Protection of the Immune System and Ways to Prevent Sickness

Health Education

Ilana Ravindra and Hussein Jomaa

Target Audience: Elementary School Students (2nd-5th grade)

Number of Participants: 102 students

Bedford Senior High School HOSA Chapter

Chapter Number: 25005

State/Country: Michigan, The United States of America

8285 Jackman Rd, Temperance, MI 48182

Division: Secondary

Region: 3

Lesson Plan

Lesson Educators:
Ilana Ravindra and Hussein Jomaa

Audience:
4 classes, 2 schools → 2nd, 3rd, 4th, and 5th grade
102 students in total

Lesson Overview:
Protecting your immune system is the main key, especially now during the flu season. Sicknesses and illnesses are spreading and our focus is to make sure students know how to stay healthy during the battle! Our lesson is designed for students to learn about the immune system, the importance of their immune system, ways to protect their bodies, how to prevent themselves from getting sick, and what to do if they get sick.

Learning Objectives: *By the end of our lesson, students should be able to:*

- Explain the role of the immune system in their body
- Identify what the immune system is
- Name ways to keep their immune system healthy
- Name ways to prevent sickness
- Identify the best things to do if they are sick

Lesson Goals: *In our lesson, our goal is to:*

- Educate students about what the immune system is
- Educate students about the roles and importance of the immune system
- Inform students on ways to keep themselves and their immune system healthy, which includes what superfoods to incorporate and the main things to do
- Ensure that the audience can easily explain ways to keep themselves healthy
- Teach different ways to prevent illness, including what to do & what foods to eat
- Explain to students what to do if they have a cold, flu, sore throat, or fever
- Indicate that the students learned by having them complete an activity, post-assessment, and game

Materials:

- “Protecting Your Immune System” PowerPoint presentation
- Presentation scripts
- Pre-assessment and post-assessment papers
- Take-home papers for parents/guardians
- Teacher evaluation paper and student evaluation papers

Materials *continued*:

- White pillowcase representing white blood cell
- cardboard painted displays germs, bacteria & antibodies with magnets
- 6 laminated T-charts with headers, "Good/Bad for the immune system"
- 6 sets of 48 laminated images
- List of healthy and unhealthy habits
- 2 signs→ "Unhealthy Habits" and "Healthy habits"
- Prizes→ Lollipops and lifesavers
- Camera/phone for picture

Instruction plan:

Approximately 1 hour, 10-minute presentation

1. **Set-up (2 minutes)** → Lay out the papers needed for the lesson, make sure all the students had pencils, PowerPoint presentation ready on the board, and distribute cardboard germs display
2. **Introduction (5 minutes)**→ Introduce ourselves, explain why we were there, explain the purpose of HOSA, and notify students what we would be doing
3. **Pre-assessment (5 minutes)** → 6 questions: multiple-choice and written responses
4. **Presentation (20 minutes)** → 35 slide presentation, "Protecting Immune System"
5. **Activity (10 minutes)** → Students were put into groups of 4-5. They were given a T-chart and a bag with 48 pictures. Students had to work together in their groups and arrange the pictures into one of the columns of the chart.
6. **Post-assessment (5-10 minutes)** → 8 questions: multiple-choice, true/false, & written responses
7. **Student evaluation (2 minutes)** → Quick yes or no survey and rating from 1-10.
8. **Demonstration (5 minutes)** → We presented a demonstration to the class over how the cells in the immune system work to fight off the germs. We made and painted cardboard germs, bacteria, parasites, and antibodies with magnets on them. We demonstrated how the antibodies and good cells, from eating healthy and practicing good habits, attach onto the germs. With a white pillowcase as the white blood cell, we showed how the white blood cell eats the germ.
9. **Extra game (10 minutes)** → If time permitted, we played a game with the whole class. They got to get up and move around. One of us read off either a good or bad habit and the students would move to the left side of the room if they thought it was a good habit for their body, or move to the right if it was a bad habit.
10. **Closing (1 minute)**
11. **Group picture/pack up (5 minutes)**

Supportive Information

What is the immune system?

- The immune system is the body's defense against infections and bacteria in our bodies.
- It has the role of attacking and fighting germs to keep us healthy.
- The immune system is made up of organs, cells, proteins, and tissues that are spread all throughout your body.
- Without the immune system, your body would be open to all sorts of germs, bacteria, parasites, and viruses set to attack. It is essential for our survival, as it's continuously fighting off germs every day!
- When our immune system is functioning properly, it protects us from diseases and damaging foreign bodies.
- It keeps a record of every microbe that it has ever defeated so that if it enters the body again, it can recognize and destroy it.

What is our immune system made of?

- The main parts of the immune system include white blood cells, antibodies, the complement system, the lymphatic system, spleen, thymus, and bone marrow.
- 80% of your immune system is in your gut.
- Your skin acts as a barrier and the mucus that lines your lungs catch germs and stops them from entering.
- Antibodies in our immune system help to fight microbes and the poisons that they produce.
- The spleen removes microbes and destroys damaged blood cells that produce diseases.
- Bone marrow is the spongy tissue in our bones which produces red and white cells and platelets.
- The thymus filters and monitors our blood.
- Leukocytes are white blood cells that play an important role in fighting off disease and bacteria.
- Phagocytes are white blood cells that chew up invading germs, bacteria, viruses, and parasites.
- Lymphocytes help the body to remember the invaders and destroy them.
- We have two types of lymphocytes, B and T cells.
- The B cells act like our military. They find targets and send defenses to lock onto them.
- The T cells act like soldiers and they destroy the viruses that the B cells find.

Why is it important to protect it?

- You need to protect your immune system because it is the main way your body fights off diseases.
- Flu and cold season stretches between October and May but generally between December and February. Germs are everywhere spreading from person to person.
- The immune system helps us go about when we are constantly being exposed to germs.
- Without a healthy immune system, you will pick up diseases and infections easily.

