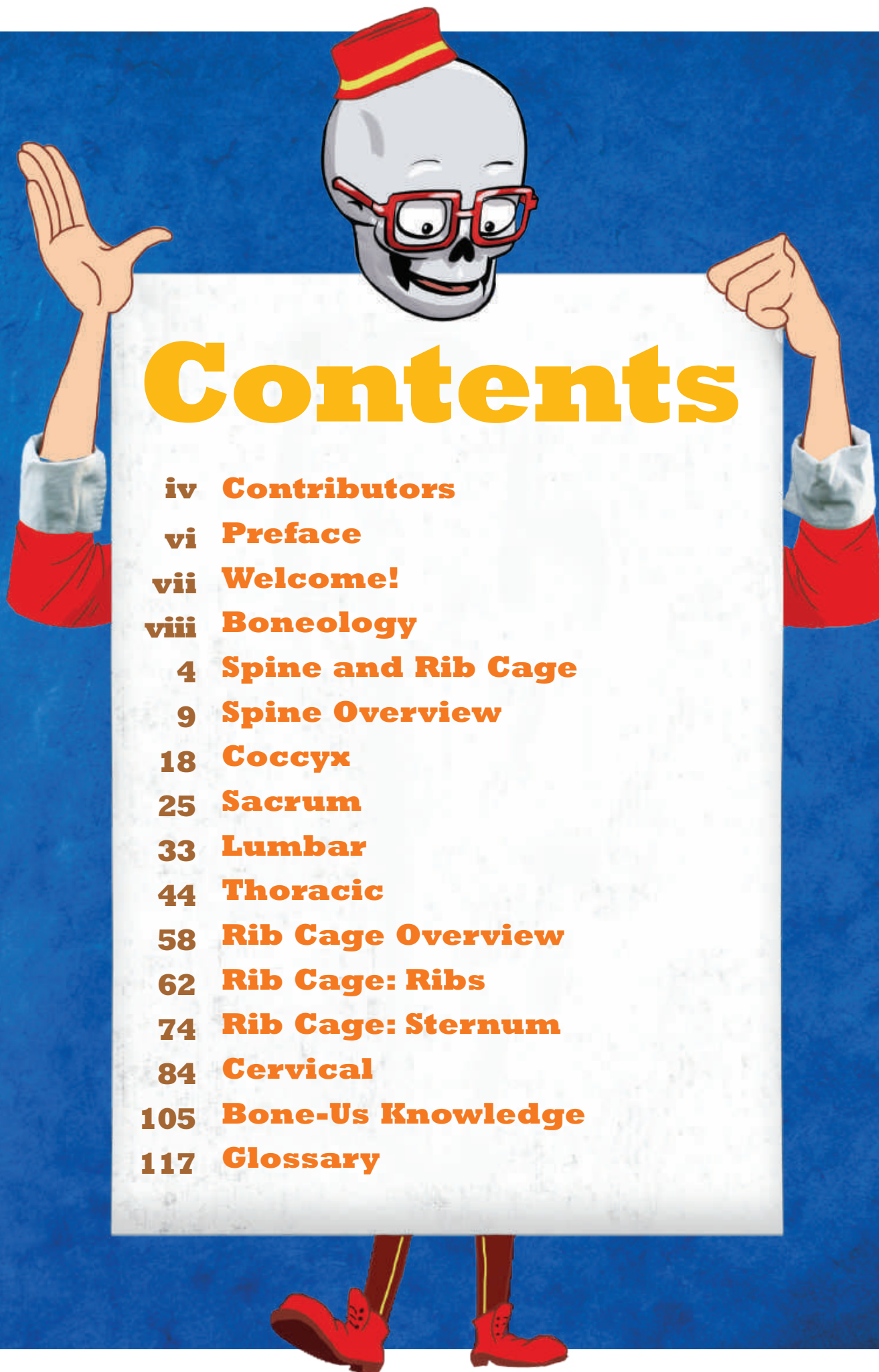


### **Book #3 Bones of the Rib Cage and Spine**

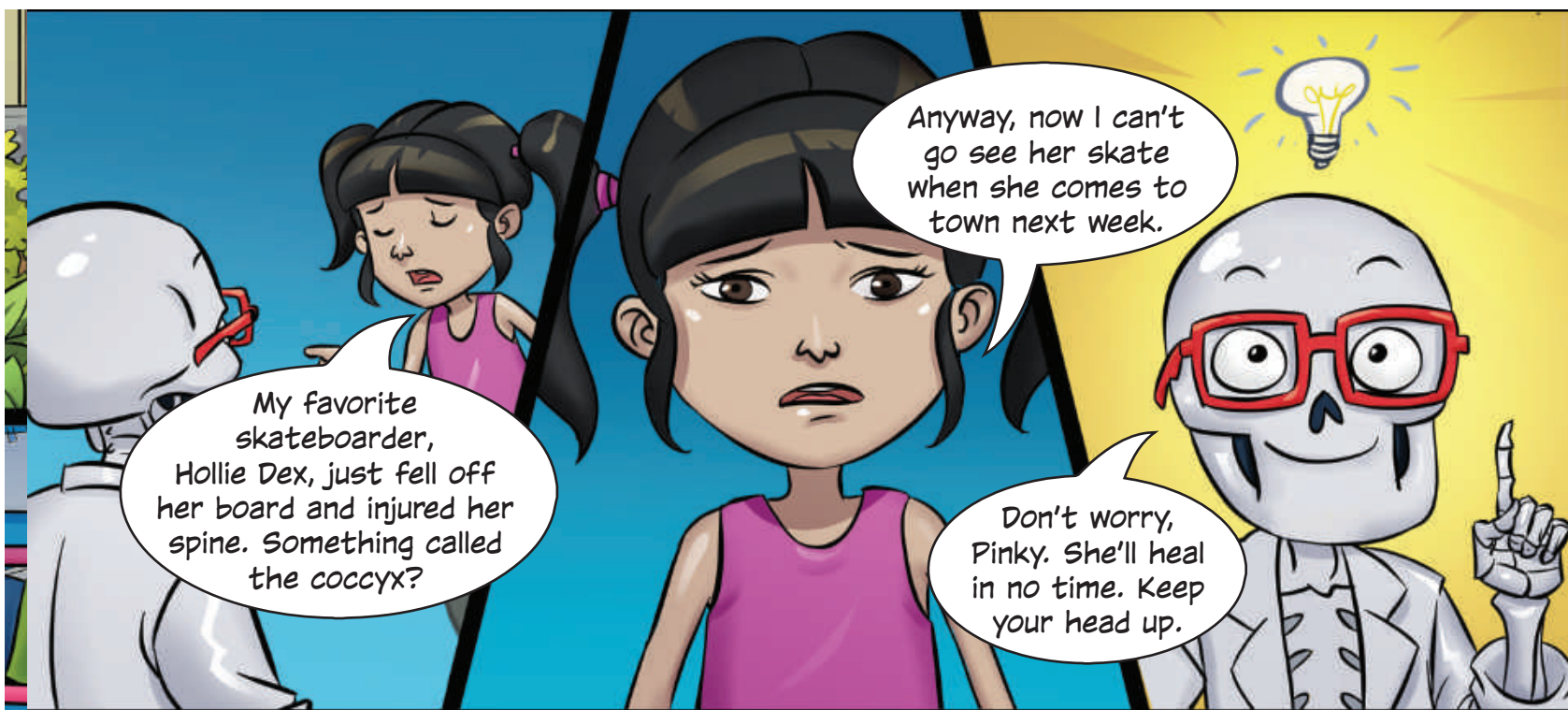
In Book 3, readers take a rollicking elevator ride traveling the ribcage and spine. Along with main characters Dr. Bonyfide and Pinky, young learners meet new friends Vinny Vertebrae, Ruby Rib, Lumbar Jack, and others! This book features Know Yourself's signature learning strategies like memory cues, puzzles, fun facts, and original comic strips.



