

Part 11 Immune Systems

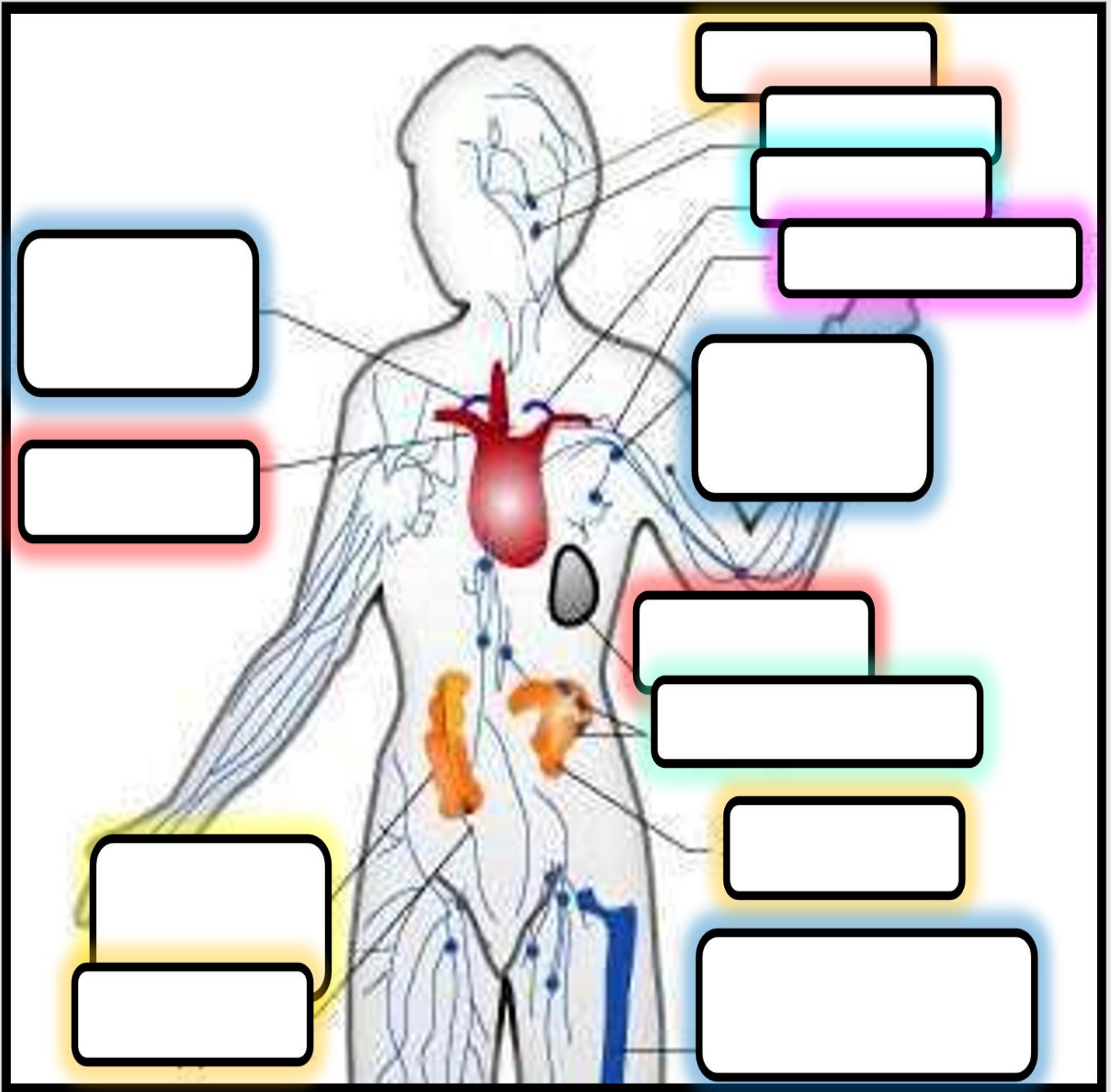
Name: _____

Part 11 Lesson 1 The Immune System

Joseph _____ (1827-1912)

- Changed the 50% death rate of early surgeries.
- He realized that _____ (small organisms) were to blame for high post surgery death rates.
- Pioneered the use of antiseptic and cleanliness. (Carbolic Acid Sprayer)

Please fill some parts of the Immune System below.



Immune system: A system that _____ the body from diseases.

It's a complex network of _____, tissues, organs, and the substances they make that helps the body fight infections and other diseases. The immune system includes white blood cells and organs and tissues of the lymph system, such as the thymus, spleen, tonsils, lymph nodes, lymph vessels, and bone marrow.

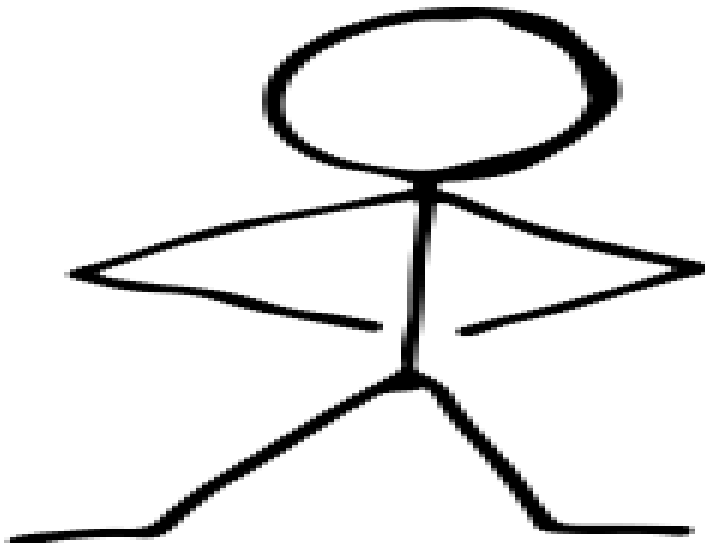
The Immune Systems protects us from...



The Immune System 1st Line of Defense.

_____ prevents disease from entering the body.

Where are the holes in the first line of defense?



One of the biggest achievements of the immune system is it's ability to determine _____ from _____.

Part 11 Lesson 2 Immune Response

The Second Line of Defense.

The _____ response: Damaged cells release _____.