Supportive Information

Ways to boost/keep the immune system healthy:

- It's important to consider choosing a healthy lifestyle!
- Don't smoke or drink alcohol.
- Maintain a healthy weight. Being too weak or obese is unhealthy for our bodies.
- Wash your hands frequently with warm water and soap. We need to wash our hands multiple times a day for twenty seconds. Do so by singing the alphabet.
- Cover your mouth and nose with a tissue when sneezing or coughing. Don't use your hands because that's how germs can be easily spread.
- Don't pick at your wounds and cuts because it allows germs to enter.
- If you travel, you should consider getting additional vaccines, especially when traveling out of the country.
- Stay hydrated and drink lots of water during the day, recommended eight cups.
- Drink clean water! Stay aware when there's an algae call in our water. If so, boil the water to kill the bacteria.
- Eat a diet high in fruits and veggies.
- Superfoods to avoid the flu include:
    - Cinnamon put in hot tea or hot cocoa is good for your guts and your immune system. If you have a cold, cinnamon will help to clear it.
    - Oranges have vitamin C and our body needs plenty of vitamin C during the flu season. It cannot be stored in the body so try to eat vitamin C rich foods daily. This includes tomatoes, peas, and peppers. You can even take Vitamin C supplements.
    - Watermelon contains citrulline that keeps the heart-healthy. It is rich in Vitamins A, C, and B and builds strong bones.
    - Broccoli, kale, and cauliflower contain loads of nutrients and is good for your gut. When eaten raw, it is more nutritious.
    - Yogurt has vitamin D and it produces more white cells in your immune system to help fight against bacteria.
    - Eat citrus fruits which include grapefruits, oranges, lemons, limes, and tangerines.
    - Ginger helps to decrease inflammation and is best when sick. It helps to reduce inflammatory illnesses and decreases nausea.
    - Spinach is another source of vitamin D and it is packed with numerous antioxidants.
    - Almonds, turmeric, green tea, papaya, and kiwi are more examples of superfoods.
- Exercise regularly for at least 30 minutes a day. By exercising, you are keeping the circulation of your white blood cells which helps the body fight illnesses.
- Be sure to keep up with your vaccinations. You should get a flu vaccine/shot each year starting from 6 months old.
- Reduce your stress levels. It's unhealthy for the body when we are constantly stressed or worried.
- If you live a crazy life, slow down and resting frequently makes a huge impact.
- Get the recommended amount of sleep each night. You should get 10-12 hours of sleep because you're still young and your body is still developing and growing.

- Get enough vitamin D, and the sun, eggs, salmon, tuna, and mushrooms all supply this.
- Make sure to get the proper and right amounts of nutrition and eat a variety of foods from all five food groups.
- Pay attention to the recommended servings and daily intakes so that you get the proper amount of vitamins and not too much.

What illnesses can you get?

- Pneumonia is a lung inflammation caused by a bacterial or viral infection. This is where your air sacs fill with pus and may become solid and inflamed. Inflammation may affect both lungs making it hard for you to breathe.
- Pneumonia affects millions of people worldwide. Each year in the U.S., 250,000 people have gone to the hospital and 50,000 people die from it.
- Signs of pneumonia include cough, a fever, and troubles with breathing.
- Influenza (flu) is a contagious respiratory illness caused by Influenza A viruses. Influenza usually catches on suddenly. People who are affected with influenza often develop the symptoms of fever, chills, cough, sore throat, runny or stuffy nose, body aches, headaches, and fatigue.
- You can get pertussis, which is whooping cough that is highly contagious. You will develop a severe cough and a high-pitched intake of breath.
- Measles is a contagious disease by a measles virus that you start to develop 10–12 days after exposure to an infected person. Symptoms include fever, cough, runny nose, and inflamed eyes
- You can develop Type 1 diabetes. This is when your immune system attacks the cells in the pancreas that make insulin. Insulin removes sugar from the blood to use as energy.

How can I prevent myself from getting sick?

- It is essential to practice good hygiene. This consists of showering daily, washing your hands often, covering your mouth and nose when coughing or sneezing, and staying away from any exposure to germs.
- It is crucial to stay hydrated and make sure that you're drinking lots of water throughout the day. Drinking water aids in cleansing your body from germs.
- Be sure to avoid touching your face, eyes, and mouth because this allows germs to enter easily into your body.
- Get the proper amount of sleep needed for your age each night.
- Stay active and exercise daily.
- Stay away from others that are sick and contagious.
- Disinfect your surfaces and wipe down your desks and tables.

What to do if I get sick?

- You want to stay hydrated, and drink lots of water.
- If you are contagious, stay home for at least 24 hours, especially if you have a fever.
- You want to be constantly washing your hands.:

Supportive Information

- Avoid touching your mouth, eyes, or nose because that's how germs can enter your body.
- Make sure you sanitize and disinfect everything around you, this includes wiping down your surfaces.
- Studies have shown "in people at risk of heart disease, their risk of heart attack is six times higher in the first seven days of flu."
- Getting a flu shot reduces your risk of getting the flu by 40-60%.
- A study that was conducted by the University of Maryland in Baltimore found that those with flu contaminate the air around them simply by breathing.
- Touching doorknobs and handles spread germs within two-four hours of contamination.
- Avoid close contact with others so you don't spread germs.
- Drinking liquids like Gatorade/Powerade to make sure you're getting your electrolytes. Other things like hot soup or hot tea also help.
- If your throat hurts, turmeric, honey, and ginger tea are the key.
- Also, if you have a sore throat, gargling salt water is good, along with cough drops and hard candies to suck on.
- If you have a stuffy nose, a nasal spray or humidifier may help. A humidifier adds moisture to the air helping with your congestion.
- Warm fluids ease your congestion by helping to increase your mucus flow.
- Taking antibiotics is good for you as they help with sickness.
- You may also take prescribed over the counter medicine.
- If you have a fever, be sure to drink lots of liquids, get plenty of rest and sleep, drink hot tea, and take Tylenol.
- Lemon water with honey helps when you are congested and dehydrated.
- Avoid coffee and pop as they are not good for you.
- It is important to blow your nose often instead of sniffling the germy mucus back up your nose. The germs are just going right back in. You aren't letting them out.
- Make sure you are getting enough rest. You need energy considering that being sick is a battle with your body causing you to be tired.
- Steamy showers help with congestion due to the moisture in the air, especially when you have a fever.
- If you have a fever, your goal is to bring the temperature down even if you are feeling hot or cold. You need to treat internal temperature by drinking cold fluids, and resting.

What will happen if your immune system isn't healthy?

- When the immune system is not healthy it can't fight back!
- Many things can weaken your immune system like alcohol and smoking, and that's what makes it unhealthy.
- You will be able to tell if you have a strong immune system if you don't get sick often.
- With an unhealthy immune system, you are more prone to develop different types of cancer. You won't only get cancer, you can get other diseases and illnesses.

Lesson Outline

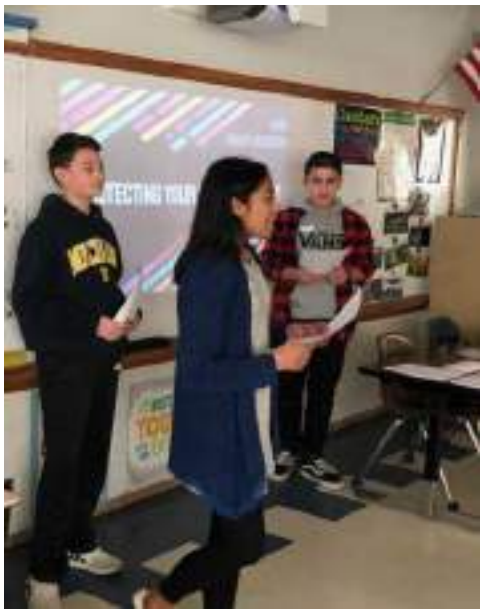
Presentation duration: 1 hour, 10 minutes

Set-Up: 2 minutes

Before we started our presentation to the class, we took five minutes to set down all the papers we had to pass out. We also set up our germs display, made sure all the students had pencils, and had our PowerPoint presentation ready on the board.

