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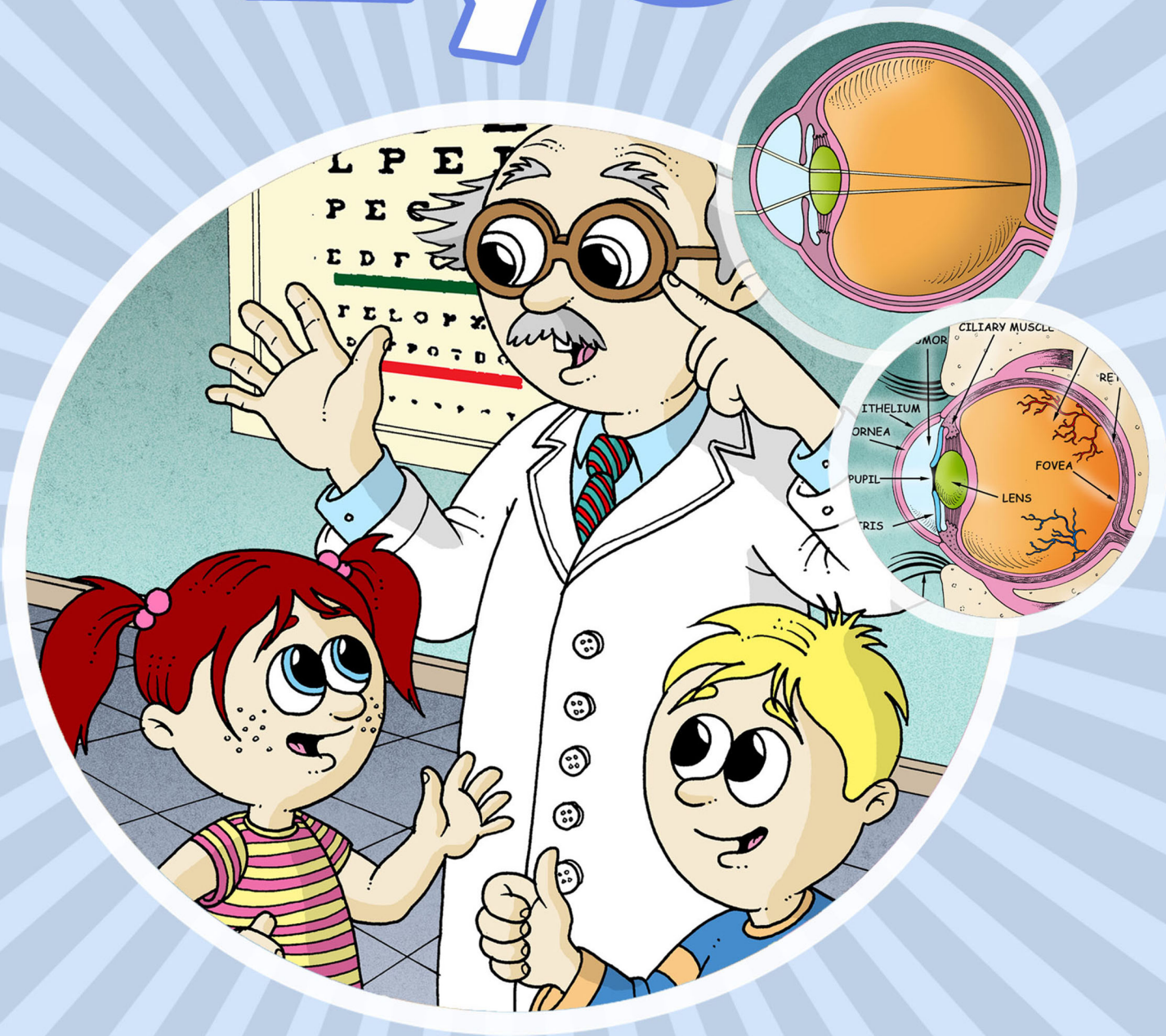
Starting reactions that last a lifetime®