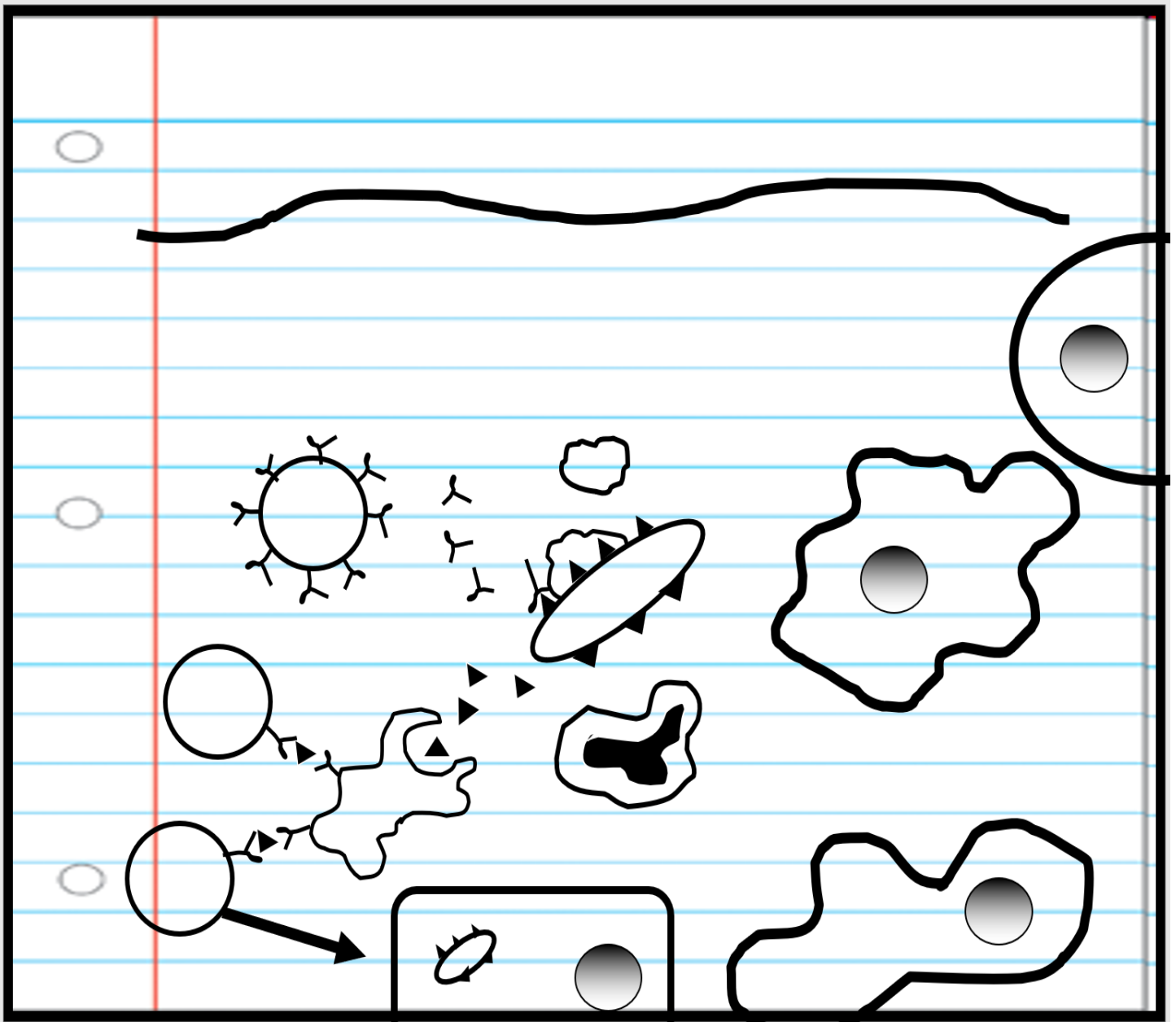
- These chemicals cause blood vessels to leak fluid into the tissues, causing swelling.
- This helps isolate the foreign substance from further contact with body tissues.

The body also has another defense mechanism called and _____ response.

- Cells produce a substance that interferes with the ability of viruses to reproduce.

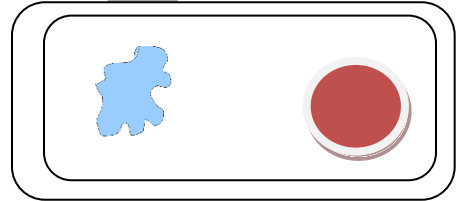
Your Bodies 3rd Line of Defense.

- The War Within (The Battle Begins)

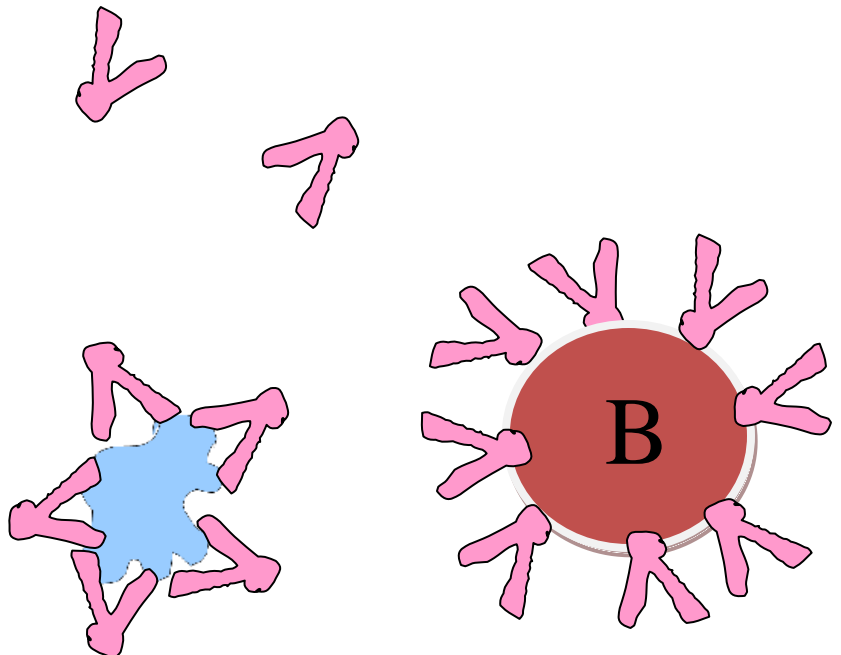
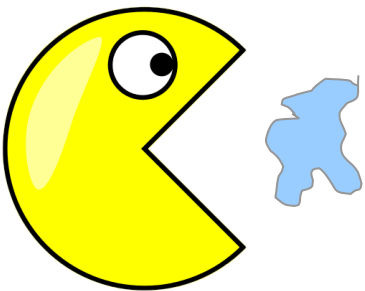


◇ Please use the space below and the pictures to describe the Immune System. Focus on the 1st, 2nd, and 3rd lines of defense. This is supposed to be abstract.