Introduction: 5 minutes

From this point, our focus was to stay engaging to the class to make our lesson sound fun and exciting! We started the lesson with the two of us introducing ourselves. Next, we gave the students a quick overview of HOSA and talked about its purpose and why we are part of it. After that, we explained our purpose in giving the presentation. It's the season where germs are spreading and its common now to catch pneumonia or influenza. We want to make sure you know the proper ways to care for your body to stay healthy, and know what to do if you get sick.



Pre-assessment: 5 minutes

We gave the students a quick 6 question pre-test with multiple choice and short response answers. This is so we could tell what they knew already and compare their results with the post test results.

Lesson Outline

PowerPoint presentation: 20 minutes

In our slides presentation, we covered and taught these main topics:

- The role of the immune system in their body
- What the immune system is
- Ways to keep their immune system healthy
- Ways to prevent sickness
- Best things to do if they are sick

Throughout our presentation, we stopped and asked review questions to make sure the students were paying attention. If they answered, they got a piece of candy. This got the class engaged as they were eager to pay attention so they could answer a question.

Activity: 10 minutes

After our presentation, we explained to the students our fun activity. We gave them ten seconds to move into groups of four-five people. We passed out T-charts and bags with images. Students had to work together to put all 48 images either in the "good for the immune system" column or the "bad for the immune system" column. Once they finished, one of us came over to check their charts and they each got a piece of candy.

Lesson Outline

Post-assessment: 5-10 minutes

After the activity, the students were given a post test similar to the pre test with a variety of different question types including multiple choice, written response, and true or false. This post assignment will show us that the students have learned something new. Hussein read the questions out loud while Ilana walked around the class helping the students with questions and collecting tests.

Student evaluation: 2 minutes

Students filled out a quick student evaluation letting us get feedback on how we did and how they felt after we taught them. The student evaluation had five yes/no questions and one question having them rate us 1-10 based off of how much they enjoyed the presentation as a whole.

Demonstration: 5 minutes

We demonstrated to the class how the cells in the immune system works to fight off the germs. We made and painted cardboard germs, bacteria, parasites, and antibodies with magnets on them. We demonstrated how the antibodies and good cells, from eating healthy and practicing good habits, attach onto the germs. With a white pillowcase as the white blood cell, we showed how the white blood cell eats the germ.

Lesson Outline

Extra Game: 10 minutes

After all the students were done with the test and evaluation, we played a quick game. This allowed the class to get up and move around. On one side of the room we had a sign labeled "Healthy habit," while on the opposite side of the room was a sign labeled, "Unhealthy habit." Hussein stood in the middle of the room and took read off either a healthy or an unhealthy habit. The students would decide whether or not it was healthy or unhealthy by moving to the left or right side of the room.

Closing: 1 minute

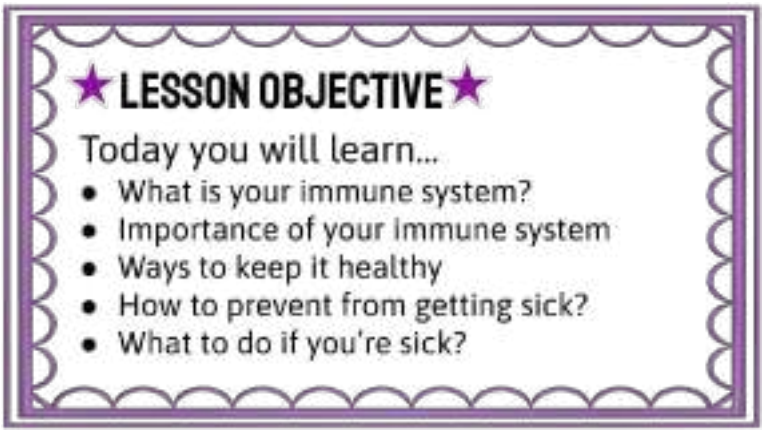
We made sure we collected everyone's papers and that everyone received a take-home paper that would tell their parents about the presentation. We then gave candy to those who didn't have a chance to win a piece during the other activities. We thanked the students for being on their best behavior and for paying attention. We also thanked the teacher for allowing us to come into their class and teach them about their immune system.

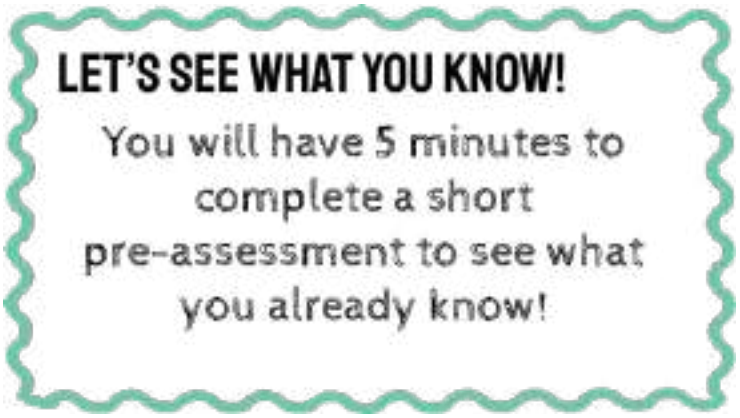
Group picture/pack up: 5 minutes

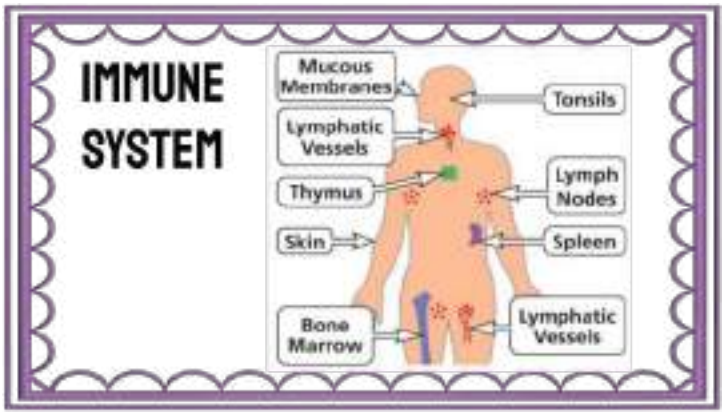
Finally, we got a group photo. We collected the teacher evaluation, and we thanked both the students and the teacher once again for allowing us to come in. We then packed all our stuff, and left.