An Introduction to the Eye



Sing-A-Long Storybook

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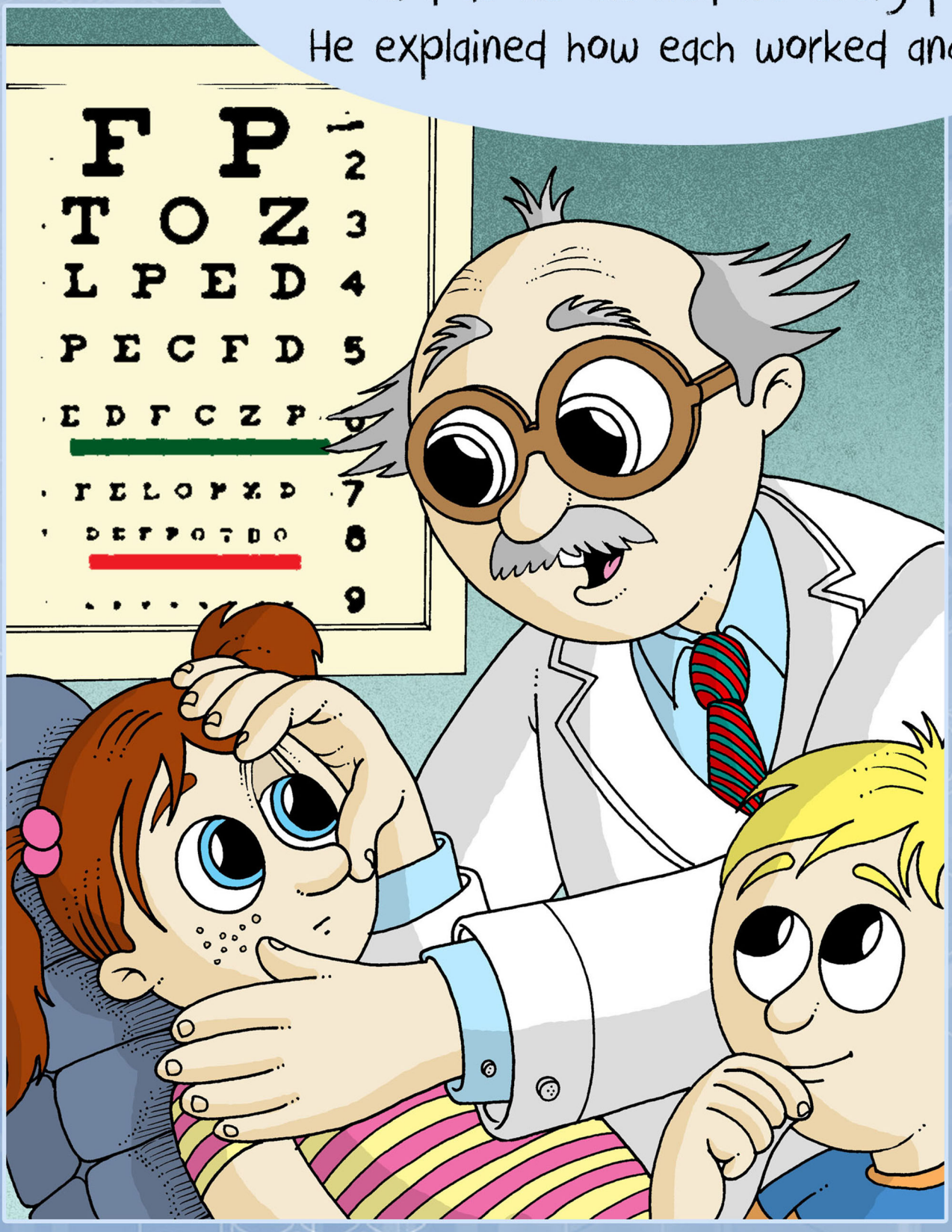
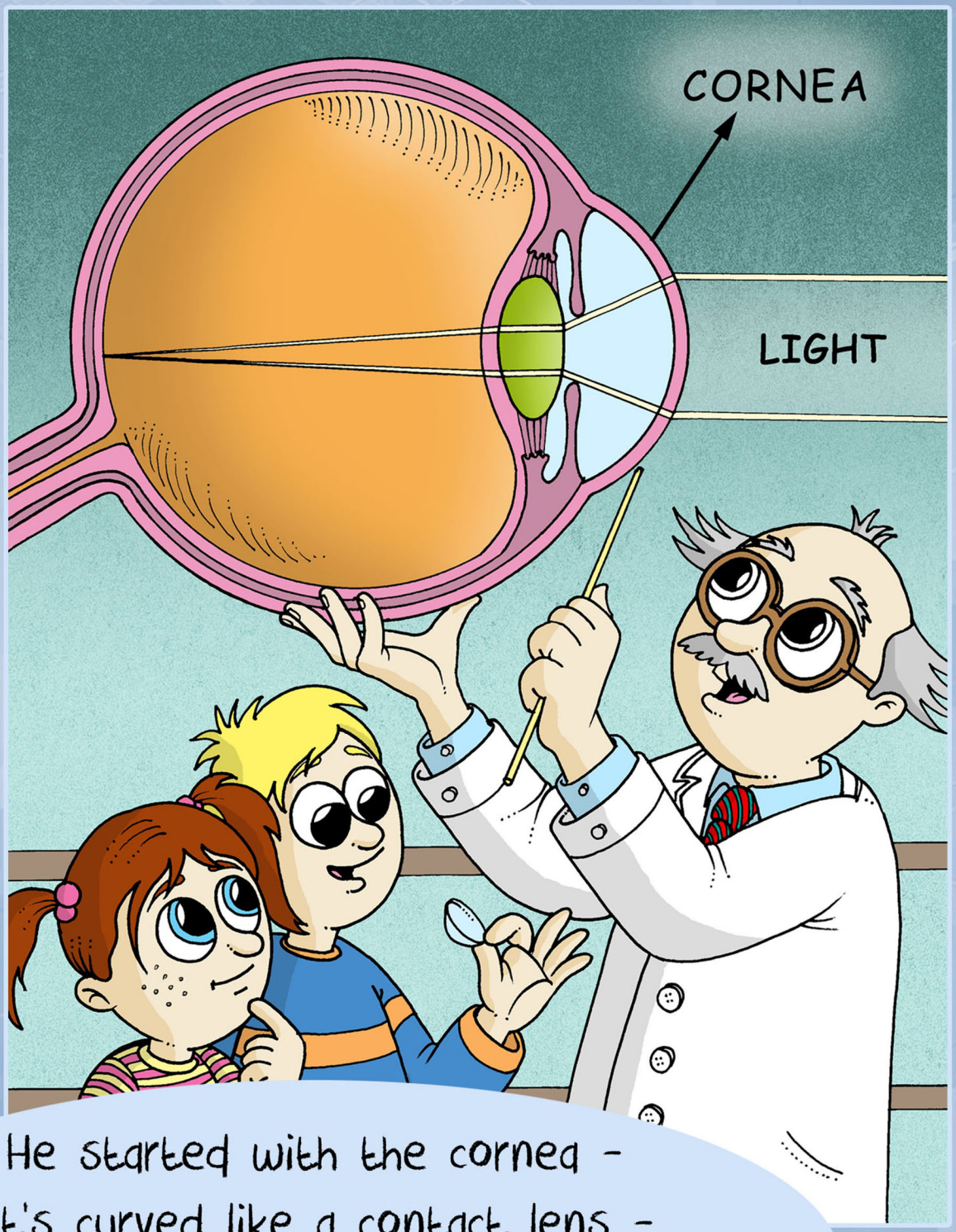
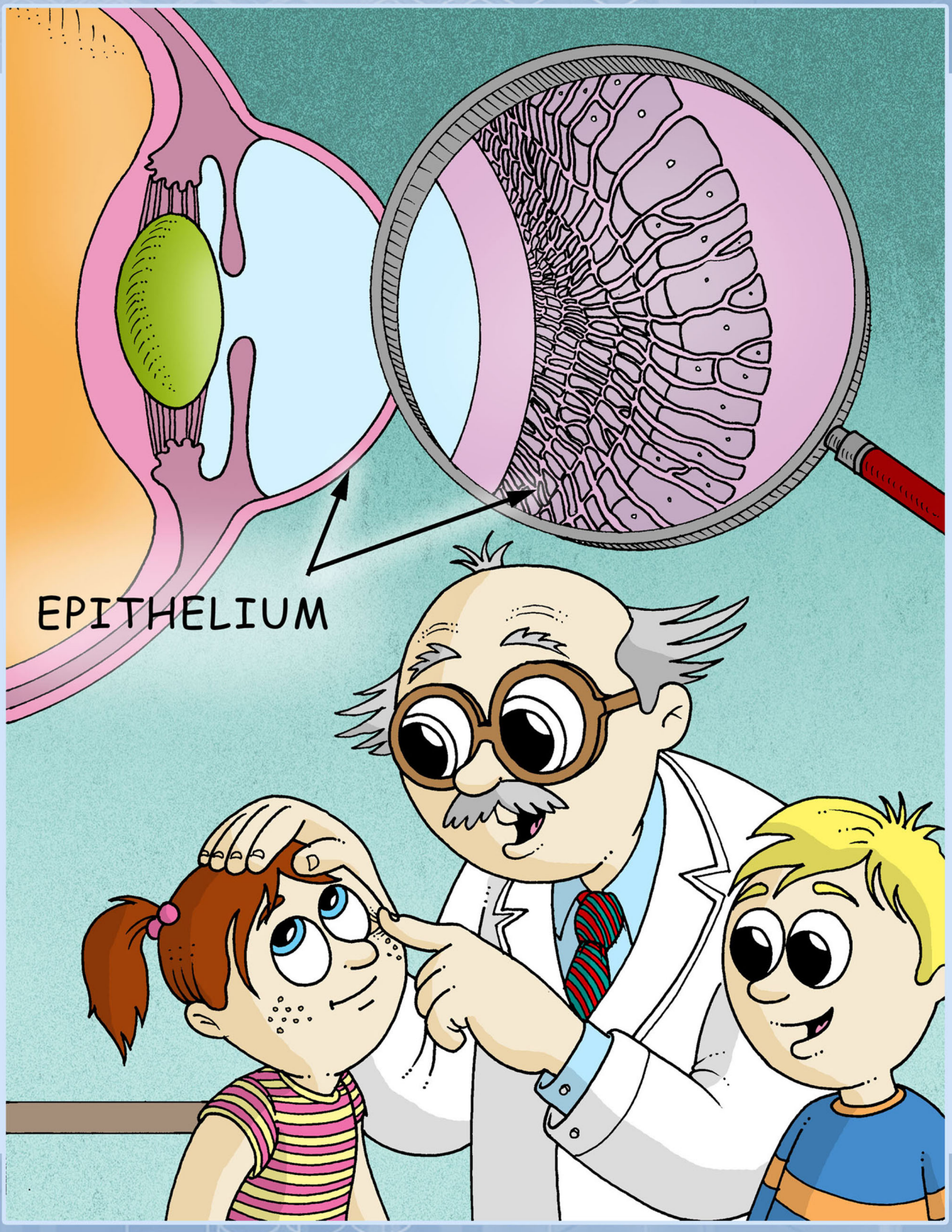
When we were playing soccer
One lovely day in spring
My elbow poked my sister's eye
It seemed a painful thing!