Skin



T

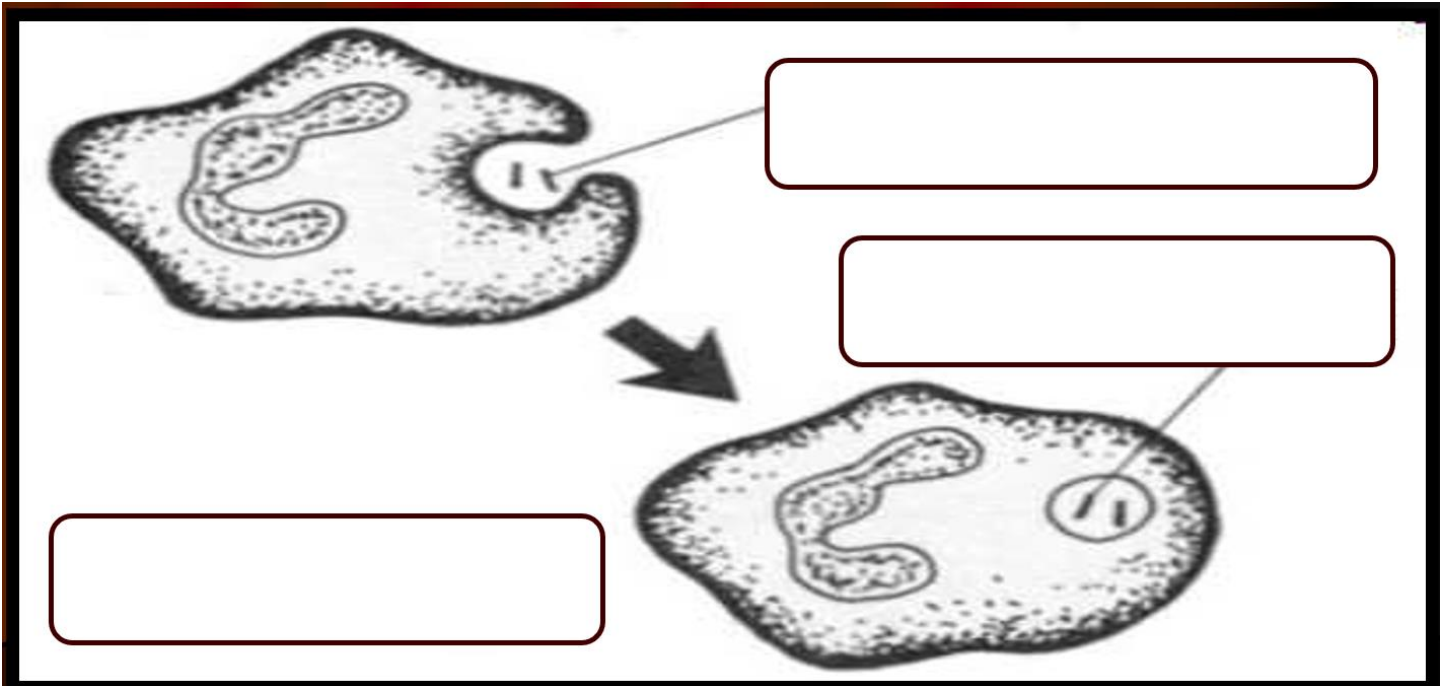


_____ is a severe allergic reaction that occurs rapidly and causes a life-threatening response involving the whole body.

- This reaction can lead to difficulty breathing, shock, and ultimately death if untreated.

3rd Line of Defense

- _____: These tell the body it's under attack.
 - These give you the aches and pains. "Time to rest!" (Warning System)
- _____: White blood cells (made in bone marrow)
 - - Phagocytes: Cells that _____ invaders.



- _____: Cells that remember the invaders and help the body destroy them if they come back.
 - B-Cells
 - T-Cells

_____ Cells: These cells function to obtain antigen in tissues, they then migrate to lymphoid organs and activate T cells.

When an antibody encounters a specific _____ (invader) it changes shape (activates) and binds to it.

T Y

- _____ cling to virus making it difficult to attach to cell.
- Immunity: Your immune system is now familiar with the invaders and can summon antibodies quickly.

Part 11 Lesson 3 An Inside Look at the Flu. Vaccines

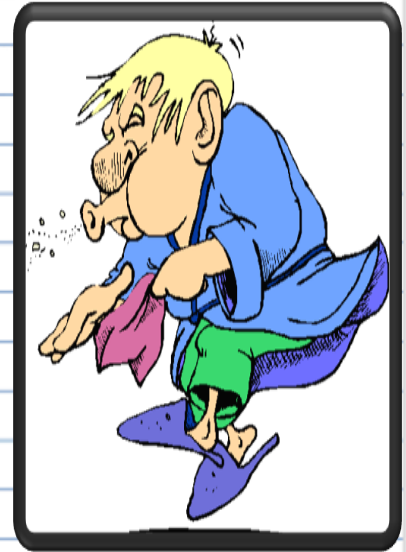
- Video! An Inside Look at the Flu
- Complete this question as you watch the video on your bundled homework.
 - <https://www.youtube.com/watch?v=CkTKZTCxrtc>

An Inside Look at the Flu

Describe symptoms of a sickness such as the flu, and the reasons for that symptom based on your immune system response.

Why do you...

- Get the aches and pains.
- Get a fever.
- Get a headache.
- Cough
- have a sore throat



Immunity can be _____, or _____.

_____ : A suspension of weakened or dead pathogenic cells are injected in order to stimulate the production of antibodies and boost immunity.