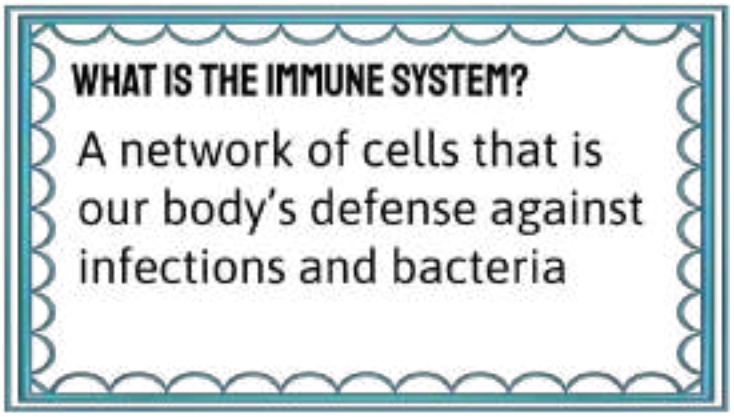
Materials

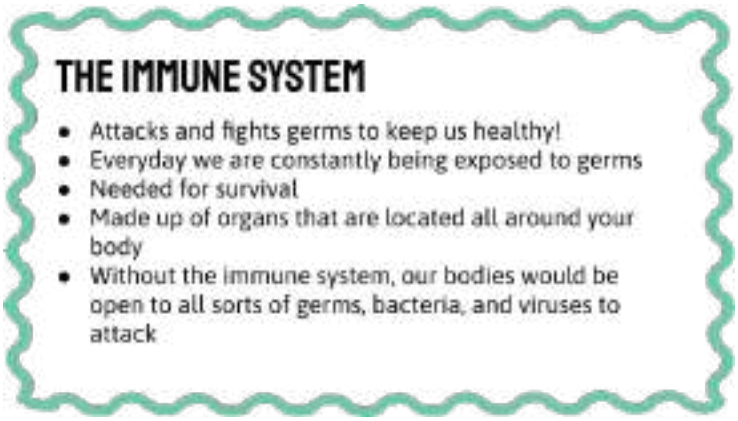
PowerPoint Presentation: Read from left to right

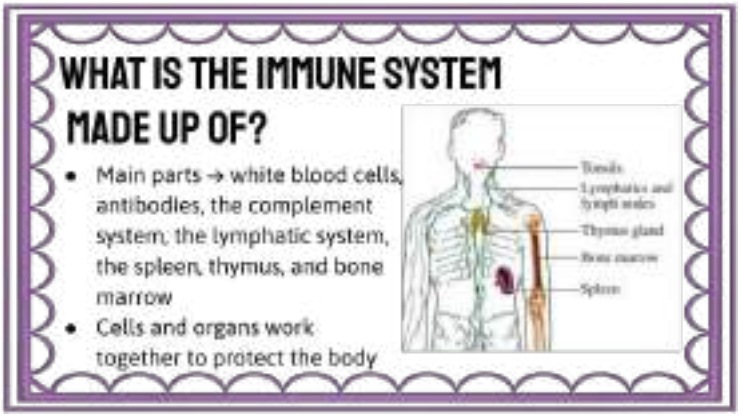








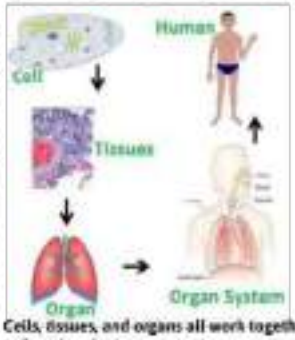


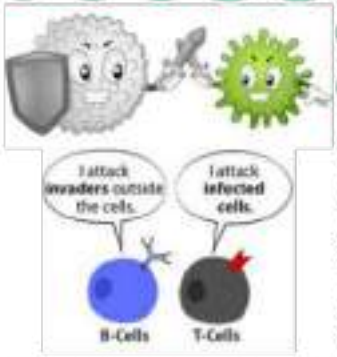


Materials

MAIN PARTS:

- Cells→Tissues→Organs→ work together to protect
- **White blood cells** play important roles→ **Leukocytes** and **Phagocytes**
- **2 types of Lymphocytes**→ helps the body remember invaders and destroys them
- **B-lymphs** → act like military. Find targets and send defenses to lock onto them
- **T cells**→ like soldiers, destroy viruses

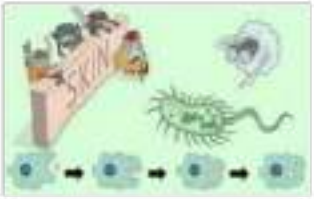




WHY IS IT IMPORTANT TO PROTECT IT?

- Helps us go about when we are constantly being exposed to germs
- Without a healthy immune system, you will pick up diseases and infections easily

★ **Flu and cold season stretches between October and May but GENERALLY between December and February**



WAYS TO KEEP YOUR IMMUNE SYSTEM HEALTHY & HOW TO PREVENT YOURSELF FROM GETTING SICK

WASH YOUR HANDS FREQUENTLY

20 seconds recommended

No hands! Use tissue or into your elbow.

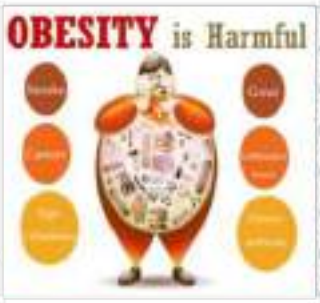
COVER YOUR NOSE AND MOUTH WHEN YOU SNEEZE OR COUGH!

Materials

DON'T PICK AT WOUNDS, IT ALLOWS GERMS TO ENTER

MAINTAIN A HEALTHY WEIGHT

Being too weak or being obese increases risk of getting sick



EXERCISE REGULARLY FOR AT LEAST 30 MINUTES A DAY

By exercising, you are keeping the circulation of your white blood cells which help the body fight the cold

KEEP UP WITH YOUR VACCINATIONS

You should get a flu vaccine/shot each year starting from 6 months old

REDUCE YOUR STRESS LEVELS

If you live a crazy life, slowing down and resting frequently makes a huge impact

GET ENOUGH SLEEP AT NIGHT

Recommended 10-12 hours

GET ENOUGH VITAMIN D

This includes being exposed to sunshine (not too much), eggs, salmon, carrots, tuna etc;

Be sure to take your vitamin supplements if you aren't getting enough vitamins in your body on a daily basis.