We took her to the doctor
Who examined her injured eye
And as he checked its every part
He explained how each worked and why.



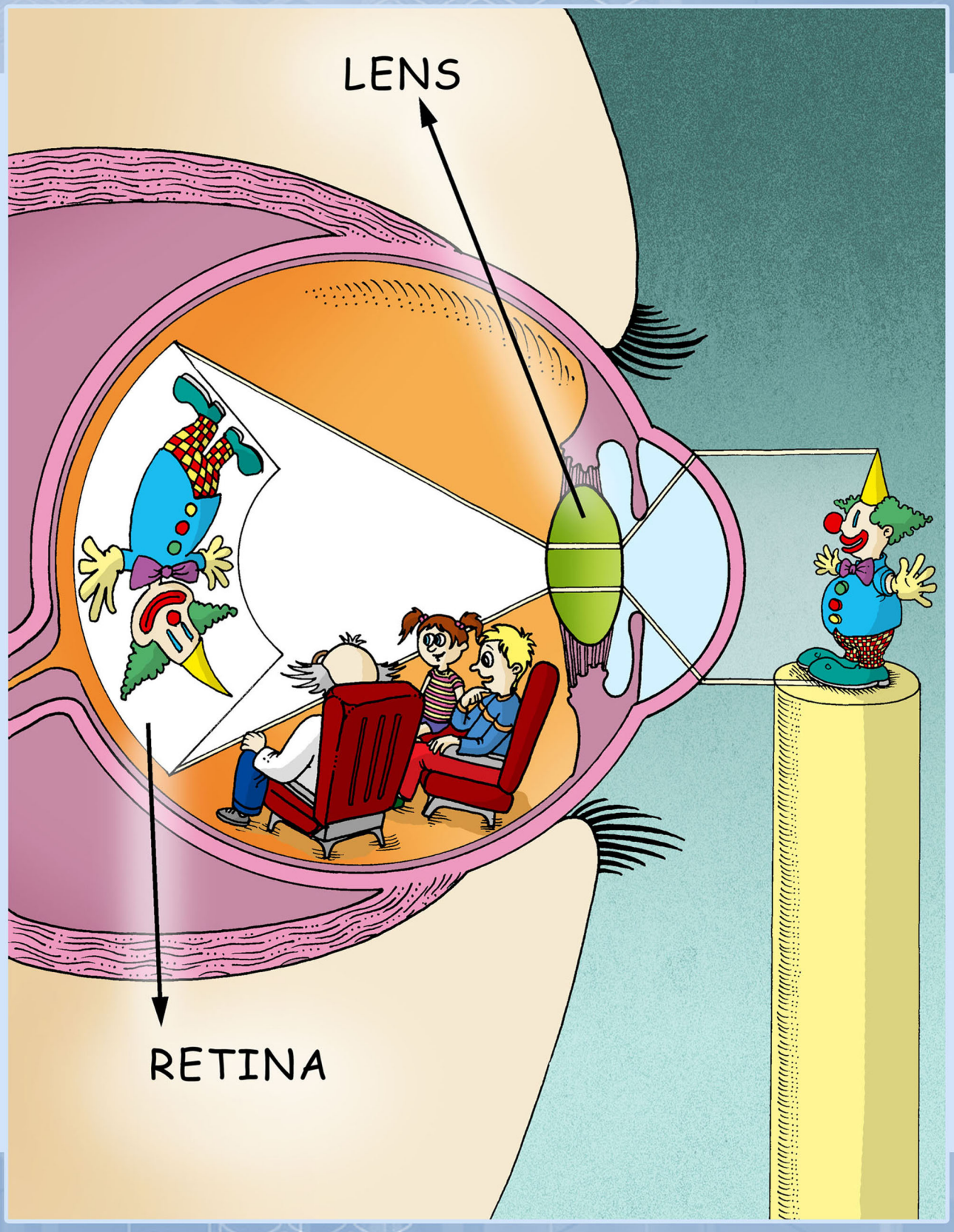


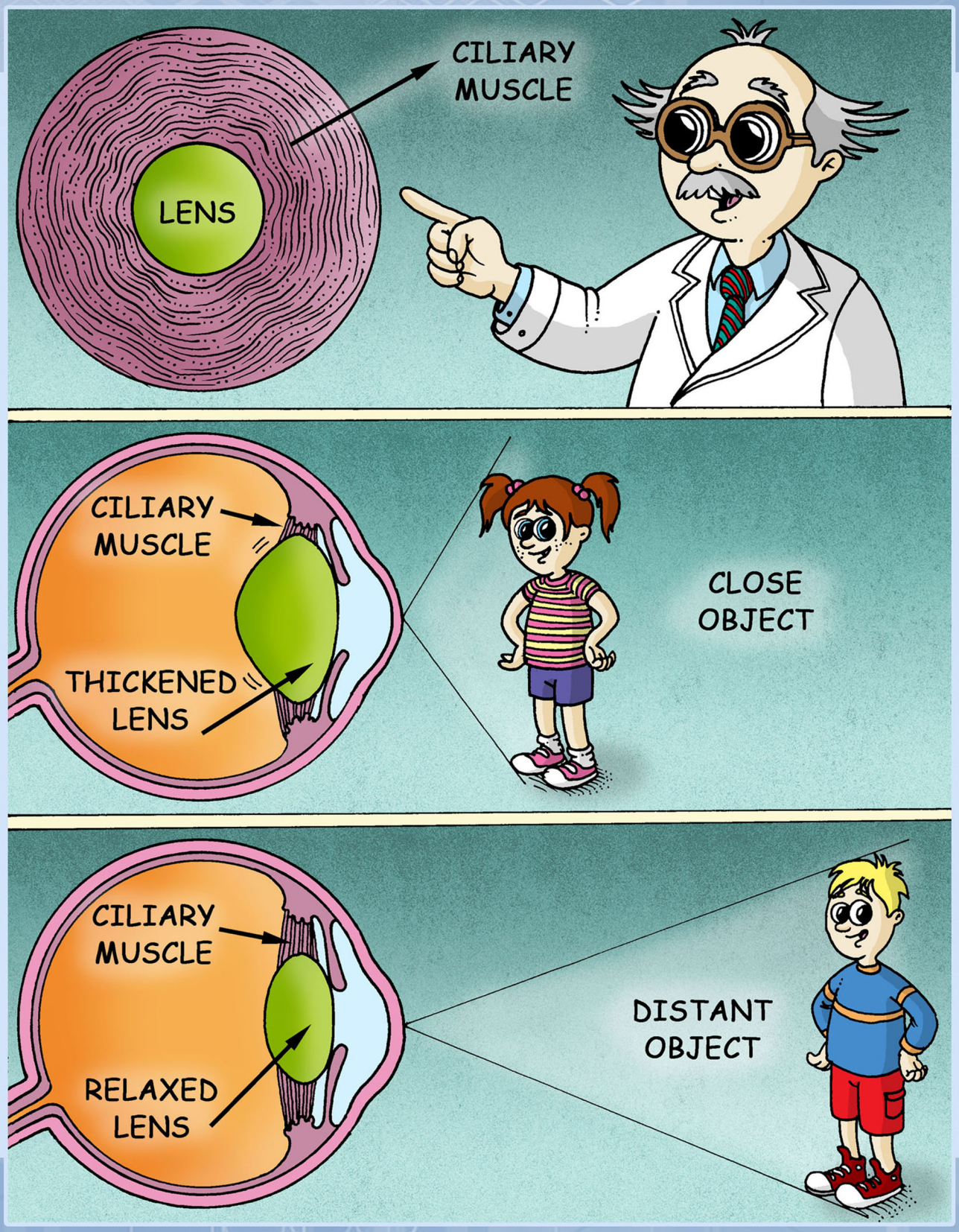
He started with the cornea -
It's curved like a contact lens -
A see-through tool at our eye's front
That incoming light rays bends.