Virus prevention

- Minimize _____ with reservoir animal (birds, mice, etc.)
- Minimize person to _____ contact

Across

1. Joseph _____ (1827-1912) -Changed the 50% death rate of early surgeries. -He realized that microbes (small organisms) were to blame for high post surgery death rates. -Pioneered the use of antiseptic and cleanliness. (Carbolic Acid Sprayer)
4. _____ is a severe allergic reaction that occurs rapidly and causes a life-threatening response involving the whole body.
6. _____ Cells: These cells function to obtain antigen in tissues, they then migrate to lymphoid organs and activate T cells.
9. _____ system: A system that protects the body from diseases. It's a complex network of cells, tissues, organs, and the substances they make that helps the body fight infections and other diseases.
10. Large specialized cells that engulf invaders.
12. I _____: Your immune system is now familiar with the invaders and can summon antibodies quickly.

Down

2. The Second Line of Defense. The _____ response: Damaged cells release chemicals.
3. A suspension of weakened or dead pathogenic cells are injected in order to stimulate the production of antibodies and boost immunity
5. The body also has another defense mechanism called and _____ response. - Cells produce a substance that interferes with the ability of viruses to reproduce.
7. Cells that remember the invaders and help the body destroy them if they come back.
8. White blood cells (made in bone marrow)
9. These tell the body it's under attack. - These give you the aches and pains. "Time to rest!" (Warning System)
11. These proteins can cling to virus making it difficult to attach to cell.

-----teacher can remove this word bank to make puzzle more challenging-----

Possible Answers

ANAPHYLAXIS, ANTIBODIES, DENDRITIC, IMMUNE, IMMUNITY, INTERLEUKINS, LEUKOCYTES, LISTER, LYMPHOCYTES, PHAGOCYTES, VACCINE, INFLAMMATORY, INTERFERON

Part 11 Immune Systems

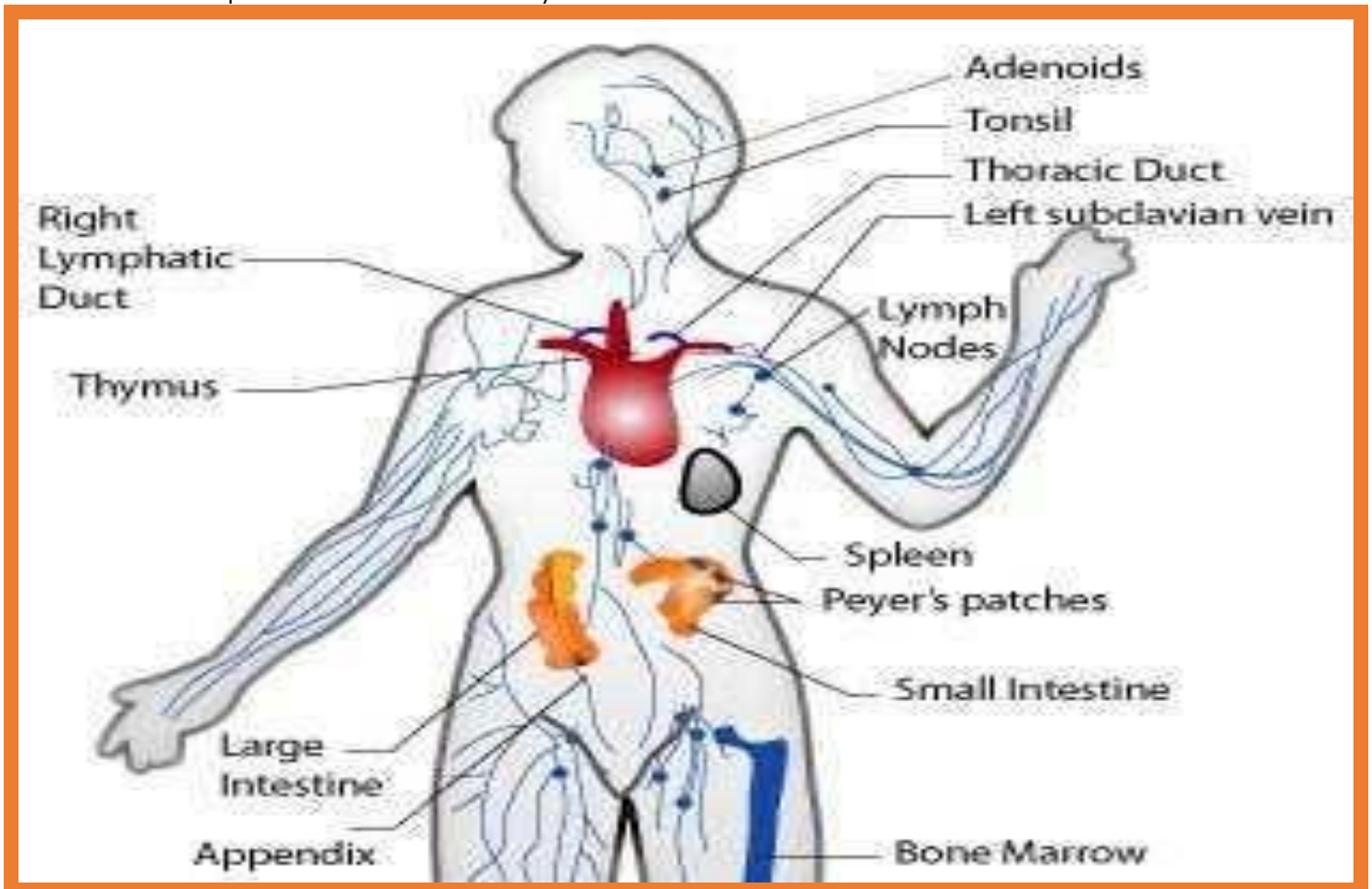
Name:

Part 11 Lesson 1 The Immune System

Joseph Lister (1827-1912)

- Changed the 50% death rate of early surgeries.
- He realized that **microbes** (small organisms) were to blame for high post surgery death rates.
- Pioneered the use of antiseptic and cleanliness. (Carbolic Acid Sprayer)

