

# HAND HYGIENE

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**NEW YORK CITY COLLEGE OF TECHNOLOGY**  
**DENTAL HYGIENE DEPARTMENT**

**DEN 2413 – Introduction to Public Health**

**Service Learning Field Project**  
**Participation Form 2018**

**Name of the Site:** Brooklyn Amity School

**Address of the Site:** 3867 Shore Parkway, Brooklyn, NY, 11235

**Date of Visit:** March 16, 2018

**Group Members:** Sajma Feratovic  
Navneet Kaur  
Maria LaRocca  
Besim Mashkulli  
Iryna Yakymenko

**Your Responsibilities:**

• **Written Report:**

- Sajma: *Implementation, Conclusion*
- Navneet: *Planning*
- Maria: *Assessment, References*
- Besim: *Evaluation*
- Iryna: *Introduction*

• **Oral Presentation:**

- Sajma: End of presentation review, board game and goodie bags
- Navneet: What is hand washing and its importance, PowerPoint
- Maria: Correct hand hygiene steps and when it should be done
- Besim: Effects of hand hygiene on oral cavity, proper brushing to eliminate germs and when toothbrushes should be replaced
- Iryna: Ice breaker/prior knowledge before presentation question & answer

## LESSON PLAN

<b>Session Title</b>	The Importance of Proper Hand Washing		
<b>Objective(s)</b>	Participants will be able to know when, how and why to wash their hands the correct way using five simple steps. They will also learn the connection between hand hygiene and oral health.		
<b>Activity</b>	<b>Time</b>	<b>Tasks</b>	<b>Materials</b>
<b>Ice Breaker/ Prior Knowledge</b>	5 min.	Ask students how many of them wash their hands Ask each student when they wash their hands Ask where else in the body can germs be found	Use hands, PowerPoint presentation
<b>Direct Instruction</b>	40 min.	Review each of the steps involved in hand washing and describe how and when to do it accurately. Have students perform it as we teach each step. For oral hygiene, discuss germs transferring from hands to mouth and possible illnesses that can occur.	PowerPoint presentation, Images, Typodont, Toothbrush
<b>Whole Group Practice</b>	20 min.	Discuss nutrition, germs, oral hygiene, getting sick, have they visited a doctor or dentist, etc.	PowerPoint presentation
<b>Individual or Pair Share</b>	20 min.	Each group member will work one on one with each student reviewing the steps on hand washing and brushing the teeth on the typodont.	Typodont, toothbrush, hands, images
<b>Review</b>	5 min.	Board game with steps of hand washing. Have each student come up and pin the image of the hand washing steps in the correct order.	Board game, pins and images
<b>Assigning Homework</b>	5 min.	Worksheet coloring page. Color the images and place a number 1-5 to place the steps in the correct order. Use the goodie bag and show your parents what you have in it and how to use the toothbrush correctly.	Worksheet Goodie bag with toothpaste, toothbrush and stickers
<b>Session Feedback or Q &amp; A</b>	10 min.	Ask students questions and review what was taught. Ask them what they learned today and if they think it was important information.	Goodie bags

### **Description:**

In our session students will be taught the importance of hand hygiene and how it can affect their oral health. We will emphasize the risks of poor hand hygiene, when it should be performed and how to perform it effectively.

## **Introduction**

Public health by definition is “the science and art of preventing disease, prolonging life and promoting human health through organized efforts and informed choices of society, organizations, public and private, communities and individuals.” Having good hygiene starts with washing your hands. Washing your hands before and after you eat, after using the bathroom, before cooking, and washing your hands out in public bathrooms are all important in preventing the spread of germs and disease. The human hands can be looked at as a “germ farm”.

According to the Minnesota Department of Health, there are about 1500 bacteria on each square centimeter of our hands. Not washing your hands when you should, can lead to many unnecessary illnesses, like the common cold. Statistics show that twenty-two million school days are lost annually among students due to the common cold. According to Green Air cleaning systems of New York City, it only takes two hours for certain strains of E. coli, Salmonella, and other bacteria to live on surfaces like cafeteria tables and doorknobs. Salmonella infections are responsible for about 1.4 million illnesses each year. According to one study done, parents, who are responsible for enforcing the hand washing habit to their children, out of 92% who said they always washed their hands in public restrooms, only 77% were observed doing so. Washing your hands when you should could be the difference between catching some sort of illness/disease and staying healthy.

