**Career Readiness Skill: Technical Skills / Hand Washing**

**Health Science**

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| **Module Title/Topic:** Technical Skills / What’s that on your hands? |
| **Overview/Annotation:** In this lesson, you will evaluate the process of pathogen transmission and growth. You will understand the importance of effective hand washing to you, your patients, and your healthcare facility. You will practice and demonstrate the correct technique for effective hand washing. |
| **Essential Question(s):**  How can your patient’s safety be affected by your hand washing techniques? |
| **Learning Objective(s):** You will:   1. Demonstrate the growth of various pathogens on items touched on a regular basis. 2. Analyze the consequences of ineffective hand washing on your own and your patient’s health. 3. Interview a hospital Infection Control employee to determine the guidelines used by their facility for proper hand washing. 4. Demonstrate and utilize effective hand washing techniques. |
| **Materials, Equipment, and Technology Resources:**  Computer, printer, Internet access, poster board, markers/colors, sink, soap, paper towels, petri dishes, agar, sterile applicators, incubator, black marker, vials of sterile water, gloves, glowgerm lotion, black light, handouts, worksheets, rubrics, access to hospital staff, classroom textbooks and workbooks, video recorder and projector |
| **Procedures/Activities:** You will complete the following activities:   1. On ½ of a poster board, create a cartoon storyboard demonstrating the chain of infection. Label each link in the chain. Refer to **Handout #1** for help. 2. Observe students as they perform their daily routines in the classroom. List the three classroom surfaces that you feel would be the most contaminated with pathogens. Thoroughly explain how you reached this conclusion. 3. Complete **Worksheet #1** to perform cultures on the three items you identified. 4. Interview the Infection Control employee at a hospital of your choice and complete **Worksheet #2**. 5. Use textbooks, Internet, and healthcare professional interviews to research nosocomial infection rates in Alabama. Write a brief summary of your findings and explain why this information is relevant. 6. Watch the follow videos <http://www.youtube.com/watch?v=XkWN-tv2EbE> , <http://www.youtube.com/watch?v=9Hkm_C_eM48&feature=related> , <http://www.youtube.com/watch?v=55H6h5GOYUQ&feature=related> , <http://www.youtube.com/watch?v=Oke9rjp8eFY> 7. Use **Worksheet #3** to practice your hand washing skill. Schedule a time with your instructor to check off on this skill. 8. Develop a 5 minute video that demonstrates the importance and/or technique of hand washing. It should be informative, as well as, entertaining and accurate. You may include other students in the project if needed, but you should be the star of the video. You may also collaborate with a multimedia class if permission is given by that teacher. Provide the video on a flash drive for grading. |
| **Assessment Strategies:**  Use the attached grading tool**, Rubric #1,** to score your presentation and other module components. |

**Handout # 1**

**Technical Skill/Hand Washing PBL**

**Photo storyboard example:**

Remember to label the parts of the chain of infection depicted in each scene.

You may add dialogue if desired.

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**Worksheet #1**

**Technical Skill/Hand Washing PBL**

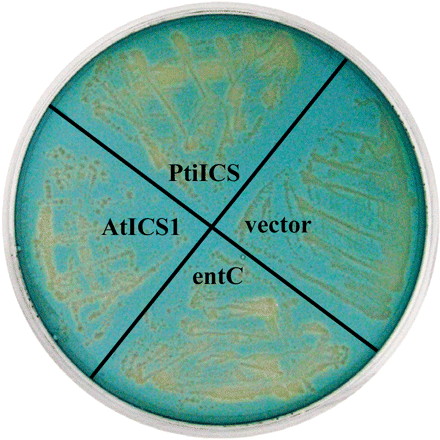
**Obtaining Cultures**

**Lab Materials:**

* Sterile cotton Q-tip-style swabs or similar swabs
* Disposable latex gloves
* Sterile agar plates (Petri plates filled with a bacterial food preparation, usually agar)
* Sterile collection tubes filled with 20 ml sterile water-back-up for re-isolation of bacteria samples, if needed (Optional)
* A black permanent marker
* Proper receptacle for disposing of swabs, tubes, gloves, and plates after use

**Procedure:**

1. Determine beforehand where you'd like to sample for bacterial cultures. Use the three you determined to be the most contaminated.
2. Use the marker to make a large X on the bottom of the petri dish and label each section according to the areas to be cultured. Leave one area blank.
3. At each location, put on a pair of gloves. Rub a sterile swab onto the surface of the item/area while twirling the swab.
4. Lightly rub the end of the swab onto a sterile agar plate in the appropriately labeled triangle while rotating the swab and going in a zig zag motion.

