Cystic Fibrosis questions

1. Which systems in the body are effected by cystic fibrosis?
   1. **CF affects the respiratory and digestive systems**
2. What are the main symptoms of cystic fibrosis?
   1. **Chest infections, wheezing, persistent coughing, difficulty growing, constipation**
3. Cystic fibrosis is caused by a mutation in which gene?
   1. **cystic fibrosis transmembrane conductance regulator (CFTR)**
4. Explain why it is an example of a recessive disease.
   1. **Because the gene only causes cystic fibrosis if the host is homozygous recessive, so with just one allele of the cf gene, the host will not have the disease, but any children may have the disease as a cause of this.**
5. A person with cystic fibrosis produces thick mucus? Why?
   1. **Because the CFTR gene normally regulates the movement of salt in or out of cells, but a person with CF has a defective CF gene, which causes the salt and water balance In cells to be dysfunctional.**
6. What are the treatments for cystic fibrosis?
   1. **There is no complete treatment currently, but to help with the symptoms of the disease:**
      1. **lung treatments such as antibiotics and and mucus reducing medicine.**
      2. **Frequent exercise.**
      3. **Controlled breathing techniques**
      4. **Dietary control – CF patients need more calories than others as they cannot absorb nutrients as well.**
      5. **Lung transplants in extreme cases.**
7. How are they trying to cure cystic fibrosis?
   1. **Gene transfer techniques are being used to attempt to cure CF. This is where a correct version of the CFTR gene is inserted into cells in a persons body, and these cells would be able to correctly produce the CFTR proteins. The original faulty cells would still exist, but the new cells would duplicate and significantly increase quality of life for the infected.**