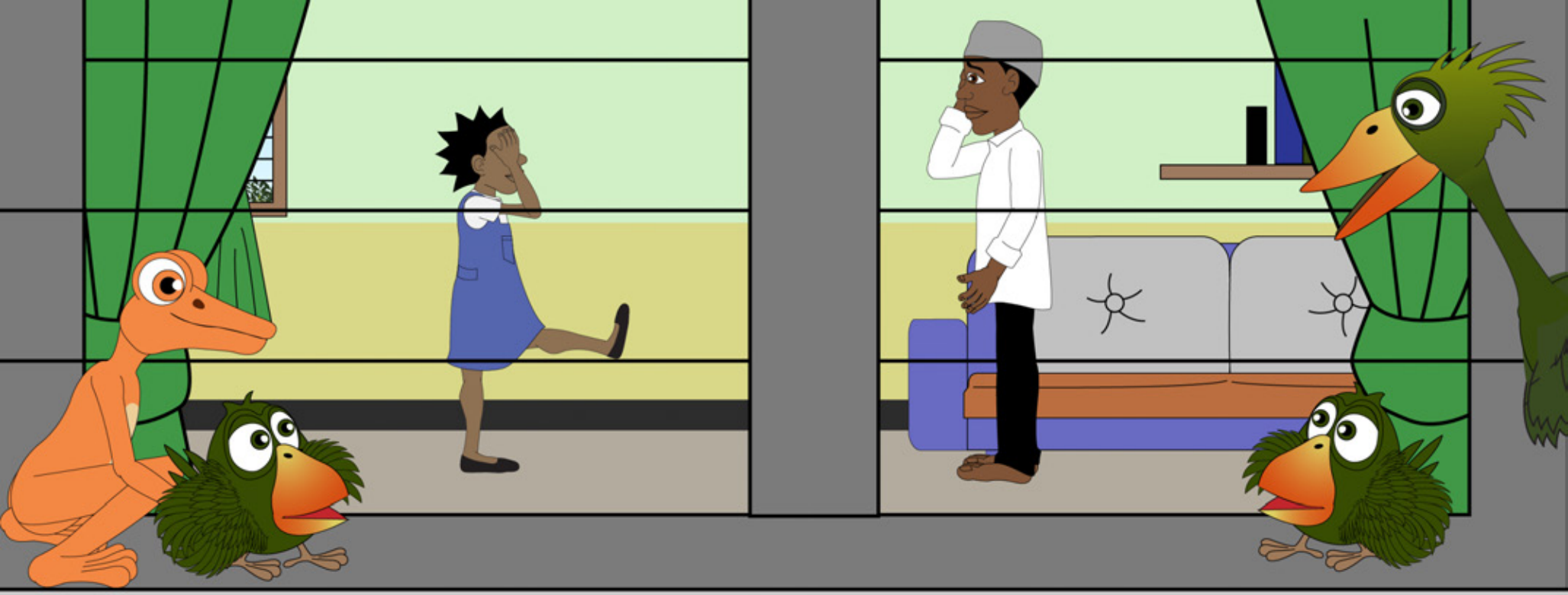
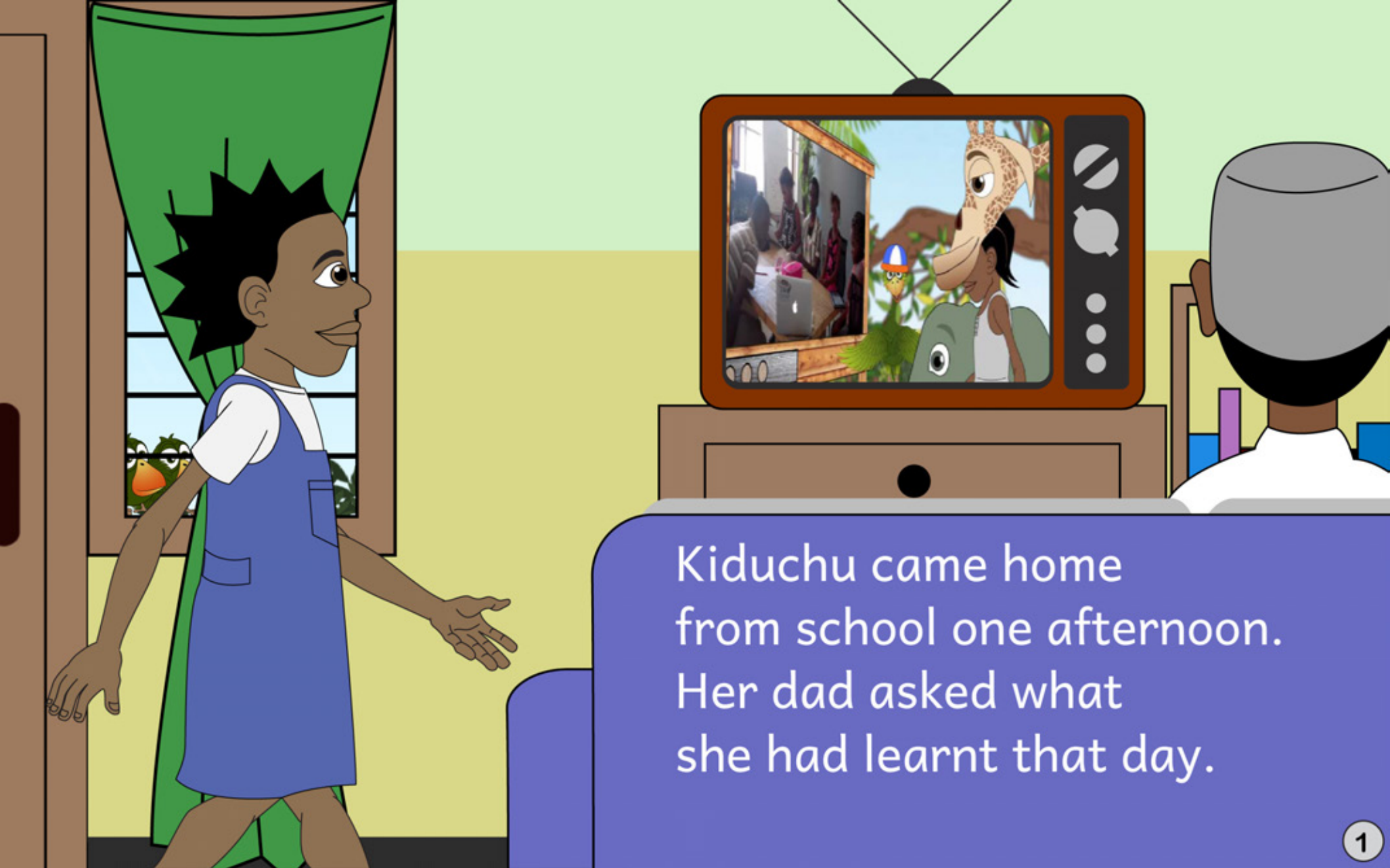


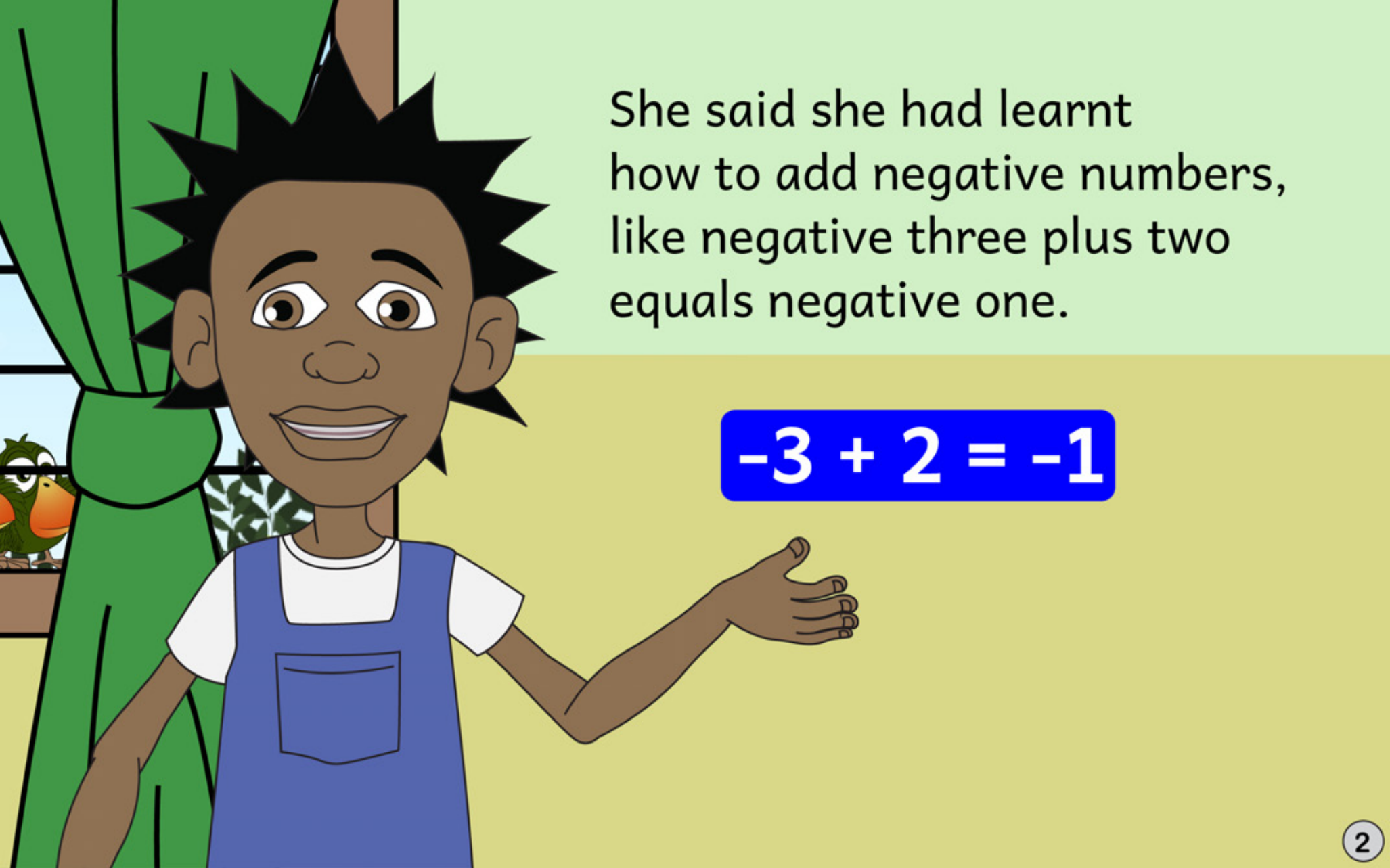
Multiplication Parade

multiplying negatives

Age
Umri
7+

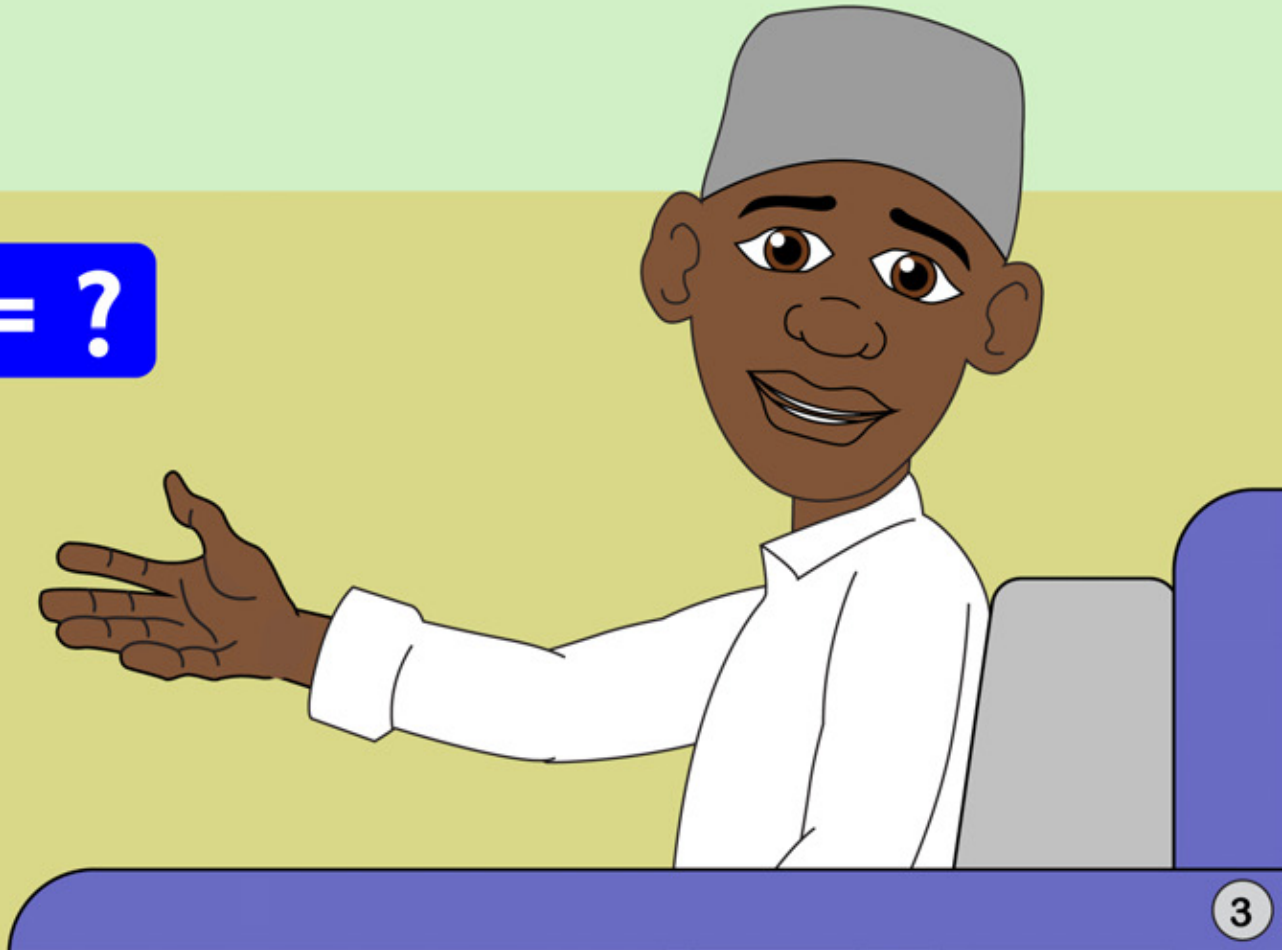
Adapted from the TV series
ubongo kids


Kiduchu came home
from school one afternoon.
Her dad asked what
she had learnt that day.
1


She said she had learnt
how to add negative numbers,
like negative three plus two
equals negative one.
-3 + 2 = -1

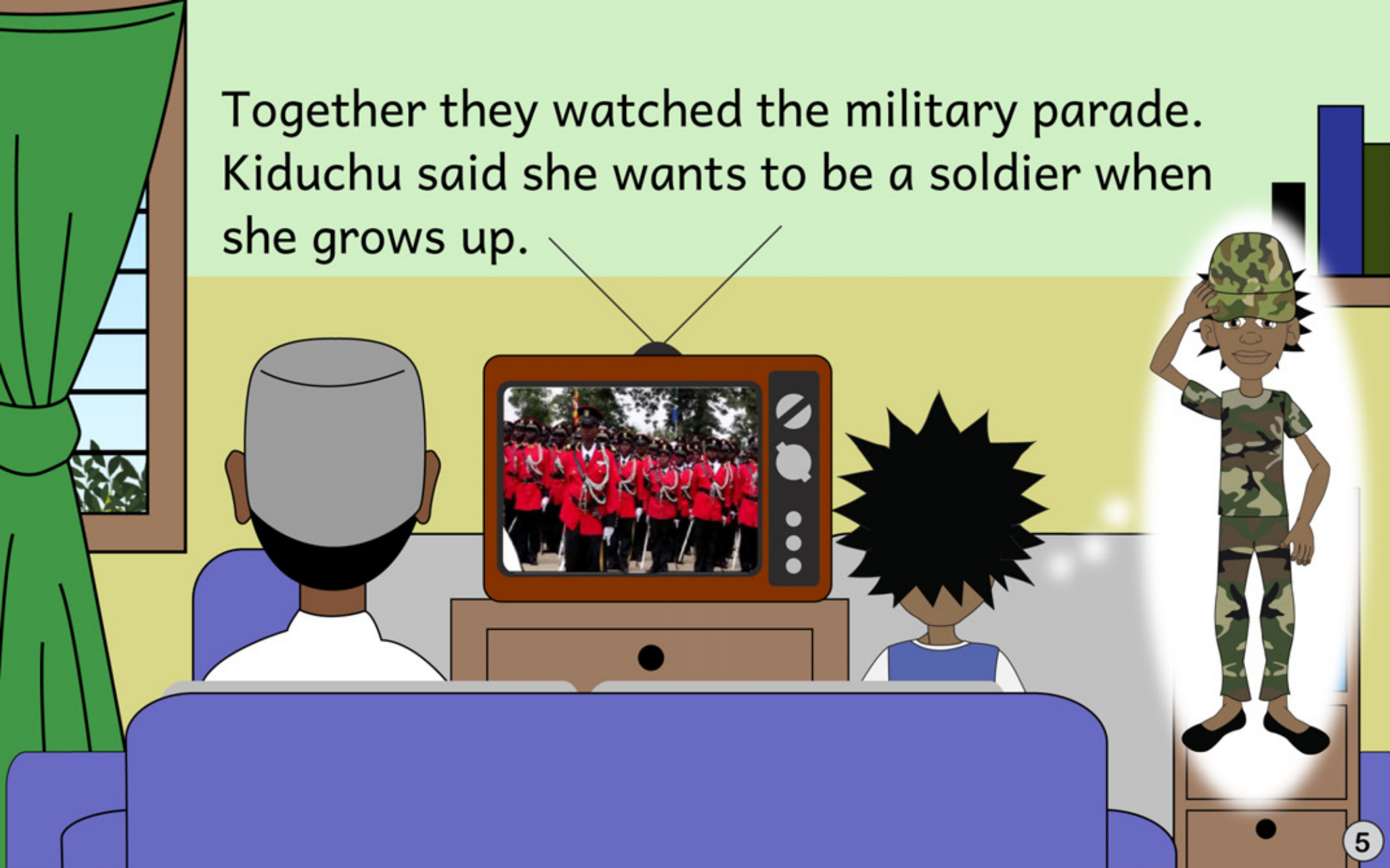
“That’s good. But do you know how to multiply negative numbers, like negative three times negative two?”

