

APPENDIX A: Overview of the Unit

Fourth Grade Teacher Survey

Please rate the following using a 5 point scale.

1 = very uncomfortable/needing more training/knowledge in this area

2 = somewhat uncomfortable/needing further information in this area

3 = neutral (neither uncomfortable or comfortable)

4 = somewhat comfortable/knowledgeable

5 = very comfortable/extremely competent and knowledgeable

How would you rate *your* basic scientific background knowledge in the following health areas?

1. What are infectious diseases? (Definition, types, causes, cures)

1 2 3 4 5

2. What are bacteria? (Definition, categories, examples, "good" bacteria vs. "bad bacteria")

1 2 3 4 5

3. What are fungi? (Definition, examples of fungi: "good" vs. "bad" fungi)

1 2 3 4 5

4. What are viruses? (Definition, examples of viruses: "good" vs. "bad", including HIV/AIDS)

1 2 3 4 5

5. What are three ways that students can prevent infectious diseases?

1 2 3 4 5

How would you rate *your* level of comfort in teaching the following concepts?

6. Infectious Diseases (Definition, types, causes, treatment)

1 2 3 4 5

7. Bacteria (Definition, categories, examples: "good" bacteria vs. "bad bacteria")

1 2 3 4 5

8. Fungi (Definition, examples of fungi: "good" vs. "bad" fungi)

1 2 3 4 5

9. Viruses (Definition, examples of viruses: "good" vs. "bad", including HIV/AIDS)

1 2 3 4 5

10. Prevention of Infectious Diseases

1 2 3 4 5

Activity List

Fourth Grade Infectious Disease and Prevention Unit

Goal: The student will have a basic understanding of what infectious diseases are, how they are spread, and what they can do to prevent them.

Objective 1: The student will be able to explain/define infectious disease.

- A. Brainstorm ideas to define an infectious disease
- B. TWL Chart of Infectious Disease
- C. “Glitter” experiment (spread of infectious diseases)
- D. Infectious Disease vocabulary
- E. “Find My Buddy” game (introduction to different diseases)
- F. Definitions of infectious disease (student quiz)

Objective 2: The student will be able to label and identify the main types of infectious disease causing agents, describe their properties, and give examples of them.

- A. Class discussion of what a microbe is
- B. List 3 types of microbes
- C. Microbe Informational Sheet
- D. Discuss “Good” microbes and do “Most Wanted Microbe” posters
- E. Students do bacteria, fungi, virus “Fill in the Blank” assignment
- F. Marvelous Microbe Activities (teaching extensions)
- G. Infectious Disease Glossary

Objective 3: The students will be able to identify one or more infectious diseases and their cause(s). The students will be able to list at least 3 ways that infectious diseases can be prevented.

- A. “The Disease Detective Series”
 - a. The six suspects
 - b. The four cases to solve
 - c. Extra credit vocabulary
- B. “The Spreading of Colds and Flu” (demonstration)
- C. “HIV Spread Through Blood” (demonstration)
- D. “Wet-Wipe Clean Up” (experiment)
- E. “Not So Life Saving” (experiment)
- F. Student Infectious Disease Prevention
- G. Incredible Infectious Disease Activities

Teacher Directions for the Pre-test and the Post-test on
Infectious Disease

1. After the tests are passed out tell the students to write or print their name in the upper right hand corner and then put their pencil down.
2. Have the students circle the word **girl** if the student is a girl or the word **boy** if the student is a boy. Then have them put their pencil down.
3. Please read the following directions to the students:

“ Today we are going to take a pre-test to find out how much you know about Infectious Disease BEFORE we begin to study this unit. This test will NOT be graded. It is a test that will tell me what you know, or think you know about infectious disease.

It is VERY important that you do not answer a question unless you know the answer or are quite sure that you know the answer. If you do NOT know the answer, circle “I don’t know”.

For example: If the question would be:

What color is Clifford the Red Dog?

- a. Blue
- b. Red
- c. Yellow
- d. White
- e. I don’t know

What would you choose? (Call on student). Yes, b is correct. You KNEW what color Clifford was.

Now, how about if I asked you this question:

What color is my stuffed dog that I have at home?

- a. Blue
- b. Red
- c. Yellow
- d. White
- e. I don’t know

What would you choose?” (Call on student ... if the student replies either a, b, c, or d ... tell them “no”. Explain that they do NOT KNOW what color your stuffed dog is. If the student said that they would circle “I don’t know” tell them **“Good job – that is correct – if you DO NOT KNOW the answer, circle I don’t know.”** Make sure that the students understand that if they do NOT know the answer, they should circle “I don’t know”. If they know the answer or think that they know the answer, then they should answer it.)