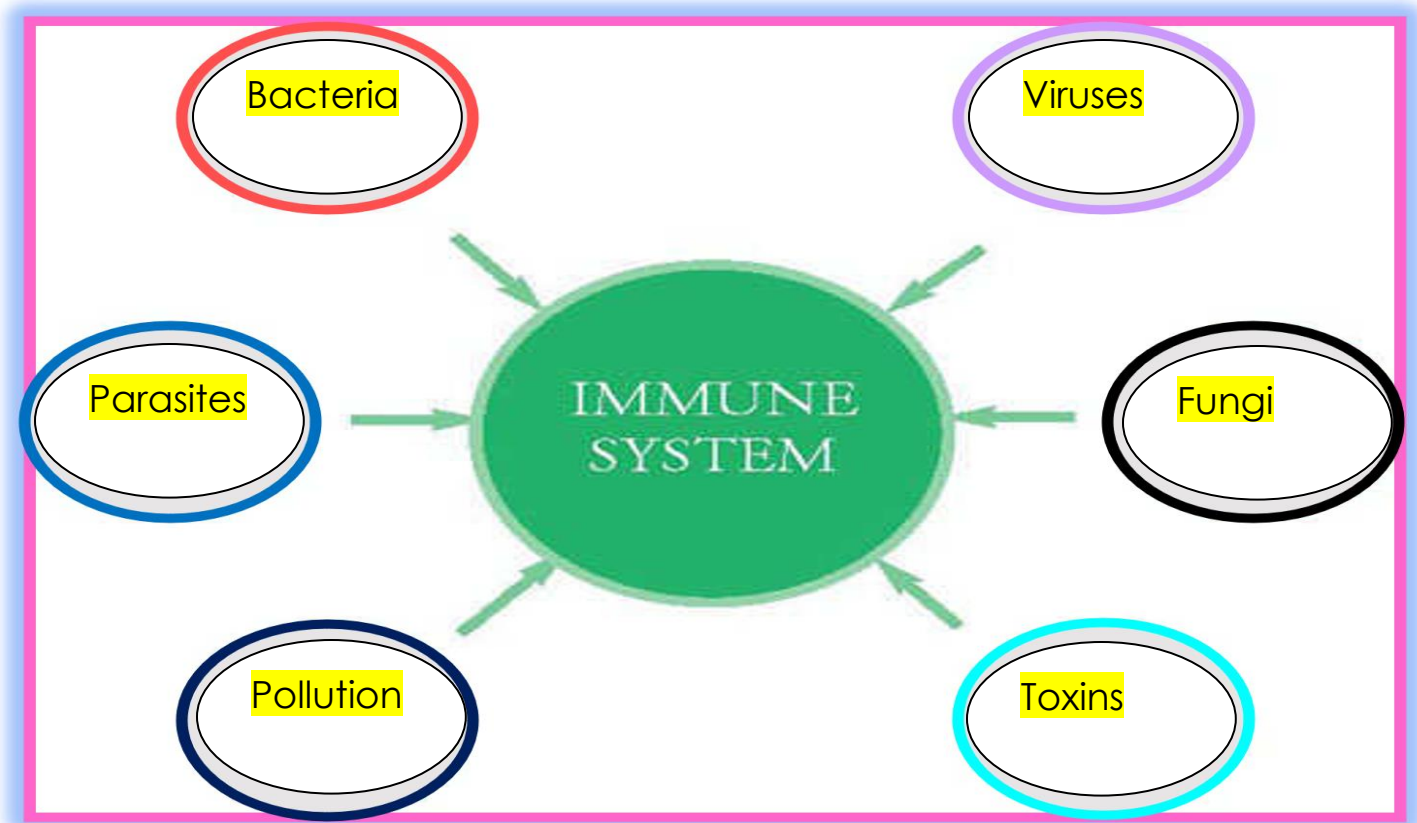
Please fill some parts of the Immune System below.



Immune system: A system that **protects** the body from diseases.

It's a complex network of **cells**, tissues, organs, and the substances they make that helps the body fight infections and other diseases. The immune system includes white blood cells and organs and tissues of the lymph system, such as the thymus, spleen, tonsils, lymph nodes, lymph vessels, and bone marrow.

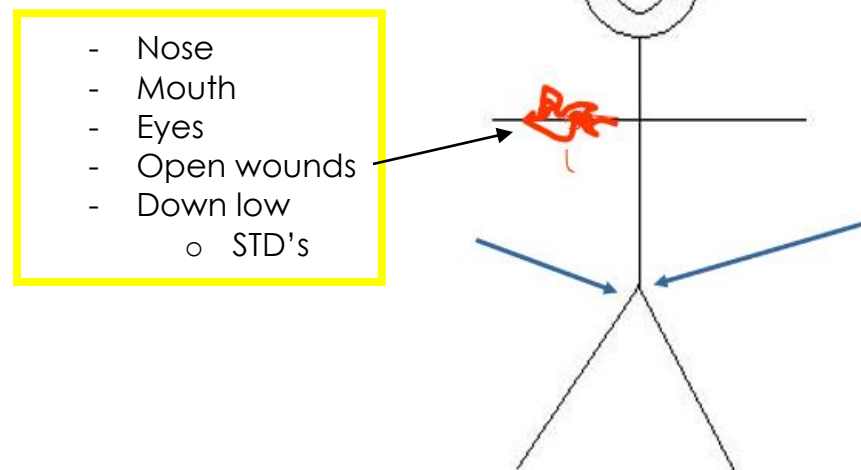
The Immune Systems protects us from...



The Immune System 1st Line of Defense.

Skin prevents disease from entering the body.

Where are the holes in the first line of defense?