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My favorite skateboarder, Hollie Dex, just fell off her board and injured her spine. Something called the coccyx?

Anyway, now I can't go see her skate when she comes to town next week.

Don't worry, Pinky. She'll heal in no time. Keep your head up.



Pinky, have you ever heard of an atlas before?

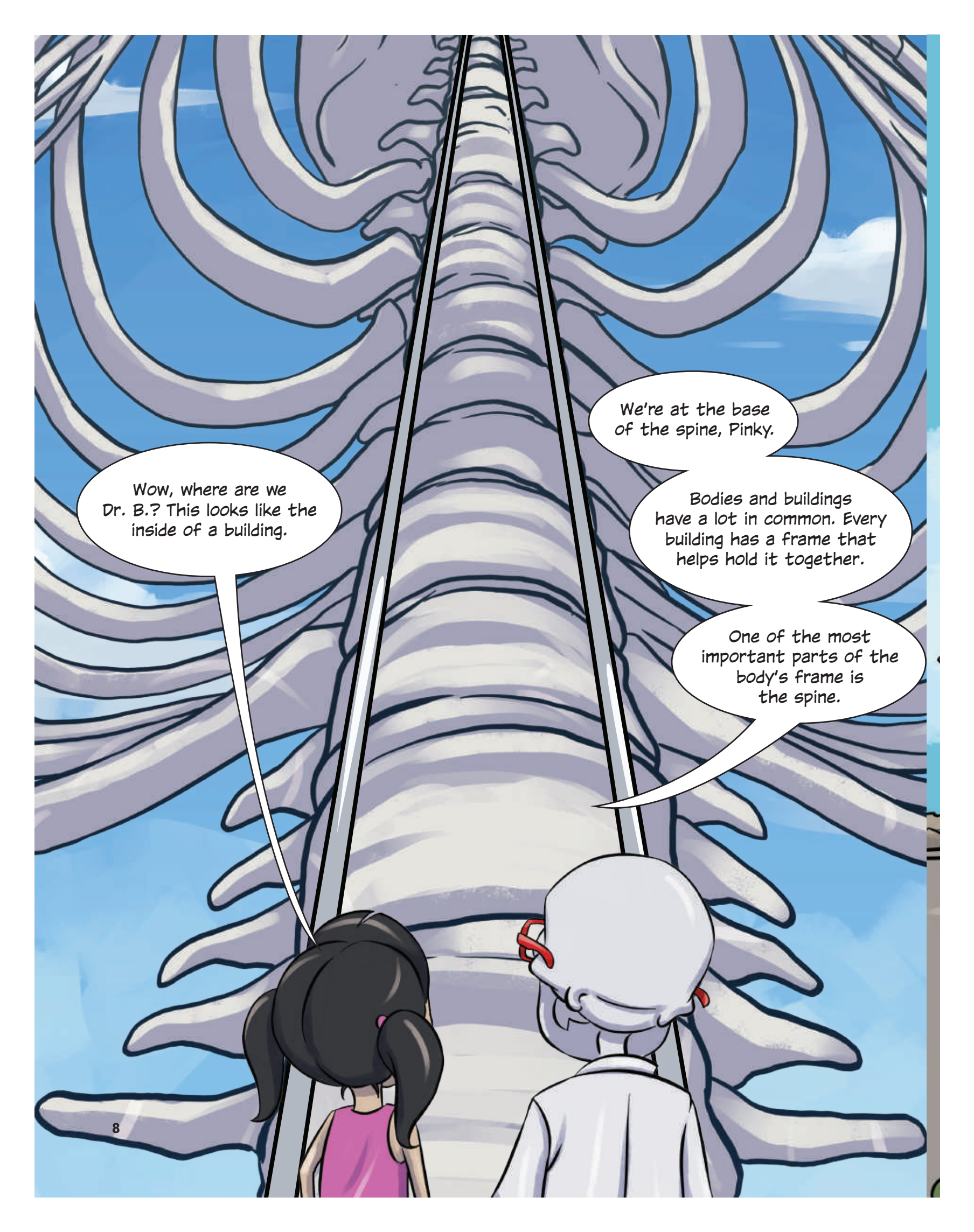
An atlas? Isn't that some kind of map?

