Year 7 Science

Term 1 Revision

Total Review Time!!!

We learned six important ideas!

1)
2)
3)
4)
5)
6)

Who wants to guess?

Living things can…

Move

Reproduce

Respire

Living things have…
…sensitivity.
…nutrition needs.
…cells.

Grow

Excrete

How can I remember these body functions?

Mrs. Gren!

Move

Reproduce

Sensitive

Grow

Respire

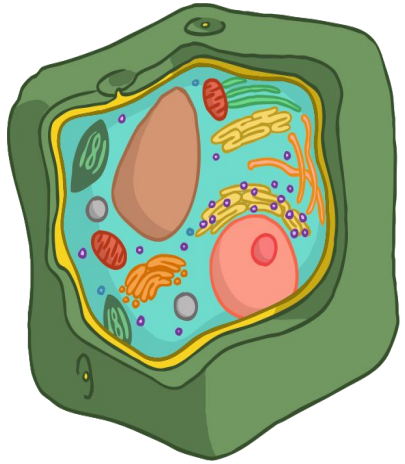
Excrete

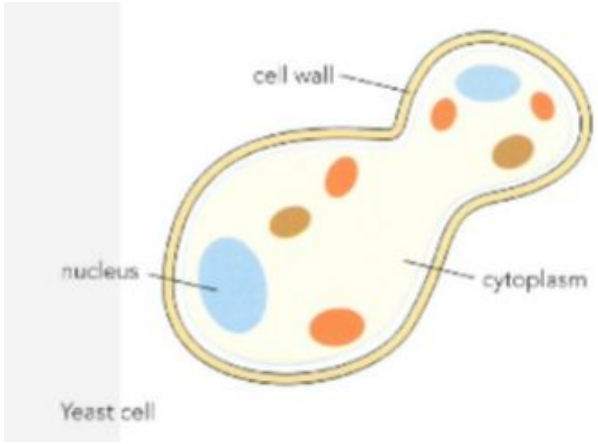
Nutrition

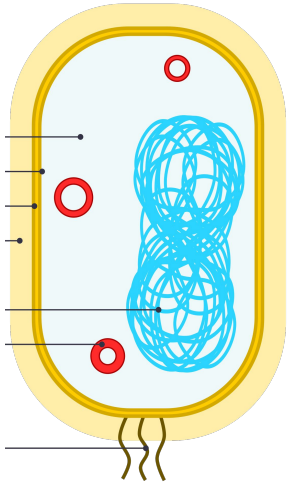
We learned six important ideas!

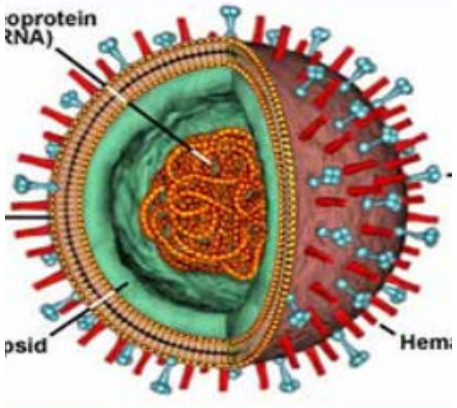
1) Living things do 7 body functions.
2)
3)
4)
5)
6)

Living things have cells!





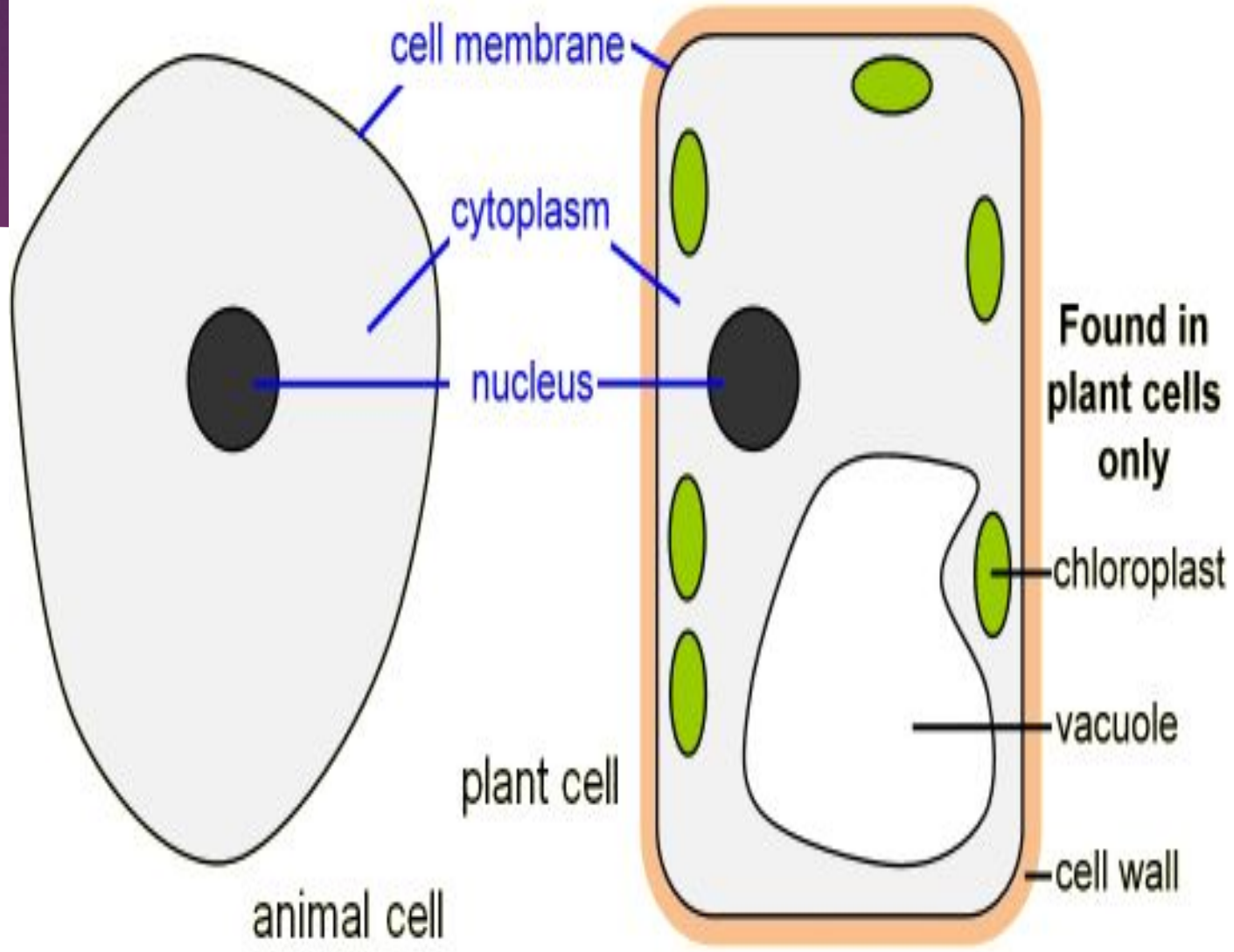


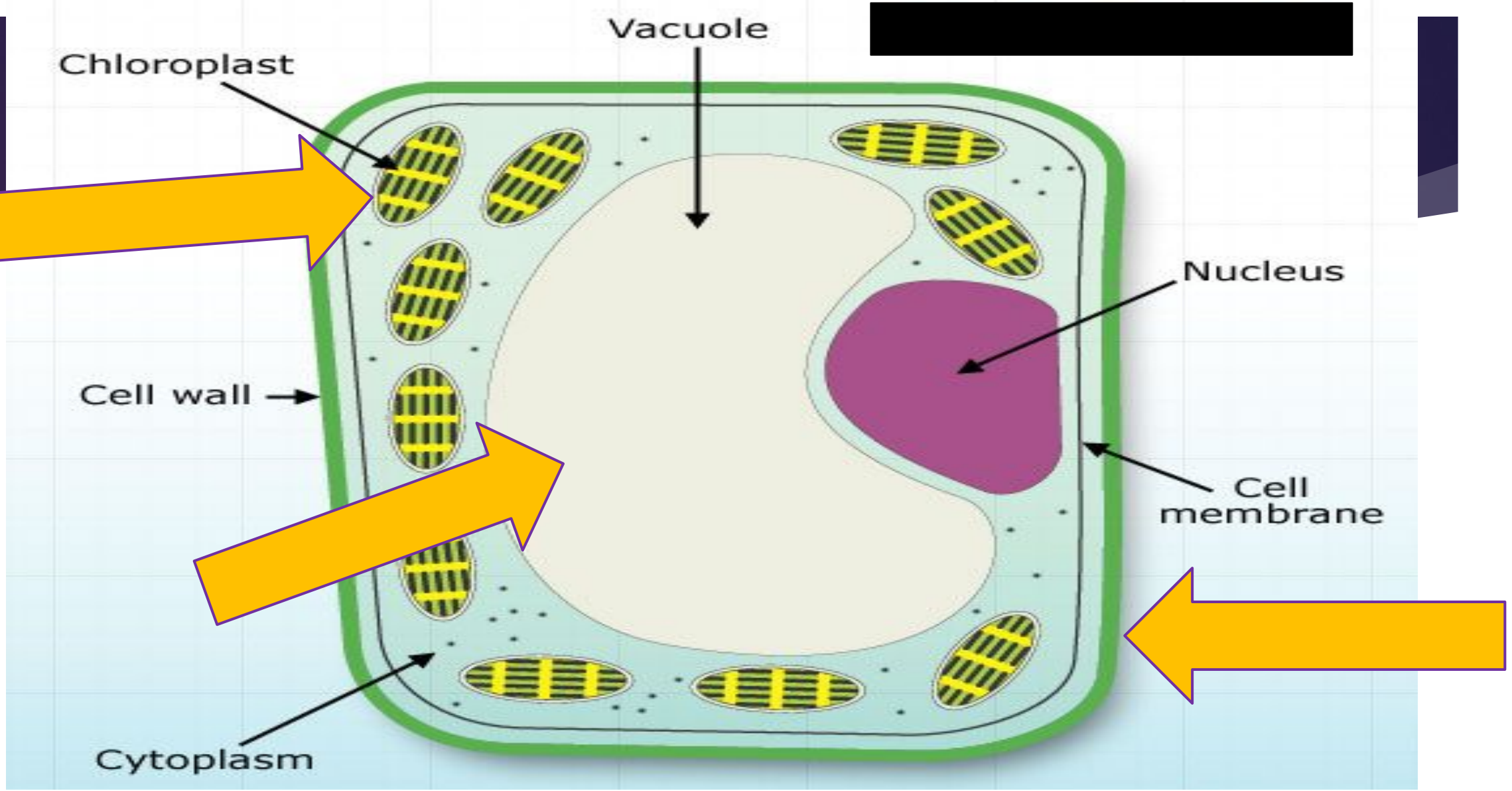


All living things are composed of one or more cells.