$-3 \times -2 = ?$

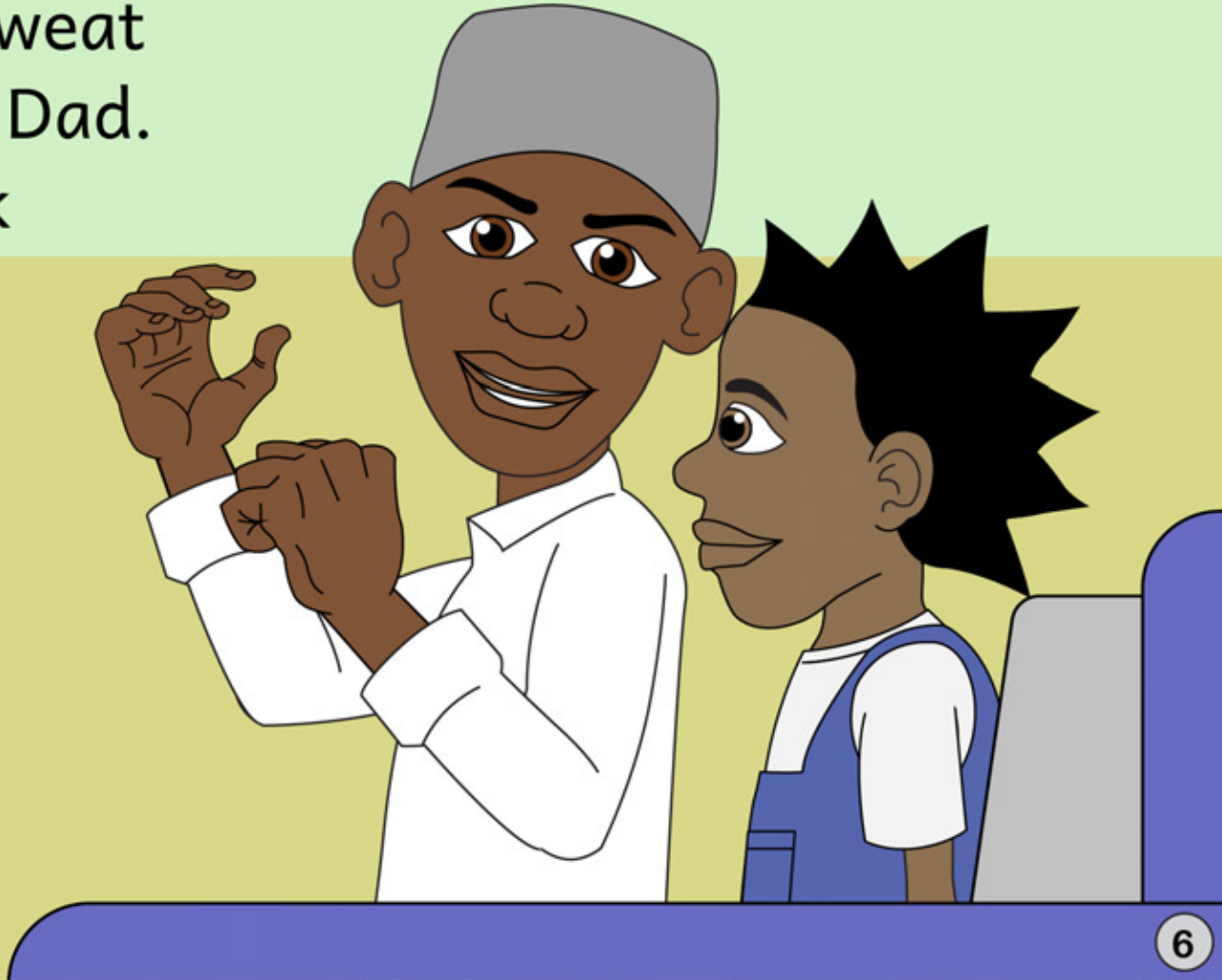



“No Dad...but I’m too tired right now.
I just want to watch TV,” replied Kiduchu.

Together they watched the military parade. Kiduchu said she wants to be a soldier when she grows up.



“Being a soldier is
hard work…all sweat
and tears!” said Dad.
“You really think
you could do it?

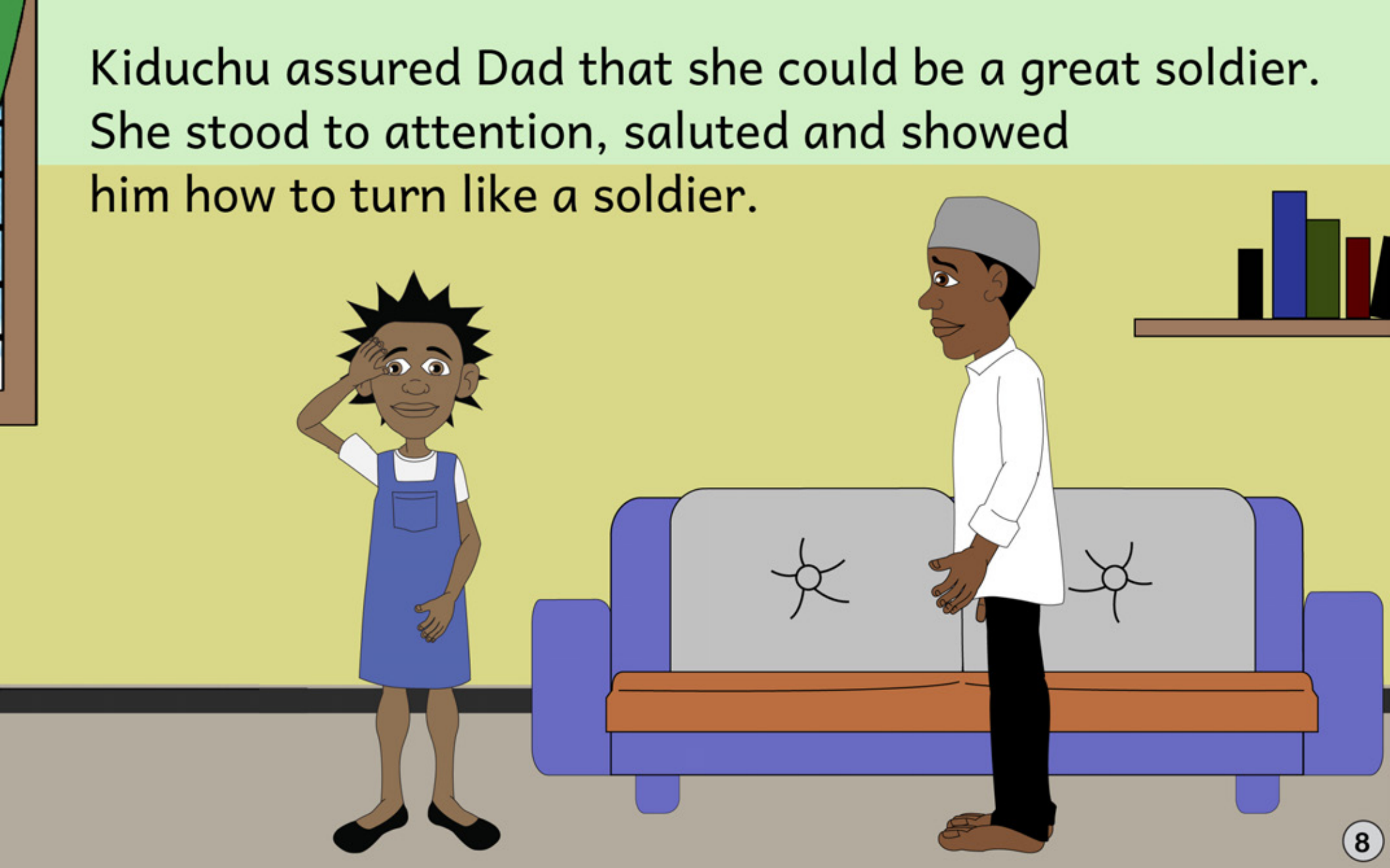


All those workout boot camps...running...

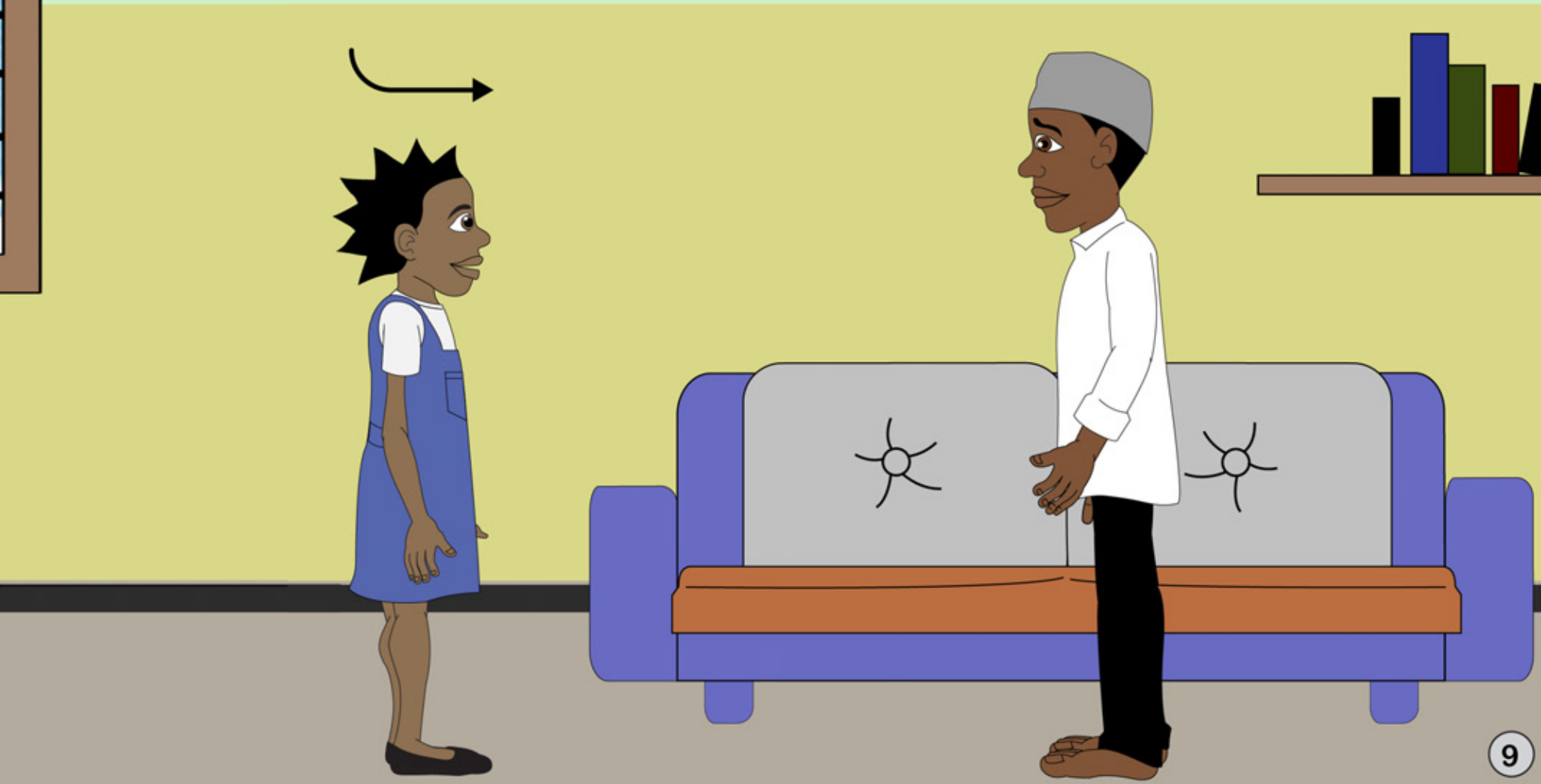
push ups...

jumping jacks
and parades!"

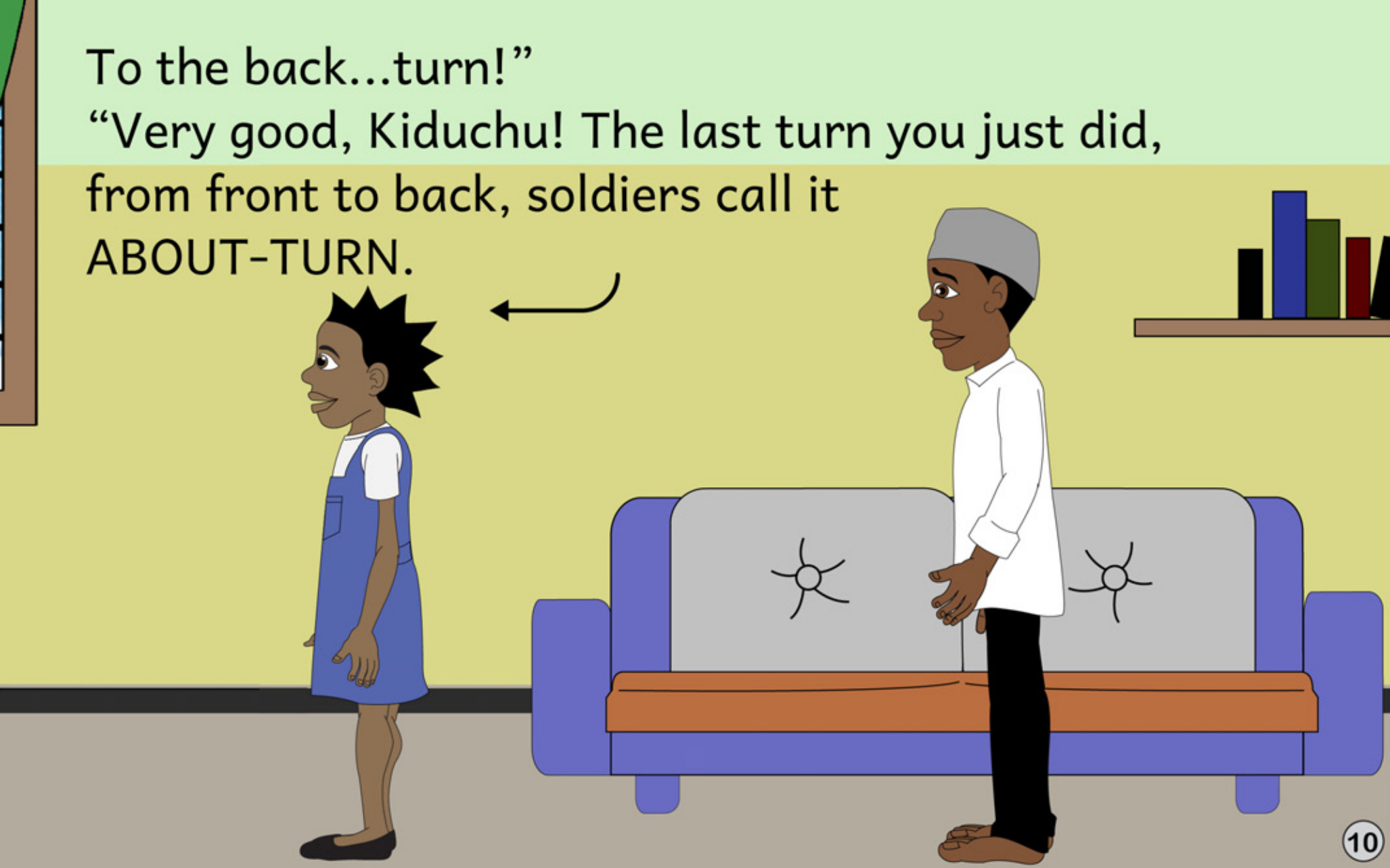
Kiduchu assured Dad that she could be a great soldier. She stood to attention, saluted and showed him how to turn like a soldier.