Indeed. It's usually a book of maps.

WOOOSSHH...!!!

But I've got a special atlas in mind that might just help get you out of your bind.





Wow, where are we Dr. B.? This looks like the inside of a building.

We're at the base of the spine, Pinky.

Bodies and buildings have a lot in common. Every building has a frame that helps hold it together.

One of the most important parts of the body's frame is the spine.



# Spine Overview

The spine is also called the **backbone**.  
It has another name, too: **spinal column**.

Say it like this:

**"spy-null"** — **"call-umm."**



Just like the columns belonging to the great buildings of ancient Greece and Rome, our column is one of great strength, and it supports our body.

Your **spinal column** is a **strong** and **flexible** structure

that **connects** to other **bones** like

your **hips** and your **ribs**

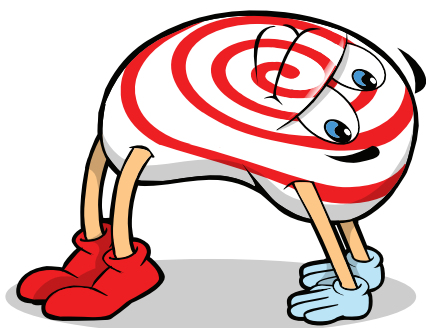
and allows you to do things like:



*run in the sun*



*touch your toes*



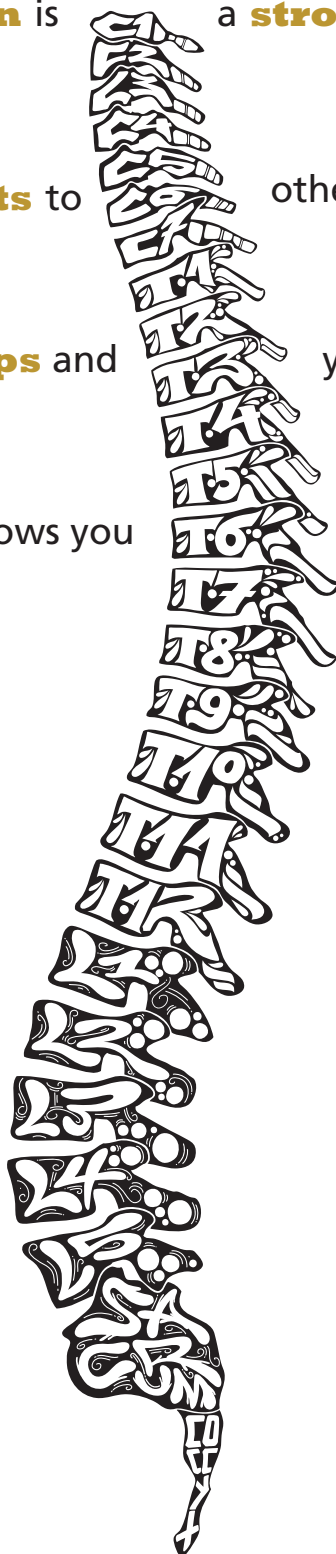
*bend like a bridge*



*jump like jazz*



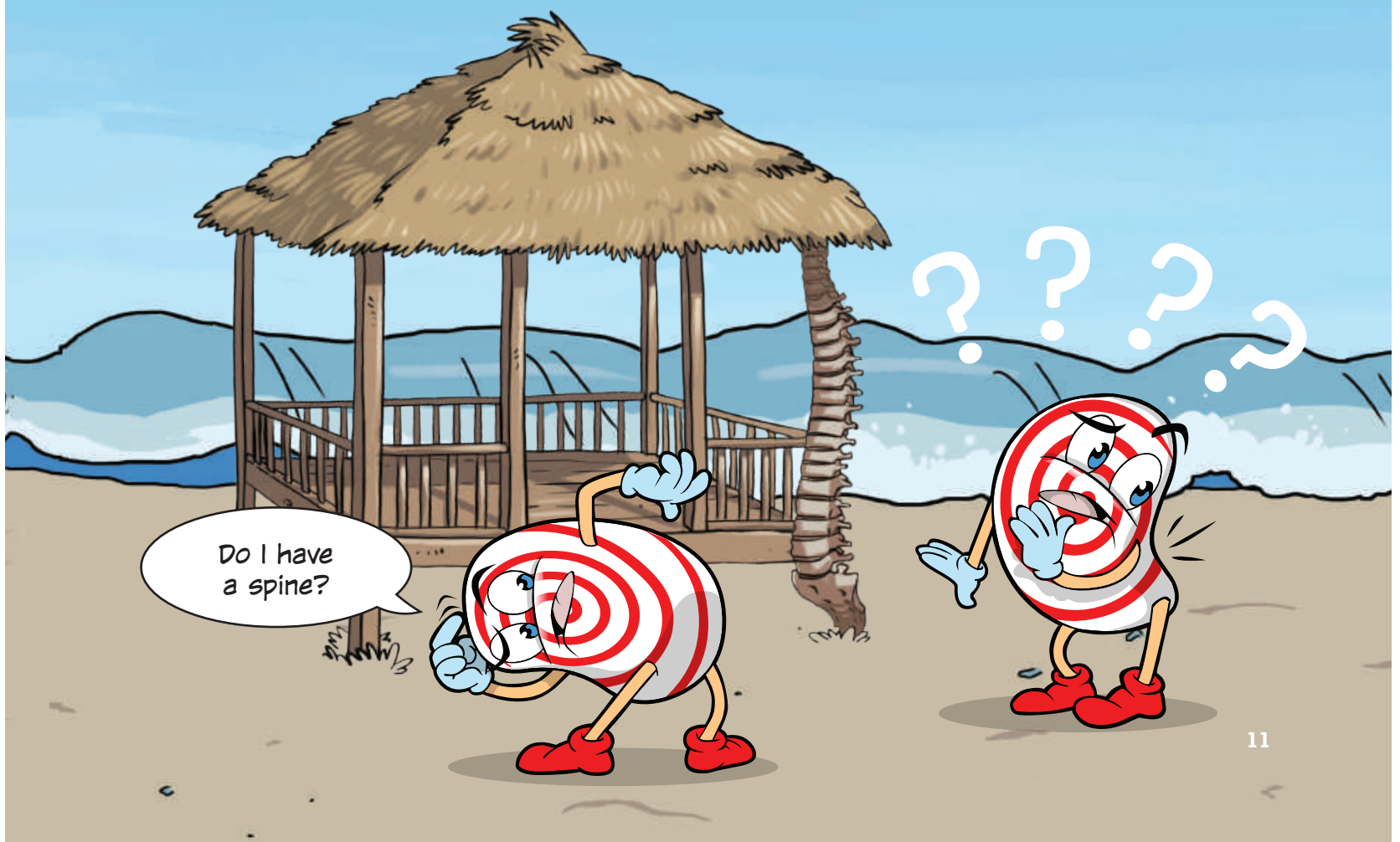
*and everything in between!*



# Do All Creatures Have Spines?

Vertebrates are living organisms that have a spine. Mammals, reptiles, amphibians, birds, and fish are all vertebrates because they have spines.

Invertebrates are living organisms that don't have a spine. Jellyfish, sea anemones, spiders, octopuses, and snails are all invertebrates because they don't have spines.





