



HOMESCHOOL SCIENCE EXPERIMENT

MAKING A MODEL OF THE IMMUNE RESPONSE TO A VIRUS

Name: _____

Date: _____

Topic: Human Biology

In this activity, you will build a simple model to show how the body's immune system detects a virus, fights it off, and remembers it to help protect you in the future.



BACKGROUND

Viruses can cause illness, but our bodies have an amazing defense system called the immune system. White blood cells and other immune cells work together to find and destroy viruses. They also remember the virus so they can respond faster next time.



QUESTION

How does the immune system respond to a virus, and how does it remember it?



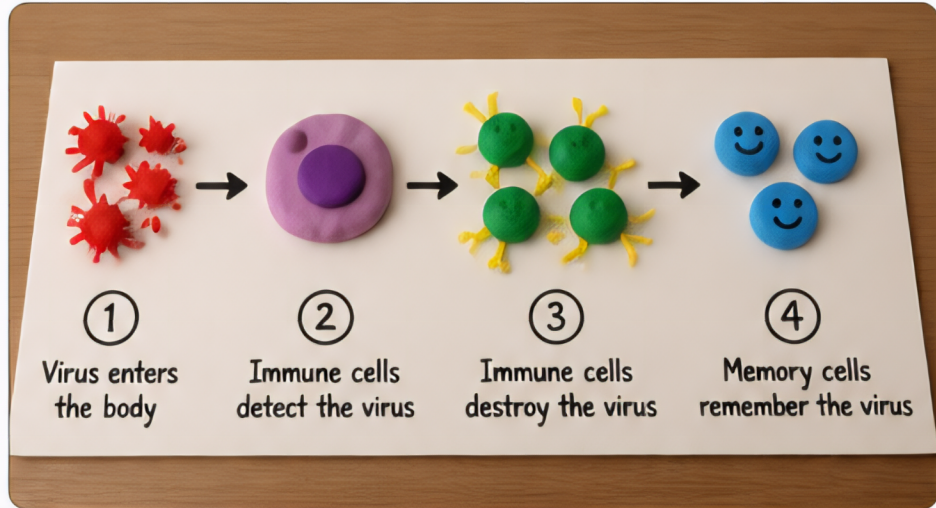
MATERIALS

- Modeling clay or Play-Doh (different colors)
- Pom-poms (red)
- Small beads or foam balls (green)
- Yellow pipe cleaners (or cut straws)
- Cardboard or poster board
- Markers
- Glue or tape
- Index cards or sticky notes
- Scissors (if using straws)
- (Optional) Googly eyes or markers to add faces



PROCEDURE

1. **Prepare the Base:** Use the cardboard or poster board as your "body."
2. **Step 1 – Virus Enters:** Place several red pom-poms on the left side of the board. Label this "Virus enters the body."
3. **Step 2 – Detected:** Add a purple clay "white blood cell" near the viruses. This cell "detects" the virus. Label this step.
4. **Step 3 – Fights Back:** Add green immune cells moving toward the viruses. Use yellow pipe cleaners as antibodies that attach to the viruses. Show some viruses being surrounded or "destroyed." Label this step.
5. **Step 4 – Remembers:** Add blue "memory cells" on the far right. These cells stay in the body to remember the virus. Label this step.
6. **Add Arrows:** Draw arrows between each step to show the sequence of the immune response.
7. **Add Details:** Use markers or sticky notes to add any extra labels or explanations to your model.
8. **Review:** Check that your model tells the story from left to right. Make changes if needed.



WHAT EACH PART REPRESENTS



Red Pom-poms = Viruses



Purple Clay = White blood cell (detects the virus)



Green Beads/Balls = Immune cells (attack the virus)



Yellow Pipe Cleaners = Antibodies (attach to viruses)



Blue Clay = Memory cells (remember the virus)



Cardboard/Poster Board = The body



OBSERVATIONS

Describe your model and what each step shows.



THINK & REFLECT

1. Why is it helpful that the immune system remembers viruses?

2. How might this model change if the virus changed shape?

3. What are some real-life ways we can help our immune system stay strong?



CHALLENGE (Optional): Research a specific virus (like the flu or COVID-19). How does the immune system respond to that virus? Add one new detail to your model to show something you learned.