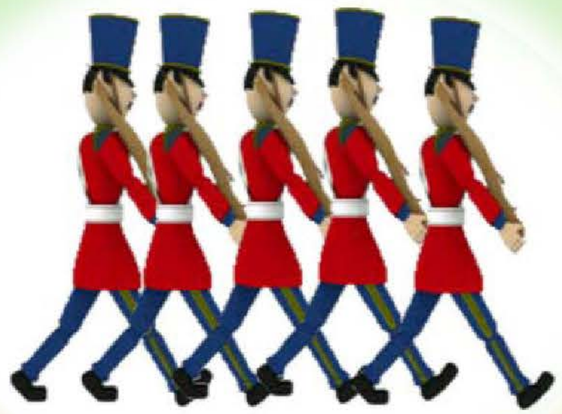


She said, “To the left…turn!

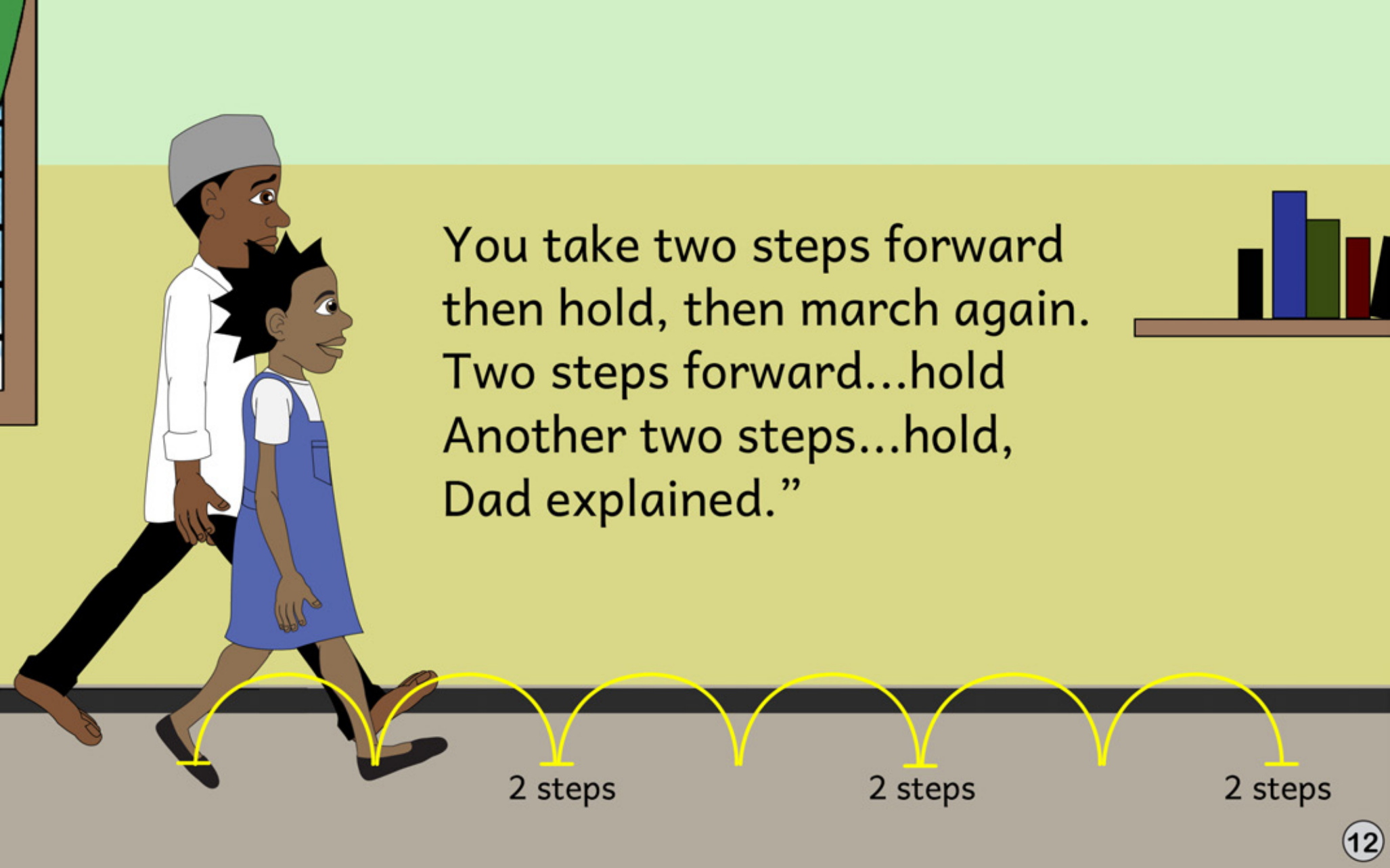


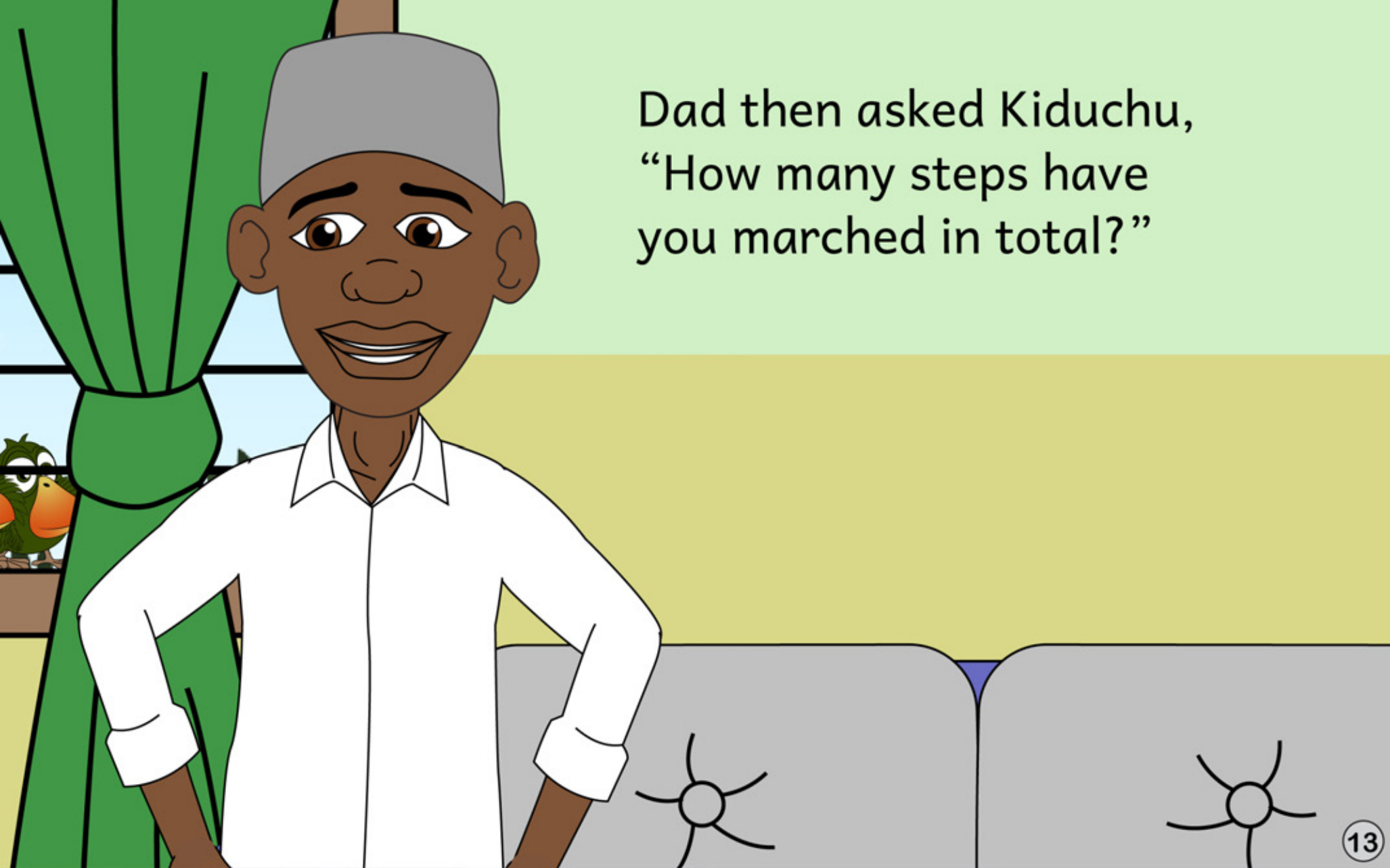
To the back...turn!"
"Very good, Kiduchu! The last turn you just did, from front to back, soldiers call it ABOUT-TURN.





But being a soldier is
more than just turning.
Soldiers have to follow
instructions as well.
I'm going to show you
a special march called
the Multiplication Parade!

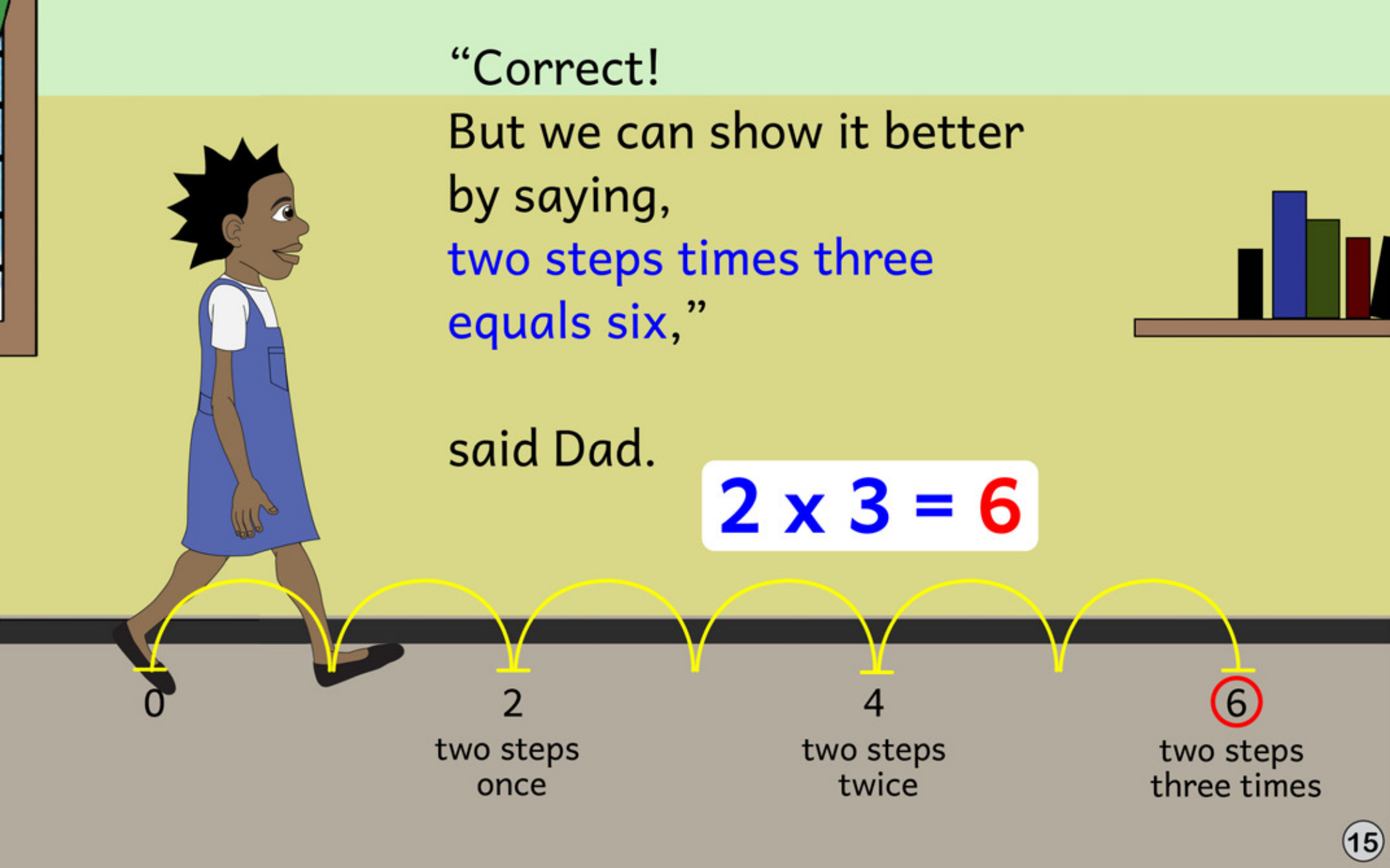

You take two steps forward
then hold, then march again.
Two steps forward...hold
Another two steps...hold,
Dad explained."
2 steps
2 steps
2 steps


Dad then asked Kiduchu,
“How many steps have
you marched in total?”

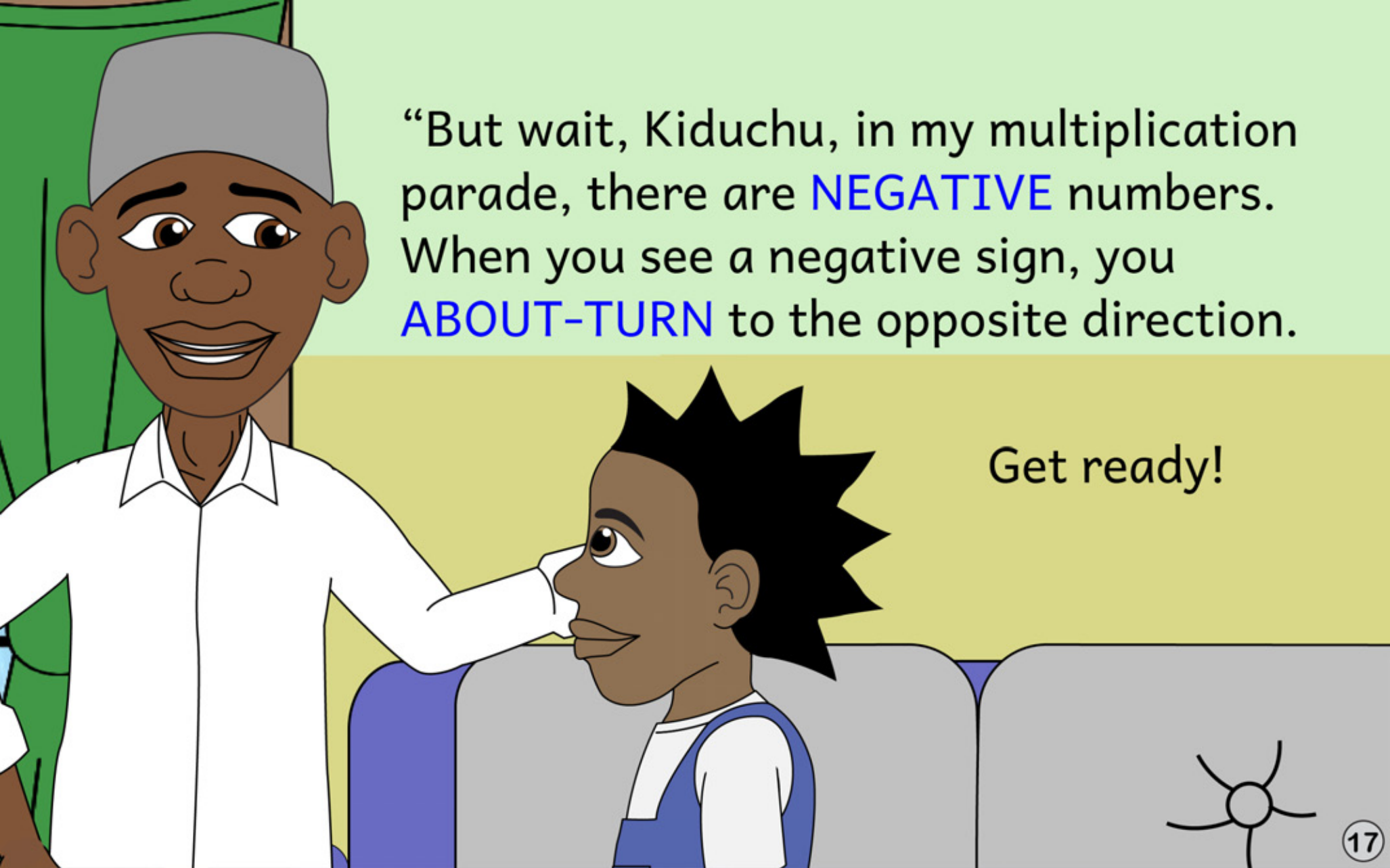
Kiduchu thought
for *a* moment,
then replied,

