Name:

Lab: Which Wash Wins?

Introduction: How many times has someone told you: “Go wash your hands before dinner?” Why is hand washing important? Found out in this activity and discover which hand-washing method is the hand-down winner.

Procedure:

1. Each seat # will be assigned the following : Seat 1 Control Team: No washing

Seat 2: water only

Seat 3: water and regular bar soap

Seat 4: water and antibacterial liquid soap

Seat 5: hand sanitizer only (no water)

*Hypothesis: Tell* which method do you think is the most effective in cleaning hands? **Why?**

1. When instructed to do so, go to the station designated for your seat number and wash your hands ONLY with what is listed in step one of procedures. (Stations within a team may have to be altered depending on the number of people in a group)
2. Prior to starting, label the bottom of your petri dish with your team’s seat numbers and the location of each swab (palm, between fingers, fingernails, etc.).
3. The hand washer should wash their hands according to the specific Team’s hand-washing procedure listed below***. Once hands are washed, DO NOT TOUCH ANYTHING.***

***SEAT 1:***No hand washing

***SEAT 2:***Turn on cold water. Hand washer should rub hands together under running water for 15 seconds, making sure to wash the palms, fingers, and fingernails.

Another member of the team should turn water off. Hand-washer should dry hands with clean paper towel. **Hand-washer should not touch anything.**

***SEAT 3:***Turn on cold water and wet hands. Apply enough regular soap to form a lather. Rub hands together (without water) for 15 seconds, making sure to wash the palms, fingers, and fingernails. Another member of the team should turn water off. Hand- washer should dry hands with clean paper towel. **Hand-washer should not touch anything.**

***SEAT 4:***Turn on cold water and wet hands. Apply enough antibacterial soap to form a lather. Rub hands together (without water) for 15 seconds, making sure to wash the palms, fingers, and fingernails. Another member of the team should turn water off.Hand-washer should dry hands with clean paper towel. **Hand-washer should not touch anything.**

***SEAT 5:***Hand washer should use the recommended amount of hand sanitizer and rub hands together until they are completely dry, making sure to rub palms, fingers, and fingernails. **Hand washer should not touch anything**.

5. Now your hands are ready to be swabbed. Have one team member open the petri dish. Seat one will dip one end of the swab into water, swab your hand, then, ***VERY GENTLY*** ,rub the swab onto the petri dish in your designated area on the dish. Seat one will repeat this with a NEW UNUSED end of the swab for each team member, and swab it onto their designated area in the petri dish. REMINDER- KEEP LID ON THE DISH UNLESS SWABBING ONTO THE DISH.

6. Using one end of a cotton swab, a third team member should swab SEAT ONE’s hand and then swab rub onto the dish in the area designated for seat one. Place lid back on the Petri dish

7. Tape down the lid to the bottom of the dish. Have the tape attached to the SIDE of the dish not across the top/bottom. YOU MUST WRITE YOUR CLASS PERIOD AND TEAM NUMBER ON YOUR DISH TO GET ANY CREDIT

8. Place your dishes in the incubator designated by your teacher. You will be recording data over the next week. Record your observations and results in the table below.

|  |  |  |
| --- | --- | --- |
| Day | Description of Treatment  | Drawing |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Results/Conclusions

1. After a week of running the experiment, take a look at the other treatments. Which treatments have the most bacterial growth?
2. Draw conclusions about the efficacy of your hand-washing method based on each team’s results. What evidence do you have that microorganisms can be transmitted by hands? What are the strengths and weaknesses of that evidence?
3. What other factors might be responsible for the growth?
4. Based on your results, why would you want to wash your hands? When would you want to wash them?
5. What are some diseases that might be transmitted by hand contact? List at least 3.
6. Why is it important that food service employees wash their hands?

 7. What Aare some sources of error in this experiment? List AT LEAST 3 AND describe how they can

 Eliminated for a more accurate experiment