The American Society of Microbiology did a study and showed that out of 97% of females and 92% of males who said they wash their hands, only 75% of females and 58% of males actually did. In this same study, 50% of middle and high school students claimed they wash their hands, but only 33% of these females and only 8% of males actually used soap while washing their hands. Hand-washing is the single most important means of preventing the spread

of infections. According to the CDCA, by washing your hands for 20 seconds, you can improve your health and avoid spreading germs as well as prevent yourself and others from getting sick.

### **Assessment**

The population we selected was a group of first grade students that attend Brooklyn Amity School. We chose this specific group of individuals because we just completed our pediatric unit in seminar and we wanted to use that knowledge on a community of people versus a patient as an individual. Children in first grade should be brushing their teeth on their own at this point, but we know they may not be fully educated on the proper brushing techniques, when to brush and how long they should be brushing for. We also know that this population of children is more fortunate than others. The Brooklyn Amity School is a private school. The estimated yearly tuition for the elementary school portion is 7,500 USD. So, we know they have access to personal health care equipment like toothbrushes, toothpastes etc. However, it is our job as future dental hygienists to educate our patients and our community about when they are used, how to use them and why.

My group and I wanted educate the children in a way that would grab their attention and interest. Therefore, we chose to focus our personal hygiene instructions on hand washing, something they do every day and are familiar with. Children at this age are likely to contract illnesses like influenza, the stomach flu, the common cold etc., so one of the most important personal hygiene activity is hand washing. Each child is born with innate immunity, also referred to as natural immunity, just so they have baseline protection when they are born. Active immunity is acquired throughout our lifetime. Our active immunity gets stronger as we get older, but the younger you are the weaker the immune system; this is why children get sick more often than adults. These children may not be educated on how germs spread and how they can contract

an illness. As a group, we decided it would be best to show them how to properly wash their hands to prevent the spread of germs.

We also wanted to relate our presentation to oral health, so we added a section at the end of our lesson discussing when and how to brush, and how good and poor nutrition affects their teeth. According to an article titled “Oral health status related to social behaviors among 6-11-year-old school children in Kosovo”, dental caries is one of the most common infectious diseases in children and some of the best ways to prevent caries is through brushing your teeth with a fluoridated toothpaste 2x a day while maintaining a healthy diet.

As a whole, the first-grade elementary school population is at risk for developing caries and contracting common illnesses like the common cold and influenza. Caries are not contagious, but are a transmissible and avoidable disease. It is important that children understand what the disease/illness is, how it is caused and how to prevent it. Although most of these children have an established dental home, it is important to review oral hygiene instruction for reinforcement purposes. Since this population is at a high risk for getting sick, hand washing is a simple way to limit the spread of germs in their classroom and at home and it is an easy concept to understand.

## **Planning**

Educating the younger population on proper hand hygiene is a very critical part of their development. It is during the learning ages of 6-7 years old, that children develop proper and healthy habits. Good hand hygiene is an essential infection control measure and can prevent germs from being spread from child-to-child, or caregiver-to-child. The spread of germs due to poor hand hygiene can impact an individual’s education as well because they would have to miss

important time in school should they become ill. This in return can also affect the parents or caregivers because they would be responsible to care for the child and hence end up missing time at work, which could pose a financial problem for some families. If children are not taught the proper ethics for proper hand hygiene at a young age, they can carry these terrible habits into adulthood.

Our specific goal with our target population of 1<sup>st</sup> graders was to ensure they understand that keeping germs to a minimum on their hands will keep them and everyone around them healthy. By the end of the lesson, the students of Brooklyn Amity School should be able to list the proper steps of washing their hands and at the proper times. Based on the assessment findings, our group brainstormed that the most efficient way to educate the students was with a breakdown of why, how and when to wash their hands via the tell-show-do technique. Of course, most children are taught that they need to wash their hands but are they effectively learning that there are proper steps in doing so?

We sought out to ensure that each child left their classroom knowing all of the proper steps involved in effective hand washing. We determined via their responses and prior knowledge, that they wash their hands in school but we wanted to include examples of washing their hands when they are not in school as well. This way they would understand that proper hand hygiene is an essential task that should be performed multiple times a day, not just something they learn in school and go home and forget about. Our group also determined that rewarding the students after the lesson with a goody bag would be a great positive reinforcement tool. They will be more prone to listen and retain the information if they know they are going to receive a reward afterwards.

The location we visited, Brooklyn Amity School, has smart boards in each classroom, so the PowerPoint presentation could be viewed in full screen so each child is sure to see it. We added colorful animated pictures and images of children washing their hands in order to capture their attention and relate to the images. Children have a tendency to copy what other children do, so these images will connect the students on a personal level by demonstrating that other children their age are washing their hands too.