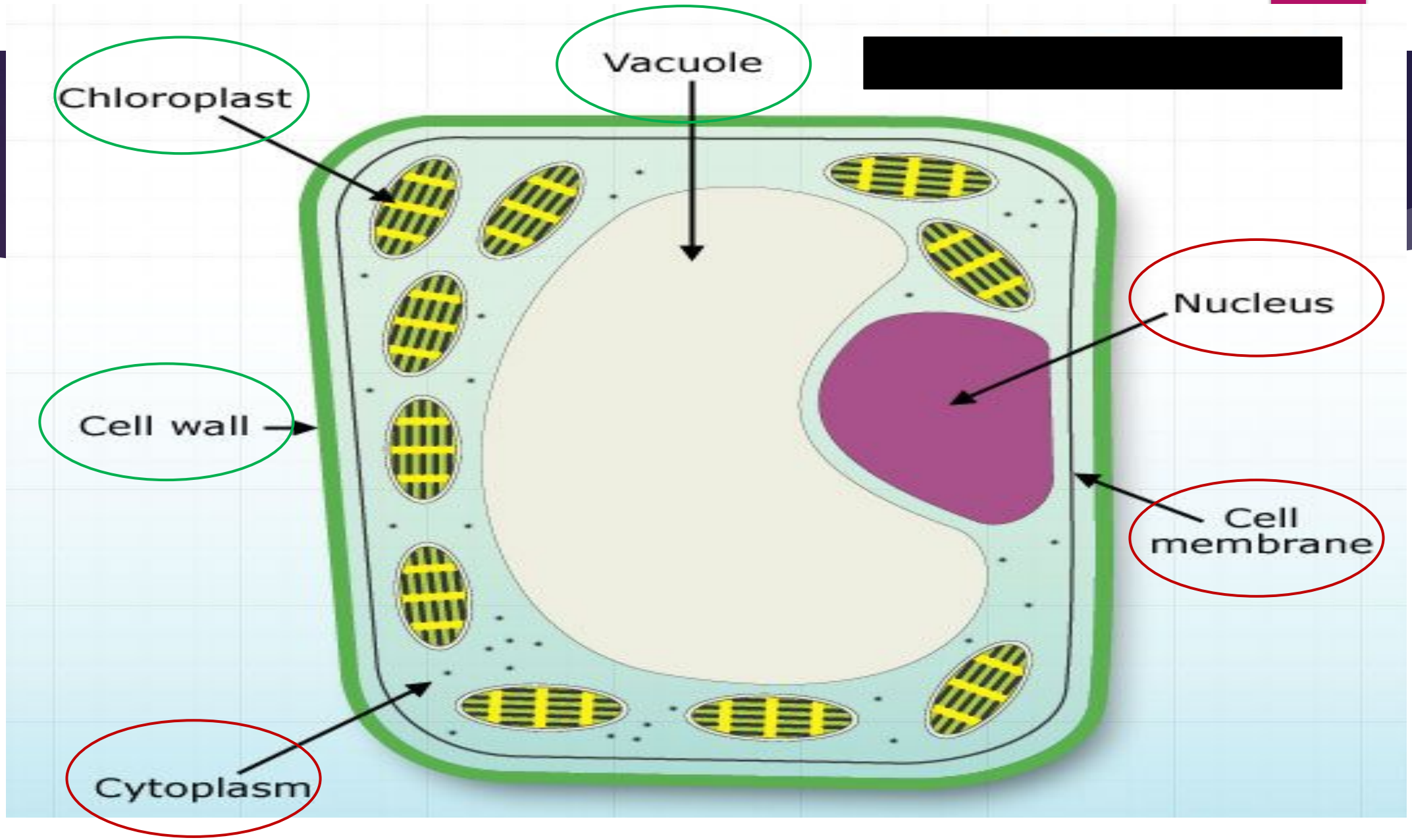
How do cells work?

All cells have at least three parts: the **nucleus**, the **cytoplasm**, and the **membrane.**





How is this cell different from animal cells?



Red are animal and plant cells – green are plant cells.

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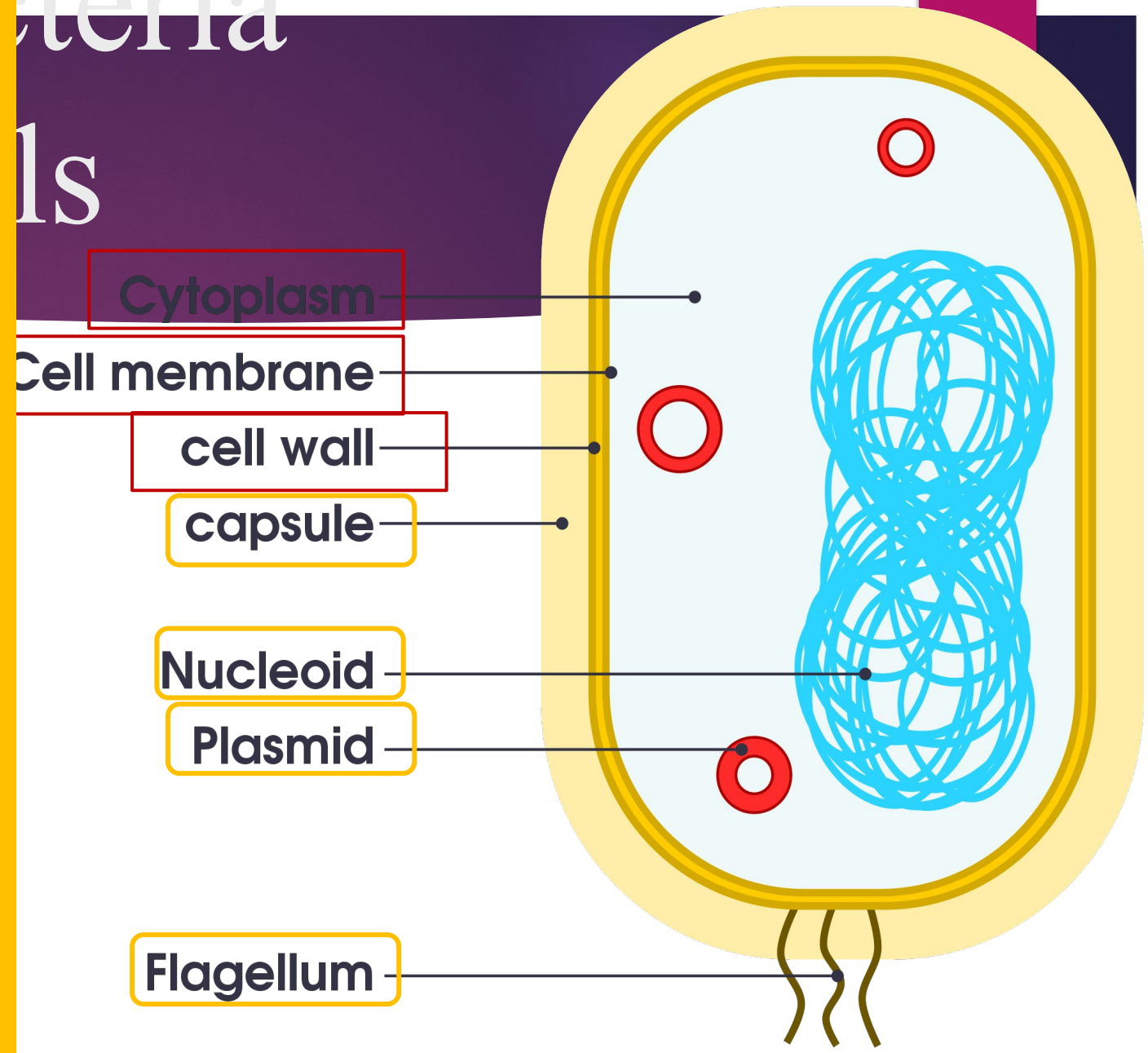
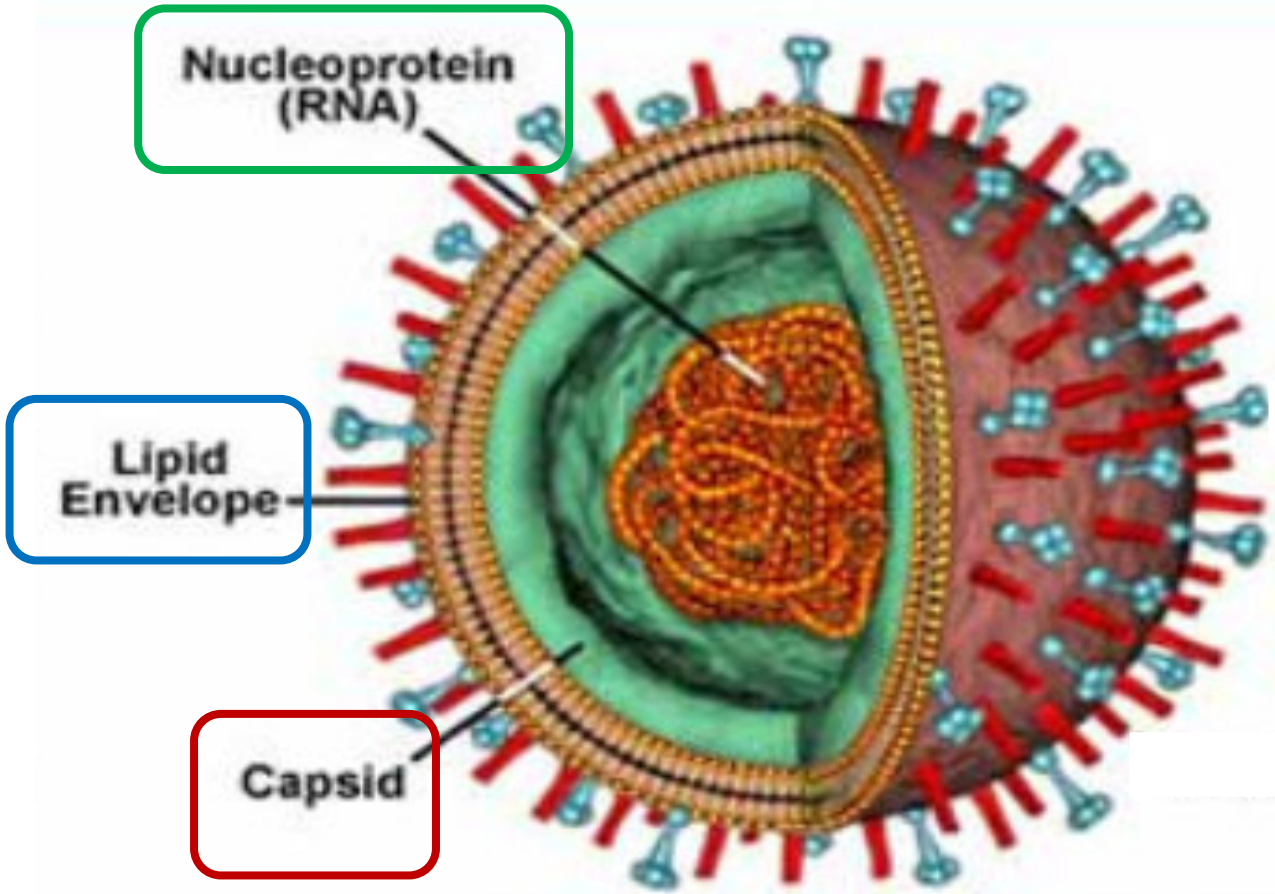
Four important parts are not the same. Prokaryotes have a capsule, a nucleoid, a plasmid, and a flagellum.