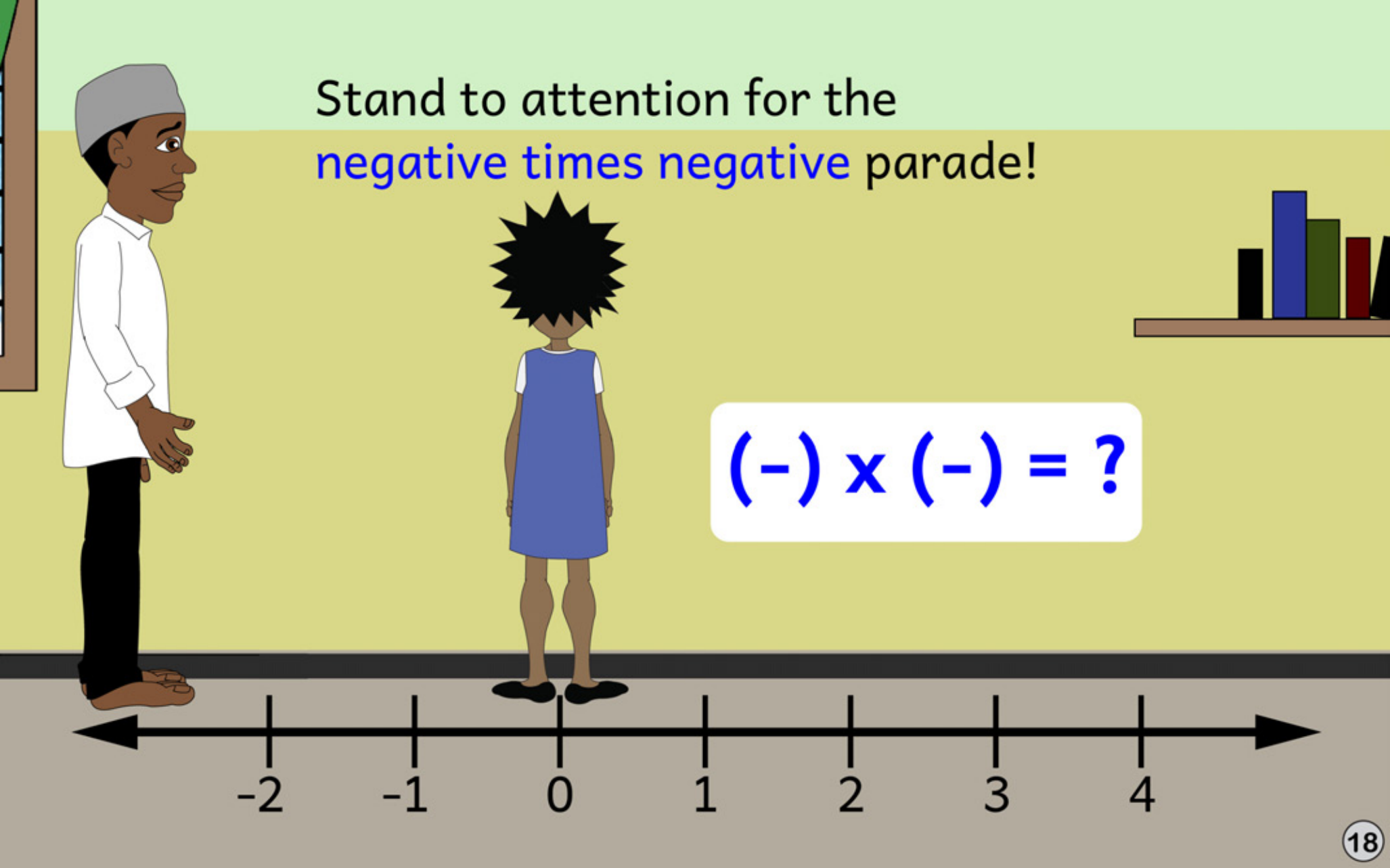
"Two... two... two...
in total, it's six."

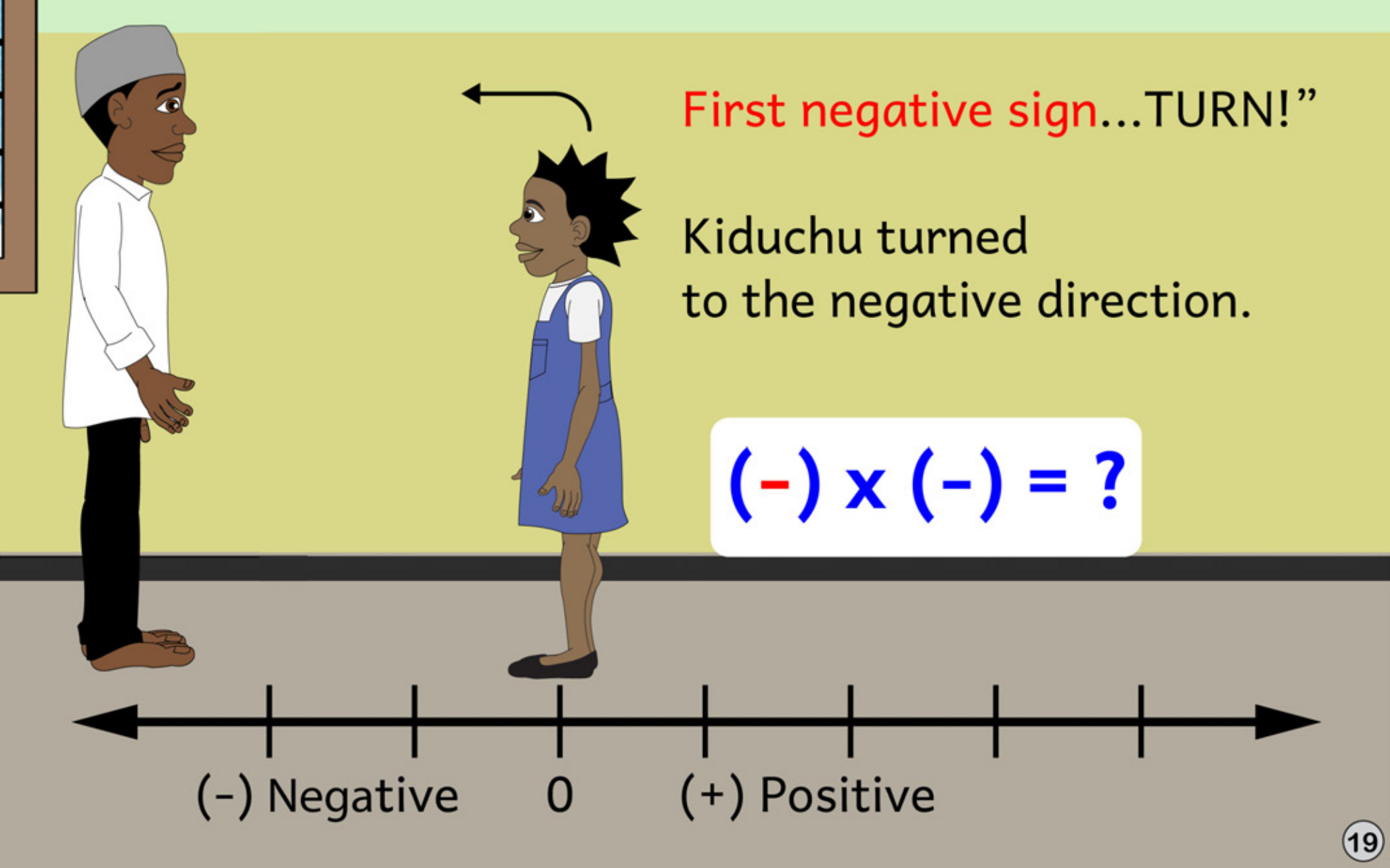
2 + 2 + 2 = 6

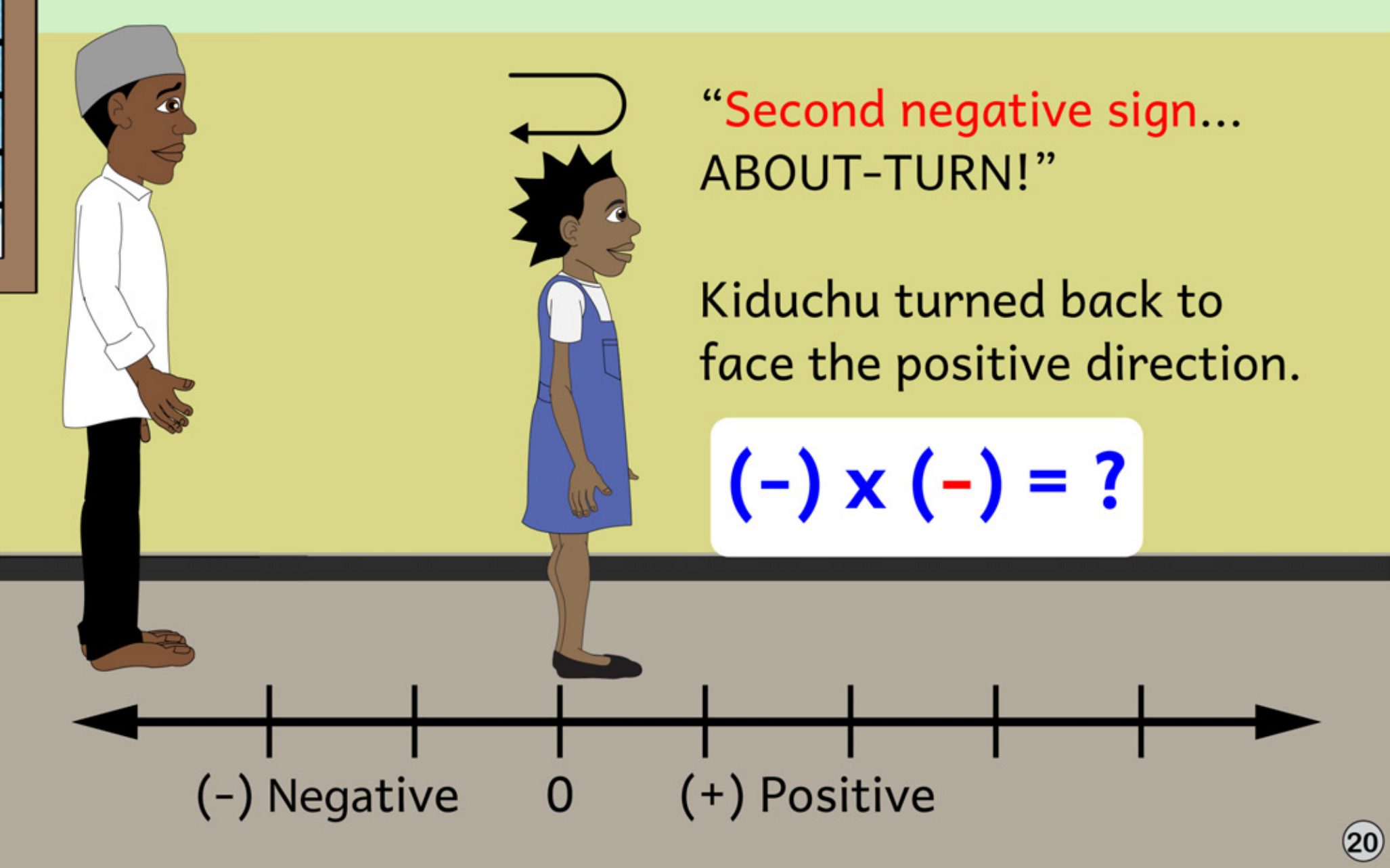

“Correct!
But we can show it better
by saying,
two steps times three
equals six,”
said Dad.
2 x 3 = 6
0
2
two steps
once
4
two steps
twice
6
two steps
three times

"Ah Dad, that's too easy!
Positive times positive
is always POSITIVE."


“But wait, Kiduchu, in my multiplication parade, there are NEGATIVE numbers. When you see a negative sign, you ABOUT-TURN to the opposite direction.
Get ready!


Stand to attention for the
negative times negative parade!
(–) x (–) = ?
-2
-1
0
1
2
3
4
18

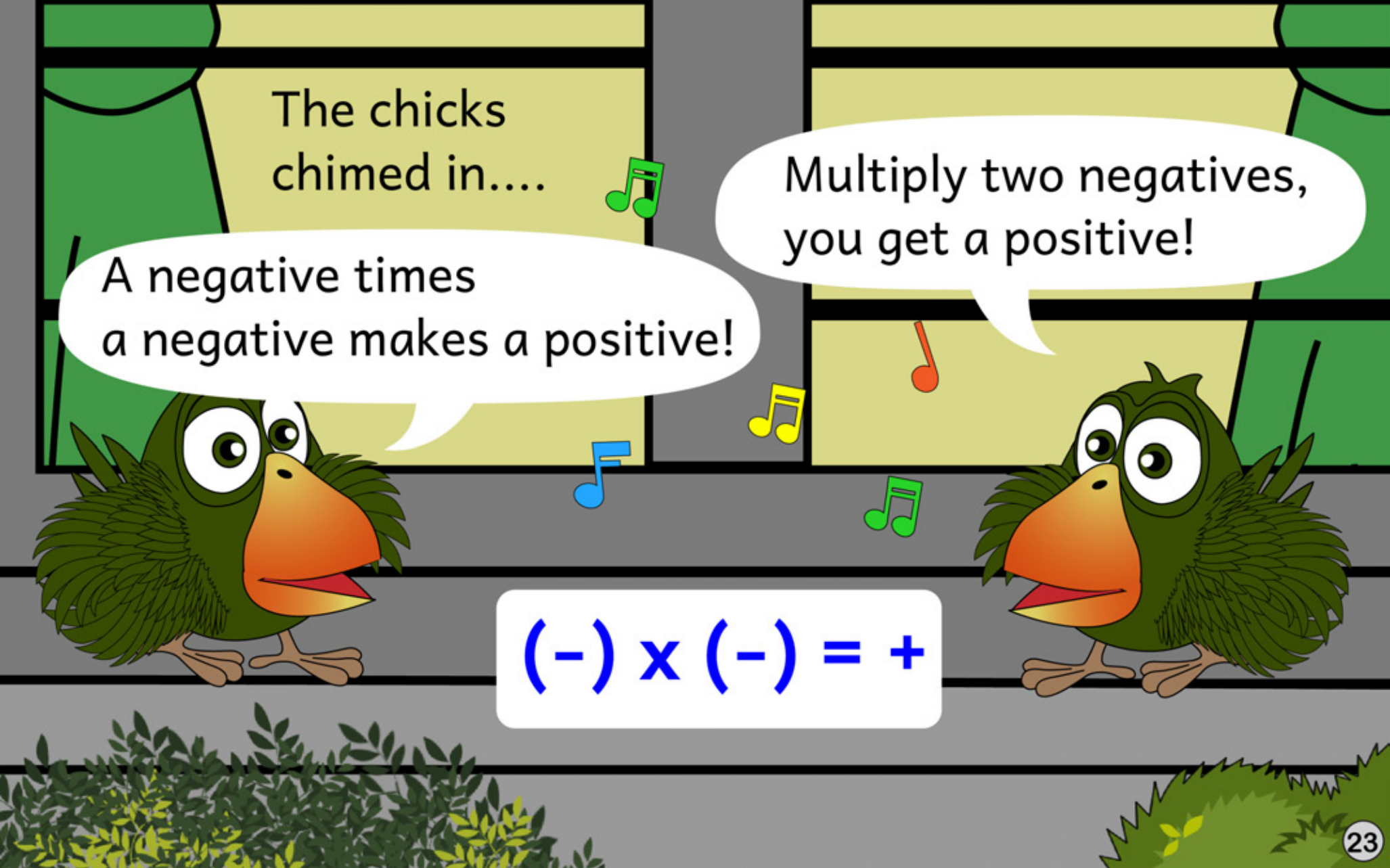

First negative sign...TURN!”
Kiduchu turned
to the negative direction.
(–) x (–) = ?
(–) Negative
0
(+) Positive


"Second negative sign...
ABOUT-TURN!"
Kiduchu turned back to face the positive direction.
(-) x (-) = ?
(-) Negative
0
(+) Positive

"Ahh I see. So whenever
I see *a* negative sign,
I about-turn to the
opposite direction!
So negative times
negative is POSITIVE."

$$(-) \times (-) = +$$

All this time,
Mama Ndege,
Da Chura and
the chicks
were watching
the parade and
listening in from
outside, on the
window sill.

