**4.2 Coronary Heart Disease**

**Key facts**

* Coronary heart disease is the term that describes what happens when your heart's blood supply is blocked or interrupted by a build-up of fatty substances in the coronary arteries. Heart disease kills more people in the UK than any other disease.
* Almost half of heart disease deaths are from **coronary heart disease** (CHD).
* CHD affects the pair of blood vessels – the **coronary arteries**, which supply the heart muscle with the glucose and oxygen that it requires for respiration.

**TASK 1**: Watch GCSE Biology Freescience Lesson on Cardiovscular diseases

**TASK 2**: Watch: <https://www.youtube.com/watch?v=NZ14XjOQoFY>

**TASK 3**: Watch the video and write down:

1. The causes of CHD
2. Different stages of CHD (Draw Diagrams)
3. What happens when the artery becomes blocked

**TASK 4**: Copy and complete following paragraph

***Heart Cholesterol Oxygen Coronary Blood Plaque artery Platelets Clot***

1. Fatty material (\_\_\_\_\_\_\_\_\_) plaques develop over time in the \_\_\_\_\_\_\_\_ arteries
2. Hard outer layer of \_\_\_\_\_\_\_can crack
3. \_\_\_\_\_\_\_\_\_\_ form blood \_\_\_\_\_\_ around the cracks
4. \_\_\_\_\_\_\_\_ narrows even more
5. \_\_\_\_\_\_\_ flow blocked \_\_\_\_\_\_\_\_doesn’t reach the \_\_\_\_\_\_\_ muscle, so the muscle dies

**Task 5**: Suggest how CHD can cause Heart Attack

**4.2 Treatment of Coronary Heart Disease**

**Key facts:**



**TASK 1**: Watch GCSE Biology Freescience Lesson on Cardiovascular diseases

**TASK 2**: Read following information about Statins:

Statins are a group of medicines that can help lower the level of low-density lipoprotein (LDL) cholesterol in the blood. LDL cholesterol is often referred to as "bad cholesterol", and statins reduce the production of it inside the liver. Statins come as tablets that are taken once a day.  In most cases, treatment with statins continues for life, as stopping the medication causes your cholesterol to return to a high level within a few weeks. Statins can sometimes interact with other medicines, increasing the risk of unpleasant side effects, such as muscle damage. Some types of statin can also interact with grapefruit juice. Many people who take statins experience no or very few side effects. Others experience some troublesome – but usually minor – side effects, such as an upset stomach, [headache](http://www.nhs.uk/conditions/Headache/Pages/Introduction.aspx) or feeling sick.

**TASK 3**: Use the words below to outline what statins are

*Reduce, cholesterol, drug, prescribed, slows, fatty deposit*

**TASK 4**: Write down any advantages and disadvantages of statins

**TASK 5**: Use information mat to answer following

Draw three diagrams (or more) to show how stents work.

You could use some of these words in your work:

***Metal mesh, artery, balloon, inflated, deflated, removed, blood flow, general anaesthetic, expensive, surgery risks***

**TASK 6**: What do you understand by the term ‘leaky valves’? What are the symptoms of leaky valves?

**TASK 7**: Leaky valves can be treated by Valve replacement. Summarise the advantages and disadvantages of Biological and Mechanical Valves.

**TASK 8**: Research about Pacemakers. Your research must include following information:

* What is a pacemaker?
* Where are pacemaker cells located in the heart?
* What happens when pacemaker cells are not working effectively?
* What is an artificial pacemaker?
* Discuss advantages and disadvantages of artificial pacemaker

**TASK 9**: Watch this video link on <https://www.youtube.com/watch?v=4hVxNTghQs8>

**TASK 10**: Write as close to 50 words as you can about transplants and artificial hearts

4.2 Cancer

Key facts:

* Cancer is a disease of cells, it’s a result of the cell cycle going wrong and cells dividing out of control.
* A tumour forms when control of the sequence of cell cycle is lost and the cells grow in abnormal and uncontrolled way.
* They divide very rapidly.
* This results in a mass of abnormally growing cells called Tumour

**TASK 1**: Watch Biology Freescience lesson Grade 9-1 on Cancer and make a list of key facts

**TASK 2**: Watch <https://www.youtube.com/watch?v=B5VHRKBI4PY>

**TASK 3**: Answer following questions

1. What is a tumour and how do they form?
2. Name two types of Tumour and describe how are they different
3. Smoking is a risk for a range of disease. Name three
4. A patient with a tumour on the skin of his neck attended a hospital clinic and was told that it was probably due to ultraviolet light exposure. The doctors removed the tumour, but 4 months later they found it had developed in his lungs and liver.
5. Was this Cancer benign or Malignant? How can you tell?
6. What do we call the tumours that develop on his lungs and livers? How do they form?
7. How could he have reduced the risk of developing Cancer?
8. Some genes are linked to Cancer. Give an example of one such gene and Cancer it can cause

**TASK 4**: Cancer can be treated by three methods

* Surgery
* Radiotherapy
* Chemotherapy

Research about Treatments for Cancers, examples, how do they work and any side-effects.

Present your research as a leaflet or on a PowerPoint