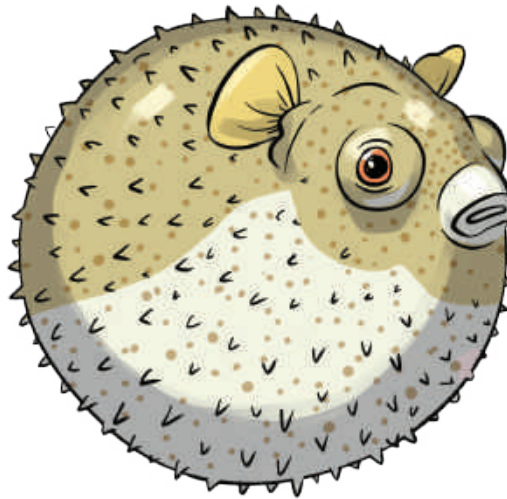
## Activity: Organisms



The word organism comes from the Greek words *organon*, meaning "body organ" and *ismos*, meaning "system."

We say organism to mean "living thing."

Circle the organisms that you think are vertebrates.



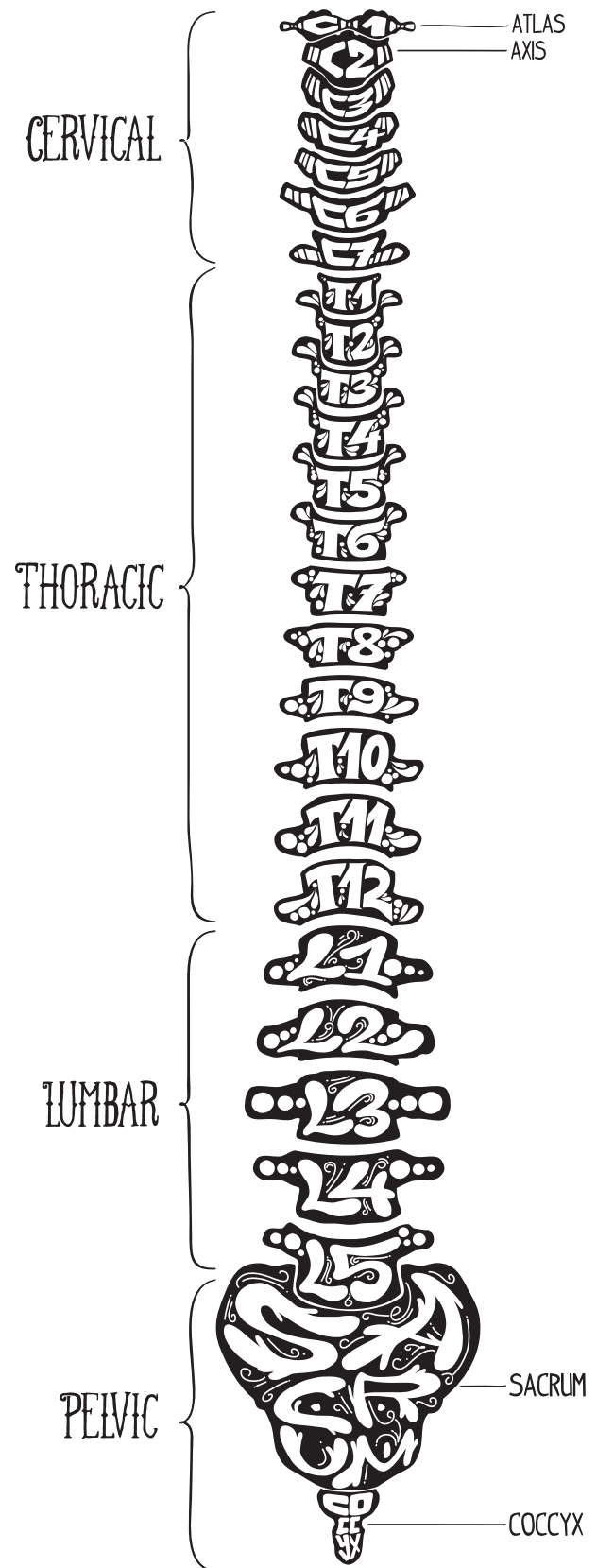


The whole spine might feel like one really loooong bone, but it is made up of **26 bones** called **vertebrae** that are stacked on top of one another.