EPITHELIUM

"The protective outer coating,
On the cornea", he next did state,
"Is called epithelium
If it's damaged, it regenerates!"

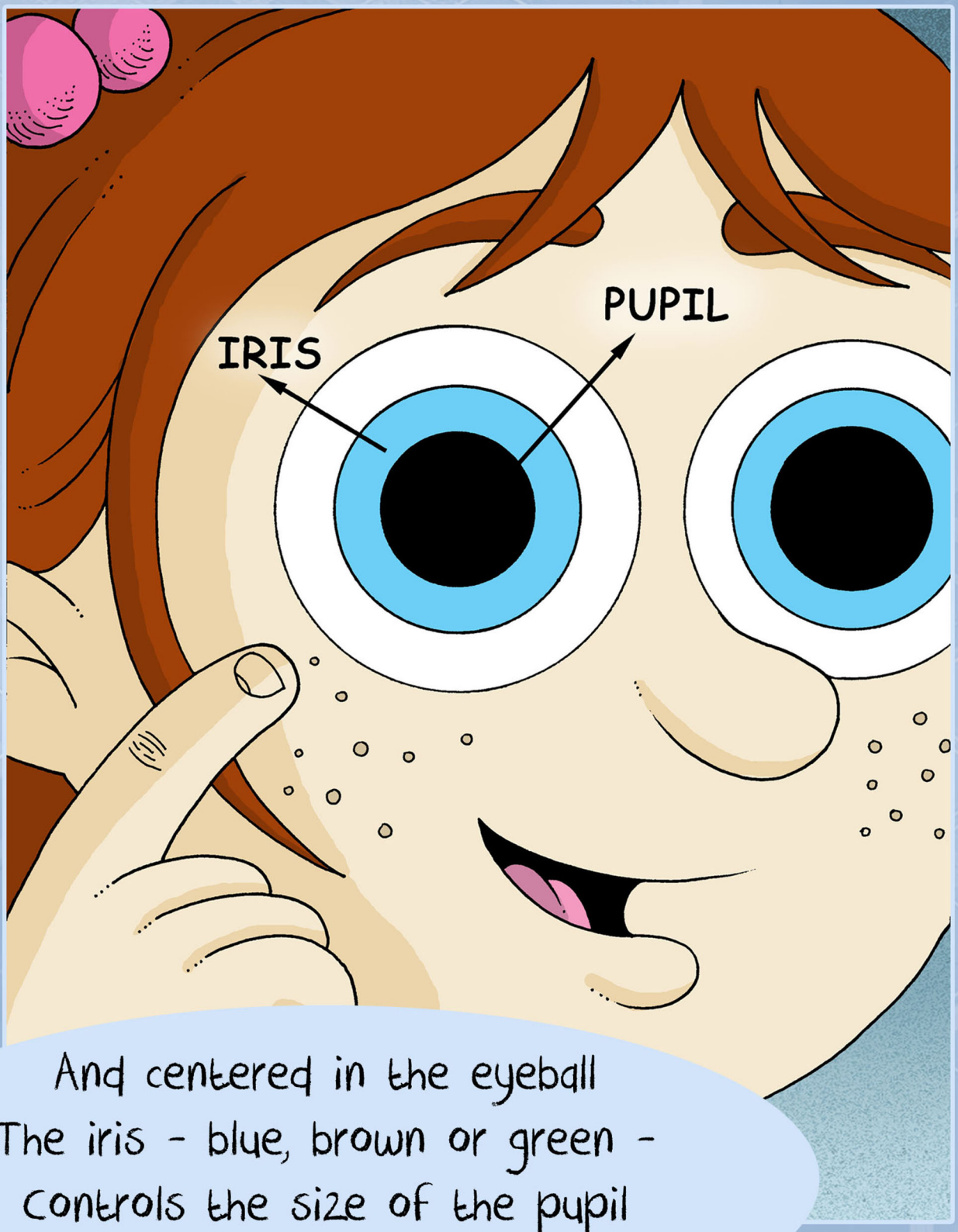
To further bend the light rays
Beneath the cornea, a lens is found
That projects images to the back of the eye
Onto the retina, upside down.