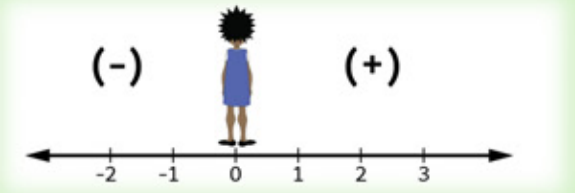

The chicks chimed in....
A negative times a negative makes a positive!
Multiply two negatives, you get a positive!
(-) x (-) = +

Next, Dad told Kiduchu to get ready for another parade.

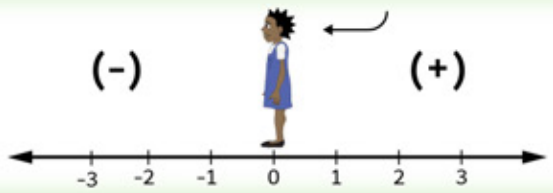
"Negative two times negative two."

$-2 \times -2 = ?$

$-2 \times -2 = +$

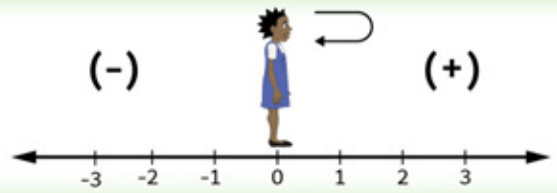


"Ready!



First sign's negative... TURN!

Turn to the negative direction.

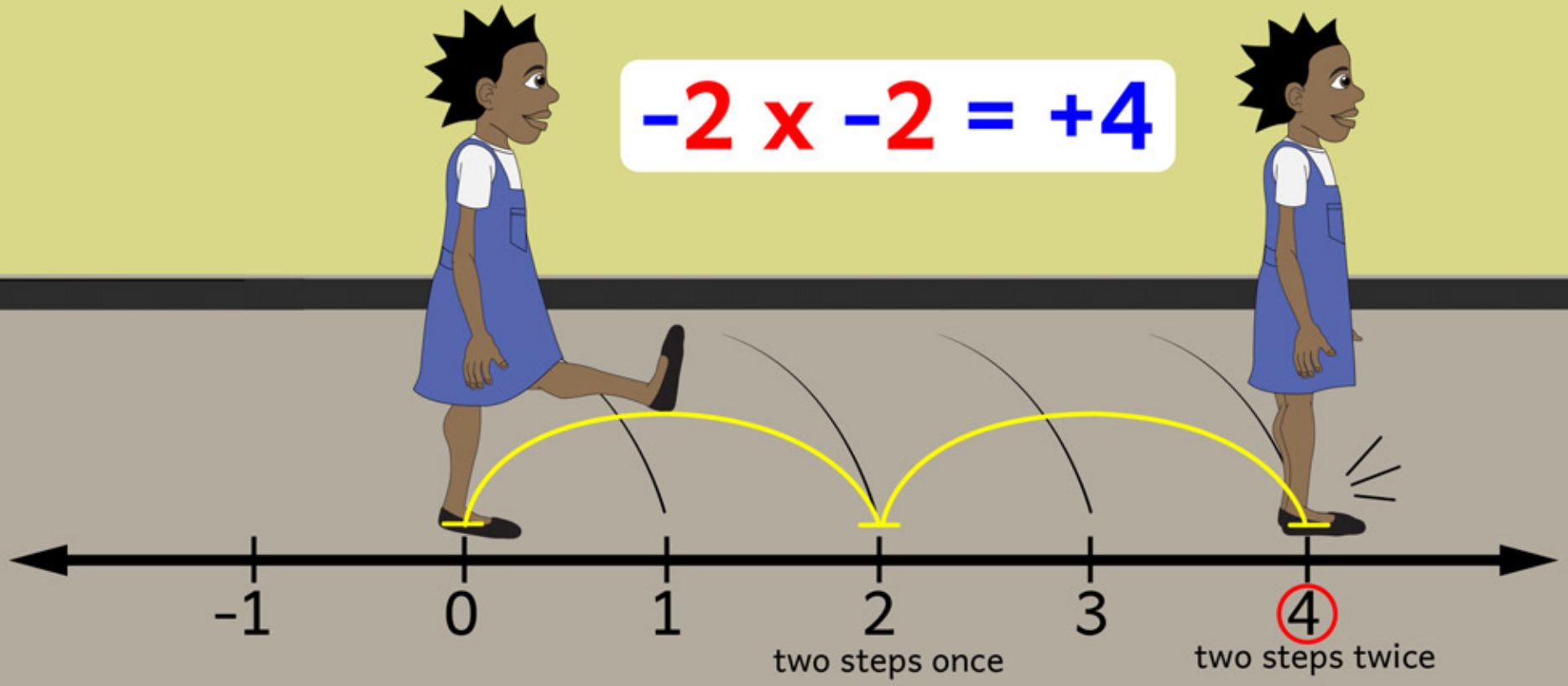


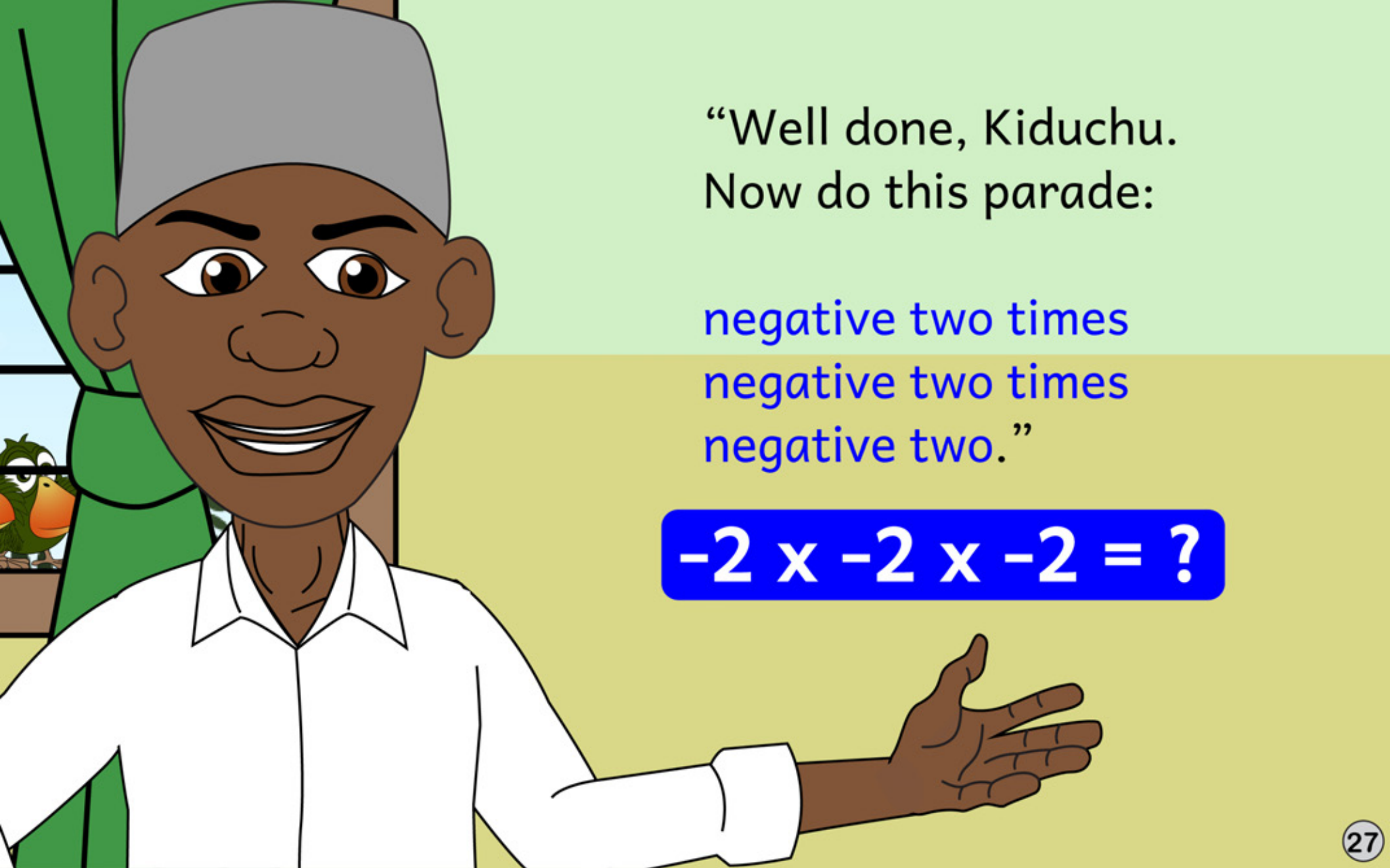
Second sign's negative... ABOUT TURN!

Turn back to the positive direction!

So the answer is going to be POSITIVE!

Now that I've done the signs, I just multiply the numbers. Two times two is four!
The answer is positive four."



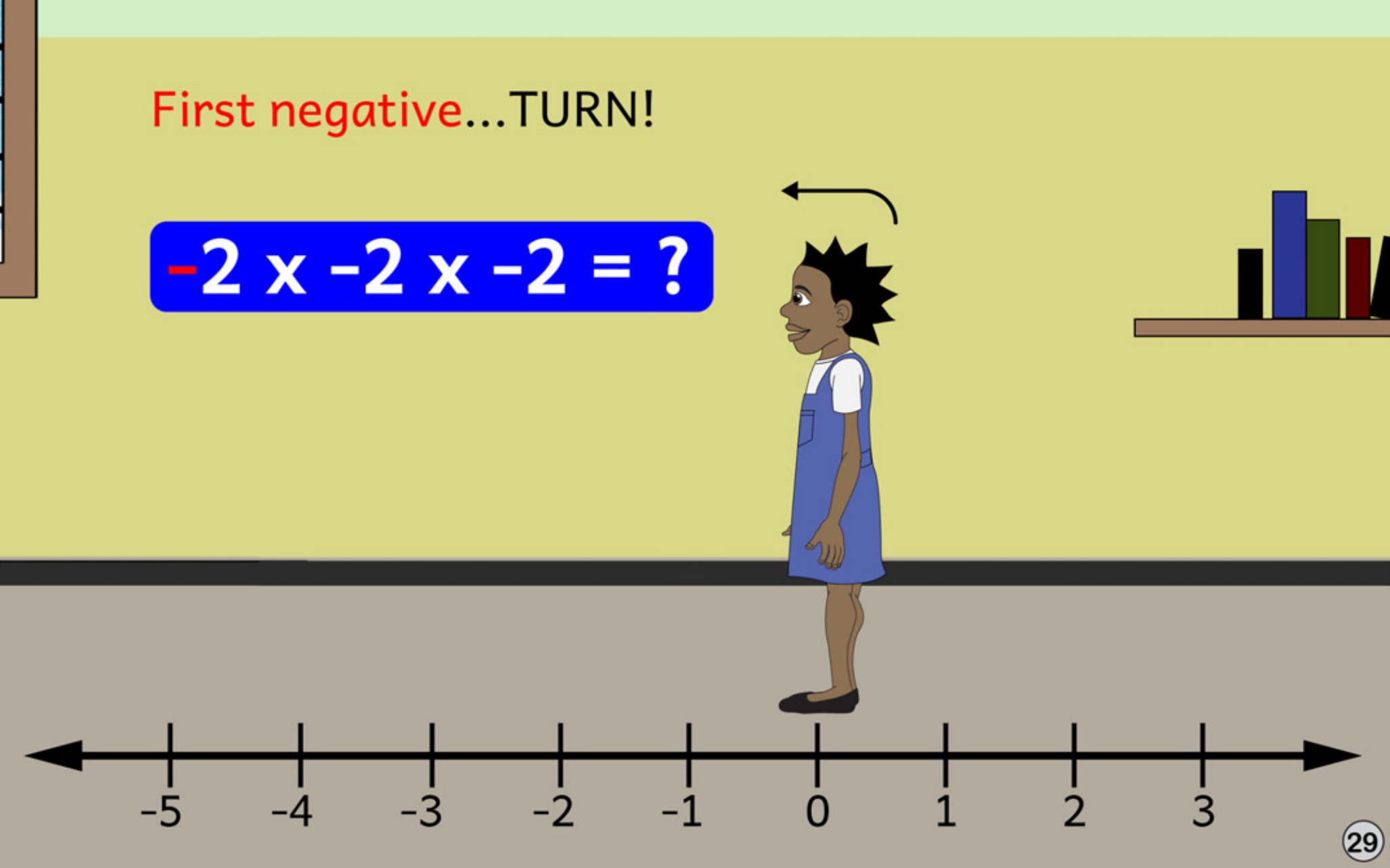

“Well done, Kiduchu.
Now do this parade:
negative two times
negative two times
negative two.”
-2 x -2 x -2 = ?

"Okay Dad,
so this parade has
three negatives.

$-2 \times -2 \times -2 = ?$

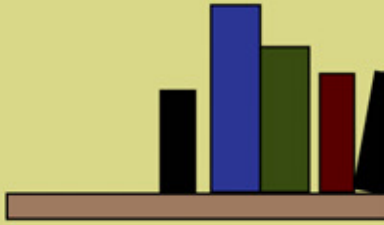
First negative...TURN!

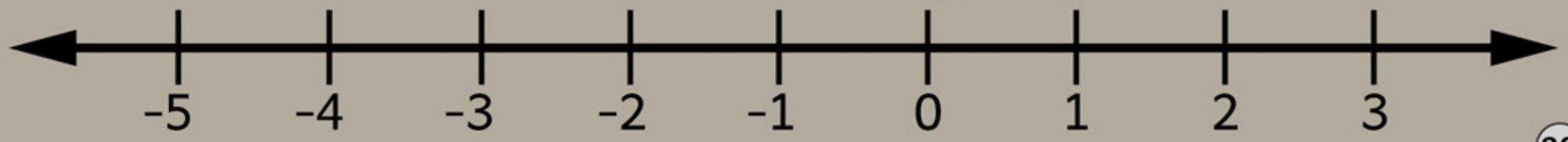
$-2 \times -2 \times -2 = ?$



Second negative... ABOUT TURN!

$-2 \times -2 \times -2 = ?$

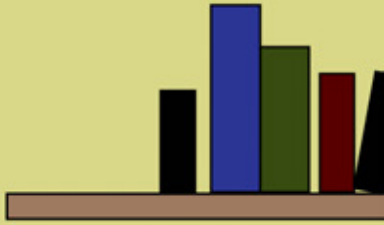


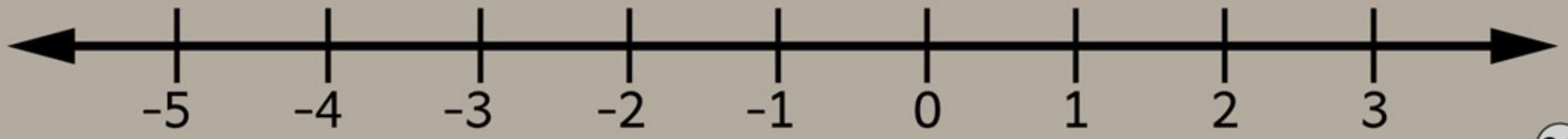


Third negative... ABOUT TURN!