“I am going to read the test out loud to you. If you do not know all of the words, that is O.K. I cannot tell you the definitions. Just do your best. Remember, you will ONLY circle the answer if you know the answer or think you know the answer. Remember if you do NOT know the answer, circle “I don’t know”. Do NOT GUESS! This test will not be graded. I will only use it to see what you know or what you do not know about infectious diseases.”

Then read the test to the students. Allow adequate time for them to answer each question. Collect the papers when they are finished. Make sure that each student has their name on their test, as we will be comparing the scores of their pre- and post-tests.

Additional Reference Materials

1. *Where Do Diseases Come From?* (Grades 2-3) **Weekly Reader: Daily Reader Skills**, 2005.
2. *HIV/AIDS Need-to-Know Guide?* (Grades 4-6) **Weekly Reader: Daily Reader Skills**, 2005.
3. *Getting the Facts About HIV/AIDS?* (Grades 7-9) **Weekly Reader: Daily Reader Skills**, 2005.
4. *Blood*, **Kids Discover**, 2005.
5. *The Value of Believing in Yourself: The Story of Louis Pasteur*, The ValueTale Series, Spence Johnson M.D., 1979.

APPENDIX B: Materials Needed

Materials List

Fourth Grade Infectious Disease and Prevention Unit

Goal: The student will have a basic understanding of what infectious diseases are, how they are spread, and what they can do to prevent them.

Objective 1: The student will be able to explain/define an infectious disease.

Brainstorm ideas to define an infectious disease - blackboard or chart paper

TWL Chart of Infectious Disease – chart paper

“Glitter” experiment (spread of infectious diseases)- five different colors of glitter (gold, silver, red, green, and blue)

Infectious Disease vocabulary – (packet)

“Find My Buddy” game (introduction to different diseases) – laminated CDC photos and description cards

Definitions of infectious disease (student quiz) – (packet)

Objective 2: The student will be able to label and identify the main types of infectious disease causing agents, describe their properties, and give examples of them.

H. Class discussion of what a microbe is – Teacher resource sheets and packet

I. List 3 types of microbes – (packet)

J. Microbe Informational Sheet – ball, baseball bat, slinky or a spiral telephone cord, packet

K. Discuss “Good” microbes and do “Most Wanted Microbe” posters – laminated examples of “Most Wanted Microbe” posters and packet

L. Students do bacteria, fungi, virus “Fill in the Blank” assignment – (packet)

M. Marvelous Microbe Activities (teaching extensions) – (packet)

N. Infectious Disease Glossary – (packet)

Objective 3: The students will be able to identify one or more infectious diseases and their cause(s). The students will be able to list at least 3 ways that infectious diseases can be prevented.

H. “The Disease Detective Series” - (packet)

a. The six suspects

b. The four cases to solve

c. Extra credit vocabulary

I. “The Spreading of Colds and Flu” (demonstration)- blackboard, spray bottle with water

J. “HIV Spread Through Blood” (demonstration) – vegetable oil, green food coloring, 3 clear glasses, one eyedropper

- K. “Wet-Wipe Clean Up” (experiment) – enough wet-wipes so that each student can have one
- L. “Not So Life Saving” (experiment) – one envelope per student in your class, white and colored lifesavers... check the experiment to see how many are needed for your class size
- M. Student Infectious Disease Prevention – (packet)
- N. Incredible Infectious Disease Activities – (packet)

Name _____

Infectious Disease and Prevention Pre-Test

Circle **ONE** answer choice to make the sentence correct. If you do not know the answer, do not circle any of the answer choices.