LENS
RETINA


CILIARY MUSCLE
LENS
CILIARY MUSCLE
THICKENED LENS
CLOSE OBJECT
CILIARY MUSCLE
RELAXED LENS
DISTANT OBJECT

The lens is circled by muscle
Called the ciliary muscle ring
It thickens the lens to see things up close
And relaxes it for distant things.

"Sometimes as folks get older,"
Said the doctor, "the muscle may fail
When the lens is not elastic anymore
The need for glasses may prevail."



And centered in the eyeball
The iris - blue, brown or green -
controls the size of the pupil
A black circle we all have seen.

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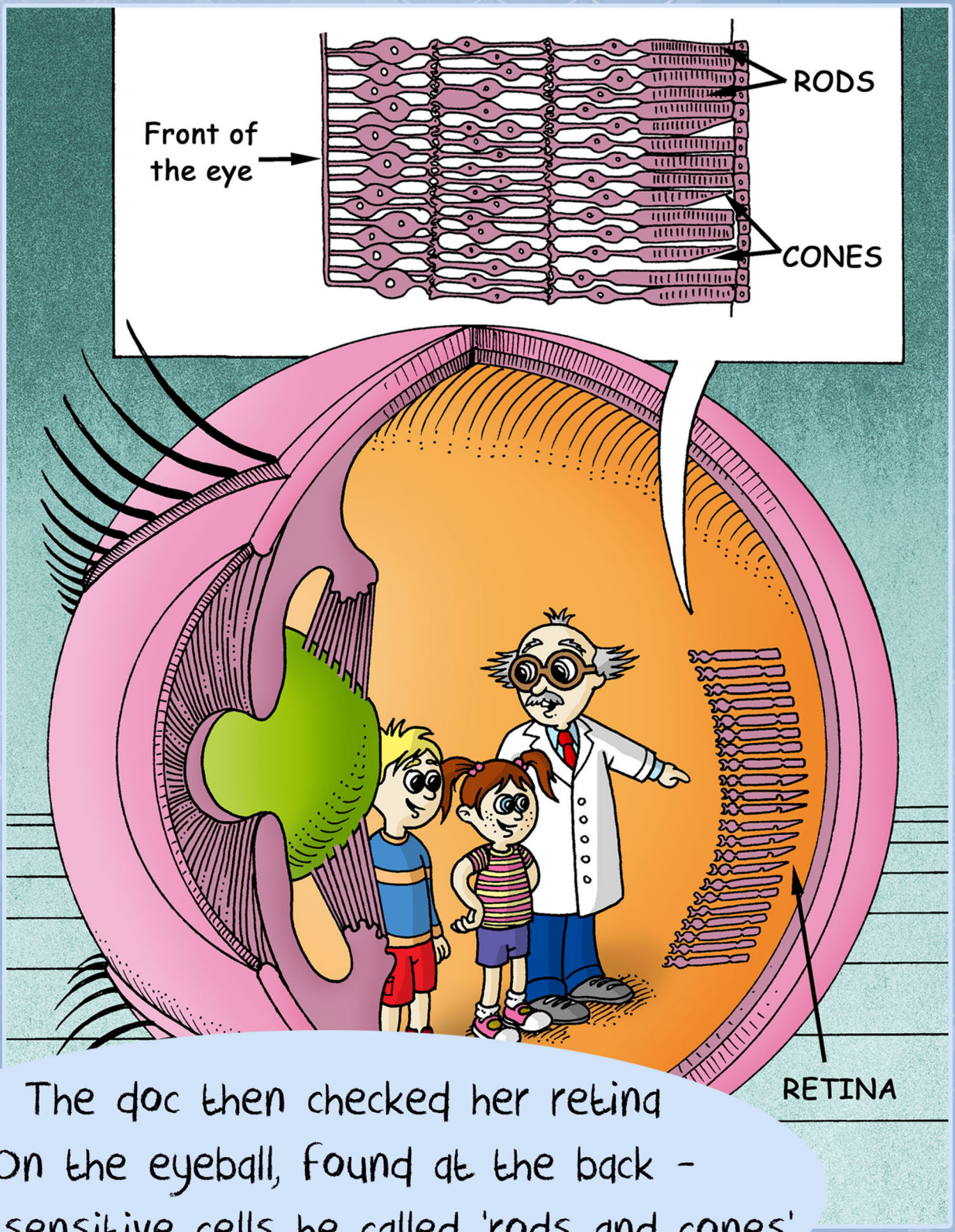
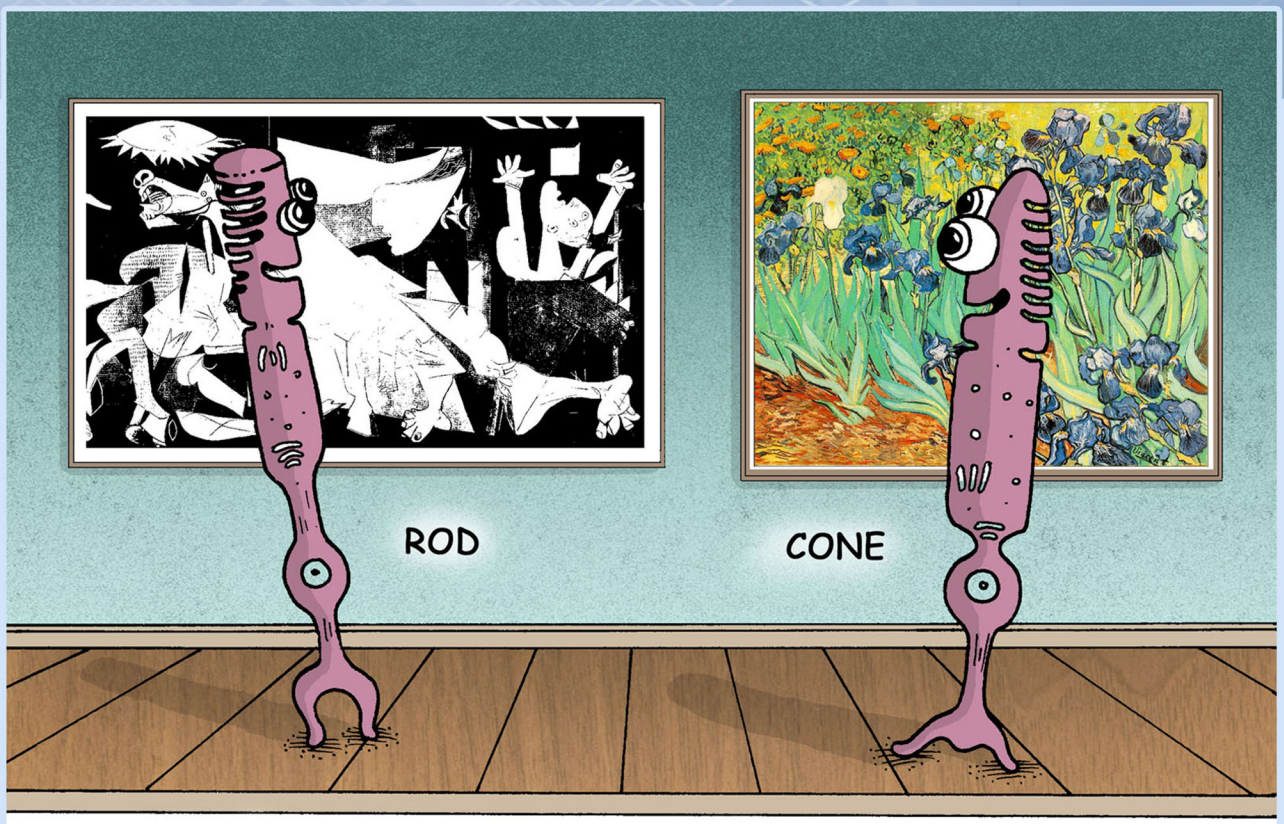
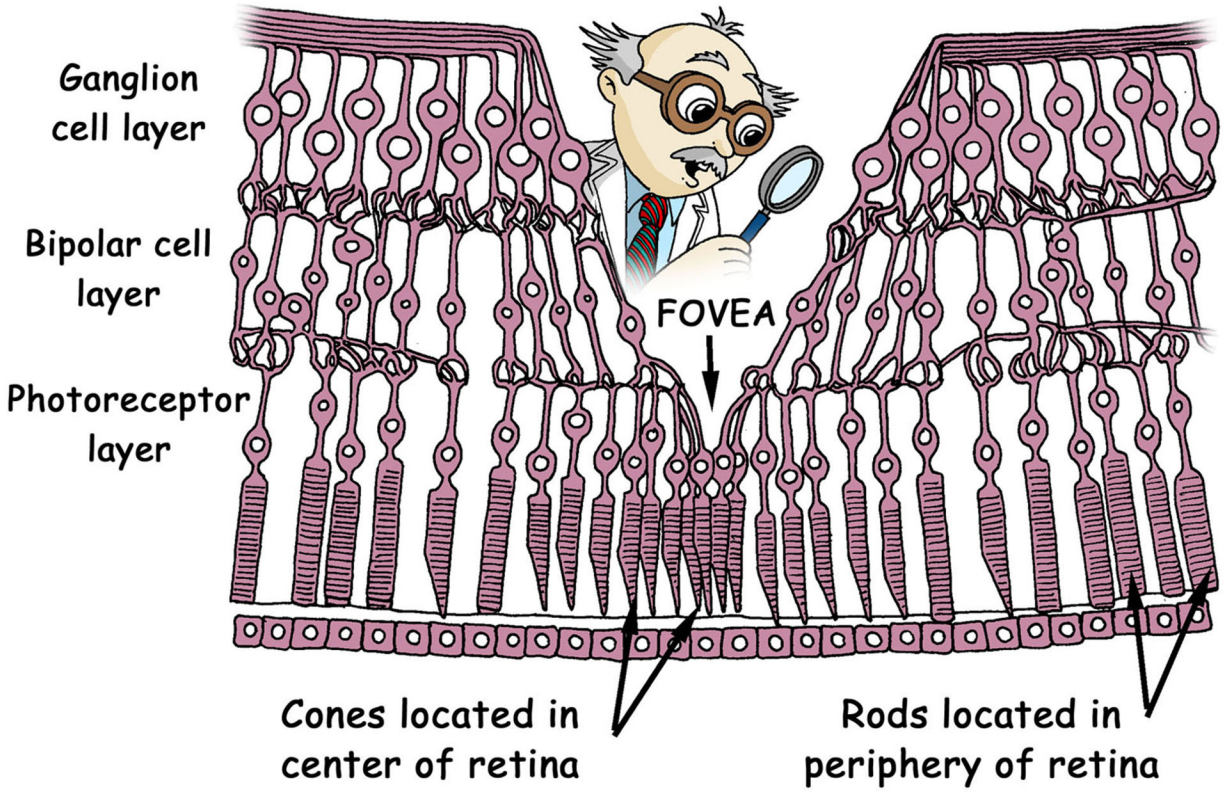
If the light becomes very bright
The pupil gets small, like a dot...
But when the light is dimmed, or off,
This dot expands, a lot!