MAKE SURE TO GET THE PROPER AND RIGHT AMOUNTS OF NUTRITION AND EATING A VARIETY OF FOODS

Pay attention to recommended servings and daily intakes so you get the proper amount of vitamins.

Materials

DRINK CLEAN WATER! BE AWARE WHEN ALGAE CALLS IN OUR WATER! STAY HYDRATED!

EAT A DIET HIGH IN FRUITS AND VEGGIES THAT BOOST YOUR IMMUNE SYSTEM:

These superfoods include:

- Cinnamon in hot tea → good for your guts
- Oranges → high in Vitamin C → body needs plenty during flu season
- Vitamin C → tomatoes, peas, peppers, vitamin C supplements
- Watermelon → contains citrulline that keeps the heart healthy, rich in Vitamins A, C, and B6. keeps bones strong and is balanced
- Broccoli, kale, cauliflower → loads of nutrients and is good for your gut
- Yogurt- vitamin D → produces more white cells and helps fight against bacteria
- Ginger! Decreases inflammation and is best when sick. Reduces inflammatory illnesses and decreases nausea

- Citrus fruits→ grapefruit, orange, lemon, lime, tangerine, red bell peppers containing twice as much vitamin C as citrus!!
- Spinach- also has vitamin C and is packed with numerous antioxidants
- Almonds, turmeric, green tea, papaya, kiwi,
- Eating whole grains

MOST IMPORTANT!!

- PRACTICING GOOD HYGIENE! → shower daily, wash hands often, covering when coughing or sneezing and staying away from any exposure to germs everywhere
- Avoid touching your face, eyes, and mouth
- Stay away from others that are sick
- Disinfect your surfaces, wipe down areas
- Avoid sharing your germs (toothbrushes, etc.)

WHAT TO DO IF YOU GET SICK?

- Stay hydrated, drink lots of water! → green tea😊
- Stay home if contagious! For at least 24 hours especially if you have a fever
- Continue washing hands
- Don't touch mouth, eyes, nose
- Sanitize and disinfect everything around you
- Avoid close contact with others so you don't spread germs
- Drink liquids like Gatorade/Powerade to make sure you're getting your electrolytes
- Drink hot soup, hot tea

- Sore throat→ gargling salt water, cough drops, hard candies to suck on, turmeric and honey with ginger tea helps!
- Stuffy nose→ nasal spray
- humidifier→ adds moisture to air helping with your congestion, elevation yourself when you sleep
- fever→ liquids, sleep, tea, medicine tylenol
- Lemon water with honey helps with congestion and dehydration
- Important to blow your nose often instead of sniffling the germy mucus back
- Take steamy showers
- Fever - goal is to bring the temperature down even if you are feeling hot or cold, you need to treat internal temp, drink cold fluids, rest
- Take Antibiotics and over the counter prescribed medicine

Materials

Protecting your immune system is extremely important! When the immune system is not healthy it can't fight back! Keeping your immune system healthy with proper care prevents you from getting sick and catching common illnesses like pneumonia and influenza.

THANK YOU GUYS FOR LISTENING! NOW TIME FOR A FUN ACTIVITY!

Bacteria in immune system video
https://www.youtube.com/watch?v=JnlULOjUhSQ&list=LLwiJTLCEnm4uOcV4MF7o5XQ&index=3

Colds, the Flu, and You
https://www.youtube.com/watch?v=4uzNnKm41W8&list=LLwiJTLCEnm4uOcV4MF7o5XQ

T-Chart Activity with all the pictures in the correct column.

Materials

Take home paper: We made sure every student received this to inform their parents/guardian that their child was given a presentation over the immune system.

Dear Parent/Guardian,

Today, your son/daughter was taught the importance of maintaining a healthy immune system, prevention from sicknesses, and what to do if he/she is sick. This lesson was given to your child by two students that attend Bedford High School during the last hour of the school day. Both of us are part of an extracurricular club at our school called HOSA. It stands for Health Occupations Students of America. HOSA is for students that hope to see themselves in the health professions field as their career. We decided to come into your child's classroom to show that protecting your immune system isn't just covering your mouth when they sneeze or washing your hands when needed. It is much more complex. We started off by introducing ourselves. We then gave the students a short pre-assessment followed by a slideshow explaining the importance of your immune system. After the slideshow, we had the students complete a fun activity. We then gave them a post-assignment to see what they learned. Finally, if time permitted, we did another activity with them. We recommend that you ask your child what they learned today. Thank you!

Sincerely,

Hussein Jomaa and Ilana Ravindra

Materials

Presentation script:

Ilana: Hello, everyone! How are you guys doing today?! (Introduce yourself)

Hussein: Introduce yourself

Ilana: ...and the both of us are freshmen at Bedford High School! TAKE OUT PENCILS
NEXT SLIDE

Hussein:

- We're here today to teach you guys about your immune system!
- By the end of today, you will know what your immune system is, the ways on how to protect your immune system, the importance of the immune system, how to prevent yourself from getting sick, and how to care for yourself when you're sick.

Kaiden: We are part of a club at our school called HOSA. HOSA stands for Health Occupations Students of America, meant for students who wish to have career opportunities in the health and medical field.

Start Passing out pre-assessments**

Ilana: We are also here because it's the time of the year where the flu and all sorts of illnesses are going around, germs are spreading! We want to help your body stay healthy and teach you how to stay protected from the evil viruses!

Hussein: Before we start, we want to see what you know. On your desks, we've given out a short pre-assessment. Take 5 minutes to fill out the questions with what you know, and don't worry, you haven't learned this yet so try your best!

Collect pre-tests*

Ilana: Make sure to pay attention during this presentation because there will be a short test at the end. Ok, so here is a diagram of our immune system. As you can see, our immune system is spread throughout the body and involves many types of cells, organs, proteins, and tissues.

Hussein: So what is the immune system? The immune system is a network of cells that is our body's defense against infections and bacteria. Remember, it's not just one cell, it's many cells working together!!

Ilana: Your immune system has the job of attacking and fighting all the germs that enter your body. (Read the rest of slide)

Hussein: (point on chart) The main parts are white blood cells, antibodies, the complement system, the lymphatic system, spleen, thymus, and bone marrow.

Hussein: Cells, tissues, and organs all work together to protect your body from germs. Read the rest of slide. Pictures slide*

Why is it important to protect it?
Ilana: It is extremely important to protect your immune system because it's in charge of helping us go about when we are constantly being exposed and open to germs each day!
It is the main way your body fights off diseases and without a healthy immune system, you will pick up diseases and infections easily

Hussein: Pneumonia, influenza, the flu, and the cold are spreading around, especially now when the weather is cold! These illnesses affect millions of people around the world and each year in the U.S., 250,000 people have gone to the hospital and 50,000 people die from pneumonia.

