

Infection – Animal Helpers© Version

Game Plans® for Game Day

Suggested time allotted for activity: 45 minutes (Friday afternoons work well)

Introduction to the Game

Infection – Animal Helpers© Version is an educational board game with the potential for teaching students about various diseases, disease transmission, types of remedies, the healthcare system, and the “animal helpers” used in research to help cure various illnesses and diseases. **Infection's** disease cards are color coded to indicate the degree of seriousness (from red being the most serious followed by white and then blue). Each card includes the disease's common and Latin names, causes, symptoms, and treatments. Multiple medical libraries and medical professionals have been consulted to insure the accuracy of the information. The object of the game is for players to cure themselves of their diseases before they “die.”

Prior to introducing the game to your class for the first time, have your students complete and turn in the accompanying “Pre-Game Questionnaire.” This test will help determine what level of basic understanding the students have about some of the concepts that will be covered in the three Game Plans. At the completion of each of the three Game Plans, please have your students complete the “Post-Game Questionnaire.” Also, please complete the Teacher Evaluation we have provided and give all of the forms to the Game Leader at the end of the last Game Day.

How to Play the Game in Class

First, divide your class into groups of five or six players. It is preferable to have each team at a different table or in separate small circles on the floor. One game is given to each team. For each team, assign one person to be the “rules reader” throughout the game. The students will learn as they play the game and follow the instructions for each square on the board.

Unlike in recreational game playing, money is not used in the classroom setting. This expedites play and learning time. Instead of buying a Cure card, the rules should be revised such that each player gets to pick a Cure card at each turn. The player is required to choose which of the four Cures he or she wants PRIOR to picking the card from the deck, e.g., “I want the Voodoo Doctor,” etc. In addition, instead of only getting to select an Animal Helper “wild card” after rolling doubles, each player will draw one of these cards at the beginning of every turn. These wild cards can be kept until they are used during the game. *You will have to inform your class of these rules revisions, as they are NOT indicated in the rules that accompany your games.*

Preparation for Game Day

Either on or prior to Game Day, you will need to do some “pre-game” preparation depending upon the Game Plan that will be used. Please refer to the individual Game Plans in this **Playbook** for instructions and materials. The five Game Plans that are covered include 1) Contagious Respiratory Diseases; 2) Allergies; and 3) Oral Health 4) Vaccines and 5) Nutritional Deficiencies and Food Safety.

On Game Day

Tell your class that there will be a “trivia game” at the end of each playing session. The students should be given clues at the beginning of the game indicating what questions will be asked so that they can look for the answers while playing the game. You and the Game Leader should circulate during the game and point out various clues to the students to help with the process. Small prizes will be awarded to each player answering the trivia questions correctly. These prizes include sugar-free candies and gum, ribbons and stickers. Students are required to put their answers to the trivia questions in WRITING ONLY. This strategy rewards each student getting the correct answer(s) and avoids screaming out answers.

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Game Plan #1: Contagious Respiratory Diseases

Since there are no BioSTARS newsletters on this topic (see Game Plans #2 and #3), it is desirable to have some up-to-date information about a contagious respiratory disease that may be “in the news.” Since it has been so prominent in the news, we have chosen SARS. Either on Game Day or a day prior to play, introduce the following basic terms about the disease and its classification. Since the game has many “contagious” diseases this is a key concept for the students to learn. Contagious can be simply defined as a disease that can be caught from someone else. With contagious *respiratory* diseases, such as SARS, the disease affects the lungs and a person’s ability to breathe. You can catch these diseases by coming in contact with an infected person’s bodily fluids like saliva or nasal mucus. The germs in these bodily fluids can enter through your nose or mouth. Most often, people catch contagious diseases by touching something or someone and not washing their hands. **THIS IS THE MOST IMPORTANT THING TO GET ACROSS TO STUDENTS – GOOD AND FREQUENT HANDWASHING WITH SOAP!**

The next term to define is “acute.” Acute means that a symptom or disease comes on quickly and can also go away relatively quickly. This is the opposite of something that is “chronic” or long lasting in duration. It does not mean that an acute disease is less severe or life threatening than a chronic disease.