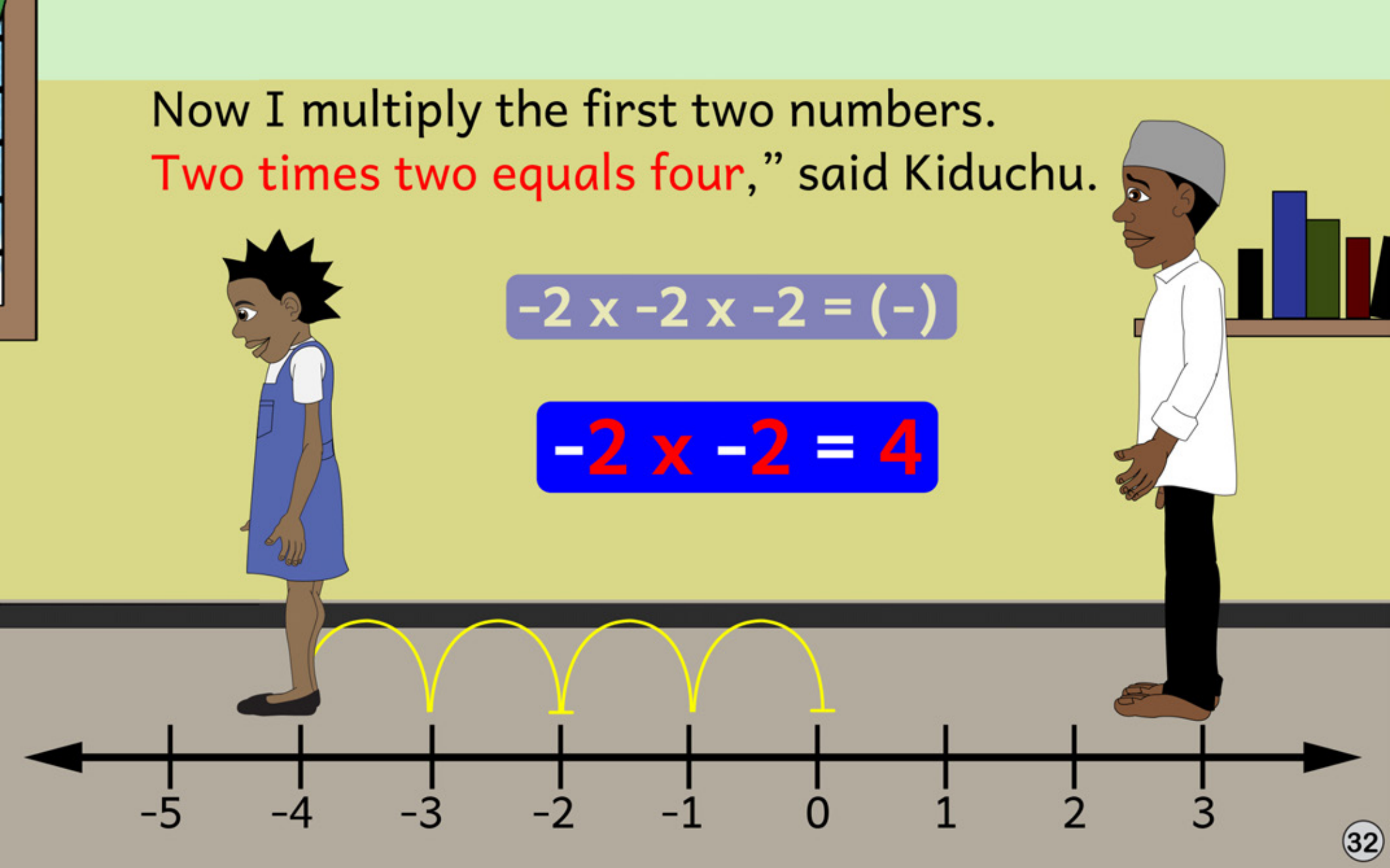
$-2 \times -2 \times -2 = (-)$

Ahh... I'm facing
the negative direction again!
So the answer will be
NEGATIVE.





Now I multiply the first two numbers.
Two times two equals four," said Kiduchu.

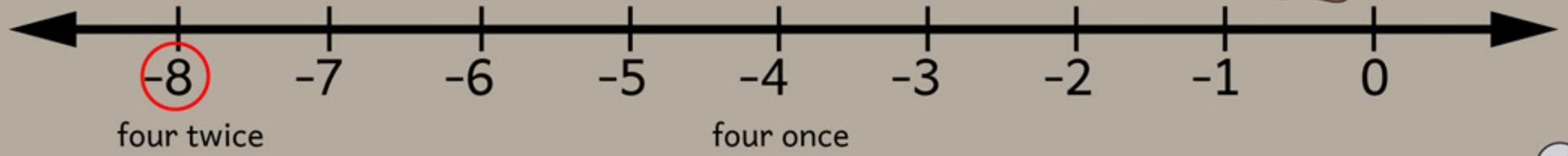


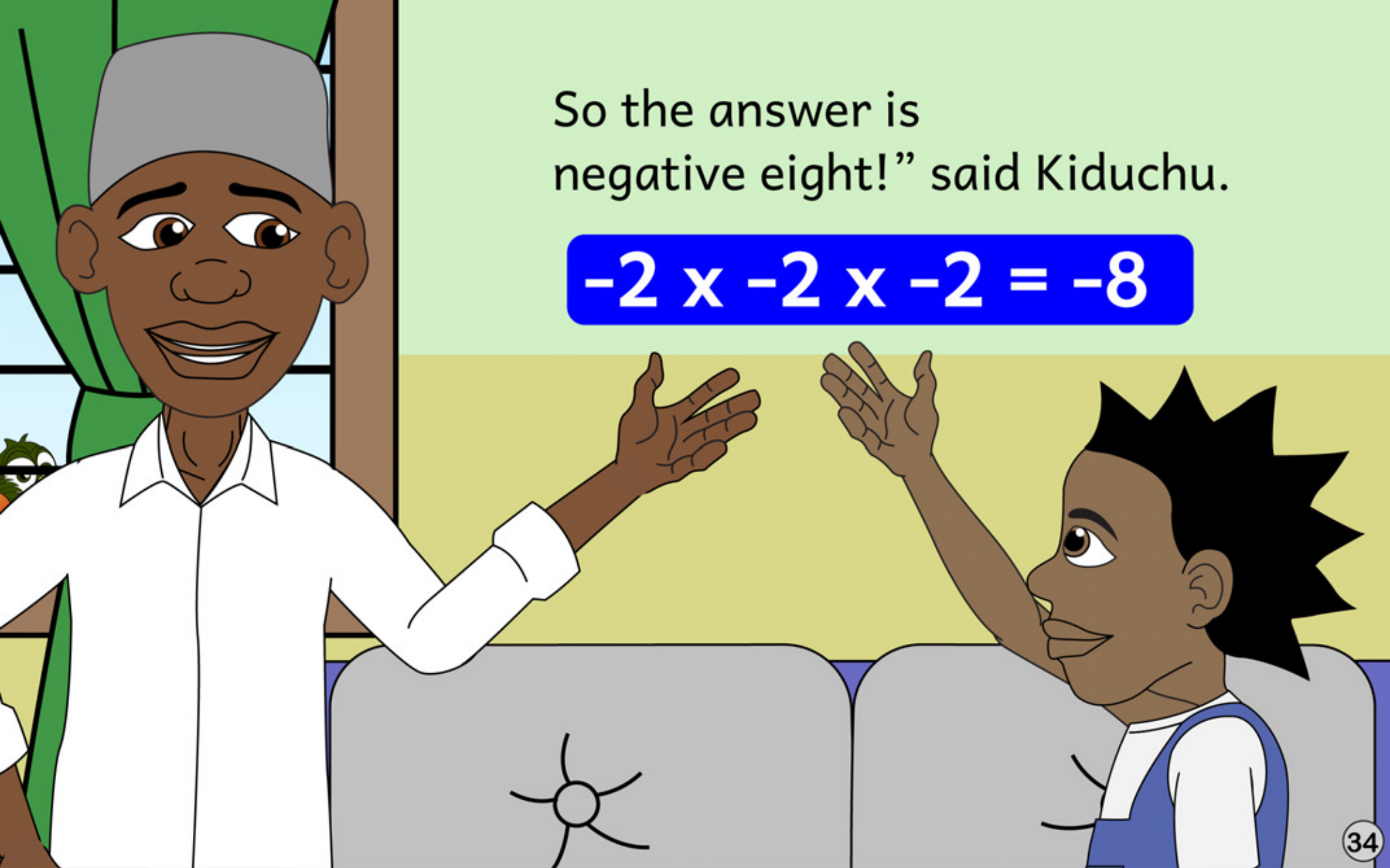
“Next, double that, because it’s four times two,” said Dad. “Four times two equals eight.

$-2 \times -2 \times -2 = (-)$

$-2 \times -2 = 4$

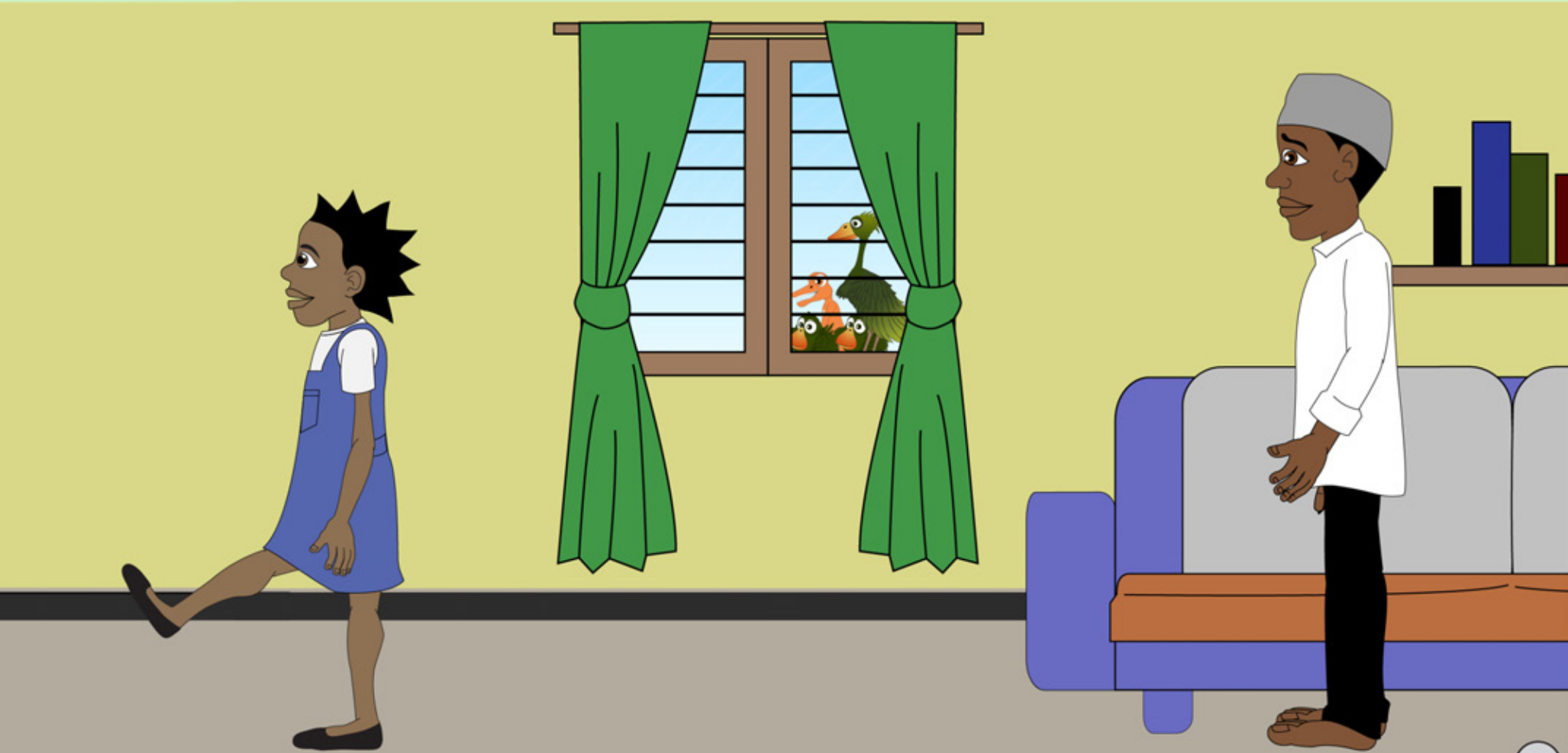
$4 \times -2 = -8$




So the answer is
negative eight!" said Kiduchu.
-2 x -2 x -2 = -8

“Well done, Kiduchu,
you would make
a good soldier,”
said Dad, as they
saluted each other.

“Phew, Dad! I’m tired. Can I please go rest?”
She thanked him and marched like a soldier to her room.



“It’s so confusing,
Mama!” said the chicks.

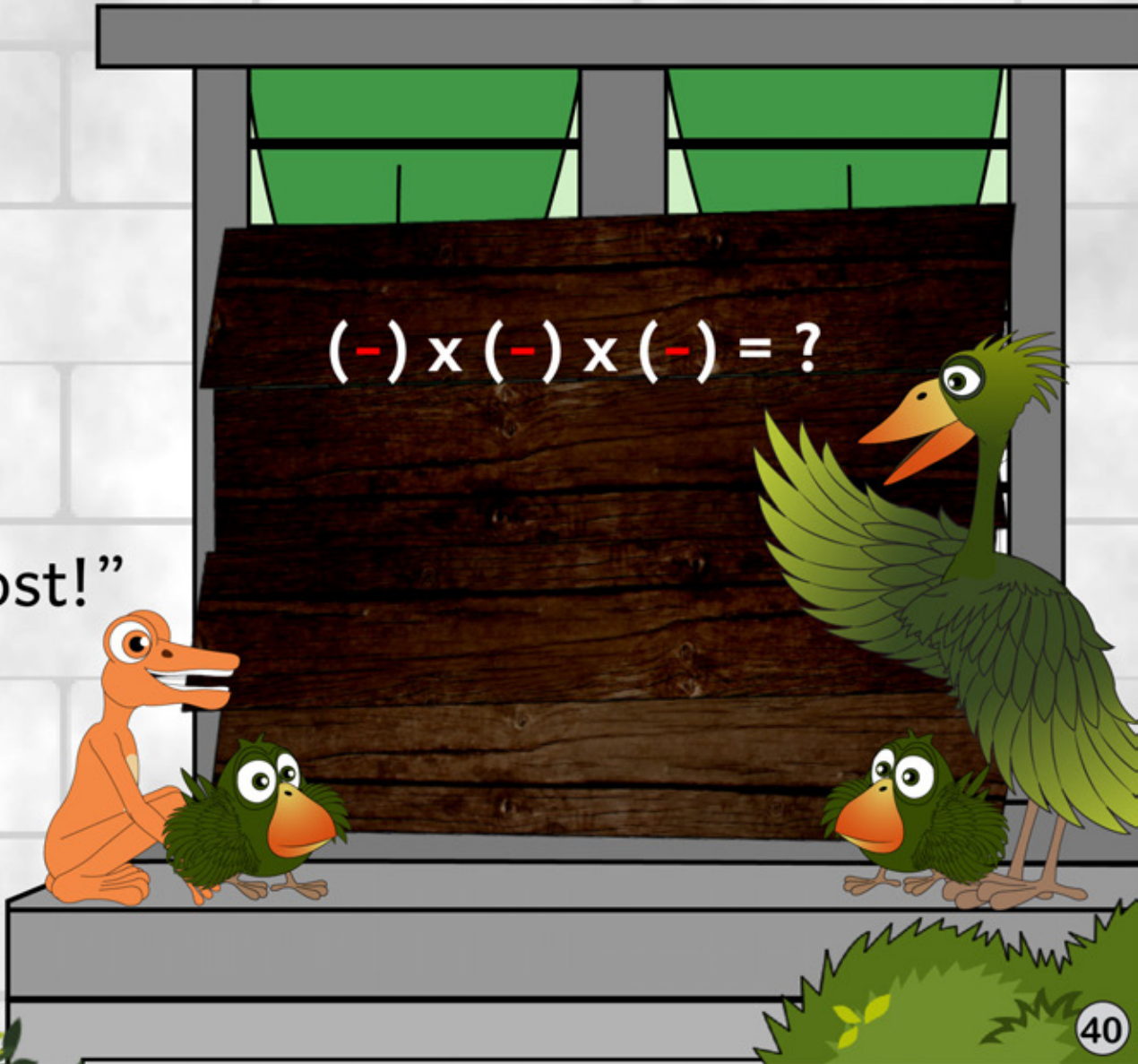
“Don’t worry,
I’ll review multiplying
negatives with you,”
said Mama Ndege.

The chicks
understood
the negative times
negative parade
well and sang,

“Negative times
negative is positive.