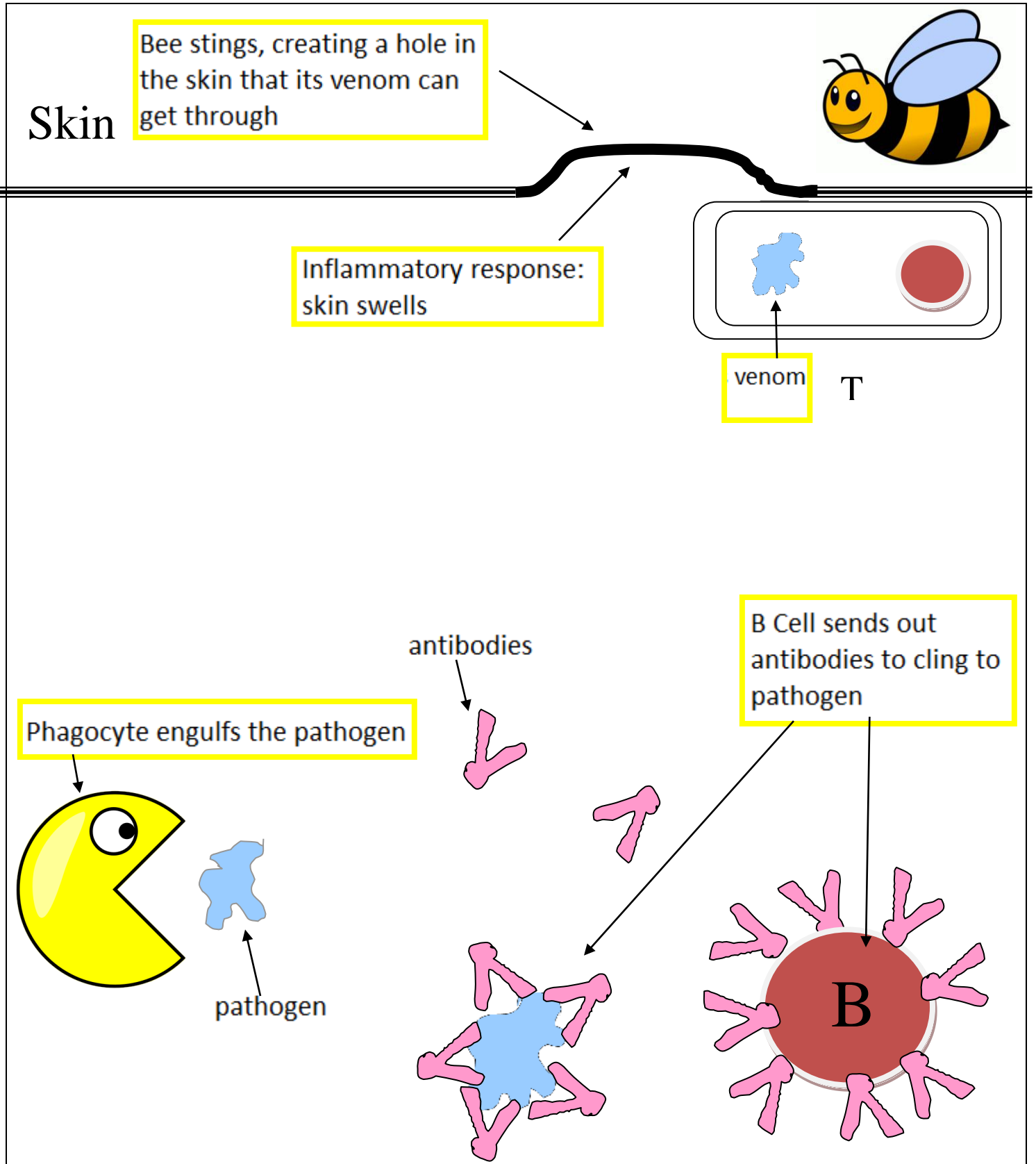
One of the biggest achievements of the immune system is its ability to determine friend from foe.

Part 11 Lesson 2 Immune Response

The Second Line of Defense.

The inflammatory response: Damaged cells release chemicals.

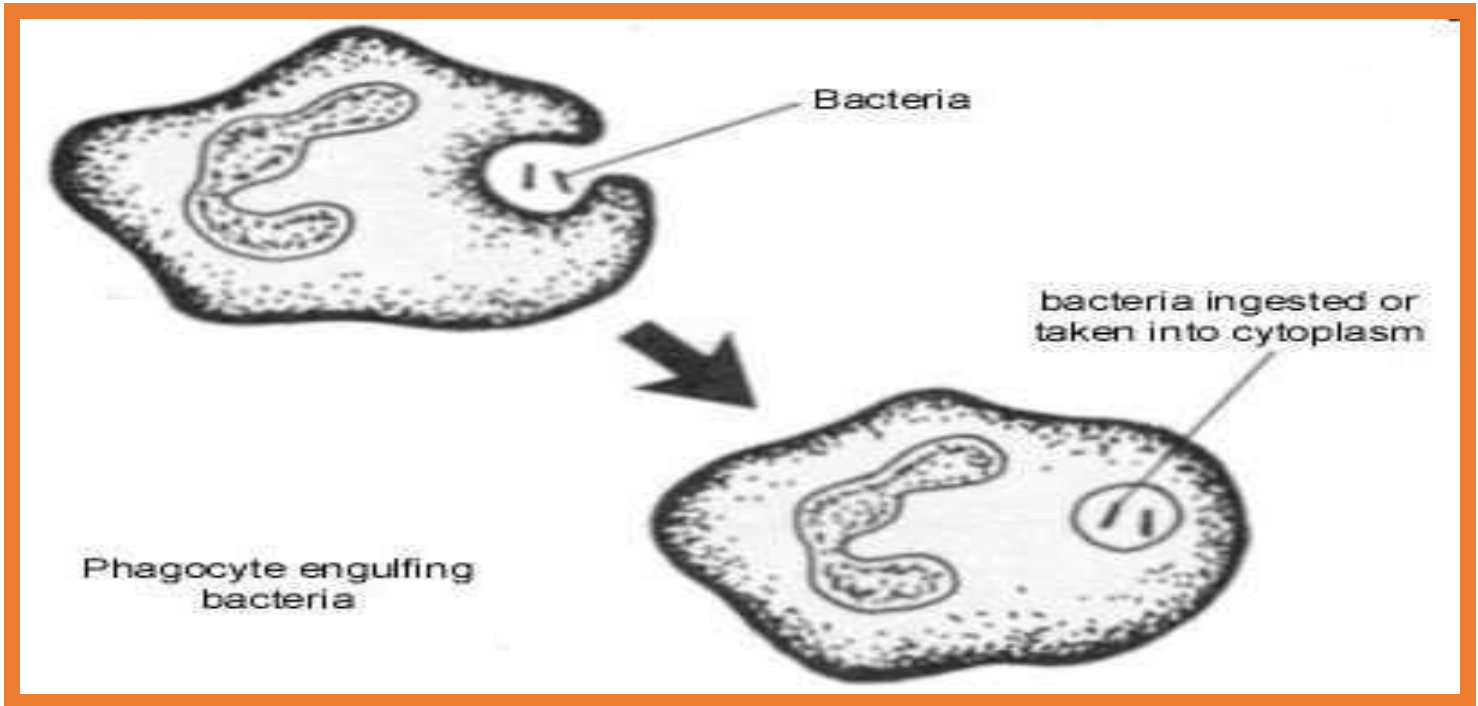
- These chemicals cause blood vessels to leak fluid into the tissues, causing swelling.