INTRODUCE FACTS ABOUT SARS (from www.CDC.gov)

SARS stands for Severe Acute Respiratory Syndrome (SARS). It is a respiratory illness that has recently been reported in Asia, North America, and Europe.

Symptoms of SARS:

In general, SARS begins with a fever greater than 100.4°F [$>38.0^{\circ}\text{C}$]. Other symptoms may include headache, an overall feeling of discomfort, and body aches. Some people also experience mild respiratory symptoms. After 2 to 7 days, SARS patients may develop a dry cough and have trouble breathing.

How SARS spreads:

The primary way that SARS appears to spread is by close person-to-person contact.

Possible cause of SARS:

Scientists at CDC and other laboratories have detected a previously unrecognized coronavirus in patients with SARS. The new coronavirus is the leading hypothesis for the cause of SARS. “Monkey helpers” assisted researchers in gaining valuable information on what virus causes this disease.

1. Inform your students that there are four (4) contagious respiratory diseases in the game. One of the trivia questions is to name at least one of these.

Answer: Consumption (Tuberculosis), Pneumonia, Whooping Cough, and Common Cold

2. Two Animal Helpers are specifically identified as having assisted with a cure for one of the contagious respiratory diseases. One of the trivia questions is to name at least one of these.

Answer: Rabbits (whooping cough) and Rodents (pneumonia)

Additional trivia questions:

3. What does SARS stand for?

Answer: Severe Acute Respiratory Syndrome

4. How can you catch a contagious disease?

Answer: By coming in contact with a bodily fluid from an infected person.

5. What is the most important thing to do in order to avoid catching a contagious disease?

Answer: Wash your hands with soap.

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Game Plan #2 - Allergies

The following Game Plan focuses on a topic available in the BioSTARS newsletter series. You should have received a hard copy of these free newsletters for each of your students prior to Game Day. Accompanying the newsletters were Teaching Notes to use when introducing this topic to your class. If you did not receive the newsletters, they are available at www.osera.org/ed_mat/AllergyB.pdf. The Teaching Notes are also available at www.osera.org/ed_mat/AllergiesTN.pdf.

You should try to introduce the newsletter/topic the day of or before Game Day. Per the BioSTARS definition, “An allergy is a misdirected immune system reaction to things that are harmless for most people” (page 3). For the Allergies topic, the Game Plan focuses on two main questions:

- 1) What causes allergies?
 - 2) What are the body's responses to allergies?
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1. Inform your students that two (2) cards in the game are known allergens (something that can cause an allergic response in a sensitive individual). One of the trivia questions is to name at least one of these.

Answer: Hay Fever (another name for “seasonal plant allergies” and Poison Oak

2. Two (2) cards found in the game are bodily responses to skin contact allergies. One of the trivia questions will be to name at least one of these.

Answer: Skin Rashes and Hives

Additional Trivia Questions

3. How can you catch a skin contact allergy?

Answer: touching an allergen

4. Two (2) animals have helped researchers identify allergens and some useful treatments. Name at least one of these two animals (from the BioSTARS)

Answer: Mouse (Local Lymph Node Assay (LLNA) test indicated by white cell swelling in the ear; replaced skin response tests) and Guinea Pig (early research with subjective skin response)

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Game Plan #3 – Oral Health

The following Game Plan focuses on a topic available in the BioSTARS newsletter series. You should have received a hard copy of these free newsletters for each of your students prior to Game Day. Accompanying the newsletters were Teaching Notes to use when introducing this topic to your class. If you did not receive the newsletters, they are available at www.osera.org/ed_mat/MouthB.pdf. The Teaching Notes are also available at www.osera.org/ed_mat/mouthtn.pdf.