Virus Cells



Virus cells are really simple. They have genetic material (like in the nucleus and nucleoid), a capsid, and a membrane.

We learned six important ideas!

1) Living things do 7 body functions.
2) Cells help living things survive.
3)
4)
5)
6)

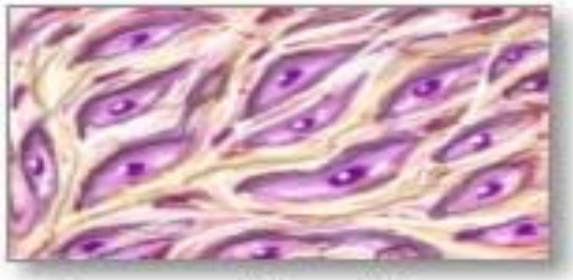
Specialised Cells

Most living things have many cells, and these cells work together.

When cells work together they help body functions improve and become **specialised** to help one body function.

Specialised Cells Make Tissues

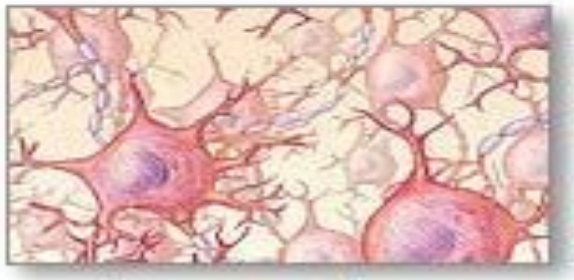
Many specialised cells work together and make **tissues** so they can help the body move, be sensitive, grow, respire, excrete, and use nutrition.



Connective tissue

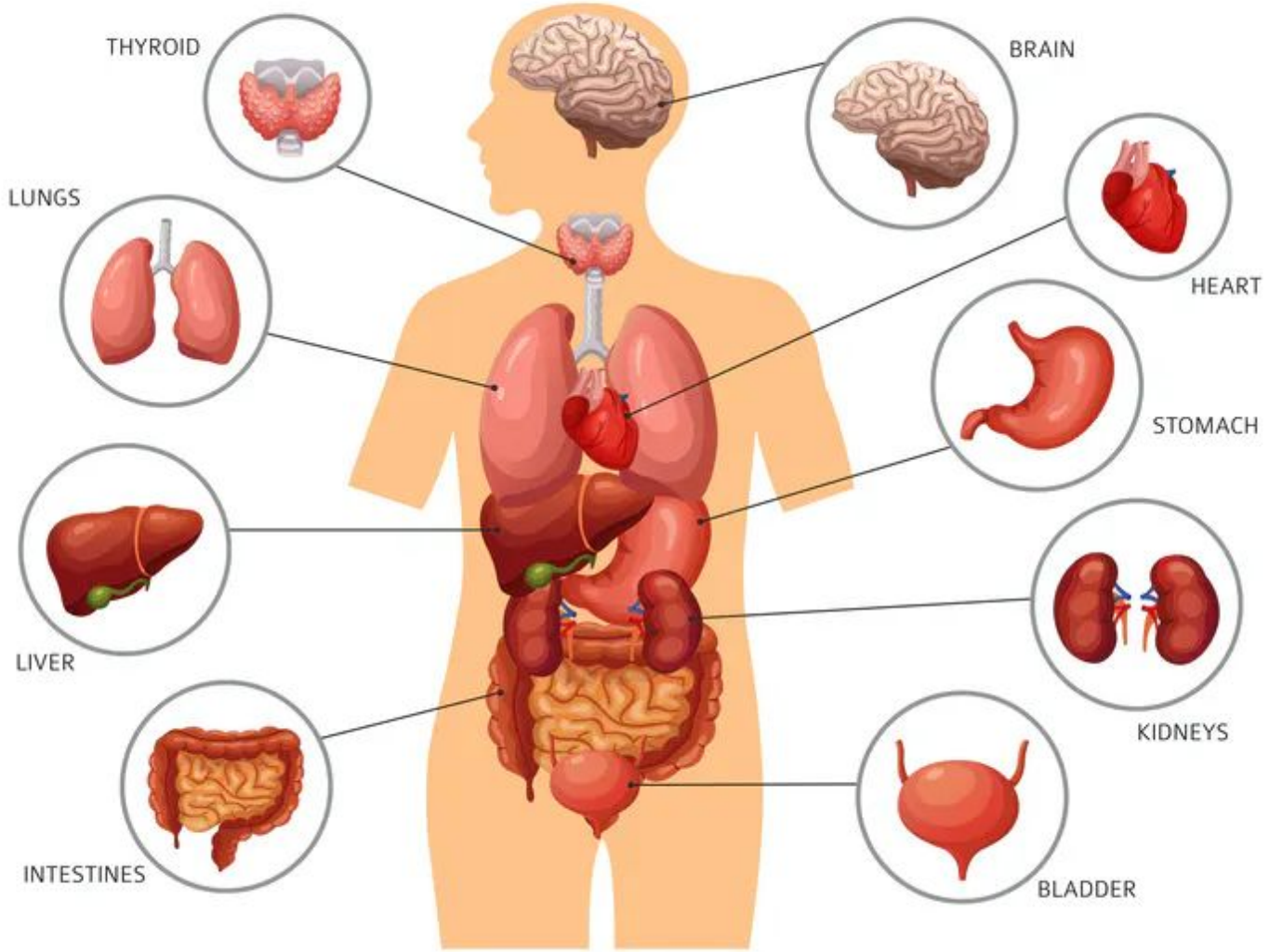
Epithelial tissue

Muscle tissue



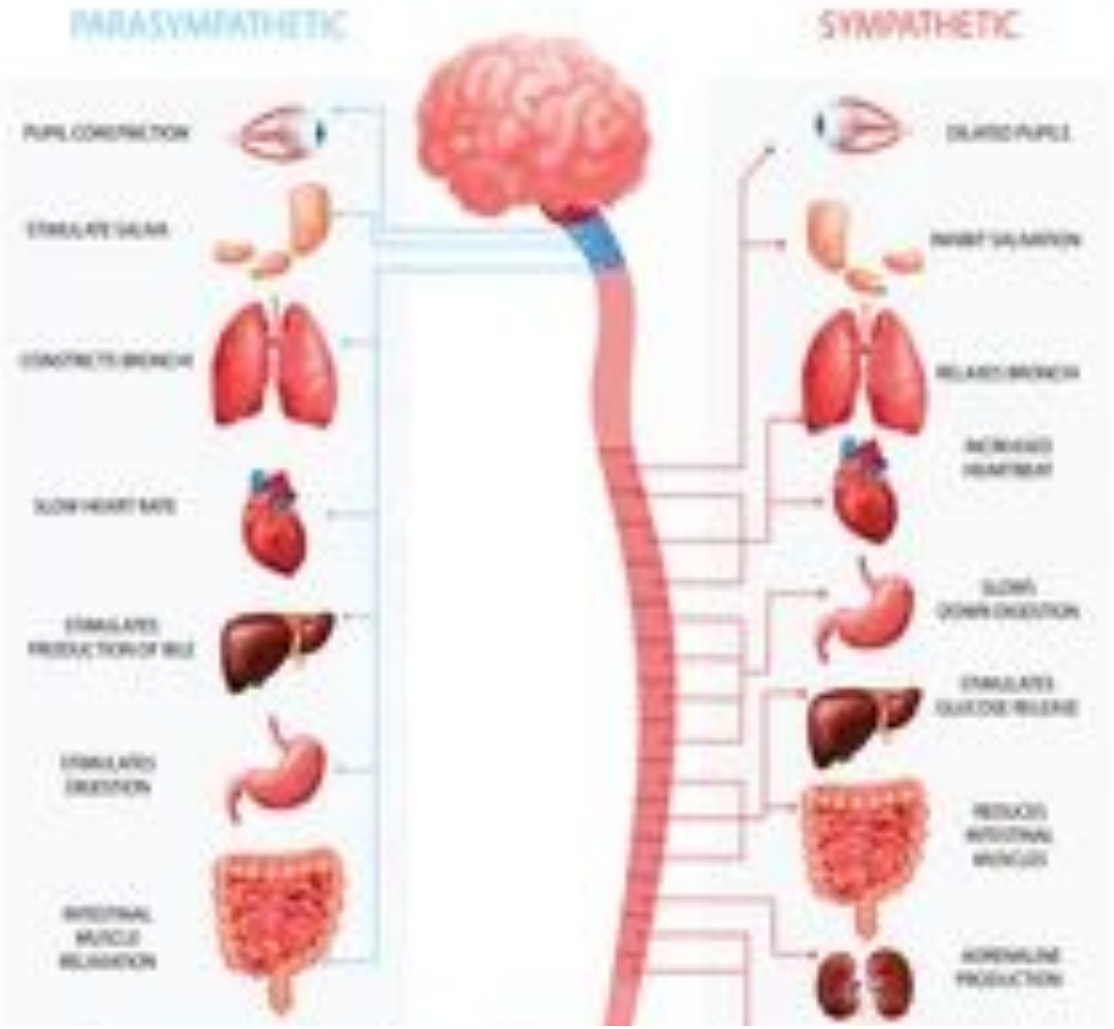
Nervous tissue

Tissues Make Organs



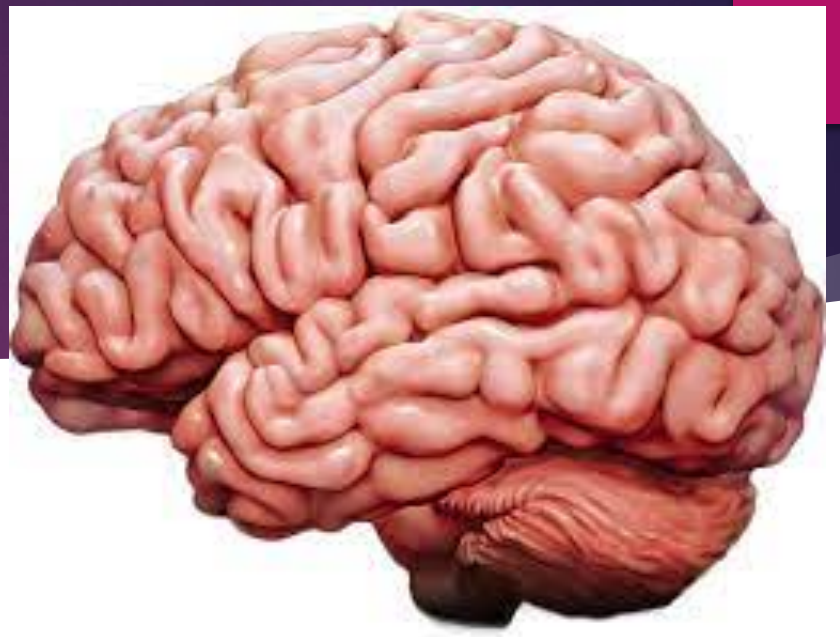
Many tissues work together and make **organs** so they can help all body functions.

Organs Make Systems



Organs work together to make **systems** that help all body functions.