We thought that the students should also know that there is a connection between oral health and hand hygiene. We chose to discuss this connection in the lesson because having germs on their hands can be brought into their mouth easily, which could potentially lead to more complicated illnesses such as respiratory problems and infections. When done being sick, many people forget to change their toothbrush, which carry's the bacteria from their system from when they were sick. This bacterium poses a threat to their immune system because it can make them sick once again as they continue to use their toothbrushes. Educating children at a young age about this healthy habit of changing their toothbrush after being sick will carry with them through adulthood. We will also stress to the students the importance of changing their toothbrush every 3 months regardless of being sick or not because bacteria doesn't just grow on dirty hands but in many other places too.

To conclude the lesson, we want to see how much of the information the students will retain. We will do a question and answer game related to when hands should be washed. We will also play a game after the presentation and have each student come up to a board we developed asking them to arrange the steps of hand washing in the correct order. Lastly, to reinforce and drill the skill, we plan to have the students repeat the steps after they leave school, by giving them a take-home worksheet assignment.

## **Implementation**

Our group selected a site which was in a classroom of a private school and involved first graders. Since it is a classroom, students are immediately aware that they are in an educational setting. This means they are expecting to learn something new, as they would on any other school day. Using the correct activities and materials was crucial in capturing their attention, as well as keeping it! In order to meet our goal of teaching the children how to wash their hands correctly to minimize germs and keep their oral hygiene healthy too, we needed to use a method they are familiar with. For that reason, our group decided to compose a fun, colorful and animated PowerPoint presentation to present to the students on their classroom smart board.

The presentation included animations of germs, hands and other children washing their hands and brushing their teeth. We also included sound effects in order for all of their senses to be active during the lesson so that they can capture our words as if they were coming to life. Students learn best with visuals and sounds so we knew that they will benefit most from our lesson by incorporating such tools. Using the PowerPoint presentation, students will learn why, how, where and when hands should be washed. They will get to see and hear the five steps involved in hand washing and how to properly brush their teeth and keep their mouths clean from germs.

Since the best approach for teaching younger children is the tell-show-do approach, we also decided to incorporate a hands-on activity. For this portion of the lesson, we developed a board game in which each child will receive an image that represents one of the steps in hand washing. They will then be selected randomly to come up to the board and pin it in the correct order according to what they learned throughout the PowerPoint presentation. They will also

each be given a typodont and toothbrush to show us the proper brushing technique we taught them.

Lastly, as positive reinforcement, each child will receive a goodie bag that contains a take home worksheet, toothbrush, stickers and toothpaste. They will be given this at the completion of the lesson as a reward for their hard work and great participation. They are also more likely to then be able to retain the information taught because they will associate it with the gifts every time they use it. For instance, when they go home and brush their teeth using the toothbrush we gave them, they will also recall that they learned how to wash their hands that day and vice versa.

### **Evaluation**

In order for this program to be effective, we needed to have a pre-and post-evaluation with the children at Brooklyn Amity School. When we first introduced ourselves to the class, we explained that we would be presenting hand hygiene and oral hygiene to the students. At this time, we asked a few questions to the children to determine how much they understood about the topics prior to the presentation. The students had some basic knowledge but didn't seem to understand the importance behind it and the connection of germs, poor hand hygiene and oral health. Another thing we noted, was that the children thought wetting their hands with water alone was considered "washing".

We asked questions about hand hygiene such as, "how long do you wash your hands for and do you use soap?" In regards to oral health, we asked questions such as, "how many times a day do you brush your teeth and for how long do should you brush?" We used the children's answers to help us measure how much they will improve with their hand hygiene and oral hygiene knowledge by the end of the presentation and poster-board activity. Our presentation

included colorful images, animations, sound effects and simple terminology so that the students would be able to comprehend the lesson. By using an approach at the students grade level, there would be an improved chance for them to learn and retain the information.

When we completed our presentation, we had a poster board game with images of the steps of hand hygiene. Each student was given a piece of the puzzle from the five steps involved in hand washing. The students were called up individually to identify in what chronological order their piece of the puzzle belonged to on the hand washing steps board game. If a student didn't know or seemed nervous, the class was encouraged to work together and help their classmates complete the hand hygiene sequence.

When we completed our presentation and poster-board activity, we repeated the questions during the presentation about oral hygiene and hand hygiene. Each of the students were able to correctly answer the questions with confidence and excitement. After the board game, each child was given the opportunity to show us that they grasped the correct brushing technique. To reinforce everything learned and to help the students retain the information once they went home, each student was encouraged to do the worksheet provided in the goodie bag and use their toothbrush to brush their teeth the correct way.

