

Learning Intentions

1. To learn the scientific properties of infectious disease.
2. To learn more about one particular infectious disease.

Questions

Use the Internet to find reliable answers to these questions. The BBC website GCSE Bitesize is very helpful, at <http://www.bbc.co.uk/schools/gcsebitesize/science/aqa/keepinghealthy/defendingagainstinfectionrev1.shtml>

1. What is an infectious disease?

Disease caused by an organism
↳ bacteria, viruses, fungi, parasites

2. What is a non-infectious disease? Give 3 examples.

Disease not caused by an infectious organism

- cancer
- diabetes
- heart disease
- Celiac
- cataracts
- osteoporosis

3. What are the differences between viruses and bacteria?

- Bacteria are living cells, can reproduce on their own
- Viruses need a host cell to reproduce. Viruses are a lot smaller than bacteria.

4. List 3 ways that white blood cells can defend the body.

- ingest pathogens and destroy them
- produce antibodies to destroy a particular pathogen
- produce anti-toxins to counteract the pathogen's toxins

5. What is vaccination?

Putting a dead or disabled pathogen into your body to create an immunity.

6. What are the 3 main types of vaccines?

- live, attenuated vaccine → can cause infection
- inactivated vaccine → dead pathogen
- fragments of the pathogen

7. What are the 3 main steps for how antibiotic-resistant strains of bacteria evolve?

- Antibiotics kill the non-resistant pathogens
- Resistant pathogens survive and reproduce
- The resistant pathogen population increases

8. What steps should you take to prevent the development of antibiotic-resistant bacteria?

- Do not use antibiotics for non-serious ~~diseases~~ infections, such as a mild ~~sore~~ throat infection
- Use all the antibiotics you are given, even if the infection appears to be gone

9. Why do we only grow cultures at 25 °C in our school?

Because cultures grown closer to body temperature (37°C) are more likely to be able to infect us

Homework Assignment

You will be assigned an infectious disease from the following list: cholera, mumps, SARS, Viral hemorrhagic fever, gonorrhoea, syphilis, smallpox, influenza, measles, Ebola, rubella, whooping cough, HIV/AIDS, rabies, leprosy, malaria, meningitis, tuberculosis, tetanus, yellow fever, giardiasis, common cold, scabies, plague, cryptosporidiosis, Lyme disease, Hepatitis B, diphtheria, Salmonellosis.

Write a short essay describing the following elements:

- Common and scientific names of the disease
- Cause of the disease
- Geographic location for the disease
- If known, first time the disease was “discovered” or identified
- Symptoms
- Transmission (how the disease spreads)
- How are infected people treated?
- How can infection be prevented?

Everyone must submit their own assignment next class.