1. Bacteria shaped like little balls are called:
 - a. Cocci
 - b. Spheres
 - c. Bacilli
 - d. Spirochetes
 - e. I don't know

2. Which one of the following is NOT a microbe?
 - a. Virus
 - b. Fungi
 - c. Antibiotic
 - d. Bacteria
 - e. I don't know

3. Which one of the following is NOT an infectious disease?
 - a. Cancer
 - b. Influenza
 - c. Lyme disease
 - d. Strep Throat
 - e. I don't know

4. A _____ cannot survive without a host.
 - a. Antibiotic
 - b. Virus
 - c. Sphere
 - d. Vaccine
 - e. I don't know

5. Rod or stick-shaped bacteria are called:
 - a. Bacilli
 - b. Cocci
 - c. Vaccine
 - d. Spirochete
 - e. I don't know

6. A _____ can prevent you from getting a disease.
 - a. Virus
 - b. Pathogen
 - c. Spirochete
 - d. Vaccine
 - e. I don't know

7. Influenza is caused by a:
- a. Virus
 - b. Bacteria
 - c. Fungi
 - d. Vaccination
 - e. I don't know
8. A disease-causing agent is a:
- a. Inoculation
 - b. Vaccine
 - c. Antibiotic
 - d. Pathogen
 - e. I don't know
9. A _____ helps us to prevent and/or treat infectious disease.
- a. Doctor
 - b. Scientist
 - c. Public Health Worker
 - d. All of the above
 - e. I don't know
10. HIV/AIDS can be spread by:
- a. Bacteria
 - b. Sneezing
 - c. Blood
 - d. Holding hands
 - e. I don't know

SHORT ANSWER. Answer the following questions using good, complete, scientific answers. Be neat and do your best.

1. List one type of bacteria that is **good** or **useful** or **helpful** to us. Carefully and clearly explain WHY it is useful to us.

2. List one type of bacteria that is **harmful** to us. Carefully and clearly explain WHY it is **harmful** to us.

3. List one virus that is **harmful** to us. Carefully and clearly explain WHY it is **harmful** to us.

4. List four ways you can **prevent** the spread of infectious diseases (be specific).

- 1. _____
- 2. _____
- 3. _____

Infectious Disease and Prevention Post-Test

Circle **ONE** answer choice to make the sentence correct. If you do not know the answer, do not circle any of the answer choices.

11. Bacteria shaped like little balls are called:
 - a. Cocci
 - b. Spheres
 - c. Bacilli
 - d. Spirochetes
 - e. I don't know

12. Which one of the following is NOT a microbe?
 - a. Virus
 - b. Fungi
 - c. Antibiotic
 - d. Bacteria
 - e. I don't know

13. Which one of the following is NOT an infectious disease?
 - a. Cancer
 - b. Influenza
 - c. Lyme disease
 - d. Strep Throat
 - e. I don't know

14. A _____ cannot survive without a host.
 - a. Antibiotic
 - b. Virus
 - c. Sphere
 - d. Vaccine
 - e. I don't know

15. Rod or stick-shaped bacteria are called:
 - a. Bacilli
 - b. Cocci
 - c. Vaccine
 - d. Spirochete
 - e. I don't know

16. A _____ can prevent you from getting a disease.
 - a. Virus
 - b. Pathogen
 - c. Spirochete
 - d. Vaccine
 - e. I don't know

17. Influenza is caused by a:

- a. Virus
- b. Bacteria
- c. Fungi
- d. Vaccination
- e. I don't know

18. A disease-causing agent is a:

- a. Inoculation
- b. Vaccine
- c. Antibiotic
- d. Pathogen
- e. I don't know

19. A _____ helps us to prevent and/or treat infectious disease.

- a. Doctor
- b. Scientist
- c. Public Health Worker
- d. All of the above
- e. I don't know

20. HIV/AIDS can be spread by:

- a. Bacteria
- b. Sneezing
- c. Blood
- d. Holding hands
- e. I don't know

SHORT ANSWER. Answer the following questions using good, complete, scientific answers. Be neat and do your best.

1. List one type of bacteria that is **good** or **useful** or **helpful** to us. Carefully and clearly explain WHY it is useful to us.

2. List one type of bacteria that is **harmful** to us. Carefully and clearly explain WHY it is **harmful** to us.

3. List one virus that is **harmful** to us. Carefully and clearly explain WHY it is **harmful** to us.

4. List four ways you can **prevent** the spread of infectious diseases (be specific).

- 1. _____
- 2. _____
- 3. _____

Infectious Disease and Prevention Pre/Post Test Answers

Circle **ONE** answer choice to make the sentence correct. If you do not know the answer, do not circle any of the answer choices.