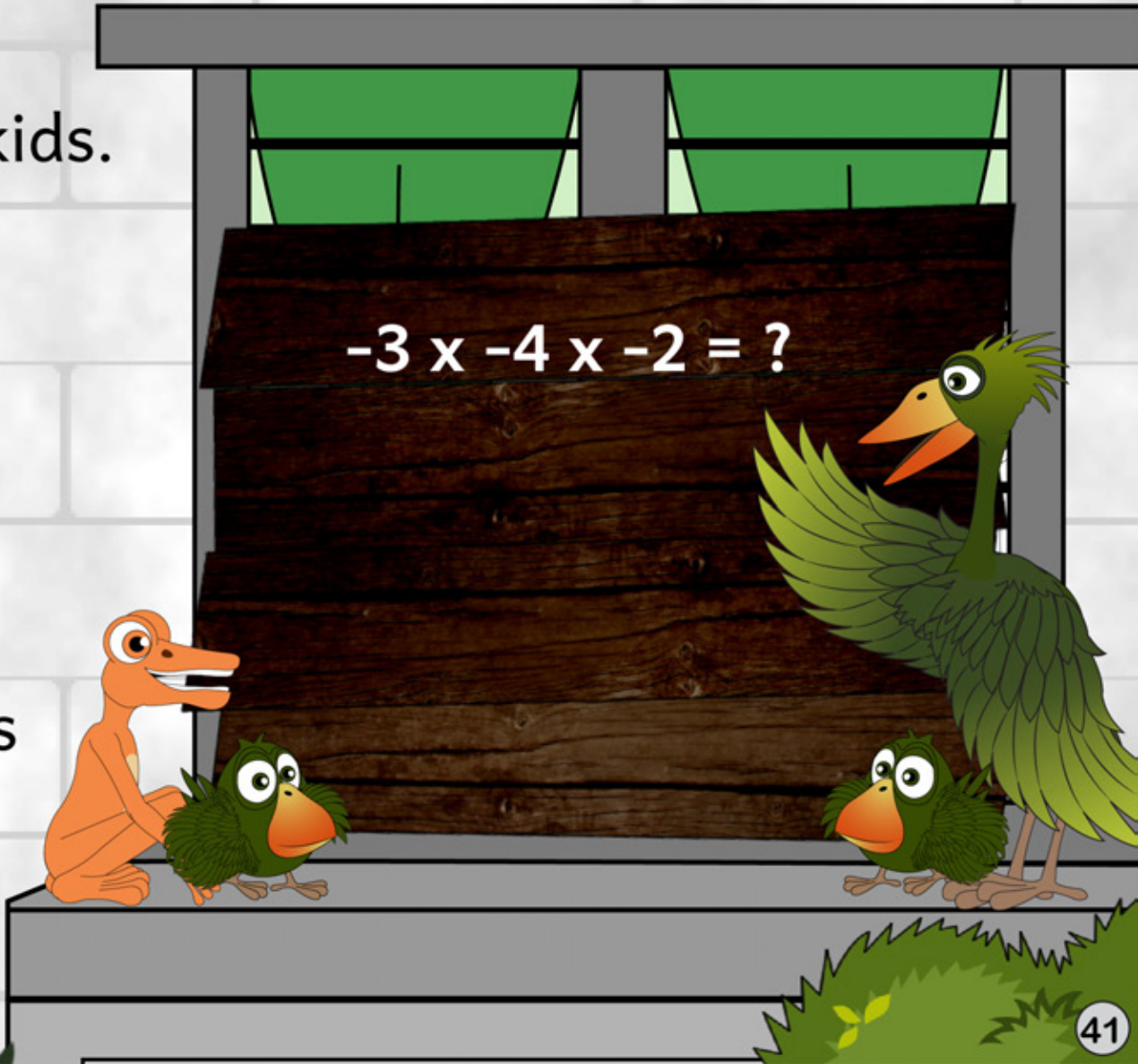
Negative
three times
negative four
is positive twelve.

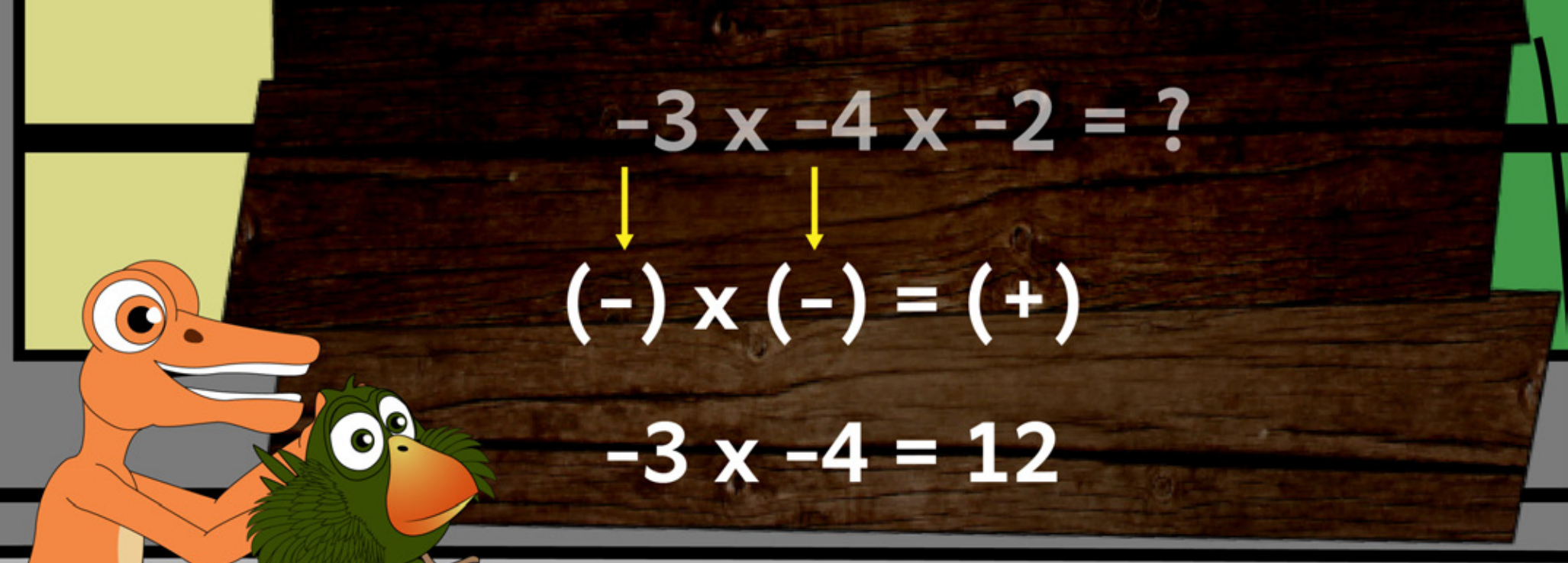
But when there are three negatives like negative times... negative times... negative...? we're completely lost!"



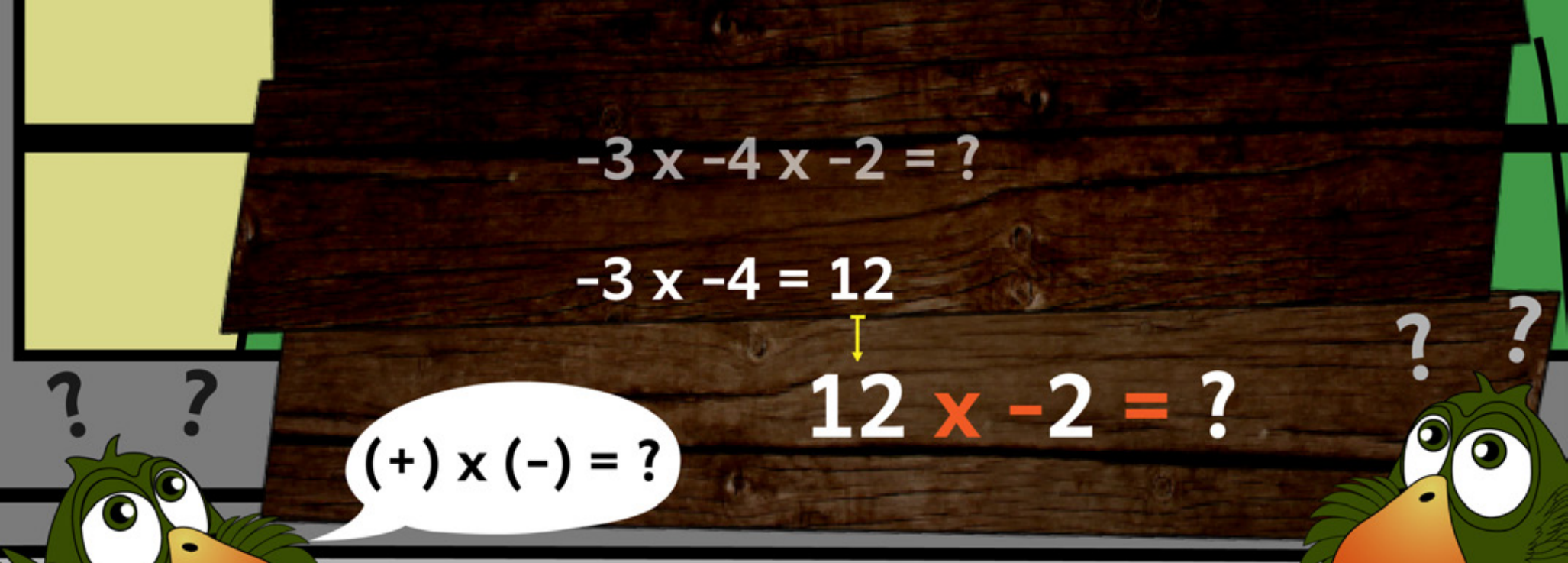
Mama replied,
“Use your brains, kids.
Think it through
step by step,
like Kiduchu did.

What is negative
three times
negative four times
negative two?”

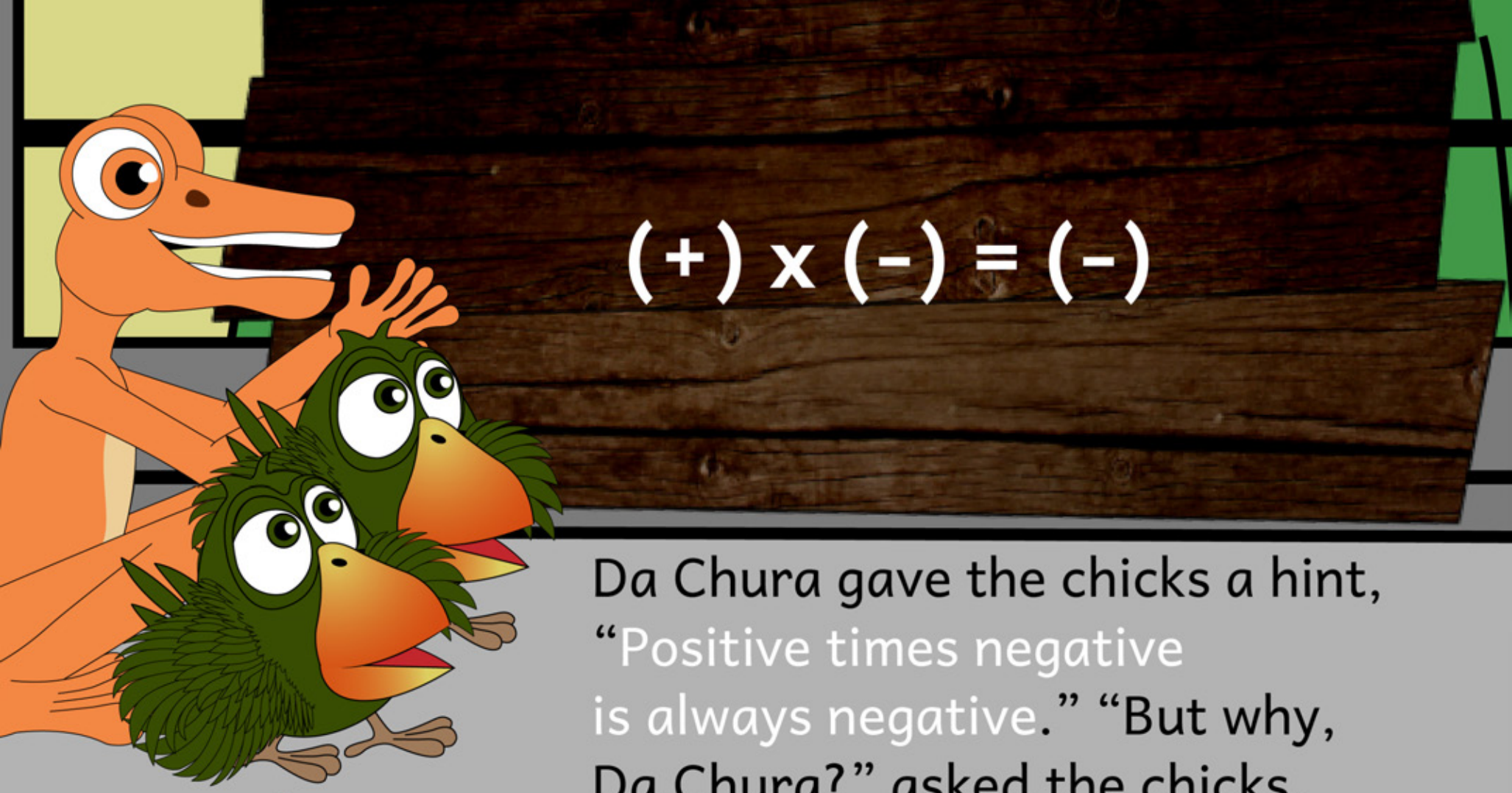




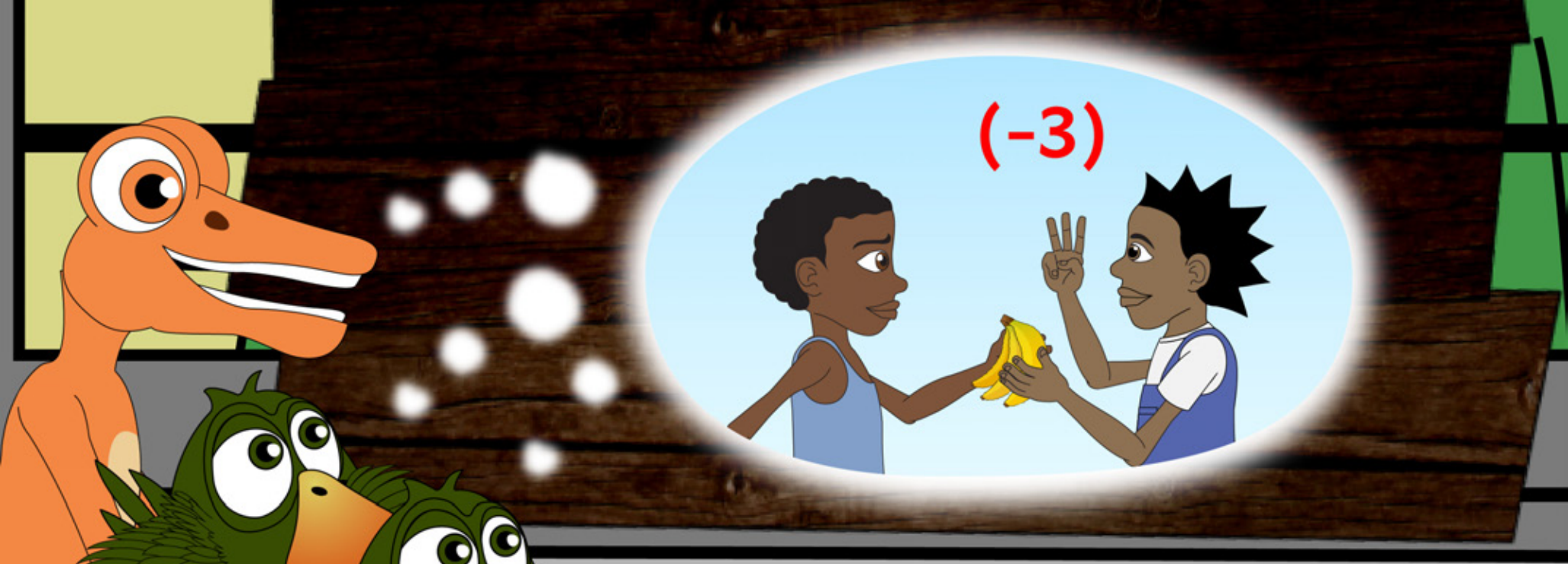
"Negative times negative equals positive. So negative three times negative four equals positive twelve.



