MEDMYST Mission # 2 - Peril in Prokaryon

1. Where will you go for this mission? ____________________
2. What is the outbreak? ____________________________________________
3. Explore the Germ Theory lesson to answer these questions.
   ______________________ proved that microorganisms were responsible for fermentation.
   ______________________ developed a procedure for determining the specific microbes that cause a disease.
   ______________________ was the first person to treat wounds with dressings soaked in carbolic acid.
4. Explore the Infectious Agents lesson and then try the sorting game. What was your time? ________
5. On which date did the number of diarrhea cases show a dramatic increase? ______________________
6. Complete the jumper cable activity.
7. What is the name of the bacteria that is causing the disease? ________________________________
8. What is the name of the disease caused by these bacteria? ____________________________
9. How is it spread? ________________________________________________________________
10. What was the source of the contamination? ________________________________
11. How did you stop the spread of the disease? ____________________________________________

MEDMYST Mission # 3 - Nemesis in Neuropolis

1. What did you learn from Dr. Xu?
   ________________________________________________________________________________
2. What was stealing information? _________________________________________________
3. True or False? Viruses can only reproduce in a living cell. __________
4. Put these steps in order using 1st, 2nd, 3rd, & 4th. __ Entry __ Release __ Docking __ Replication
5. Search Jeremy's room for 5 clues and then send the message to Alpha.
6. What disease does Jeremy have? ________________________________
7. What disease could make someone immune to smallpox? ______
8. Follow the directions to make a smallpox vaccine.
9. Who developed the smallpox vaccine? ________________________________
10. Follow the directions to make a smallpox vaccine.
11. How did you stop the spread of the disease? ____________________________________________
MEDMYST Mission # 4 - Malady at Mabufo

1. Draw a line to match each vector with its associated disease.

   Anopheles Mosquito ♦
   Rat Flea ♦
   Body Louse ♦
   Deer Tick ♦
   Culex Mosquito ♦
   Tsetse Fly ♦

   ♦ Lyme Disease
   ♦ Malaria
   ♦ Plague
   ♦ Sleeping Sickness
   ♦ Typhus
   ♦ West Nile Virus

2. What type of animals are usually vectors? __________________________________________

3. How many people die from malaria each year? __________________________

4. What did Laveran notice in the blood of malaria infected soldiers? __________________________

5. What did Manson discover? ______________________________________

6. Help Dr. Ross complete the experiment.

7. What did you use to help the people in Tswana? __________________________

8. What is the best weapon against malaria? __________________________

9. True or False? Male and female adults can bite. ________

10. Complete the activity to protect the village from malaria.

11. What term refers to malaria parasites? __________________________

12. What organ do they invade? __________________________

13. What type of blood cells make antibodies? __________________________

14. What type of cell gets rid of the invaders? __________________________

15. What are the symptoms of malaria? __________________________

Want extra credit?
Complete one of Missions 5 & 6 in the MedMyst set. Ask your teacher for a worksheet!
Name: ________________________________

**Location 1: NCDC Headquarters**
1. _________ are diseases that can be passed from animals to humans.
2. List the type of pathogen that causes each disease.
   a. Rabies - __________________________ c. Mad Cow __________________________
   b. Ringworm - ________________________ d. Anthrax - __________________________
3. List two of the causes for the increasing number of zoonotic diseases.
   1 - _________________________________ 2 - _________________________________

**Location 2: BioDefense Research Facility**
4. List the four "Category A" pathogens that are zoonotic. __________________________

5. Identify the area(s) of the body that are affected by each type of anthrax.
   a. Cutaneous Anthrax - ________________ c. Pulmonary Anthrax - ________________
   b. Gastrointestinal Anthrax- ________________

**Location 3: Neuropolis University**
6. After handling any animal, including your pets, you should always ________________.
7. True or False: You can catch a zoonotic disease from unwashed vegetables.

**Location 4: Biosafety Level 4 Lab**
8. Why do researchers tape their gloves and socks to their BSL4 coveralls? ________________

**Location 5: Farm**
9. What did the Japanese use to spread plague infected fleas over China before World War II? ________________
10. From where did the terrorist get the anthrax bacteria? ____________________________

Done? Turn in to the bin for your class.
MEDMYST EXTRA CREDIT
Mission #6 - Disease Defenders

Name: ________________________________

Part 1: Microbiology Training
1. A scientist who specializes in investigating pathogens in a laboratory is a ___________________________.
2. What is step 1 of formulating a hypothesis? ___________________________________________________
3. What is step 2 of formulating a hypothesis? ___________________________________________________
4. What is step 3 of formulating a hypothesis? ___________________________________________________
5. What independent variable is being tested? ___________________________________________________
6. What is the dependent variable? _____________________________________________________________
7. Why do you have to put on PPE before filtering the rabies fluid? _________________________________

Part 2: Veterinary Medicine Training
1. What is studied in the necropsy suite? _______________________________________________________
2. What is the vet’s hypothesis? _______________________________________________________________
3. Which brain tissue sample serves as the positive control sample? _______________________________
4. Which brain tissue sample serves as the negative control sample? _______________________________
5. Which two brain tissue samples look very similar after staining? _____ & _____
6. Was the vet’s hypothesis supported or rejected by the results? _______________________________
7. The brain tissue staining confirmed that ____________________________________________________

Part 3: Epidemiology Training
1. A scientist who specializes in tracking outbreaks of disease is in the field of _________________.
2. What exposure and outcome are being investigated? ___________________________________________
3. Who are the cases in the outbreak simulation? _____________________________________________
4. Who are the controls in the outbreak simulation? ___________________________________________
5. What animal is hypothesized to be the source of the rabies? ________________________________
6. You analyze the results of the questionnaire by putting them into a ____________________________
7. The exposure odds ratio measures if there is an association between the _______________ and the _______________.

Done? Turn in to the bin for your class.