Nervous System

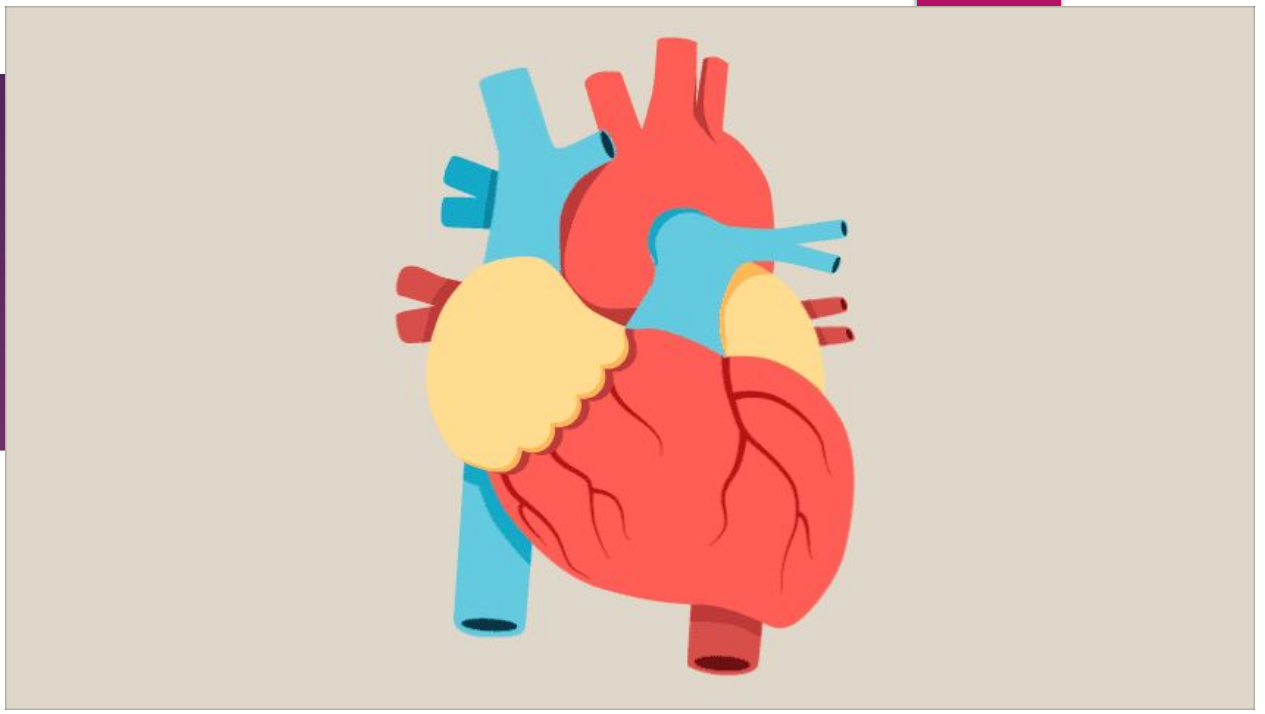


brain

What should I know?

The brain controls the body..

Circulatory System



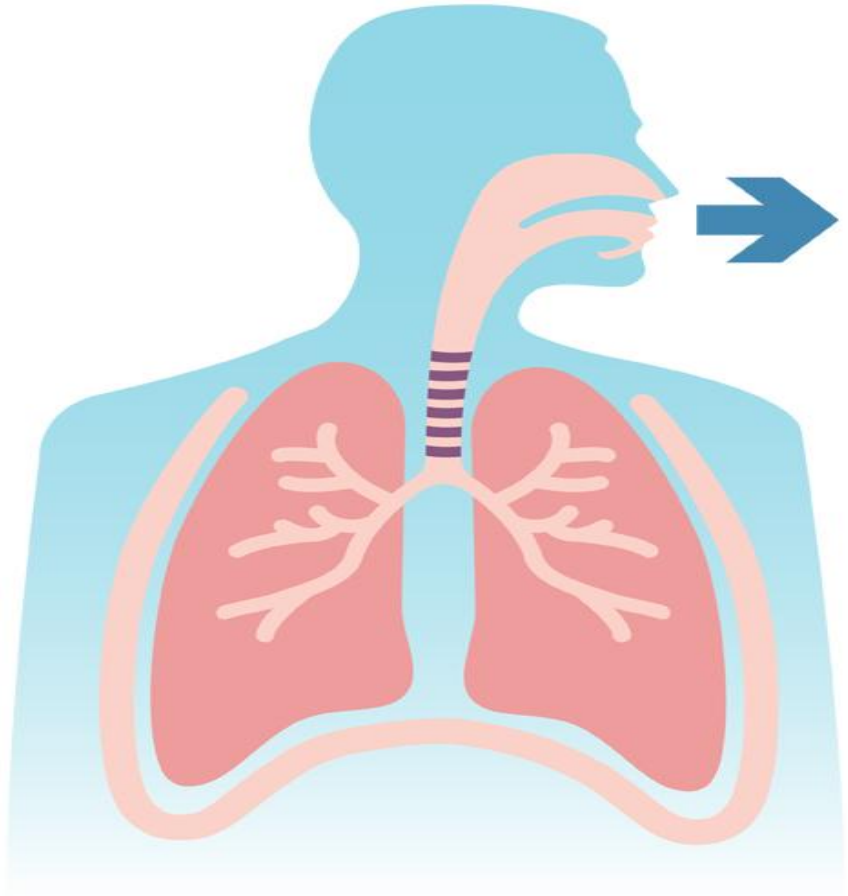
heart

What should I know?

The heart makes blood move in your body so oxygen goes to all your organs.

Respiratory System

lungs

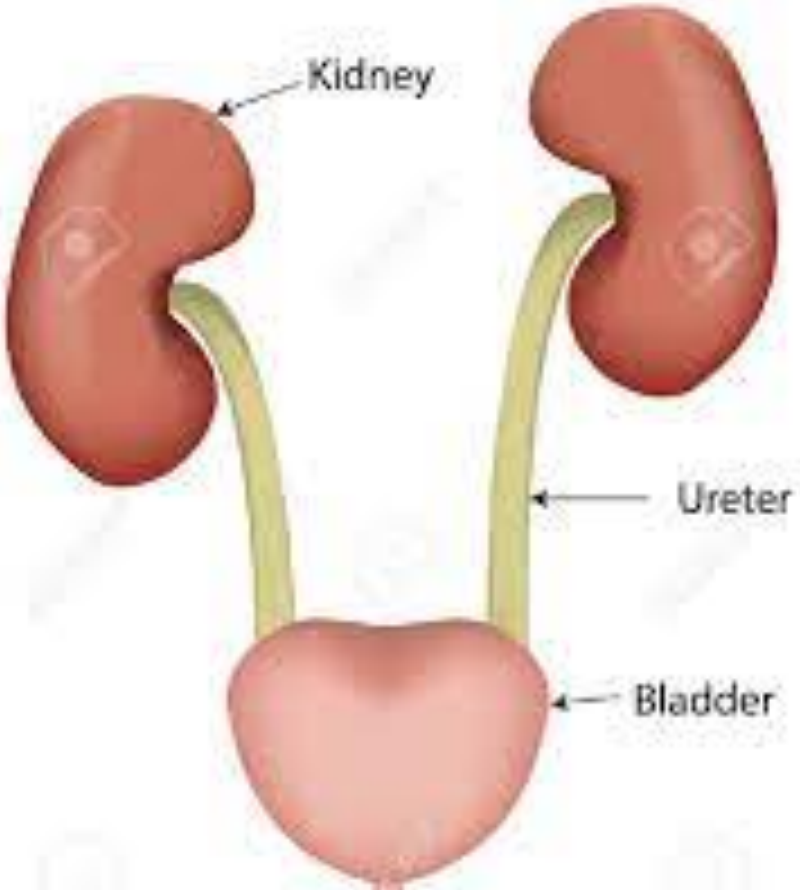


What should I know?

The lungs bring oxygen (O_2) into the body,
push carbon dioxide (CO_2) out of the body.

Excretory System

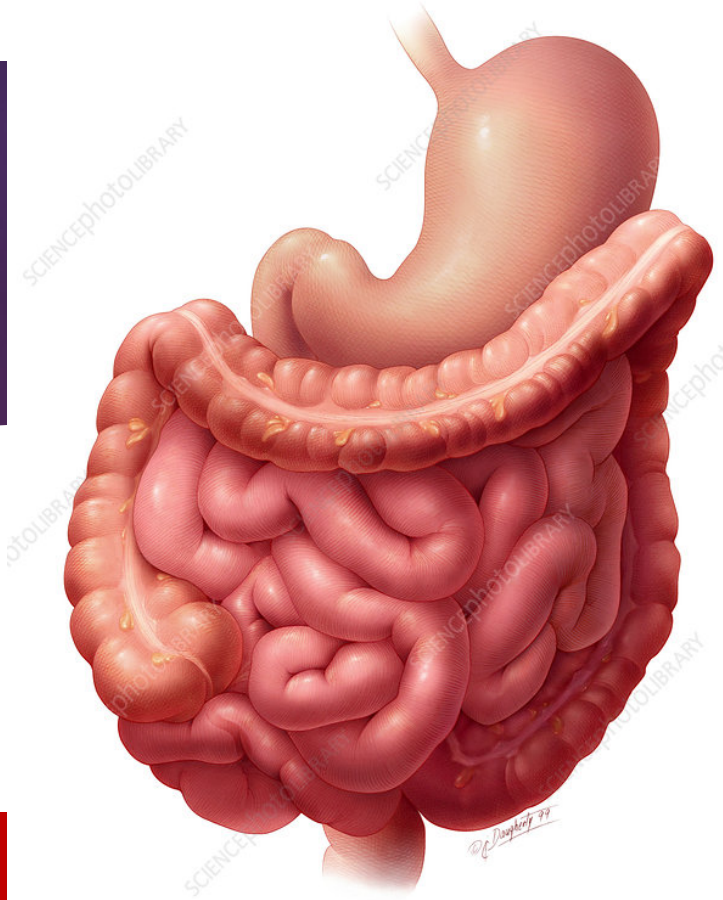
kidneys and bladder



What should I know?
The kidneys make urine and get water for the body. The bladder holds the urine.