Say it like this:  
**"ver-tuh-bray."**

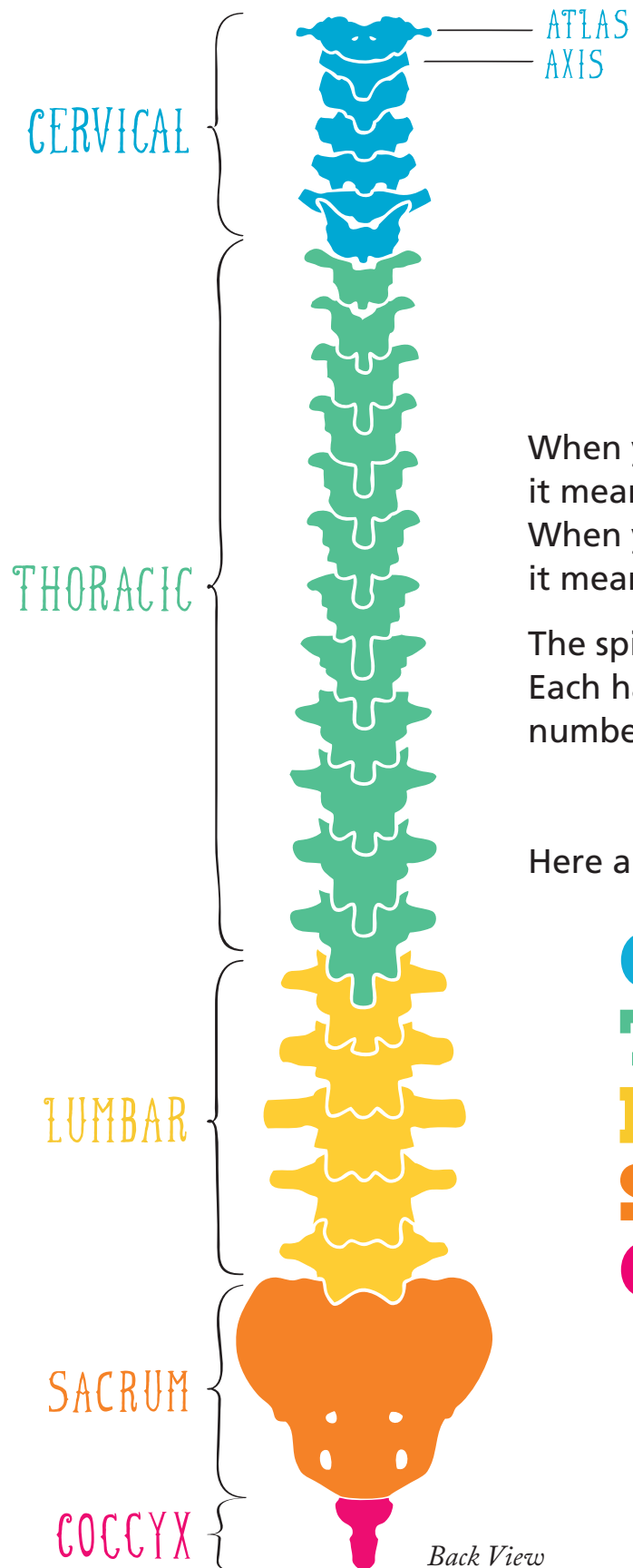
Your spine extends from your neck, just below your earlobes, all the way down to the very bottom of your back. This area is known as your buttocks, also called your butt, for short.

The spine houses the **spinal cord**, which is the bundle of nerve fibers and tissue that carries messages between the brain and the rest of the body.