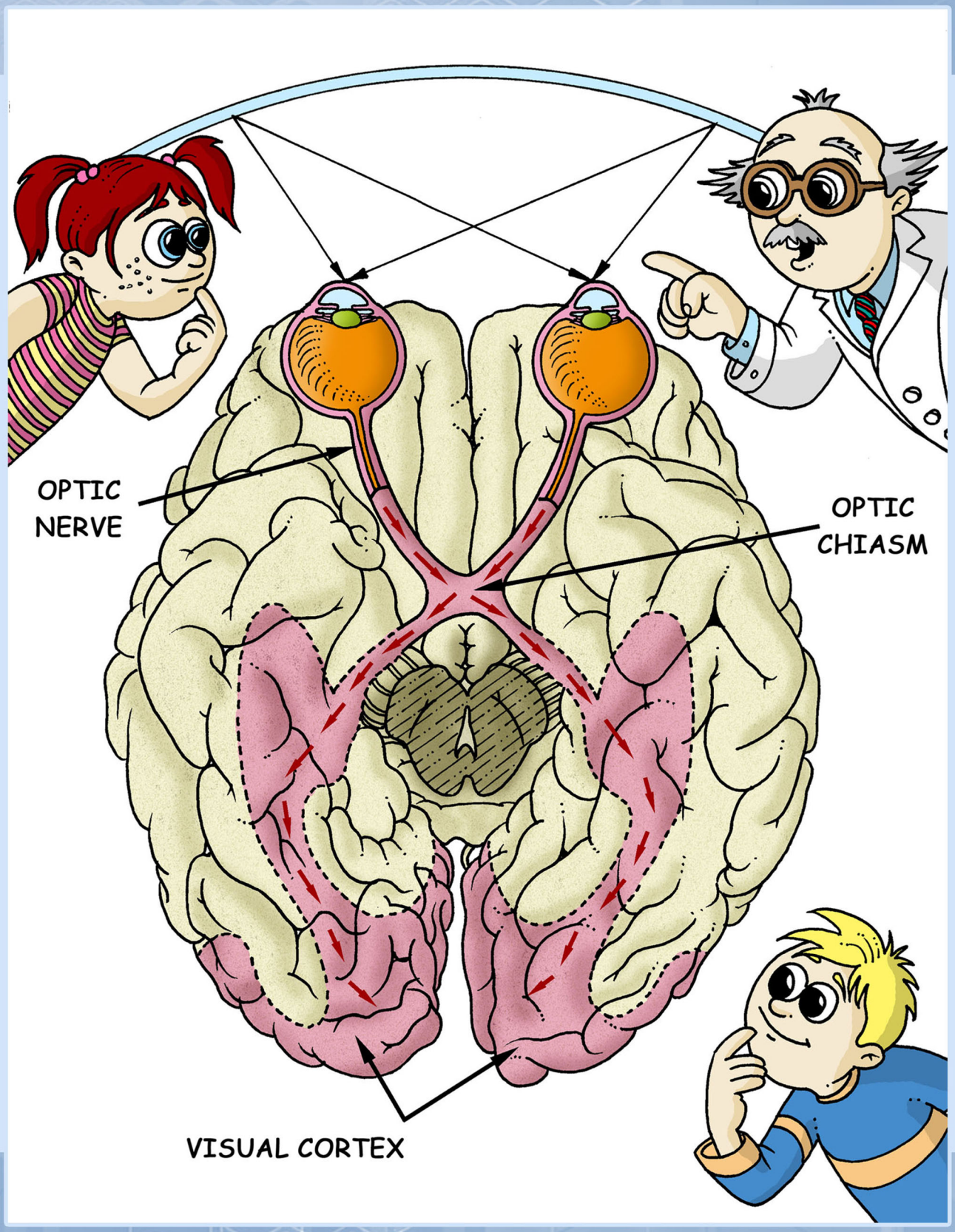
The doc then checked her retina
On the eyeball, found at the back -
Light sensitive cells he called 'rods and cones'
To see colors, white or black.