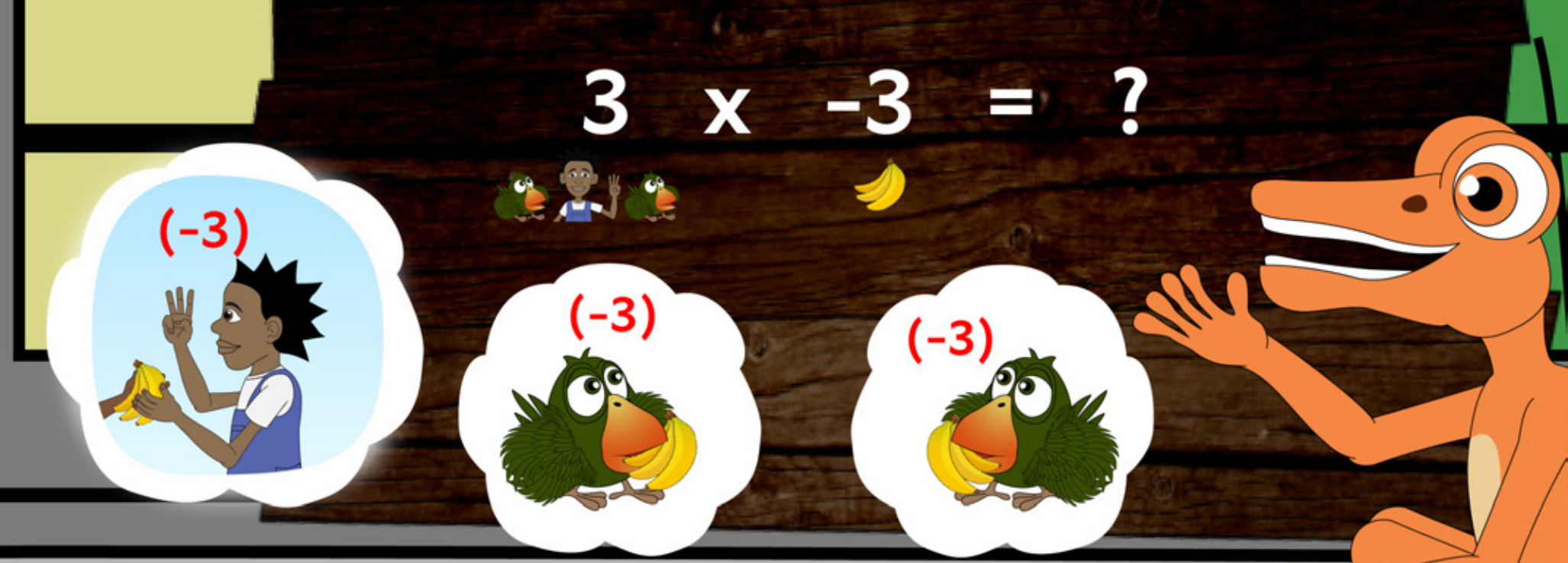
Now we have positive twelve times negative two. Ummm???...What does positive times negative equal?"



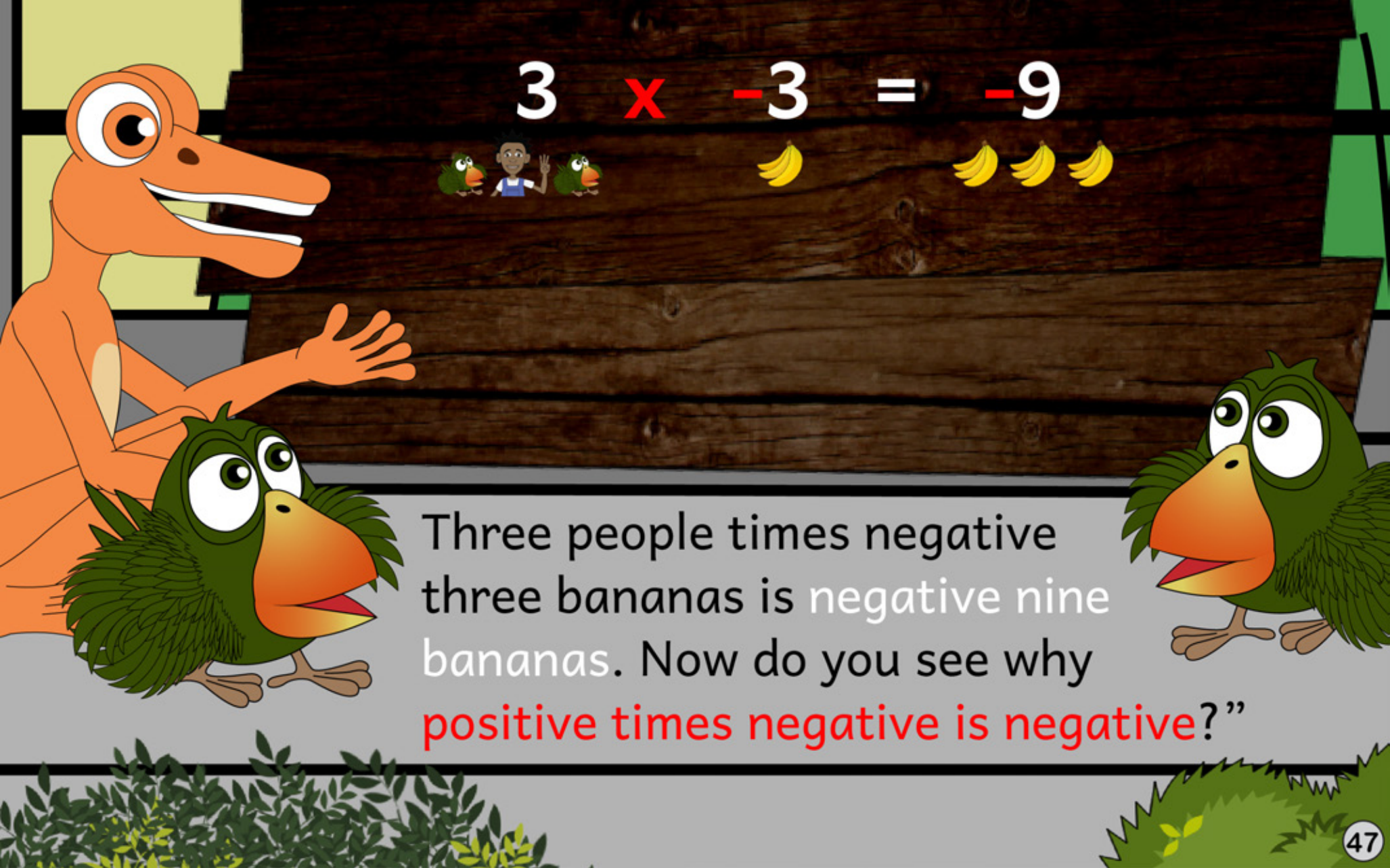
Da Chura gave the chicks a hint, "Positive times negative is always negative." "But why, Da Chura?" asked the chicks.

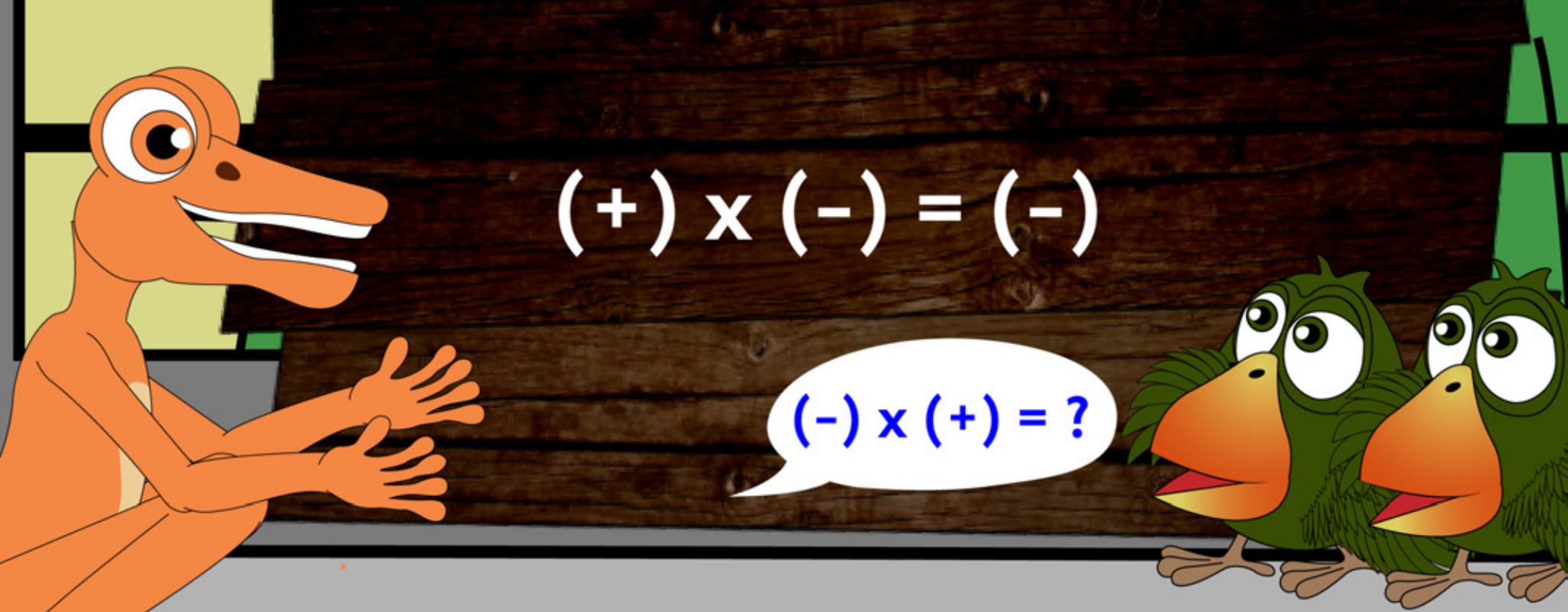


"Remember when Koba loaned Kiduchu three bananas. That meant that she had negative three bananas.

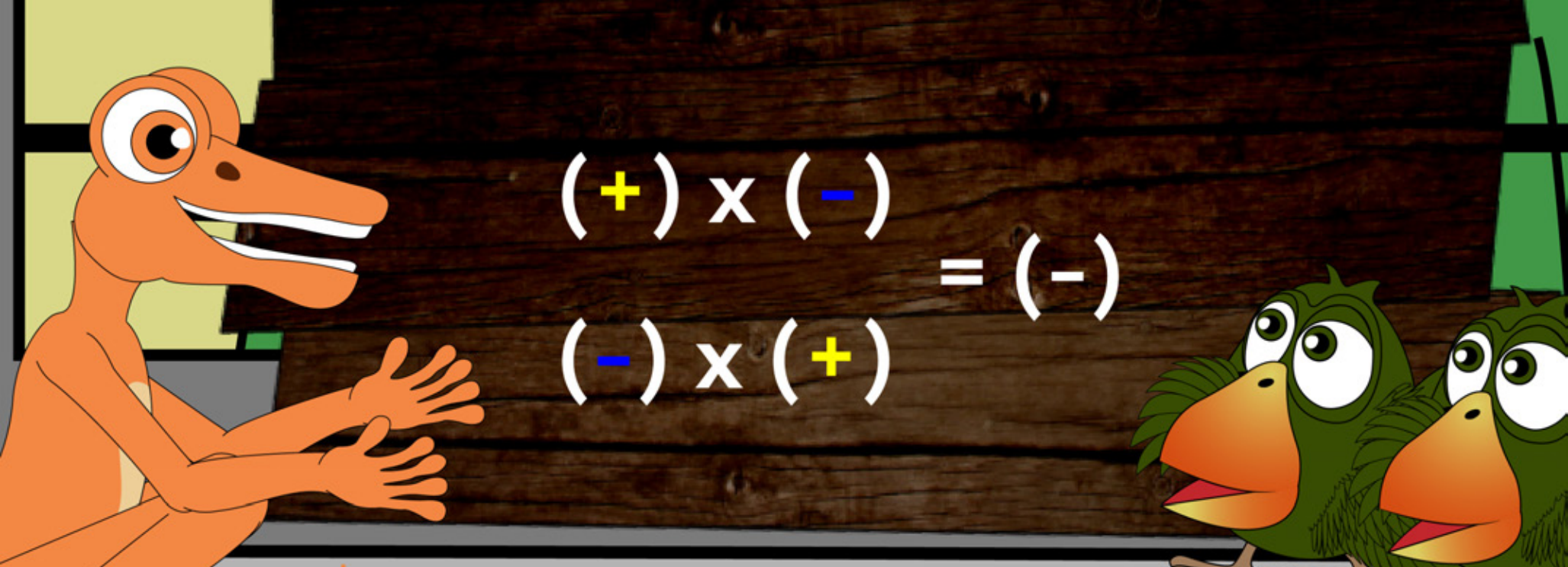


If each of you chicks also borrowed
3 bananas each, that would be
three people times negative three bananas.


3 x -3 = -9
Three people times negative three bananas is negative nine bananas. Now do you see why positive times negative is negative?”



"Yes, we see! Positive times negative is negative.
But what if it's negative times positive,
Da Chura?" asked the chicks.



“The order doesn’t change anything. Both positive times negative and negative times positive are negative. Now finish the question you’re working on!” replied Da Chura.

(+) x (-) = (-)

-3 x -4 x -2 = ?

-3 x -4 = 12

12 x -2 = -24

“Positive twelve times negative two equals negative twenty four!”

“Well done! Now you’re using your brains, kids!

$-3 \times -4 \times -2 = ?$

$-3 \times -4 = 12$

$12 \times -2 \times = -24$

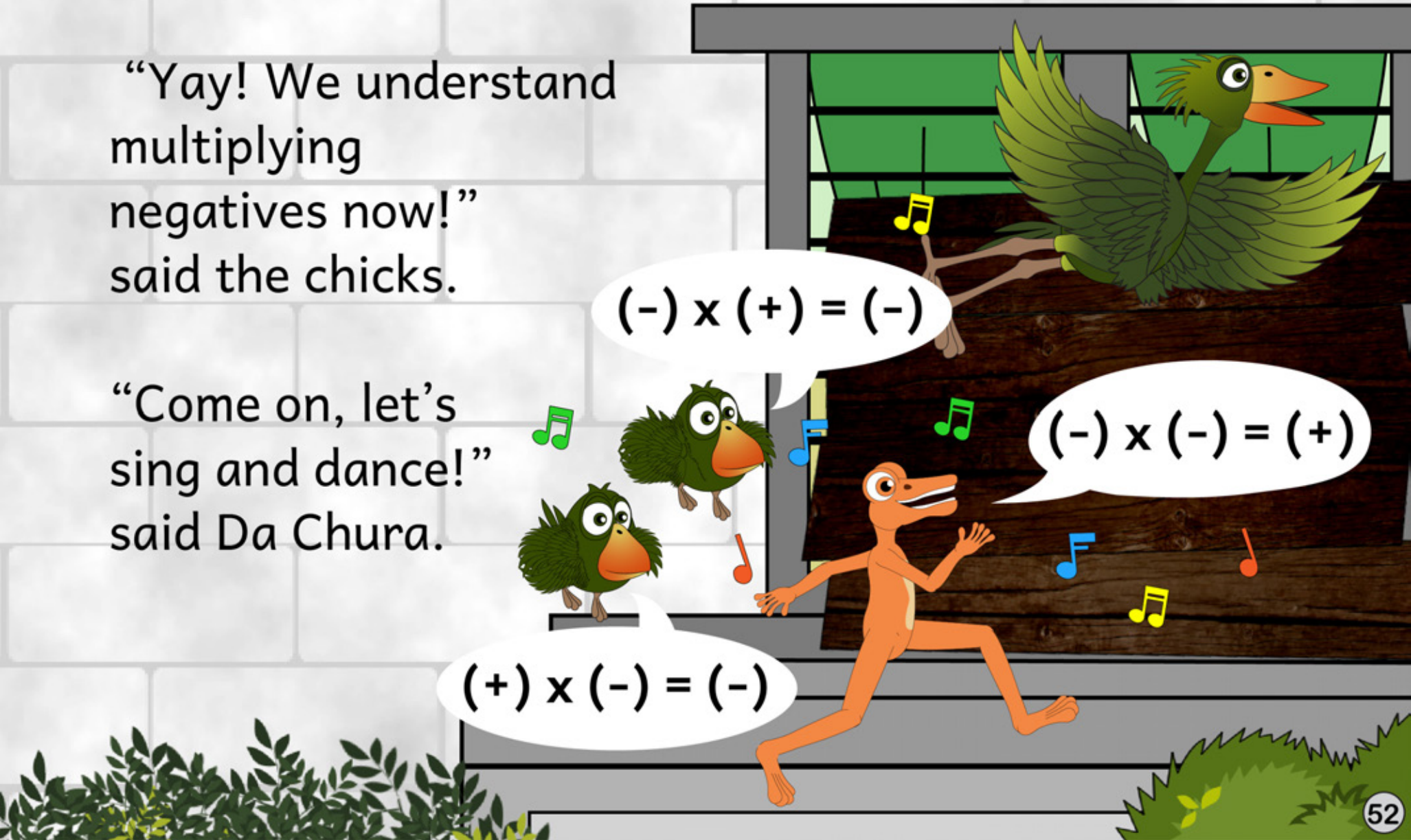
$-3 \times -4 \times -2 = -24$

Negative three times negative four is positive twelve.”

So twelve times negative two is negative twenty four,” recapped Mama.

"Yay! We understand multiplying negatives now!" said the chicks.

"Come on, let's sing and dance!" said Da Chura.



The End

created by

ubongo.co