*Front View*

# Spine Sections



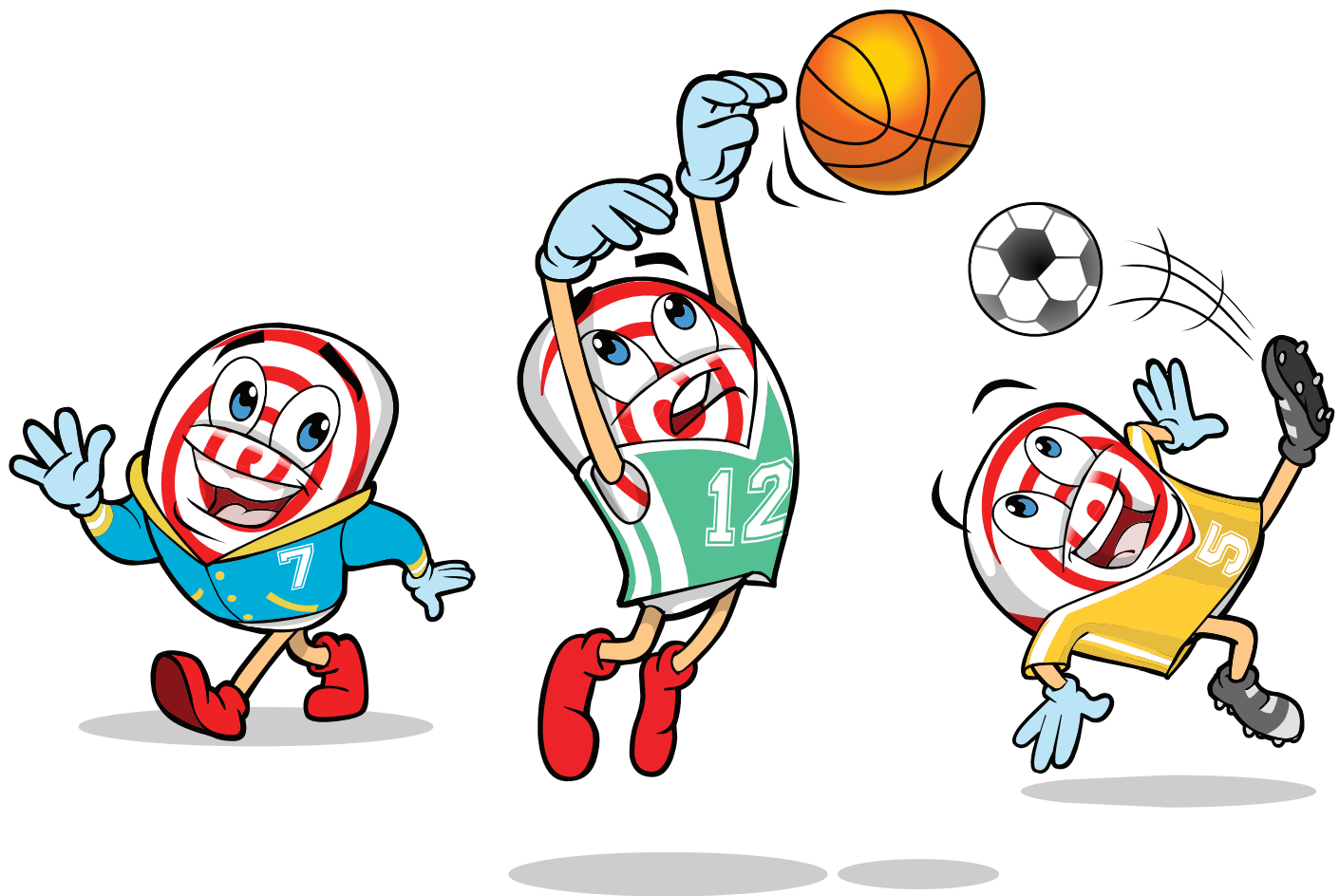
When you say **vertebra**,  
it means a single bone in the spine.  
When you say **vertebrae**,  
it means more than one vertebra.

The spinal column is divided into five sections.  
Each has its own name, and each has its own  
number of vertebrae.

Here are the sections, from top to bottom:

**Cervical**  
**Thoracic**  
**Lumbar**  
**Sacrum**  
**Coccyx**





The **Cervical 7** keeps your neck in check.

The **Thoracic 12** owns the most back bones.

The **Lumbar 5** lets your lower back thrive.

The **Sacrum** and the **Coccyx** are hard to speak,

but one is shaped like an anchor

and the other like a beak.

