$\qquad$ Date: $\qquad$ Block: $\qquad$

## 1.5 - Immune System Notes (Science 8)

## Immune System:

- The body system that $\qquad$
- Has three $\qquad$ to protect us from pathogens

1. The First Line of Defense: skin and linings of internal body systems
A) $\qquad$

- Skin is a $\qquad$ barrier to keep pathogens from entering body
$\circ$ $\qquad$ and natural body acids: kill pathogens on skin $\qquad$
B) Linings of the $\qquad$ system
- $\qquad$ in your nose and throat: $\qquad$ pathogens and move them back out of your body
- $\qquad$ : pathogens get caught in sticky mucus and are removed from your body when you
$\qquad$ , $\qquad$ , and $\qquad$
C) Contents and linings of the $\qquad$ system
- Strong $\qquad$ in your $\qquad$ : kill many types of pathogens
- Mucus: $\qquad$ pathogens that are then removed by $\qquad$

2. The Second Line of Defense: white blood cells and inflammation
A) White Blood Cells ( $\qquad$ _)

- $\qquad$ pathogens that get through the $\qquad$ line of defence
- Some WBCs release $\qquad$ that make it easier for other WBCs to kill pathogens
B) Inflammation
- A process that causes a part of the body to become $\qquad$
- Occurs if you have an $\qquad$ or $\qquad$
- Increased blood flow $\rightarrow$ $\qquad$ move into the affected area and

3. The Third Line of Defence: specialized white blood cells
A) Specialized white blood cells (e.g. T cells, B cells)

- Recognize pathogens that they have previously fought
- If the same pathogen enters the body in the future, they

$\qquad$ so you don't get sick again
B) T cells: $\qquad$
B cells: $\qquad$
(Antibodies are particles in the bloodstream that $\qquad$ produced by
$\qquad$ Antibodies $\qquad$ to and
$\qquad$ pathogens and infected cells.


## Practice:

In your own words, describe the role of the immune system.

Why does the immune system need multiple lines of defense?
$\qquad$
$\qquad$
$\qquad$

Classify each of the following statements as describing the first, second, or third lines of defense.

1. Mucus can trap pathogens. $\qquad$
2. Specialized white blood cells, called T cells and B cells, allow your body to develop an immune response that prevents further infection. $\qquad$
3. The skin and the linings of internal body systems stop many pathogens.
4. Inflammation causes a part of the body to become red and swollen as blood cells move into the area. $\qquad$
5. Acids given off by the body can kill some pathogens. $\qquad$
6. White blood cells can surround and kill pathogens keeping infection from spreading. $\qquad$
7. The immune system defends against pathogens and infection. $\qquad$

In your castle analogy, how did you represent each of the three lines of defense? Explain your analogy in your own words. If there were any aspects of the immune system that you were unable to represent in your analogy, describe them as well.