Anaphylaxis is a severe allergic reaction that occurs rapidly and causes a life-threatening response involving the whole body. This reaction can lead to difficulty breathing, shock, and ultimately death if untreated.

3rd Line of Defense

- **Interleukins**: These tell the body it's under attack.
 - These give you the aches and pains. "Time to rest!" (Warning System)
- **Leukocytes**: White blood cells (made in bone marrow)
 - Phagocytes: Cells that **engulf** invaders.



- **Lymphocytes**: Cells that remember the invaders and help the body destroy them if they come back.
 - B-Cells
 - T-Cells

Dendritic Cells: These cells function to obtain antigen in tissues, they then migrate to lymphoid organs and activate T cells.

When an antibody encounters a specific **antigen** (invader) it changes shape (activates) and binds to it.

T Y

- **Antibodies** cling to virus making it difficult to attach to cell.
- Immunity: Your immune system is now familiar with the invaders and can summon antibodies quickly.

- Video! An Inside Look at the Flu
- Complete this question as you watch the video on your bundled homework.
 - <https://www.youtube.com/watch?v=CkTKZTCxrtc>

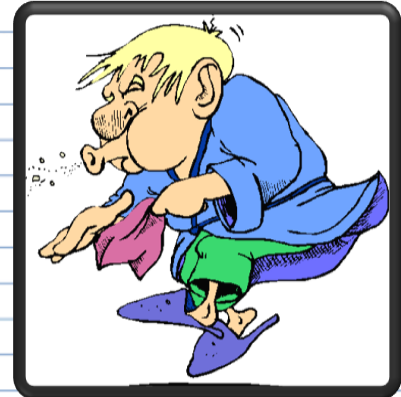
An Inside Look at the Flu

Describe symptoms of a sickness such as the flu, and the reasons for that symptom based on your immune system response.

Why do you...

- Get the aches and pains.
- Get a fever.
- Get a headache.
- Cough
- have a sore throat

Immune response



- Sore throat and cough: first line of defense kills cells non-discriminately, so it kills healthy cells too.
- Aches and pains: caused by interleukins.
- Fever: also caused by interleukins in order to destroy optimal breeding temps for the virus.
- Headache: A result of the increased temperature, as the blood vessels in her head swelled.

Immunity can be **active**, or **passive**.

Vaccine: A suspension of weakened or dead pathogenic cells are injected in order to stimulate the production of antibodies and boost immunity.

Virus prevention

- Minimize **contact** with reservoir animal (birds, mice, etc.)
- Minimize person to **person** contact

Across

1. Joseph _____ (1827-1912) -Changed the 50% death rate of early surgeries. -He realized that microbes (small organisms) were to blame for high post surgery death rates. -Pioneered the use of antiseptic and cleanliness. (Carbolic Acid Sprayer)
4. _____ is a severe allergic reaction that occurs rapidly and causes a life-threatening response involving the whole body.
6. _____ Cells: These cells function to obtain antigen in tissues, they then migrate to lymphoid organs and activate T cells.
9. _____ system: A system that protects the body from diseases. It's a complex network of cells, tissues, organs, and the substances they make that helps the body fight infections and other diseases.
10. Large specialized cells that engulf invaders.
12. I _____: Your immune system is now familiar with the invaders and can summon antibodies quickly.