Digestive System Part 1

stomach and intestines

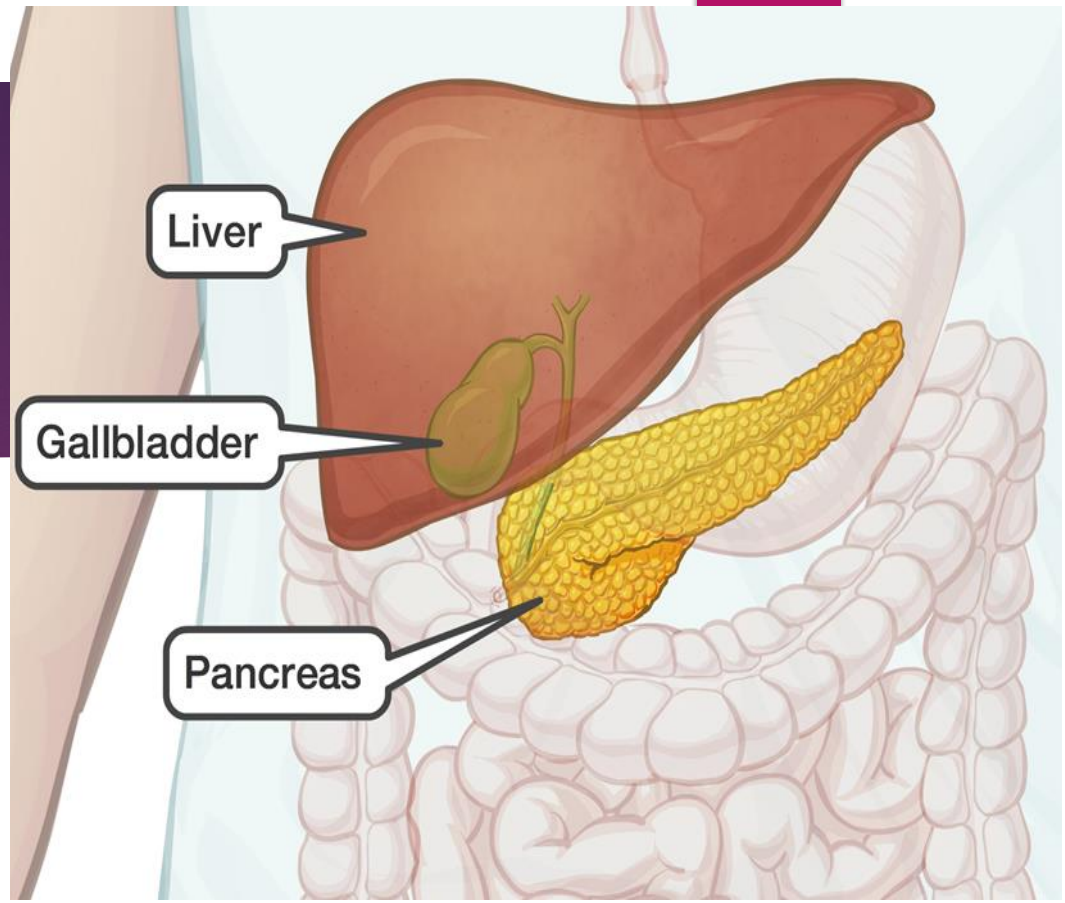


What should I know?

The stomach breaks down food so the body can use it. The intestines put food and water in the blood.

Digestive System Part 2

liver and pancreas



What should I know?

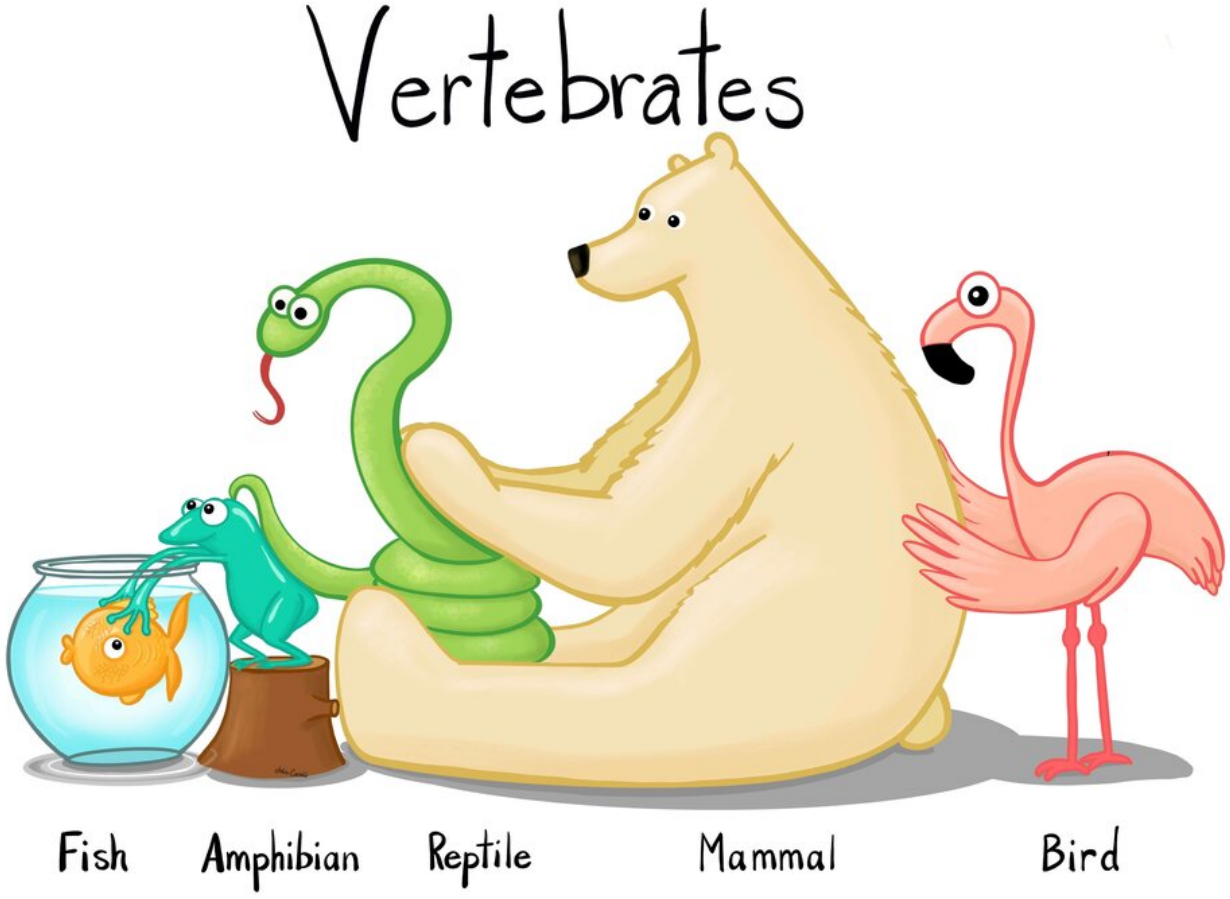
The liver gets rid of dangerous things in the body. The pancreas helps the liver.

We learned six important ideas!

1) Living things do 7 body functions.
2) Cells help living things survive.
3) Cells work together making organs.
4)
5)
6)

Vertebrates

Vertebrates are animals that have a full skeleton in their bodies.

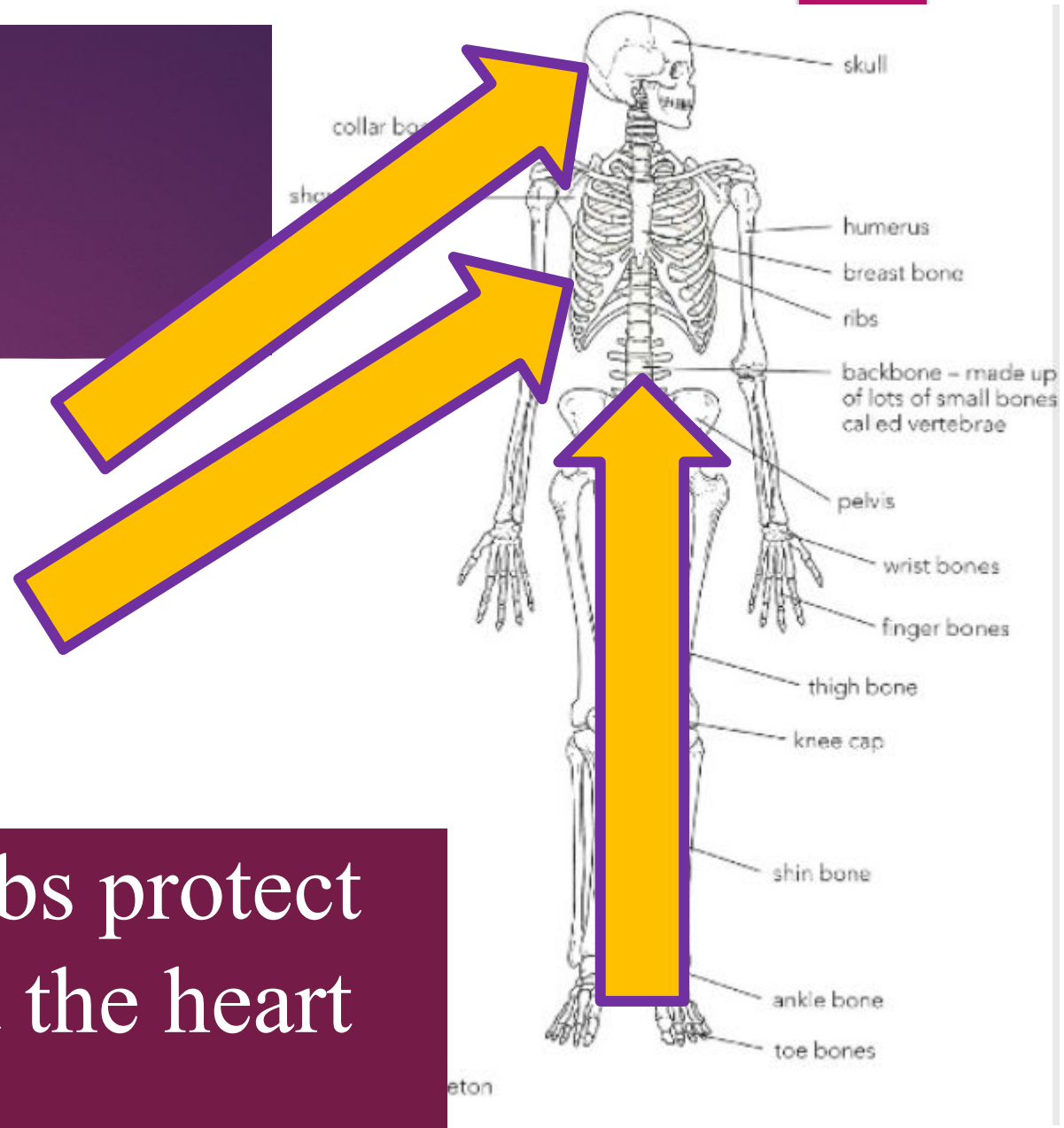


Many animals on land are vertebrates.

Fish are too!

Why a skeleton?

