Name:_____ Class: _____ Date: _____

Tracking Down Diseases

Learner Outcomes:

- Interpret healthy functions of the human body systems and illustrate ways the body reacts to internal and external stimuli.

Key Terms:

Disease	Infection	Immunity
Smallpox	Pasteurization	
Contagious	Vaccination	

Background Information: Long before modern medicine, people realized that certain diseases were spread from person to person. It was important to find the source and isolate the infected person or persons until the disease had run its course.
One of our students has come in contact with a disease! To demonstrate this, his/her clear solution has been infected with NaOH solution. ****NaOH is corrosive. Please be extremely careful in handling the solutions and moving around the room!****

Research Question: How does disease spread from only one infected person?

Materials:

Paper cups	Phenolphthalein	Sodium Hydroxide
Glove	indicator solution	solution
	Eyedropper	

Procedure:

1. Write your name on the paper cup your teacher gives to you.
2. Using an eyedropper, put one dropper full of your solution into the cup of another student.
3. Have the student put one dropper into your cup.

This investigation / activity has been adapted from:
Mah K, Martha J, McClelland L, et al. *Science in Action 9.* Toronto, ON: Addison Wesley.

4. Repeat steps 2 and 3 with five other students in your class. Randomly choose students you would normally talk to or interact with on any normal day.
5. Once you have shared with 5 students, add a few drops of Phenolthalein solution to your cup and record your observations.

Observations:

Were you infected?

How did you know who was infected and who wasn't?

Who you shared solutions with	Who was infected	Where did the infection start?

Number of infected students in your class: _____
Number of un-infected students in your class: _____

Analysis:

1. How many students in your class became "infected" with the disease?

2. Did you have any way of knowing who was infected? Why or why not?

3. Why did adding the phenolphthalein after all of the exchanges occur simulate a real disease

This investigation / activity has been adapted from:
Mah K, Martha J, McClelland L, et al. *Science in Action 9.* Toronto, ON: Addison Wesley.

4. How could we have known earlier who had the disease?

5. How could you have avoided getting the disease?

6. In this simulation we spread disease by transferring fluids (saliva) from one person to another by using an eyedropper. In everyday life, how might we knowingly or unknowingly transfer saliva (and a disease) to someone else?

7. There are many other ways diseases can be spread. Identify 5 others?

Conclusion: Could you track who had the disease to begin with? How?

This investigation / activity has been adapted from:
Mah K, Martha J, McClelland L, et al. *Science in Action 9.* Toronto, ON: Addison Wesley.

Extension:

Research one major disease epidemic that has occurred in human history and find out:

- What the disease was
- How it spread
- What the symptoms were
- How the disease could be treated once a person was infected
- How the disease could be prevented
- Any other interesting facts!

This investigation / activity has been adapted from:
Mah K, Martha J, McClelland L, et al. *Science in Action 9.* Toronto, ON: Addison Wesley.