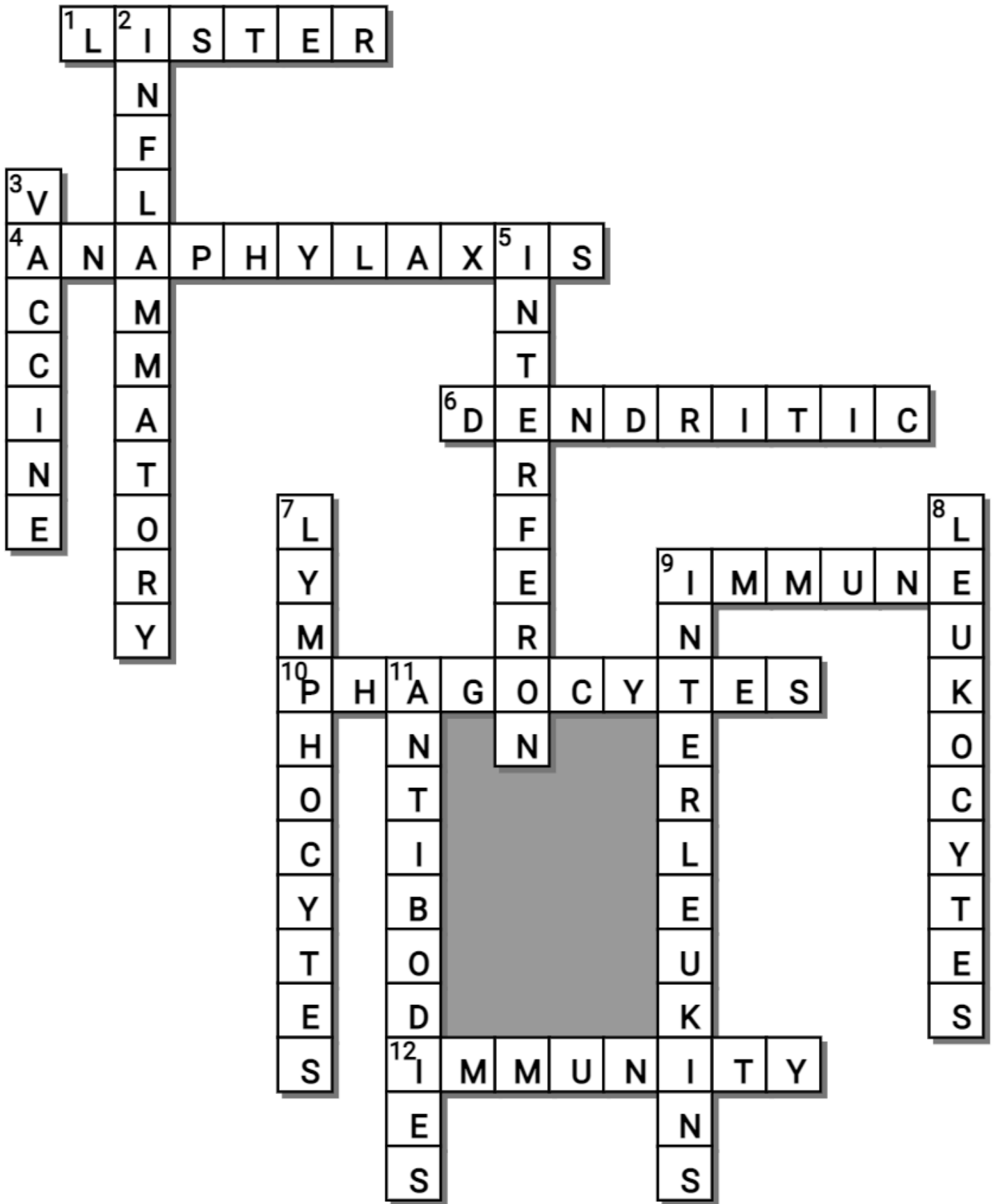
Down

2. The Second Line of Defense. The _____ response: Damaged cells release chemicals.
3. A suspension of weakened or dead pathogenic cells are injected in order to stimulate the production of antibodies and boost immunity
5. The body also has another defense mechanism called and _____ response. – Cells produce a substance that interferes with the ability of viruses to reproduce.
7. Cells that remember the invaders and help the body destroy them if they come back.
8. White blood cells (made in bone marrow)
9. These tell the body it's under attack. – These give you the aches and pains. "Time to rest!" (Warning System)
11. These proteins can cling to virus making it difficult to attach to cell.

-----teacher can remove this word bank to make puzzle more challenging-----

Possible Answers

ANAPHYLAXIS, ANTIBODIES, DENDRITIC, IMMUNE, IMMUNITY, INTERLEUKINS, LEUKOCYTES, LISTER, LYMPHOCYTES, PHAGOCYTES, VACCINE, INFLAMMATORY, INTERFERON



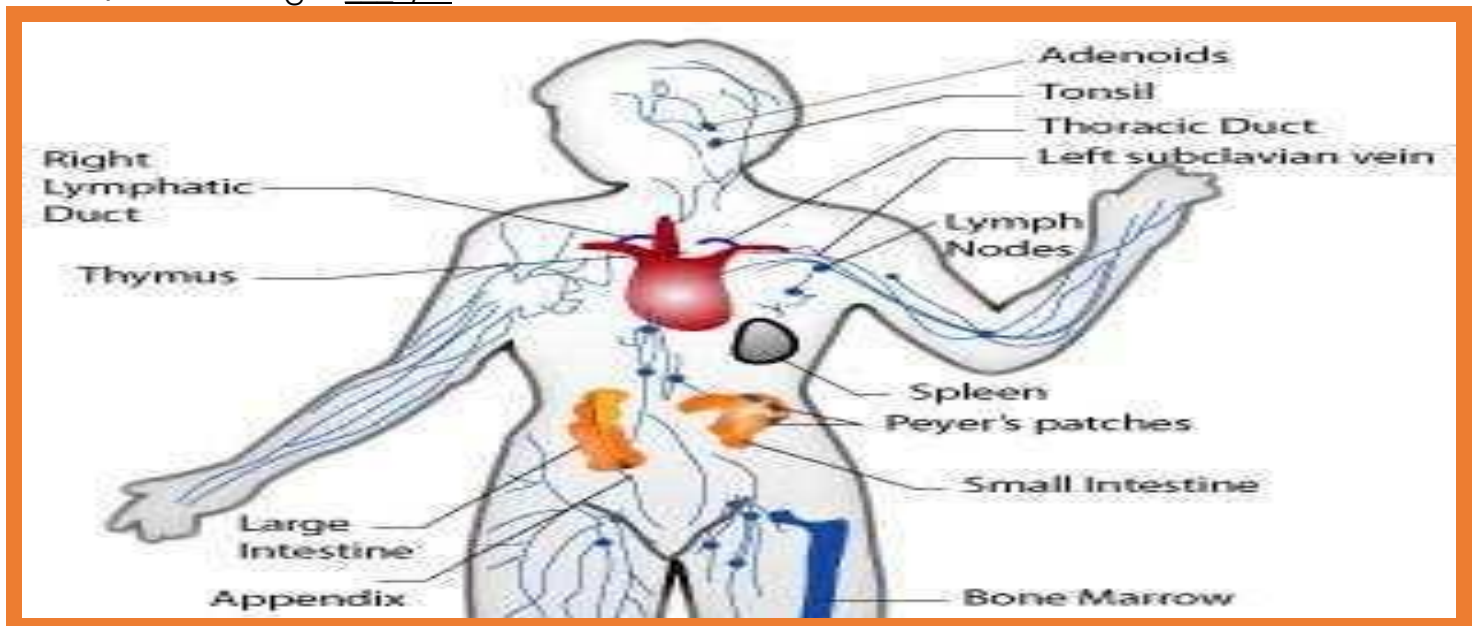
Part 4 Review Game Lesson 4

1-10 = 10 pts * = Bonus + 1 pt,
 (Secretly write owl in correct space +1 pt)
 Final Question = 5 pt wager

Name: _____
 Due: Today
 Score ____ / 100

DIPLOMATIC IMMUNITY	FIGHT BACT	FAMOUS PARASITES <small>Bonus round 1 pt each</small>
1) D: Joseph Lister	6) Inflammatory response	*11) The Tick
2) B: Pancreatic juices	7) Lymphocytes	*12) The Worm
3) Viruses, bacteria, parasites	8) Lymph	*13) Hotel Transylvania
4) Skin	9) Macrophage "phagocyte"	*14) Kong: Skull Island
5) Friend from foe	10) Dendritic	*15) The Mandalorian

Final Question Wager ____ /5 Answer:



Part 4 Review Game Lesson 4

1-10 = 10 pts * = Bonus + 1 pt,
 (Secretly write owl in correct space +1 pt)
 Final Question = 5 pt wager

Name: _____
 Due: Today
 Score ____ / 100

DIPLOMATIC IMMUNITY	FIGHT BACT	FAMOPUS PARASITES <small>Bonus round 1 pt each</small>
1)	6)	*11)
2)	7)	*12)
3)	8)	*13)
4)	9)	*14)
5)	10)	*15)

Final Question Wager ____ /5 Answer: _____