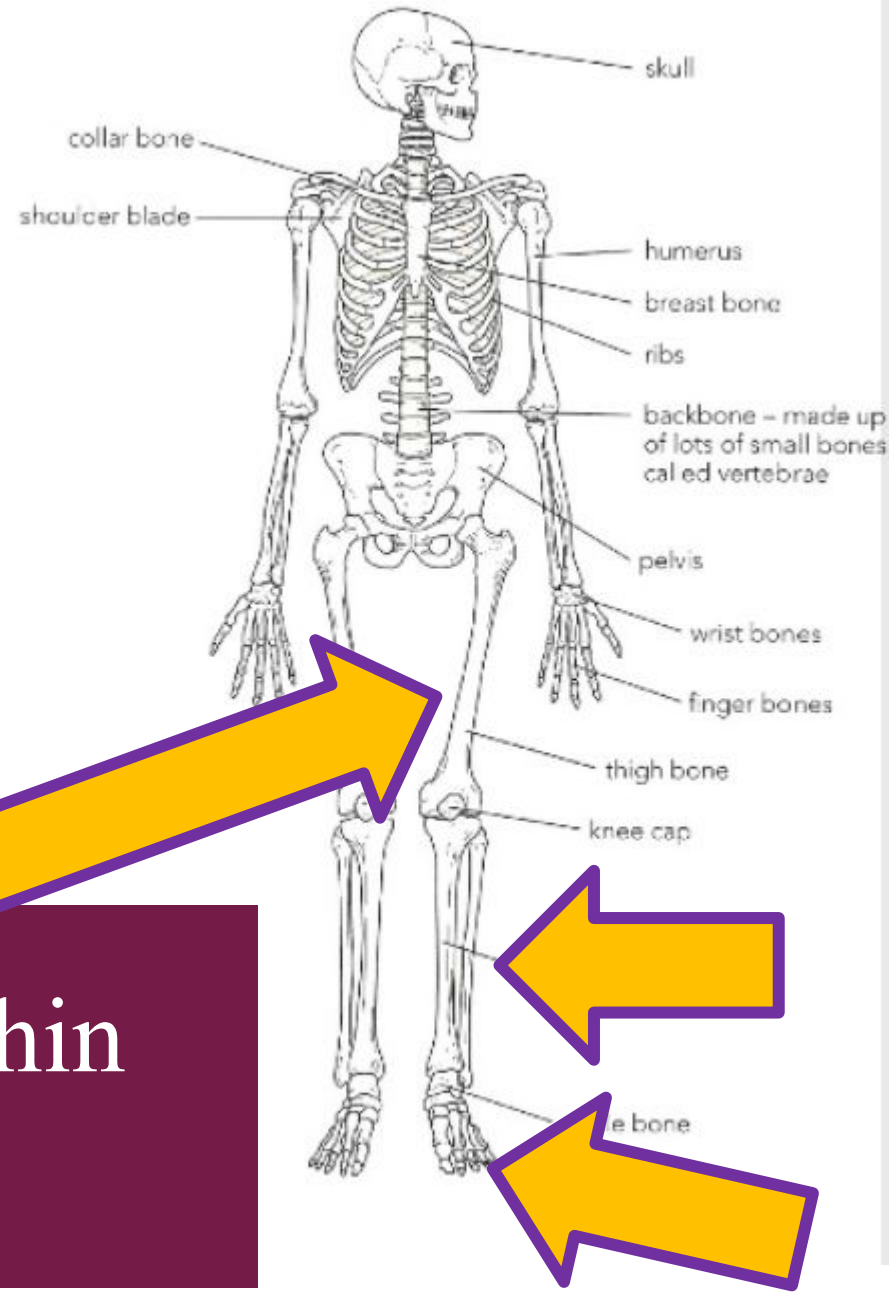
Bones help humans survive. The two important things they do are protect organs and help us stand up.



The skull, backbone, and ribs protect the brain, spinal chord, and the heart and lungs.

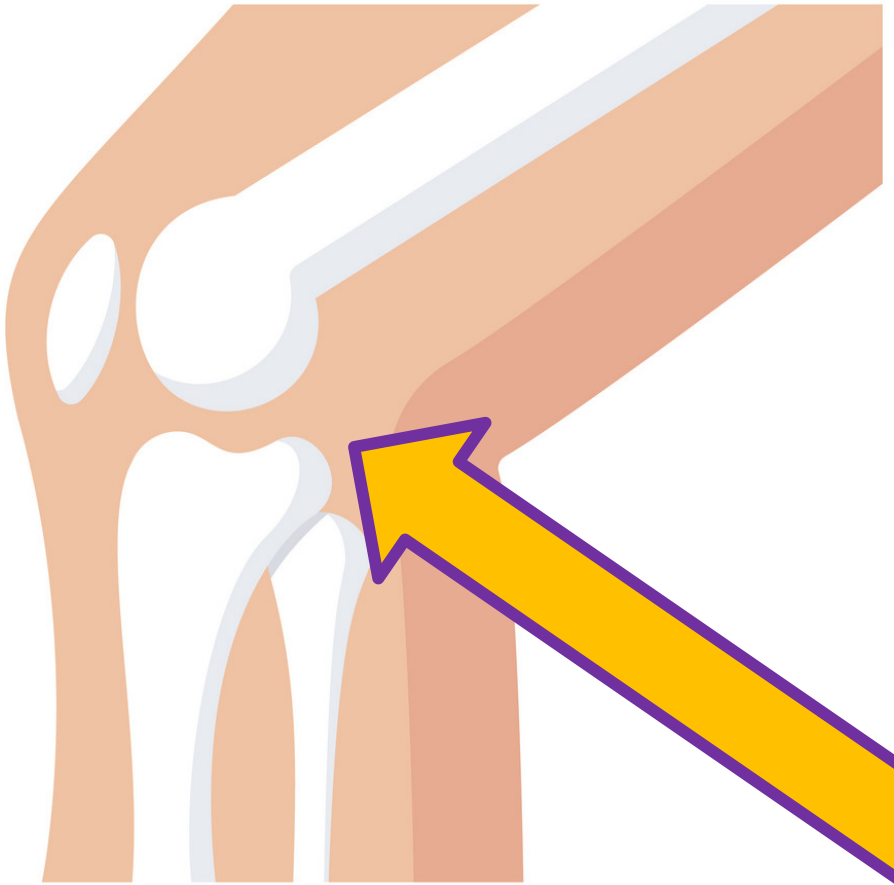
Why a skeleton?

We need many bones to help us stand up and run and jump. These bones are what helps us to move.



The toe bones, thigh bone, and shin bone help us stand up.

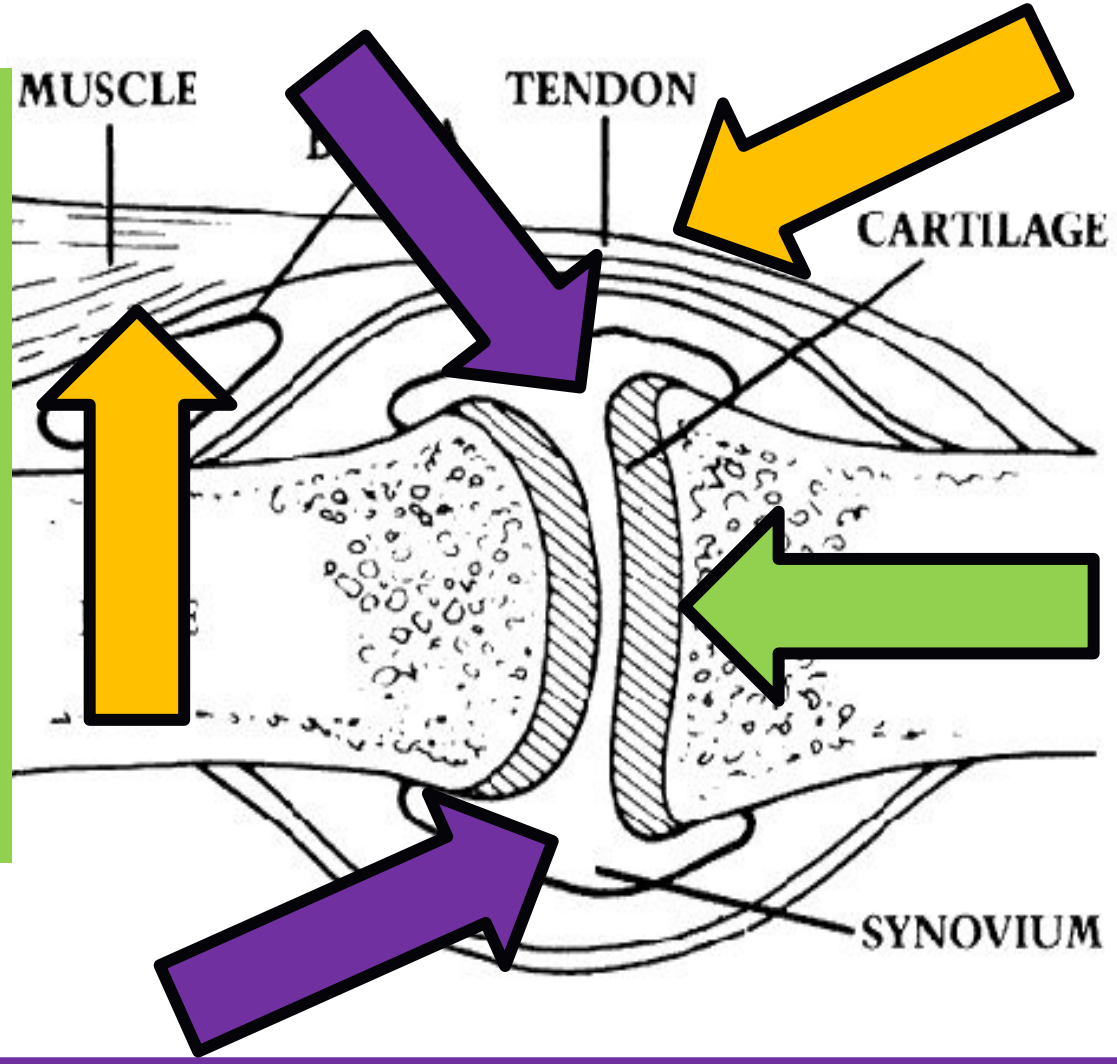
Bones Are Jointed



Bones are not straight or look like circles. Their shape helps them fit together with other bones.

Eg. The knee joint connects the thigh and shin bones.

Cartilage is what covers the bones and helps them move together.

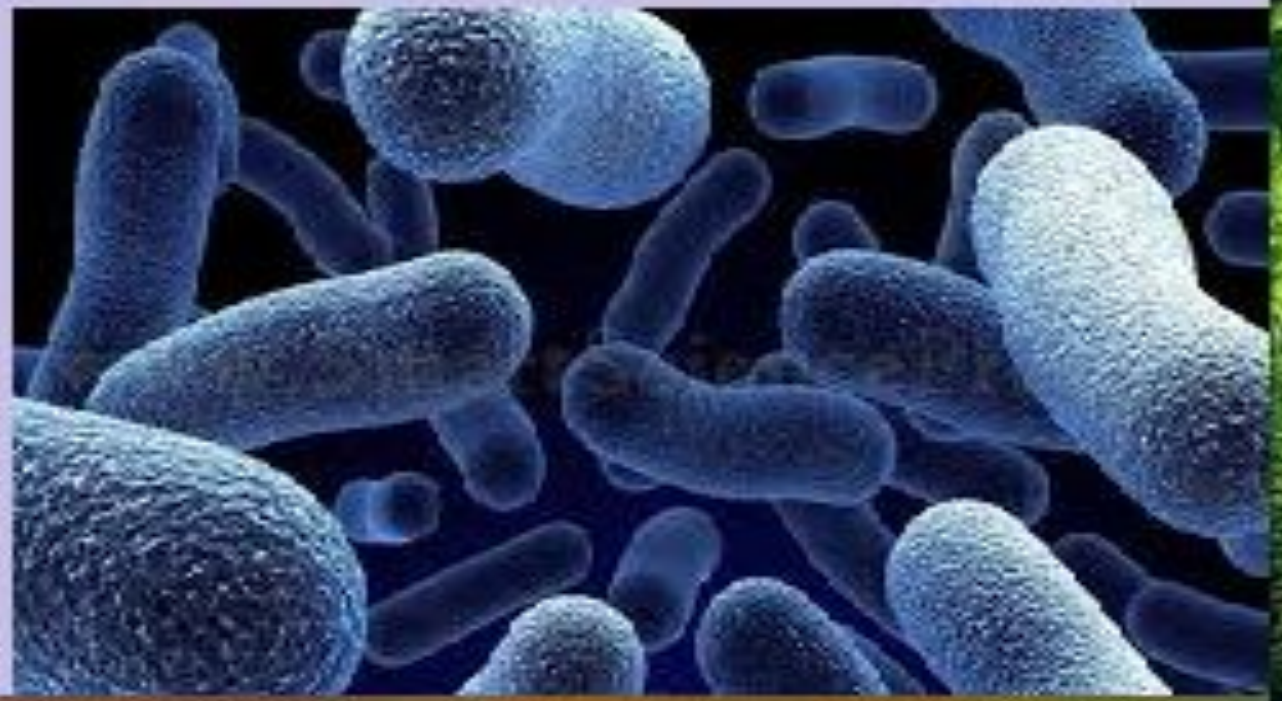


Tendons, ligaments, and muscles hold the bones together and help the bones move.