Ilana: Can anyone tell me what pneumonia is? Answer- lung inflammation caused by a bacterial or viral infection, basically a lung infection making it hard for you to breathe

Ilana: There are 6 main ways to keep yourself healthy during this season of illness, read rest of slide.

Ilana: We will now go into depth on Ways to keep your Immune System Healthy & How to Prevent yourself from getting sick

Hussein: The most important thing to do is constantly washing your hands! Be sure to wash with warm water and soap for 20 seconds singing the alphabet. Wash after using the bathroom, before you eat, after playing outside, and coming back from school, for up to about 7 times per day!

Ilana: When you sneeze or cough, COVER your mouth with your elbow/sleeve or tissue! Never use your hands because you will spread germs!

Hussein: Don't pick at your wounds or your cuts! The germs on your hands will enter your body through the cuts. The best thing to do is to apply a band-aid and wash the area.

Hussein: Maintaining a good and healthy weight is important! Eating the right amounts of food is important! Being too weak or too obese can lead you to sickness.

Ilana: You need to exercise regularly daily for at least 30 minutes! Getting fresh air and keeping your body active decreases your risk of getting sick! You are also helping to keep your blood cells circulated so they can move around and fight off bacteria!

Ilana: Getting a flu shot every year will help keep your body safe. If you travel, you should consider getting additional vaccines ESPECIALLY when going out of the country because there are certain diseases you could catch.

Materials

Hussein: Raise your hand if you're always worried or stressed out about something, like school? Being stressed out is bad for our bodies, so it's best to slow down and take breaks and rest. Reduce your stress.

Ilana: Every night you should get 10-12 hours of sleep because you're still young and your body is still growing and developing, you need enough energy. When we sleep well at night, we feel good during the day!
Kaiden: Getting vitamins into your body by taking vitamin supplements! Make sure to get enough vitamin D, this can come from the sun, eggs, salmon, and tuna.

Hussein: Eat the proper nutrition and eat from a variety of food groups! Balance it out! Who can name the five food groups?

Ilana: Staying hydrated and drinking lots of water during the day cleanses your body. Remember, 8 cups of water is recommended! Also, drink clean and filtered water, and stay aware when algae calls in the water.

Hussein: Next, we are going to tell you what foods you should be incorporating in your diet. It should be a diet high in fruits and veggies, here are the foods that are good for your immune system.

Ilana:

- drinking hot tea with cinnamon is good for your guts
- oranges contain lots of vitamin C which is good during flu season
- other foods with vitamin c include tomatoes, peas, peppers, and you can take vitamin C supplements
- watermelon is a great superfood because it contains a citrulline acid that keeps the heart-healthy, rich in Vitamins A, C, and B6 which keeps your bones strong.

Ilana:

- Broccoli, kale, and cauliflower have loads of nutrients that are good for your gut.
- How many of you guys like to eat broccoli, kale, and cauliflower?
- Next, yogurt has lots of vitamin D and it produces white cells to help fight bacteria.
- When you have a stuffy nose, ginger decreases inflammation and is best when you're sick.
- It Reduces inflammatory illnesses and decreases nausea.

Hussein:

- itrus fruits like grapefruit, oranges, lemons, limes, tangerines, and red bell peppers all have vitamin c and anything with vitamin C is good for the immune system. (Continue reading slide)

Ilana: The MOST IMPORTANT things you should do to keep yourself from getting sick is:

- Practicing good hygiene which means showering once a day, washing your hands, covering your nose and mouth when you cough and sneeze.
- Try not to touch your face, mouth, or nose when you're at school.
- You should stay away from others that are sick, and wipe down your desks and tables every day during flu season, and avoid sharing your germs

Materials

Lastly, we are going to show you ways to care for yourself when you're sick!

- It's important to stay hydrated when you're sick to get rid of all the toxins in your body and to replace the fluids that are lost.
- Drinking water and green tea is the best!

Hussein:

- Stay home if you're contagious for 24 hours.
- Continue washing hands
- Don't touch mouth, eyes, nose
- Sanitize and disinfect everything around you with wipes
- Avoid close contact with others so you don't spread germs

Ilana: Drinking fluids like Gatorade and Powerade are good because they have electrolytes. Hot soup and hot tea are the best when you're sick, especially when your body temperature is cold. When you have a sore throat, gargle saltwater, suck on hard candies and cough drops, and drinking turmeric and honey with ginger tea is the key!

Hussein:

- If you have a stuffy nose, use a nasal spray because it helps to clear your stuffy nose
- Running a humidifier adds moisture to the air helping with your congestion
- When sleeping you should elevate yourself, meaning to sleep with your head high on a pillow

Hussein:

- With a fever, you need water and liquids for energy, hot soup and tea, sleep, and medicine
- Lemon water with honey helps with congestion and dehydration
- It's Important to blow your nose often instead of sniffling the germy mucus back into your system
- Take steamy showers when you're cold and shivery
- With a Fever - the goal is to bring the temperature down even if you are feeling hot or cold, you need to treat internal temperature by drinking cold fluids, and with rest
- Take Antibiotics and over the counter prescribed medicine

Ilana: Protecting your immune system is extremely important! When the immune system is not healthy it can't fight back!

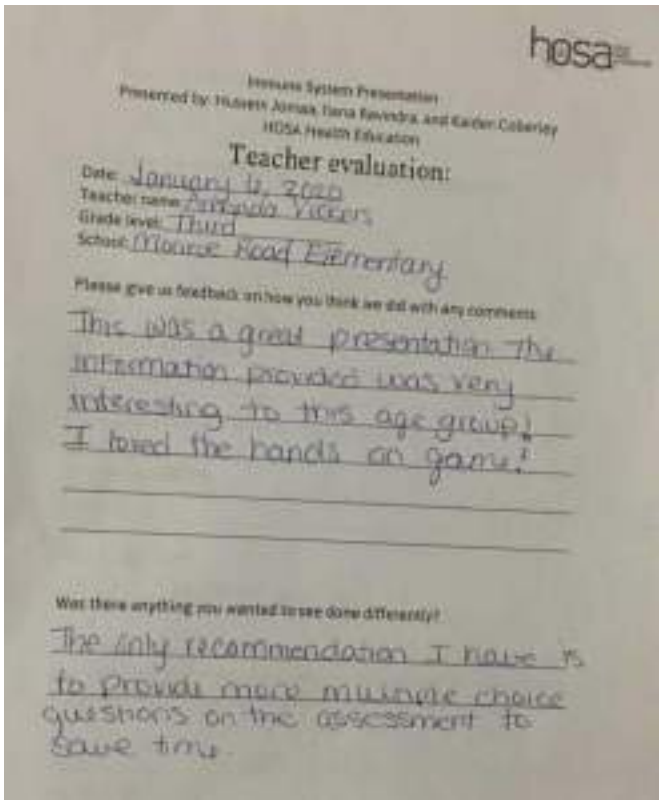
Hussein: Keeping your immune system healthy with proper care prevents you from getting sick and catching common illnesses like pneumonia and influenza.

