

THE IMMUNE SYSTEM



THE IMMUNE SYSTEM - TEACHER NOTES

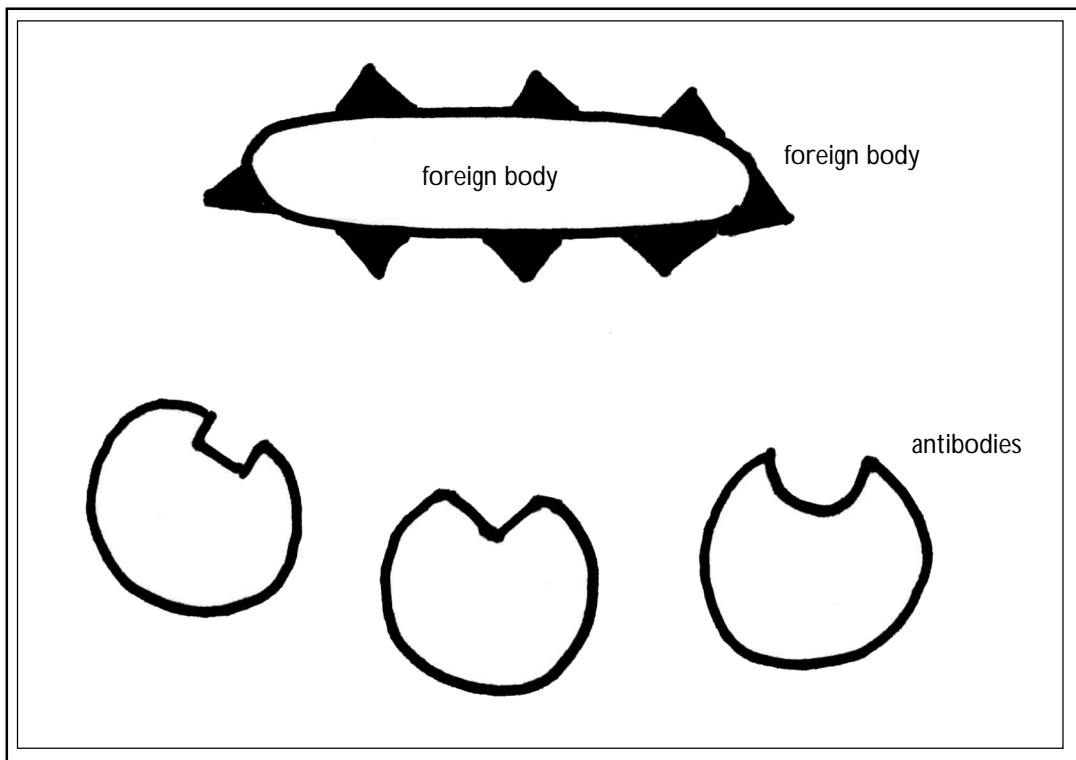
What it does:

- Protects the body from invading organisms
- It keeps detailed records of all the intruders so that it can react rapidly if they reappear

What body parts are involved:

- Bone marrow
- Blood and blood parts: B cells, T cells, antigen, antibody
- Spleen

What it looks like:



How it works:

- The immune system provides the body with specific resistance by defending it against particular invading organisms.
- White blood cells called lymphocytes are able to recognise and attack foreign substances on invading cells. The invader is usually destroyed. The immune system also memorises the invader so that immunity can be developed.
- On the surface of most pathogens (bacteria and viruses), are proteins called antigens. The presence of an antigen triggers the lymphocytes to produce proteins called antibodies. The antibodies lock on to the antigens, and disable the pathogen or identify it so that it can be destroyed by a cell called a phagocyte.
- There are two types of lymphocytes - B cells, and T cells. B cells produce antibodies, and T cells attack invaders directly.

Other facts to know:

- Immunisation, or vaccination, is a way of preparing the body's immune system to fight particular diseases. In immunisation, the body is either given a low dose of the disease so that the body can produce antibodies, or, the body is given antibodies against the pathogen.
- An allergy is an excessive reaction by your immune system in response to an antigen. The immune system attacks the antigen and releases substances called histamines that disrupt your bodies systems.
- AIDS is an abbreviation for Acquired Immune Deficiency Syndrome. It is caused by the virus Human Immunodeficiency Virus. The virus attacks the T cells, reducing the number and making it difficult for the body to defend itself against pathogens. As a result, people with HIV are at risk from infections that the body can normally ward off.
- Lymphocytes and phagocytes are originally formed in the bone marrow but are developed in the spleen.



IMMUNITY ACTIVITIES

Activity Title: Spreading it around

Level: All

Resources Required: Glitter

Specific learning outcome: Children will understand how particles can be spread from one person to the next

Curriculum links: **Health and Physical Education**
Personal growth and development

Science
Living world

Essential Skills
Communication, Information, social and co-operative skills

Description:

- 1 Get one student to dip their hands into a tray of glitter at the front of the classroom
- 2 Have the students line up. Have the student whose hands were dipped in glitter shake hands with the person at the front of the line. Get that person to shake hands with the person next to them, and so on down the line, spreading the glitter from person to person.
- 3 Have the last student in the line show the other children their hands. Discuss how the glitter was passed from person to person and the similarities between this and spreading disease.