[](http://www.pnas.org/content/106/51/22020/F4.large.jpg)

1. Carefully dip the same swab into your water-filled tube - this will give you a backup in case your first plate culture doesn't work out.
2. Recover the petri dish without contaminating the lid. Turn the dish upside down.
3. Mark your plate with the date and your initials on the bottom to keep track of your culture.
4. Place, lid side down, in the incubator for 48 hours. Then observe for bacterial growth.

Which area was the most contaminated?

What did you learn about the importance of hand washing by performing this culture?

**Worksheet #2**

**Technical Skill/Hand Washing PBL**

Interview the Infection Control employee at a local hospital and complete the following worksheet.

Hospital Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Employee Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. When do you discuss hand washing with new employees?
  2. How important do you consider hand washing to be?
  3. Why is employee hand washing important to the hospital itself?
  4. What could happen to the employee if they are not compliant with washing their hands?
  5. How do you monitor the compliance of the employees?
  6. What happens to employees that repeatedly do not follow the hand washing policies?
  7. In your opinion, what is the most important reason to wash your hands?

**Worksheet #3**

**Technical Skill/Hand Washing PBL**

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

Practice this skill while being observed by a peer.

The peer will use this rubric to assure you are following the correct procedures.

Continue to practice until you perform the skill without error or assistance.

Now apply the Glow Germ lotion and rub it on your hands.

Wash your hands again and view them under a black light.

The areas that are glowing are the “pathogens” you missed while washing your hands!

Schedule a check off time with your instructor.

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| **Handwashing**  **(Time: 3 minutes)** | **Possible** | **Allocated** |
| 1. Removed jewelry | 1 |  |
| 2. Turned faucet on with paper towel, adjusted temperature (water should be warm) and discarded towel in waste container | 3 |  |
| 3. Wet hands and wrists thoroughly with fingertips pointing down | 2 |  |
| 4. Applied soap to get a lather on hands | 1 |  |
| 5. Put the palms of hands together and rubbed them using friction and a circular motion for 10-15 seconds | 3 |  |
| 6. Put the palm of one hand on the back of the other hand, rubbed together several times and repeated after reversing position of hands | 3 |  |
| 7. Interlaced fingers on both hands and rubbed them back and forth | 2 |  |
| 8. Cleaned nails with an orange/cuticle stick and/or hand brush | 2 |  |
| 9. Rinsed hands with fingertips pointed downward | 2 |  |
| 10. Dried hands thoroughly, from tips of fingers to wrist, and discarded towel | 2 |  |
| 11. Turned faucet off with dry paper towel and discarded towel in wastebasket | 2 |  |
| 12. Avoided touching inside of sink | 3 |  |
| **TOTAL POINTS -- PROCEDURE** | **26** |  |

**Rubric #1**

**Grading Tool for Technical Skill/Hand Washing PBL**

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

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| Procedure number | Procedure | Points Possible | Points  Subtracted | Grade |
| 1. | Chain of Infection Storyboard | 15 |  |  |
| 2. | Classroom pathogen exercise | 5 |  |  |
| 3. | Worksheet 1: Culture | 10 |  |  |
| 4. | Worksheet 2: Interview | 10 |  |  |
| 5. | Nosocomial Summary | 10 |  |  |
| 6. | Worksheet 3: Hand Washing Practice/Check off | 25 |  |  |
| 7. | Video   * Clearly depicts the importance of hand washing and/or properly demonstrates technique * Accurate information * Student is the star * Entertaining * Grammar correct * Points **subtracted** for subject matter that is inappropriate | 25 |  |  |
|  |  | 100 |  |  |