Ilana: Thanks for hanging tight during the presentation! Do any of you have any questions, feel free to ask them to any of us if you think of one! Now, time for an activity!

Activity
Post assessment
Student Evaluation
Extra Game
Immune System Demonstration
Quick Video to review
Class picture

Feedback Tools

Teacher Evaluation Feedback:



hosa

Immune System Presentation
Presented by: Hussein Jomaa, Rana Ravindra, and Kaiden Coberley
HOSA Health Education

Teacher evaluation:

Date: January 6, 2020
Teacher name: Amanda Vickers
Grade level: Third
School: Monroe Road Elementary

Please give us feedback on how you think we did with any comments:

This was a great presentation. The information provided was very interesting to this age group! I loved the hands on game!

Was there anything you wanted to see done differently?

The only recommendation I have is to provide more multiple choice questions on the assessment to save time.

hosa

Do you think this lesson was beneficial to the students?

Absolutely!

Circle how you would describe each of the following categories:
1. Disagree
2. Fair
3. Agree

The topic is related to health education	1 2 (3)
Grade level appropriateness	1 2 (3)
The lesson was useful	1 2 (3)
Google slides presentation	1 2 (3)
Interest level	1 2 (3)
Activity	1 2 (3)
Interactive with kids	1 2 (3)
Came prepared	1 2 (3)

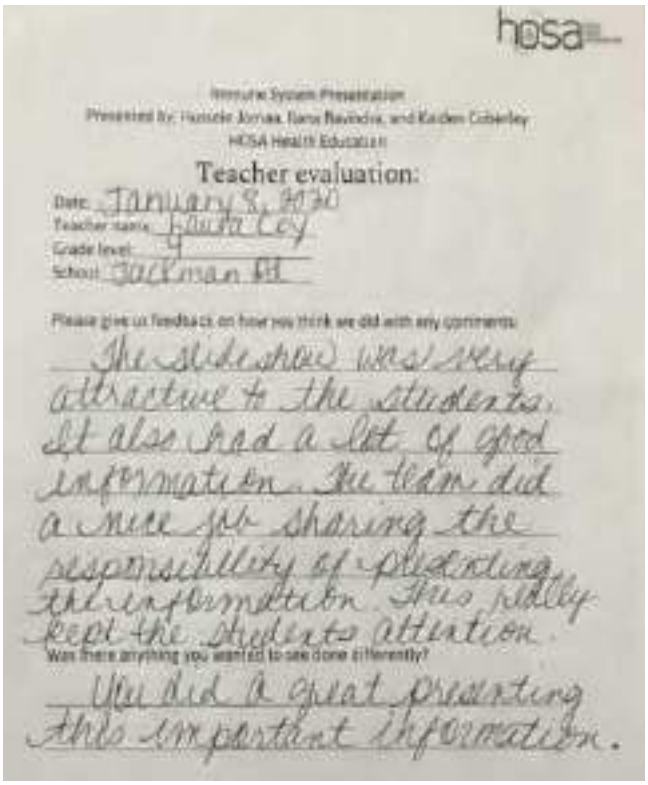
Teacher signature:

x Amanda Vickers

Thank you for allowing us to come in and present to your students during your class time. We greatly appreciate your dedication to arranging time on your schedule for us. We also appreciate your feedback. Thank you!

-Rana Ravindra
-Hussein Jomaa

Thank you very much!
Good luck in your futur



hosa

Immune System Presentation
Presented by: Hussein Jomaa, Rana Ravindra, and Kaiden Coberley
HOSA Health Education

Teacher evaluation:

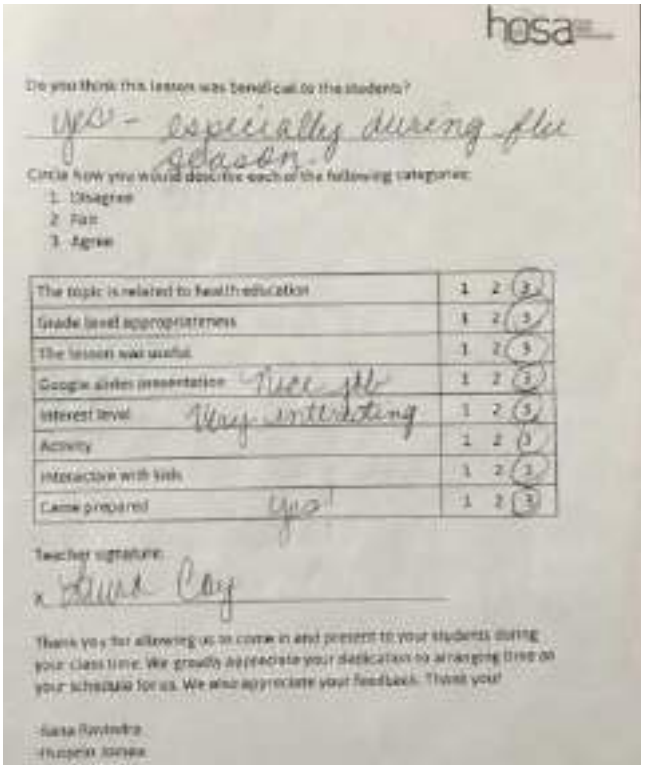
Date: January 8, 2020
Teacher name: Paula Coy
Grade level: 4
School: Jackman MS

Please give us feedback on how you think we did with any comments:

The slideshow was very attractive to the students. It also had a lot of good information. The team did a nice job sharing the responsibility of presenting the information. This really kept the students attention.

Was there anything you wanted to see done differently?

You did a great presenting this important information.



hosa

Do you think this lesson was beneficial to the students?

Yes - especially during flu season.

