

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Questions - How Vaccines Work (by Alia Holt)

1. Vaccines can be used effectively to develop immunity towards viruses, bacteria, or toxins, while antibiotics can only be used for bacteria. Can you suggest a reason for this?
2. What was the first disease where the principles of immunization were employed as a preventative treatment?
3. The word vaccine has a Latin root, what organism was it named for?
4. What features of Cowpox make it a good candidate as a method of immunizations for Smallpox?
5. The Cowpox immunization the Jenner used on the little boy was an example of a live-attenuated, or inactivated vaccine?
6. What are the benefits of a live-attenuated vaccine?
7. What are the benefits of an inactivated vaccine?
8. If immunization with Cowpox virus worked for developing immunity to Smallpox virus, would it work for Chickenpox?

9. When a vaccine is administered its role is to cause an immune response by introducing antigens to the immune system. List the steps involved in the immune response.
  
  
  
  
  
  
  
  
  
  
10. Some special chemicals are added to the vaccine, describe what are they and what they do?
  
  
  
  
  
  
  
  
  
  
11. One of the myths of vaccines is that they contain dangerous chemical additives, name one controversial additive, and suggest why scientist believe the myth is not merited?
  
  
  
  
  
  
  
  
  
  
12. In point form, summarize the process of creating, testing and producing a vaccine in mass quantities.