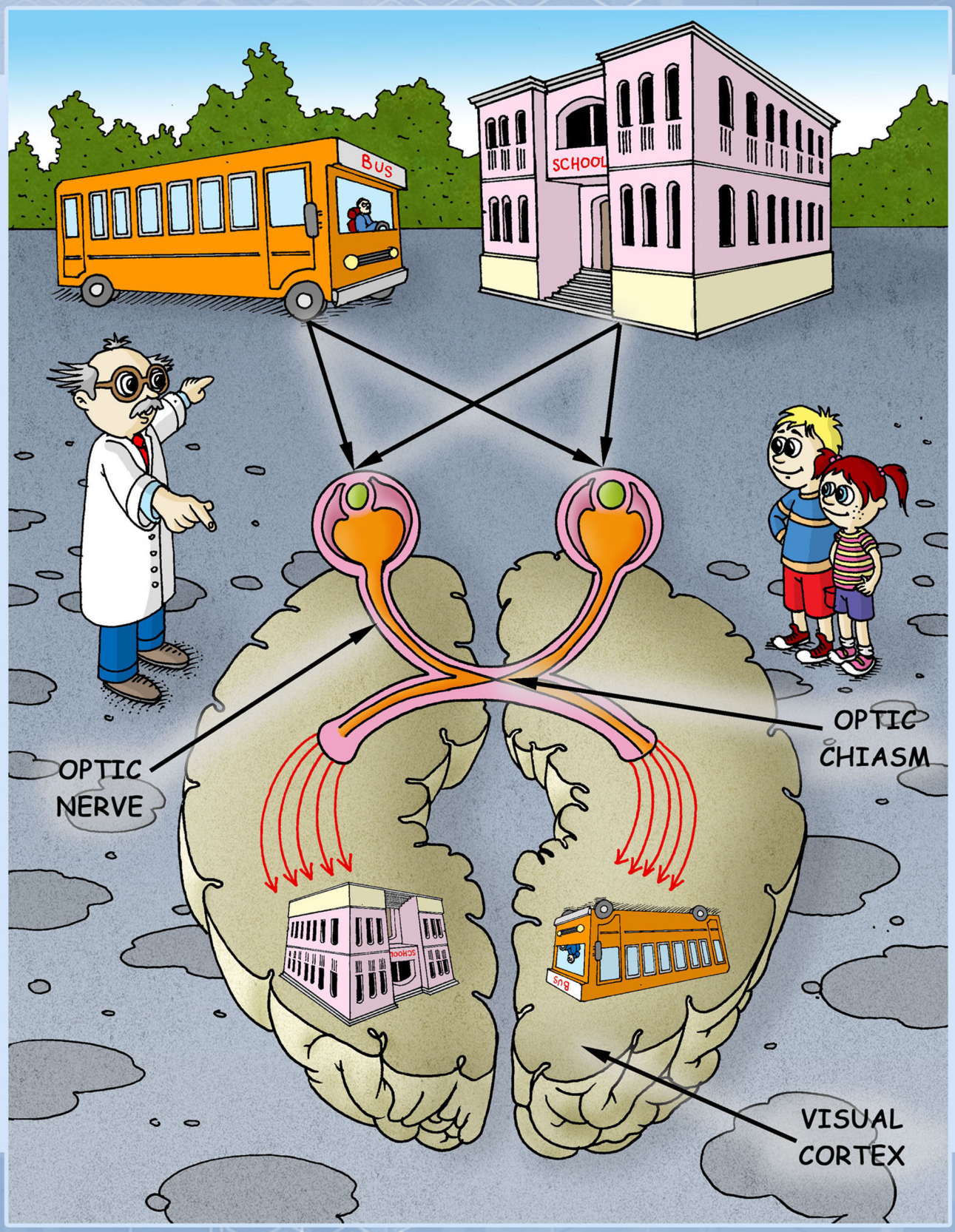

ROD
CONE


Ganglion cell layer
Bipolar cell layer
Photoreceptor layer
FOVEA
Cones located in center of retina
Rods located in periphery of retina