You should try to introduce the newsletter/topic the day of or before Game Day. Oral health can be defined as including teeth, gums, tongue, mouth and lips. For the Oral Health topic, the Game Plan focuses on two main questions:

- 1) What are the diseases associated with the oral cavity?
 - 2) What can promote good oral health?
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1. Five (5) cards in the game are problems/diseases related to oral health. One of the trivia questions is to name at least one of these.

Answer: Cold Sores, Trench Mouth, Periodontal Disease, Bad Breath, and Gingivitis

2. Two (2) cards found in the game are diseases of the gums. One of the trivia questions will be to name at least one of these.

Answer: Periodontal Disease and Gingivitis

Additional Trivia Questions

3. What things can you do to care for your mouth?

Answer: brush teeth after eating, floss your teeth, use mouth rinse, and visit the dentist every six months

4. What animal group has participated in helping researchers find a cure for oral cancer? (from the BioSTARS)

Answer: Hamsters (also acceptable is the answer “Rodents,” which is found in the game)

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Game Plan #4 – Vaccines

The following Game Plan focuses on a topic not available in the BioSTARS newsletter series. Thus, additional background information has been included in this **Playbook** for your Pre-Game Day review with your students. Please copy any or all of this material to distribute to your class. Discuss that “vaccination” and “immunization” mean the same thing. All children are required to be immunized against certain diseases prior to entering school. This protects them and other children from catching and spreading diseases. For the Vaccine topic, the Game Plan focuses on three main questions for the trivia game:

1) What is a “vaccine?”

Answer: “A vaccine is nothing more than a cram course for the immune system, teaching it how to recognize and fight off . . . hostile microbes (germs).”

2) What are the diseases in the game that can be prevented by the use of a vaccine?

Answer: Rocky Mountain Spotted Fever, Cholera, Small Pox, Yellow Fever, Lockjaw, Polio, Rabies, Black Death, German Measles (Rubella), Mumps, Whooping Cough (Pertussis), Flu

3) What animal helpers have helped in finding vaccines for diseases?

Answer: Dog, Cow, Ferret, Rodents, Monkey, Horse, Rabbit

Additional Trivia Questions

4) What disease is the first example where an animal served as a model for a human vaccine?

Answer: Rabies

5) What vaccine did Ohioan Albert Sabin develop?

Answer: Oral Polio vaccine

Infection – Animal Helpers© Version **Game Plan #5 – Nutritional Deficiencies and Food Safety**

The following Game Plan focuses on a topic not available in the BioSTARS newsletter series. Thus, additional background information has been included in this **Playbook** for your Pre-Game Day review with your students. Please copy any or all of this material to distribute to your class. Discuss that the food borne diseases AND nutritional deficiencies identified in this game are 100% preventable! This is unlike many of the diseases we have learned about in the game. For the Nutritional Deficiencies and Food Safety topic, the Game Plan focuses on three main questions for the trivia game:

1) What are the signs and symptoms of a food-related illness?

Answer: Nausea and diarrhea, fever, dehydration and blood in the stool

2) What can you do to prevent getting a food borne disease?

Answer: Keep cold foods cold and Keep hot foods hot, Wash hands before eating or preparing foods, Avoid cross contamination of food – for instance, don't cut vegetables on same cutting board as raw chicken, Exercise caution when eating out – use the “nose” test to make sure your food smells fresh and not spoiled

3) What can you do to help prevent diseases like Rickets and Scurvy?

Answer: Eat foods with lots of Vitamin D and C

Additional trivia questions:

4) Name the four diseases in the game that deal with food safety?

Answer: Cholera, Food Poisoning, Tape Worm and Trichinosis

5) Name the two diseases in the game that deal with a nutritional deficiency?

Answer: Rickets (Vitamin D) and Scurvy (Vitamin C)

6) Name the animal helpers in the game that have assisted with research on Rickets and Scurvy? Cow and Dogs (Rickets), Guinea Pig (Scurvy)