Synovial fluid (synovium) helps make it easier for the bones to move together.

We learned six important ideas!

1) Living things do 7 body functions.
2) Cells help living things survive.
3) Cells work together making organs.
4) Vertebrates move with skeletons.
5)
6)



No real nucleus

If there is a difference betwee
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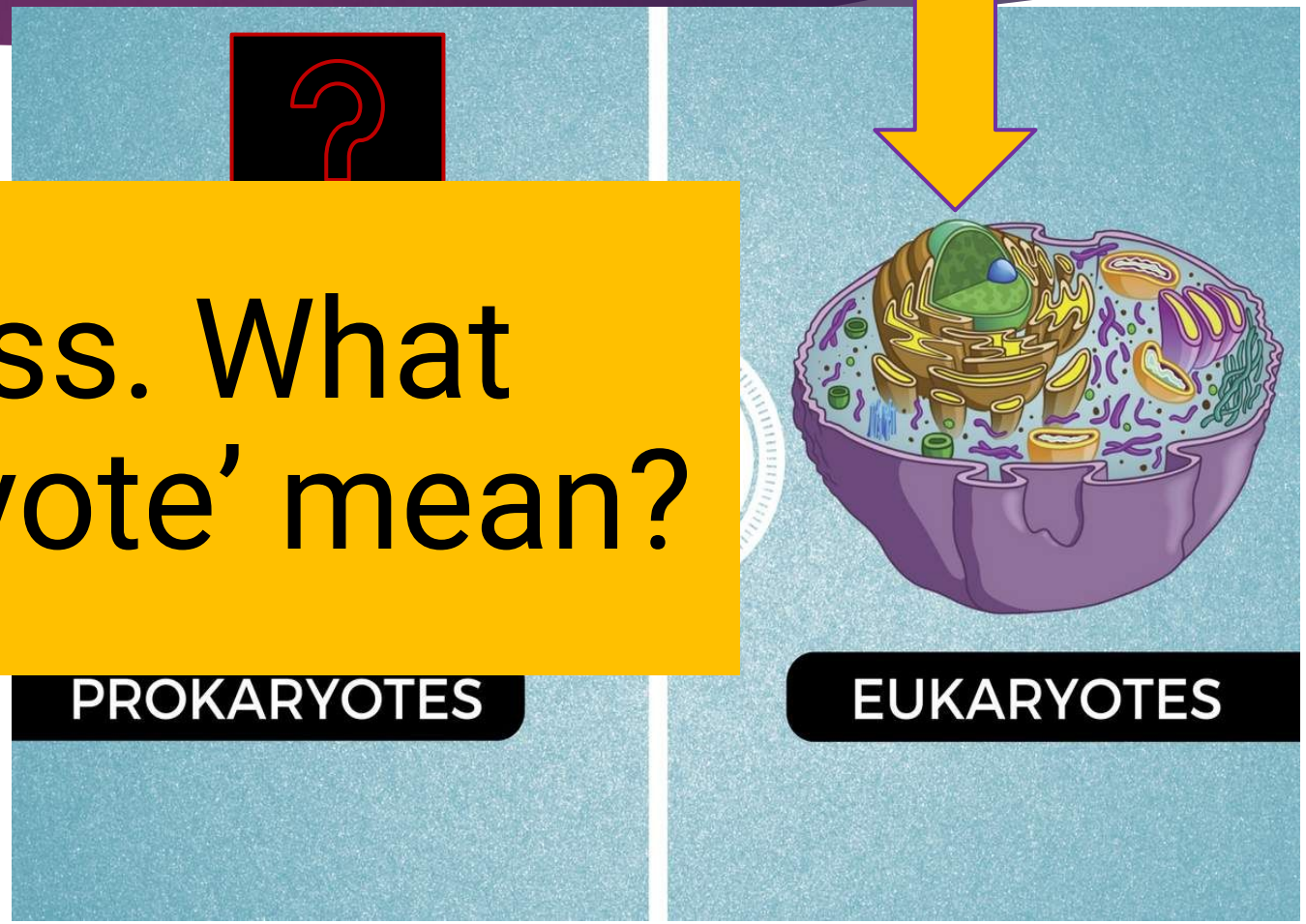
and do not have **a real nucleus**.

Take a guess. What does –'karyote' mean?



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Four important parts are not the same. Prokaryotes have a capsule, a nucleoid, a plasmid, and a flagellum.

teria

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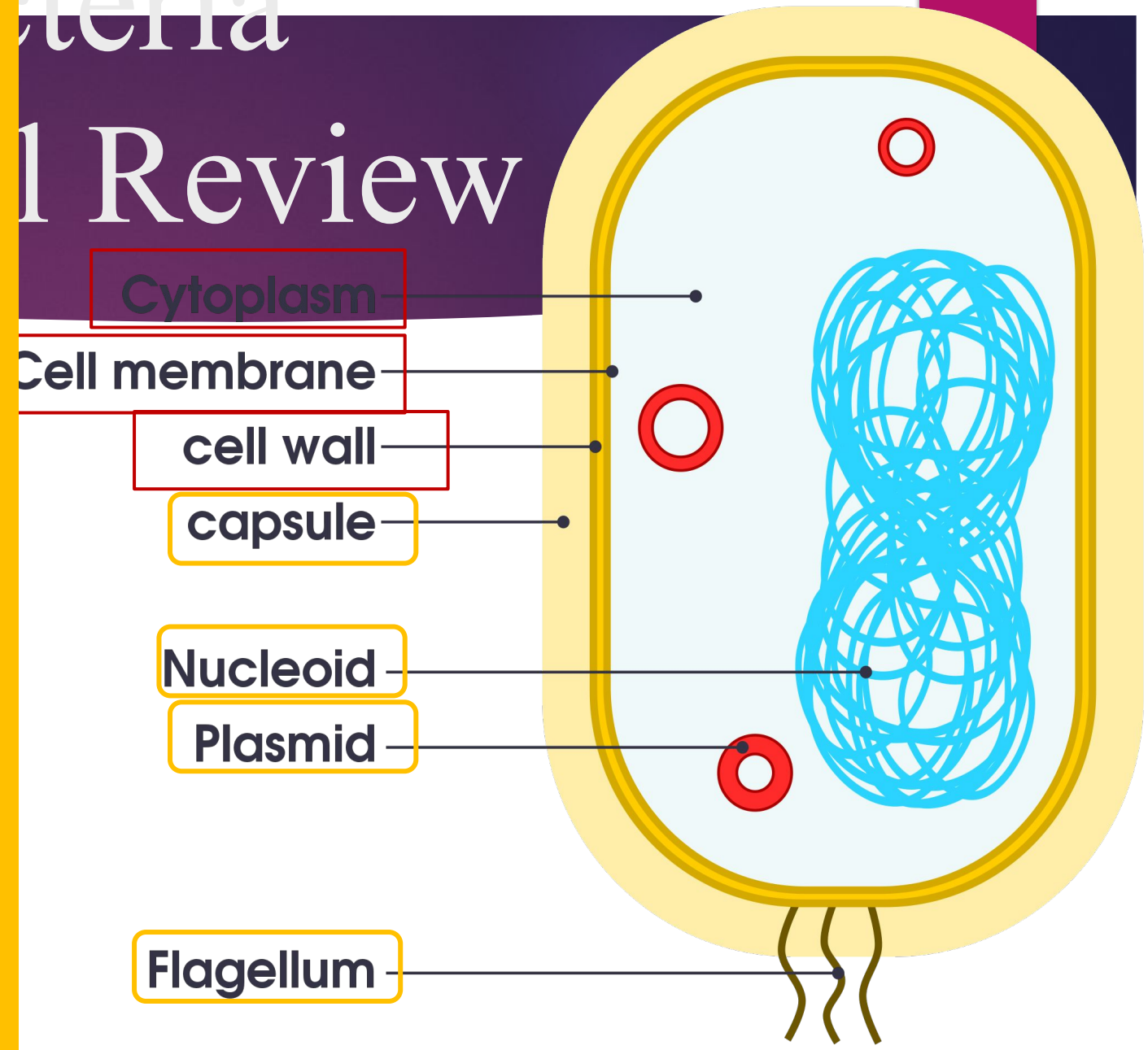


Prokaryotes (Bacteria, Viruses) vs. Eukaryotes (Plants, Animals)

Prokaryotes have:

1) *Plasmids*
2) A *nucleoid material*)
3) Flagellum
4) Capsules

Both have:

1) Cell membranes
2) Cell walls
3) Cytoplasm
4) Organelles

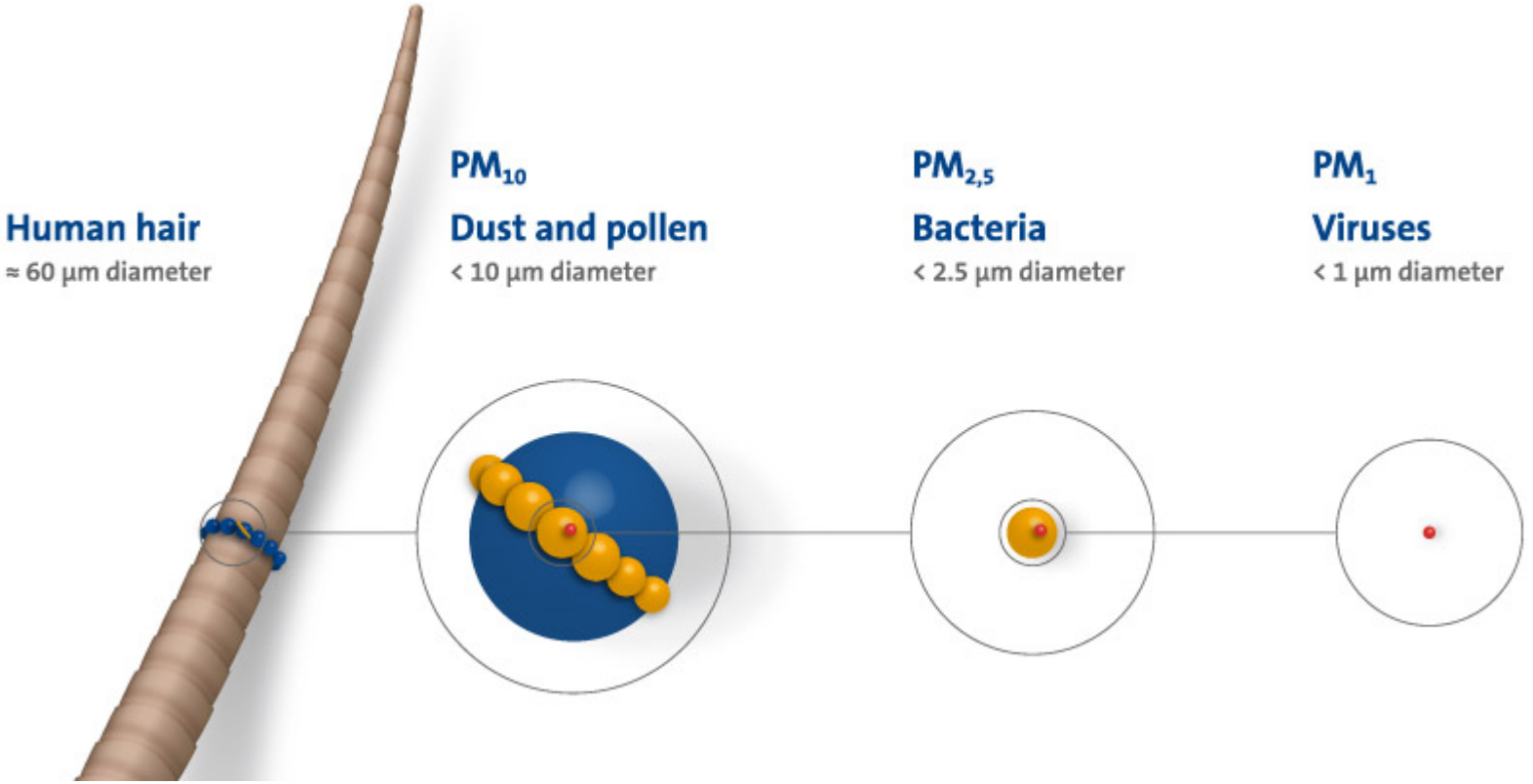
Eukaryotes have:

1) A **Nucleus**

We learned six important ideas!

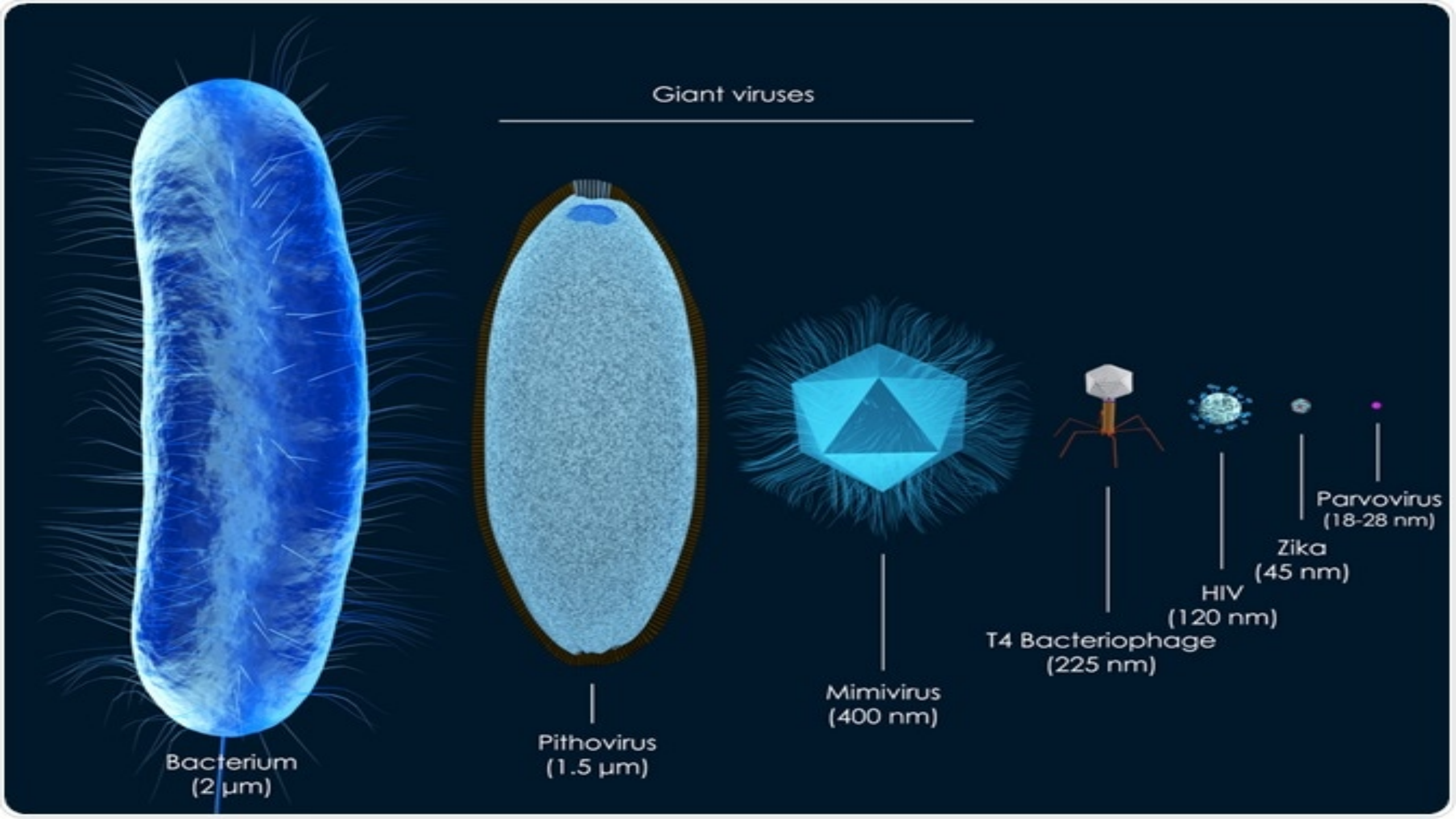
1) Living things do 7 body functions.
2) Cells help living things survive.
3) Cells work together making organs.
4) Vertebrates move with skeletons.
5) Microorganisms are prokaryotes.
6)

The Smallest of All - Viruses

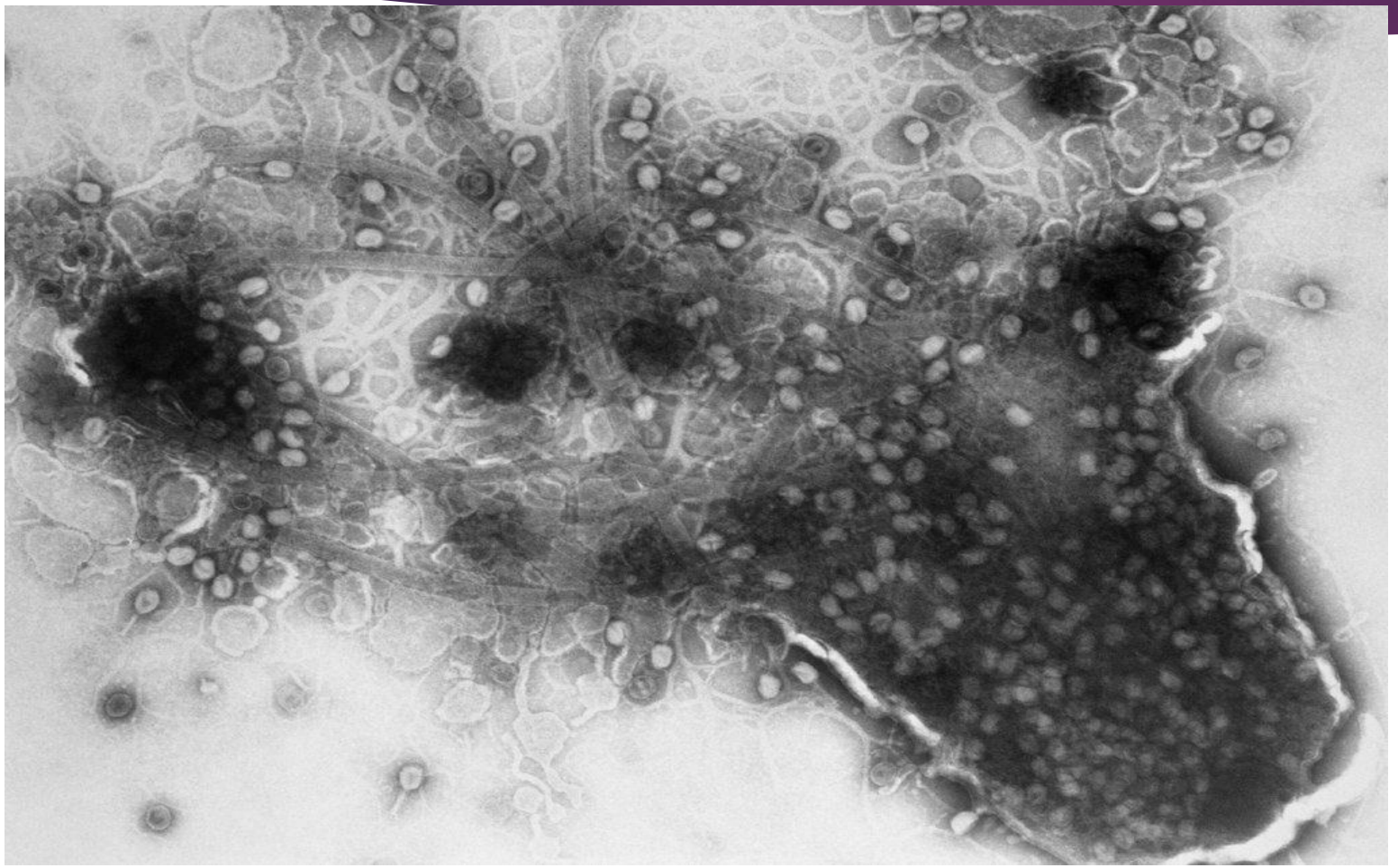


If you thought bacteria were small, you need to see viruses!

Most bacteria are 5 to 10 times bigger!


Giant viruses
Bacterium
(2 µm)
Pithovirus
(1.5 µm)
Mimivirus
(400 nm)
T4 Bacteriophage
(225 nm)
HIV
(120 nm)
Zika
(45 nm)
Parvovirus
(18-28 nm)

…viruses need other living things to use their genetic material to reproduce. They CANNOT reproduce on their own! :-/



Viruses move from one living thing to another.

They use the living thing for nutrition, like animals eating each other, but …

That did not help…

$1\ micrometer = 1\mu m = 0.000001m$

$1\ nanometer = 1nm = 0.000000001m$

Yes, these sizes are VERY hard to understand. Try this example. Look at the dot: •

This dot • would be over 1,000µm and over 1,000,000nm!

Most viruses are smaller than 100nm!

So…let's list what we know!

Viruses are alive because:

1) They have the genetic material all cells do, they just cannot reproduce
2) They do many body functions, just not reproduction
3) They are sensitive and smart (complex)

Viruses are NOT alive because:

1) They do not reproduce
2) They have simple cells
3) All of their body functions are VERY different from other living things

Year 7 Science

Term 1 Revision