As a group, we felt we were able to successfully accomplish our goal to educate the students because they demonstrated the ability to successfully answer our post-evaluation questions and complete the board game activity correctly. By having the students work both collectively and individually, we were able to ensure that they properly listed the steps in chronological order. At the same time, the students indicated that they fully comprehended the importance of when to wash their hands and the consequences of not doing so. The students were all encouraged to go home and discuss what they learned with their caregivers and siblings so

that they too will know the importance. There was a positive indication of skill and education improvement compared to the when we first met the students and when we completed the lesson and activities.

## **Conclusion**

Overall, our experience at Brooklyn Amity School was very fulfilling and it was so exciting to be able to teach students the importance of hand hygiene and oral health. The students were very energetic and loved to ask and answer questions. As healthcare professionals, it is our obligation to promote and reinforce education especially on important topics such as ours, regardless of the access to sources individuals have. Although these students were in a private school, they still lacked basic educational information.

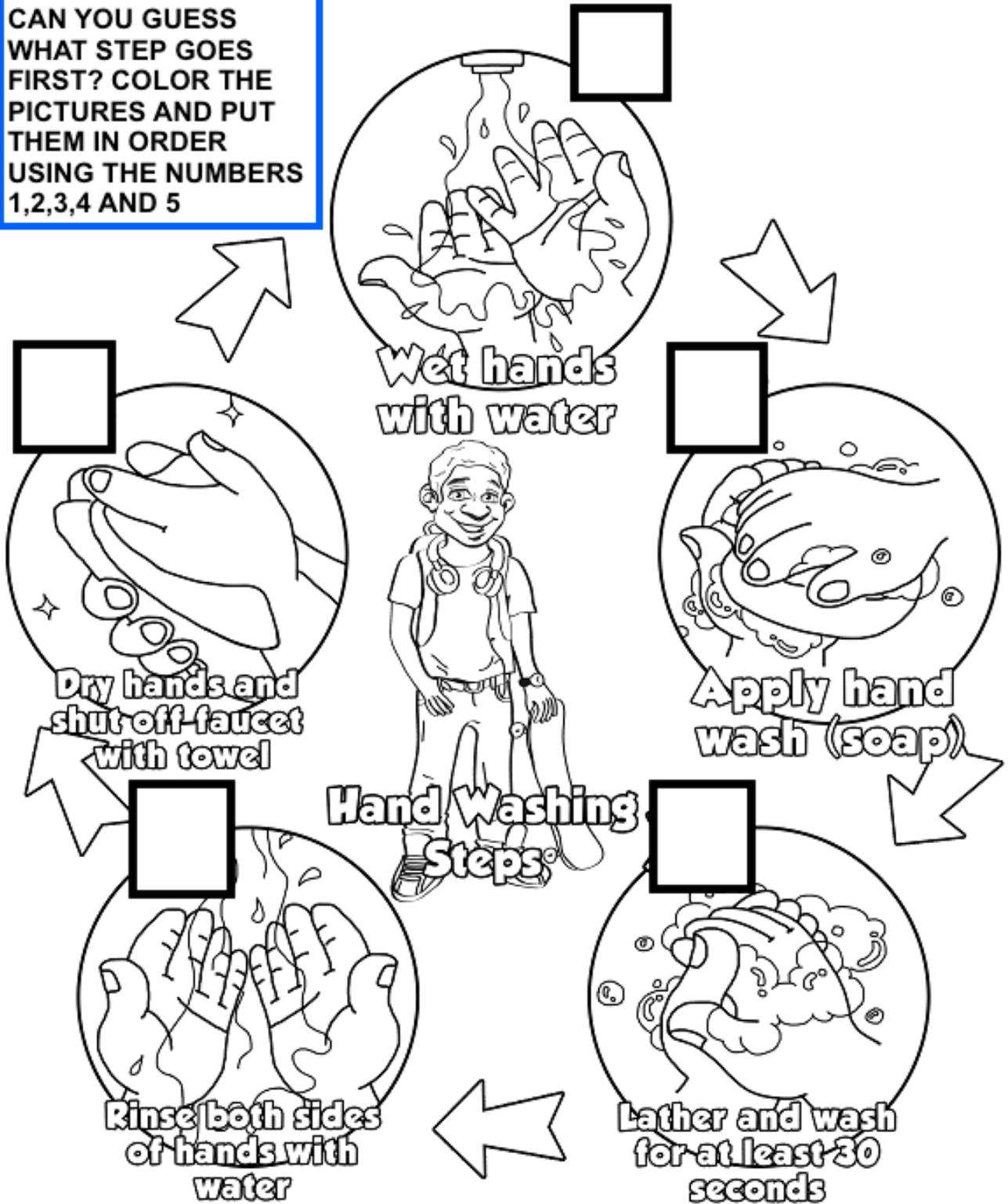
We were able to teach the students effectively and leave them with new knowledge that will benefit them overall as they continue to grow. It was very satisfying for us all to work with Brooklyn Amity School and it was wonderful to have the teacher and staff welcome us and encourage their students to participate. Collectively, with us students at NYC College of Technology, and other local organizations, we can educate all individuals on important diverse topics that will benefit the entire community as a whole over the years.