21. Bacteria shaped like little balls are called:
- a. **Cocci**
 - b. Spheres
 - c. Bacilli
 - d. Spirochetes
 - e. I don't know
22. Which one of the following is NOT a microbe?
- a. Virus
 - b. Fungi
 - c. **Antibiotic**
 - d. Bacteria
 - e. I don't know
23. Which one of the following is NOT an infectious disease?
- a. **Cancer**
 - b. Influenza
 - c. Lyme disease
 - d. Strep Throat
 - e. I don't know
24. A _____ cannot survive without a host.
- a. Antibiotic
 - b. **Virus**
 - c. Sphere
 - d. Vaccine
 - e. I don't know
25. Rod or stick-shaped bacteria are called:
- a. **Bacilli**
 - b. Cocci
 - c. Vaccine
 - d. Spirochete
 - e. I don't know
26. A _____ can prevent you from getting a disease.
- a. Virus
 - b. Pathogen
 - c. Spirochete
 - d. **Vaccine**
 - e. I don't know

27. Influenza is caused by a:

- a. **Virus**
- b. Bacteria
- c. Fungi
- d. Vaccination
- e. I don't know

28. A disease-causing agent is a:

- a. Inoculation
- b. Vaccine
- c. Antibiotic
- d. **Pathogen**
- e. I don't know

29. A _____ helps us to prevent and/or treat infectious disease.

- a. Doctor
- b. Scientist
- c. Public Health Worker
- d. **All of the above**
- e. I don't know

30. HIV/AIDS can be spread by:

- a. Bacteria
- b. Sneezing
- c. **Blood**
- d. Holding hands
- e. I don't know

SHORT ANSWER. Answer the following questions using good, complete, scientific answers. Be neat and do your best.

1. List one type of bacteria that is **good** or **useful** or **helpful** to us. Carefully and clearly explain WHY it is useful to us.

See additional resources in Appendix E

2. List one type of bacteria that is **harmful** to us. Carefully and clearly explain WHY it is **harmful** to us.

See additional resources in Appendix E

3. List one virus that is **harmful** to us. Carefully and clearly explain WHY it is **harmful** to us.

See additional resources in Appendix E

4. List four ways you can **prevent** the spread of infectious diseases (be specific).

1. See additional resources in Appendix E

2. _____

3. _____

TEACHER EVALUATION OF THE INFECTIOUS DISEASE AND PREVENTION UNIT

Use the scale of 1 to 5 to answer these questions.

1 = very confusing, not usable

2 = somewhat confusing, minimally usable

3 = clear and of some use

4 = very clear and of good use

5 = extremely clear and very usable

Please evaluate the following questions from the “teacher’s point of view” with consideration for this unit’s delivery to your students.

1. The overall format of this unit in sections in its notebook layout

1 2 3 4 5

Comments:

2. Part 1: Outline of the Unit (overview of it)

1 2 3 4 5

Comments:

3. Part 2: Materials Section of the Unit (what you needed to get to teach the unit)

1 2 3 4 5

Comments:

4. Part 3: Student Packet (Completeness)

1 2 3 4 5

Comments:

5. Part 4: Teacher Packet (Completeness, ease of use)

1 2 3 4 5

Comments:

6. Part 5: Teacher Informational Background (Additional helpful scientific information that you may possibly use)

1 2 3 4 5

Comments:

7. Part 6: Additional Suggested Resource List

1 2 3 4 5

Comments:

8. Part 7: Student Pretest (Format, information gained about their pre-existing knowledge)

1 2 3 4 5

Comments:

9. Part 7: Student Post-test (Format, assessment of their knowledge gained from the unit)

1 2 3 4 5

Comments:

10. The over-all effectiveness of the information in this unit (The usefulness of this unit in meeting the goal of the unit)

1 2 3 4 5

Comments:

Please consider the following questions according to how well you thought the STUDENTS were able to learn from this packet. Evaluate using the 5 point scale.

11. The clearness of the information presented

1 2 3 4 5

Comments:

12. The amount of information presented

1 2 3 4 5

Comments:

13. The demonstrations in this unit

1 2 3 4 5

Comments:

14. The experiments in this unit

1 2 3 4 5

Comments:

15. The organization of the packet to help facilitate student learning

1 2 3 4 5

Comments:

16. The variety of activities to help address different learning styles

1 2 3 4 5

Comments:

17. The reflection of the hierarchy of thinking skill levels (Bloom's taxonomy)

1 2 3 4 5

Comments:

18. The addressing of student's individual needs (special needs, gifted students)

1 2 3 4 5

Comments:

19. The flexibility to allow some student choice and learning extensions

1 2 3 4 5

Comments:

20. The “fun/excitement/enjoyment factor” of learning

1 2 3 4 5

Comments: