

Sets (s): Triple Award students

YEAR 11

SUBJECT Biology LP4

Knowledge Focus: Defence and disease



Ysgol Uwchradd  
Prestatyn  
High School

### This half term : Skills, Knowledge and Understanding to be developed

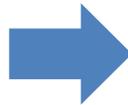
You will be studying how bacteria and viruses cause disease and how bacteria can be grown in the lab to test the efficiency of antibiotics. You will also learn how the immune system can kill pathogens and how vaccination prevents disease.

### Key Terms to be learned this half term:

Nephron, selective reabsorption, urea, ADH, dialysis, bacteria, viruses, fungi, pathogen, antibiotics, aseptic technique, colonies, inoculating loop, incubation, penicillin, phagocytes, lymphocytes, antibodies, antitoxins, antigen, vaccination, immunity, side effects, monoclonal antibodies, hybridoma

#### Week 1 and 2 Learning Objectives etc:

- Describe the role of the kidney in homeostasis, including its structure and how substances are removed from the blood and enter the kidney.
- Describe the role of the hormone ADH in controlling the water content of blood.
- Describe how dialysis can be used to treat people with kidney failure.
- **SPECIFIED PRACTICAL:** Test artificial urine samples for the presence of protein and glucose.
- Know the basic structures of bacteria and viruses. Describe ways that bacteria and viruses can be spread between people.



#### Objective assessments:

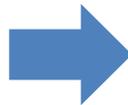
Description of how kidneys and dialysis filter blood.  
Comparison of kidneys with dialysis treatment.

#### Homework:

Complete the key word grid for this topic.

#### Week 3 and 4 Learning Objectives etc:

- Describe how bacteria can be grown safely by using aseptic techniques.
- **SPECIFIED PRACTICAL:** Investigation into the effect of antibiotics on bacterial growth.
- Describe how penicillin can be made by controlling the growth of fungi.
- Describe how drugs are tested to make sure they are safe to use.



APP question on the kidney

#### Objective assessments:

Analysis of data from specified practical.  
Explanation of different aseptic techniques.

#### Homework:

Describe the causes, effects and treatment of HIV/AIDS, chlamydia and malaria.

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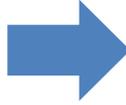
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**Week 5 and 6 Learning Objectives etc:**

- Describe the ways that our body defends itself against disease, including natural barriers and the role of white blood cells.
- Describe how vaccinations protect us from disease.



SA Questions  
on response/  
regulation/  
defence

**Objective assessments:**

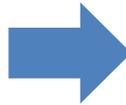
Answers to past exam questions.

**Homework:**

Revise response/regulation and defence against disease topics for a test.

**Week 7 Learning Objectives etc:**

- Know how monoclonal antibodies are produced and how they can be used medically to diagnose and treat disease.



**Objective assessments:**

Answers to past exam questions.

**Homework:**

Revision for external exams.