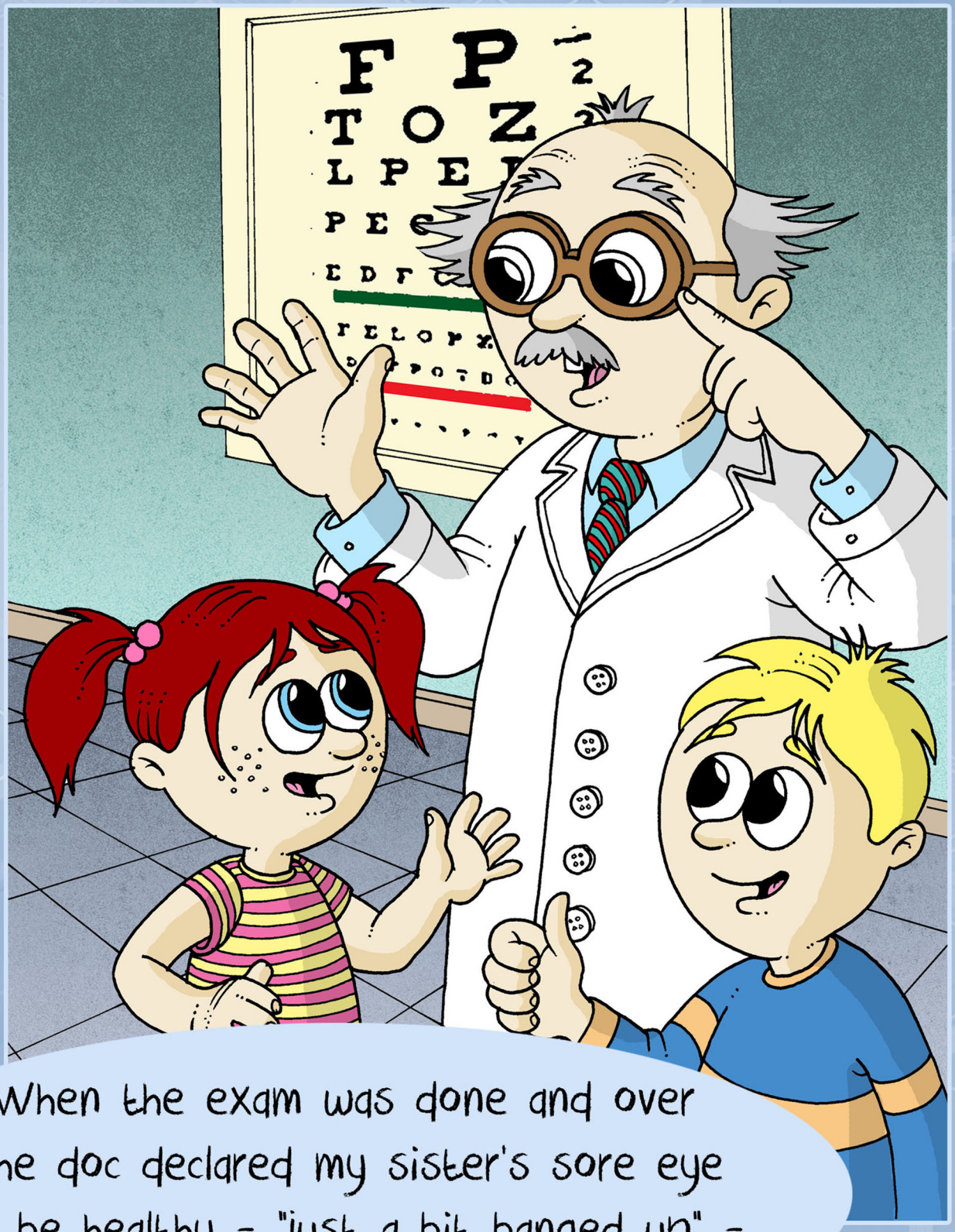
The rods see black and white things
The cones they are for color
Most cones are found in the fovea -
To help us see things that are smaller.

Doc said the optic nerve is vital
To get images to our brain
Each eye has one; in the brain they meet
And then they separate again.
Where they meet is the optic chiasm -
And from there, they travel far
To the visual cortex of our brain
Where the cells for perception are.

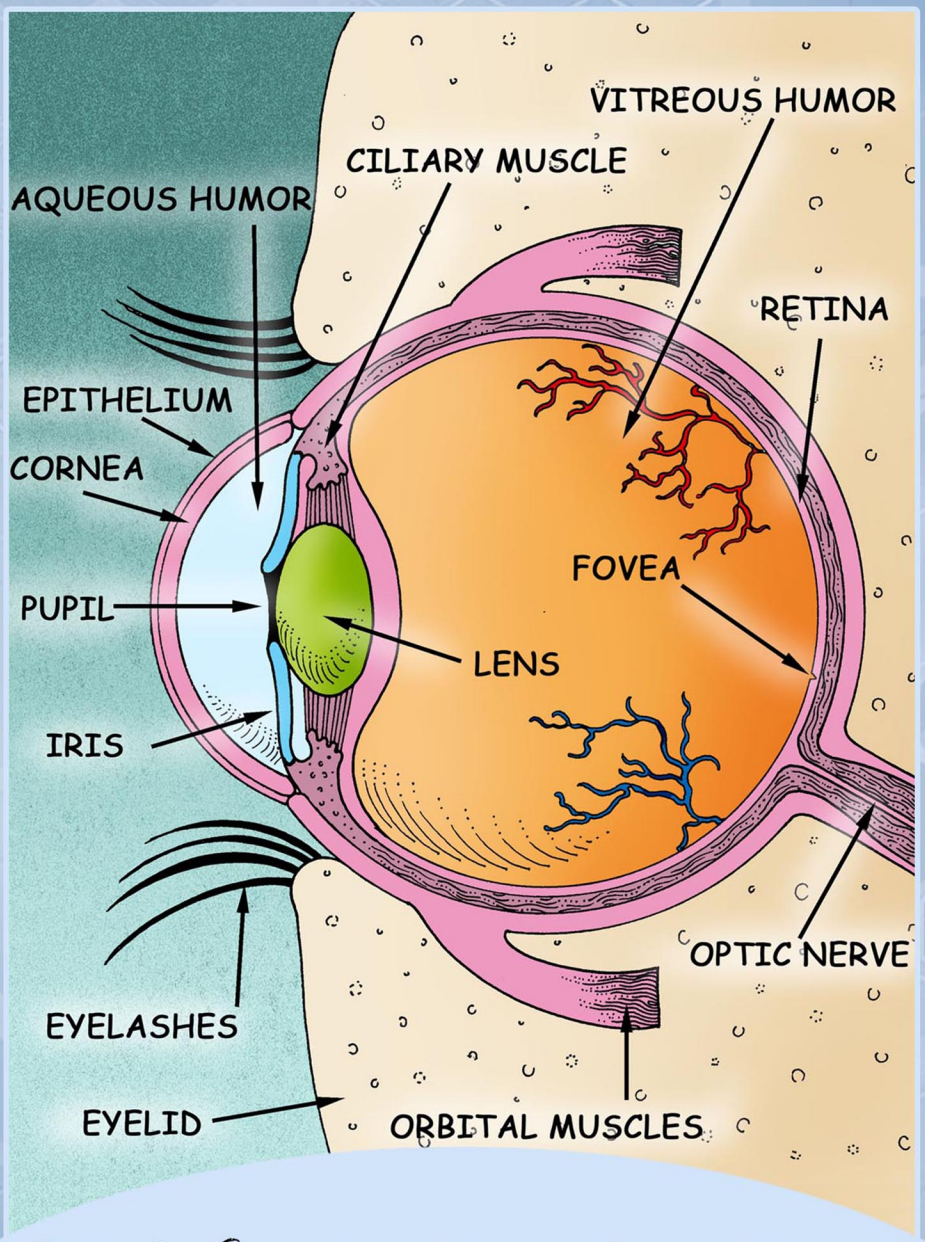

OPTIC NERVE
OPTIC CHIASM
VISUAL CORTEX


BUS
SCHOOL
OPTIC NERVE
OPTIC CHIASM
VISUAL CORTEX

For, this piece of brain then tells us
What we see is a bus or a school
By unscrambling the messages the eyeball sends
Wow, this system is cool!



When the exam was done and over
The doc declared my sister's sore eye
To be healthy - "just a bit banged up" -
And he bid us all, "Good bye".



But, before he let us leave there
He made one message clear -
"If you take care of your eyes and
treat them well
You'll see better far and near!"