## Poster Board Activity



Note: Only the numbers were present on the board and the image of the hands with germs. Each image (puzzle piece) was given to a student and they came up to place it in the correct order.

LET'S PLAY A GAME!  
CAN YOU GUESS  
WHAT STEP GOES  
FIRST? COLOR THE  
PICTURES AND PUT  
THEM IN ORDER  
USING THE NUMBERS  
1,2,3,4 AND 5



## References:

SERVICE LEARNING PROJECT

Agency Observation Rubric

DEN2413 sp2018

Mrs. Anesa Vucetovic

Observer:

Students Name:

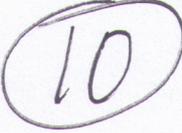
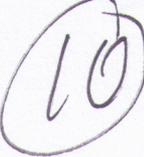
Sajma Feratovic;

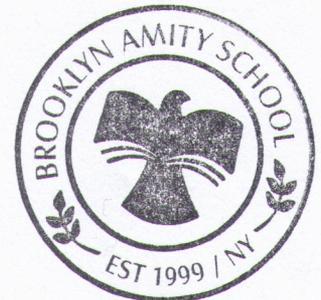
Students Name:

Navneet Kaur; Maria LaRocca,

Students Name:

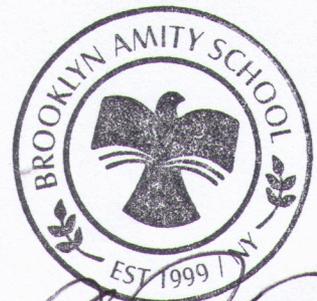
Besim Mashkulli;  
Fryna Yakymenko

CATEGORY	10	8	6	comments
Presentation/Presenting Skills  	Students are confident in presentation skills, energetic, and knowledgeable in their content. Presenters' information is interesting and engaging. Speaker speaks at a moderate rate and loudly. Students are able to answer questions confidently	Presentation is a little choppy. Student forgets some information. Report seems memorized and is monotone or choppy. Student talks too softly or talks too quickly. Energy may be lacking. Student may not have enough expertise on topic to answer basic questions.	Student seems unrehearsed. Student is not confident in presentation skills. Students lack interest and energy in presenting. Information presented is dry and boring. Student talks so softly or so rapidly, it is impossible to comprehend. Student cannot answer any basic questions.	Students were confident, professional and informative. Their presentation was excellent and the children were very engaged.
Aesthetic Appeal of Display  	Students have large, colorful, and easy to understand display that applies to topic and flows. Project is neat and legible. Students use creativity to make display colorful, visually attractive, and engaging.	Student has charts and graphics but they do not help comprehension of topic or are too small or are in black and white. Project is not neat and straight. Students use some creativity to make display colorful and visually attractive.	Students' display is irrelevant. Project is messy and not easy to read. Student uses little creativity to make display colorful and visually attractive.	Powerpoint was perfect for the kids to comprehend, vibrant & creative! Colorful, fun, & great sound effects!



<p>Content &amp; Accuracy</p> <p>10</p>	<p>Content is accurate. Students show strong evidence of thoroughly understanding the topic. Information is presented so it is easy for target audience to comprehend.</p>	<p>Content is mostly accurate. Student shows good evidence of understanding topic. Some information is difficult for audience to comprehend.</p>	<p>Content is mostly inaccurate. Student shows little understanding of topic. Student goes off topic. Information is all borrowed and not put into student's vocabulary.</p>	<p>Children were able to grasp the lesson taught and understand importance of it. Easy terms + instructions for class level.</p>
<p>Creativity and Accuracy</p> <p>10</p>	<p>Students have interactive or creative engaging aspect of project that draws participants in. Creative or engaging activity on topic and helps further understanding.</p>	<p>Student has some type of interactive and engaging aspect of project that draws participants in. It is creative but doesn't further understanding. Project helps further understanding but is not that engaging.</p>	<p>Creative or interactive piece does not further understanding and does not engage participants.</p>	<p>Students were creative, patient and fun. They were able to successfully engage the participants in the presentation + activity games.</p>

al: 1/2018



*Thank You!*