Circle how you would describe each of the following categories:
1. Disagree
2. Fair
3. Agree

The topic is related to health education	1 2 (3)
Grade level appropriateness	1 2 (3)
The lesson was useful	1 2 (3)
Google slides presentation Nice job	1 2 (3)
Interest level Very interesting	1 2 (3)
Activity	1 2 (3)
Interactive with kids	1 2 (3)
Came prepared Yes!	1 2 (3)

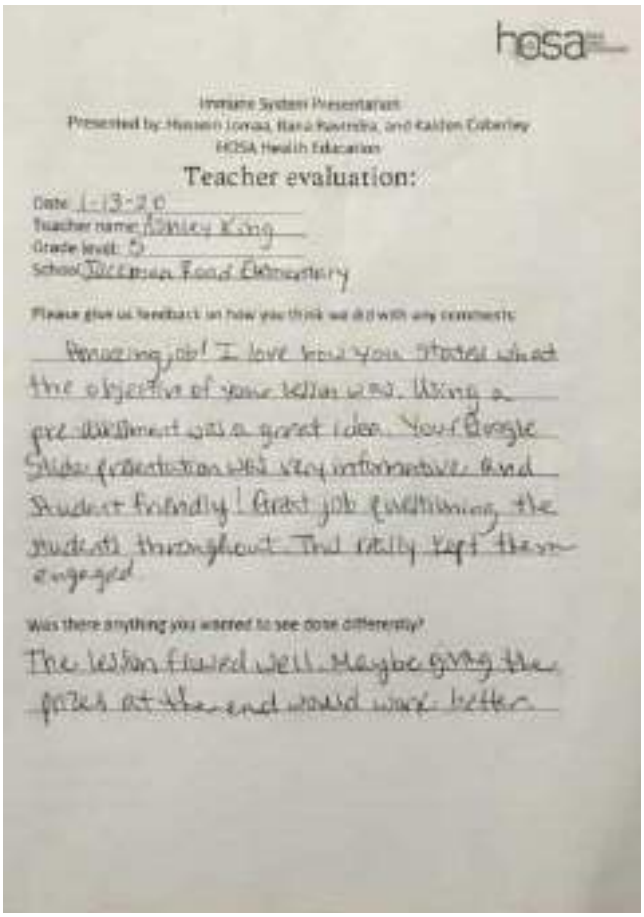
Teacher signature:

x Paula Coy

Thank you for allowing us to come in and present to your students during your class time. We greatly appreciate your dedication to arranging time on your schedule for us. We also appreciate your feedback. Thank you!

-Rana Ravindra
-Hussein Jomaa

Feedback Tools



hosa

Immune System Presentation
Presented by: Hussein Jomaa, Ilana Ravindra, and Kaiden Cobertley
HOSA Health Education

Teacher evaluation:

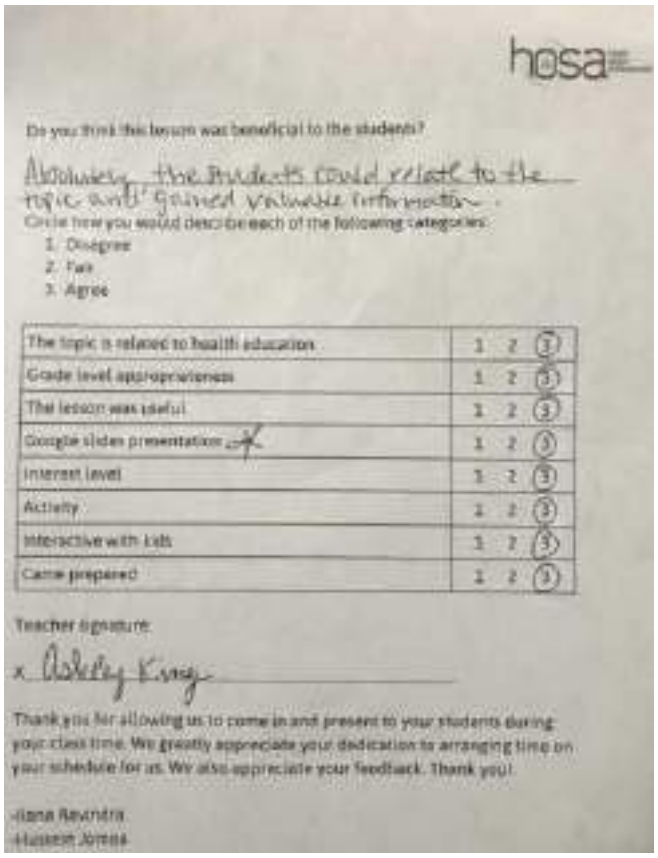
Date: 1-13-20
Teacher name: Ashley King
Grade level: 5
School: Thompson Road Elementary

Please give us feedback on how you think we did with any comments:

Amazing job! I love how you stated what the objective of your lesson was. Using a pre-assessment was a great idea. Your Google Slides presentation was very informative and Student friendly! Great job engaging the students throughout. That really kept them engaged.

Was there anything you wanted to see done differently?

The lesson flowed well. Maybe giving the prizes at the end would work better.



hosa

Do you think the lesson was beneficial to the students?

Absolutely, the students could relate to the topic and gained valuable information.

Circle how you would describe each of the following categories:
1. Disagree
2. Fair
3. Agree

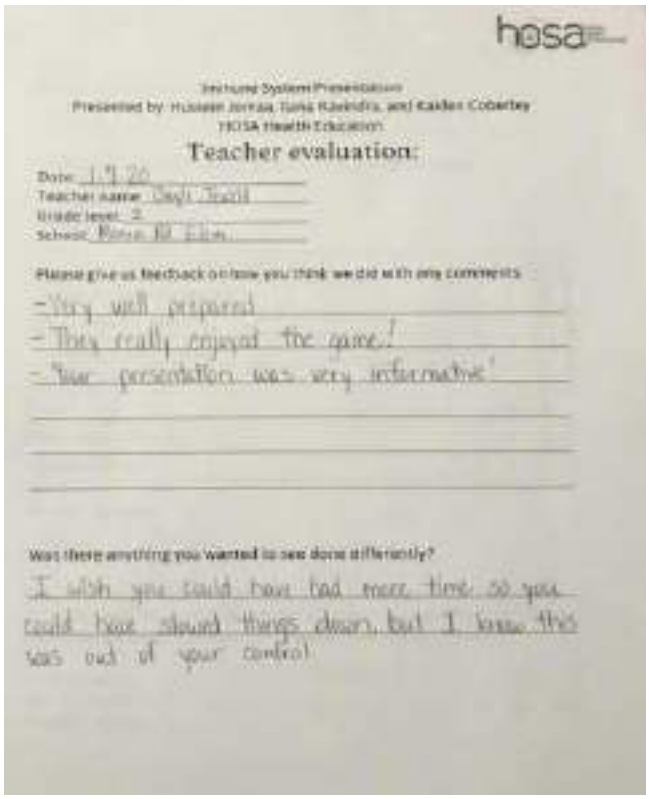
The topic is related to health education	1	2	(3)
Grade level appropriateness	1	2	(3)
The lesson was useful	1	2	(3)
Google slides presentation	1	2	(3)
Interest level	1	2	(3)
Activity	1	2	(3)
Interactive with kids	1	2	(3)
Came prepared	1	2	(3)

Teacher signature:

x Ashley King

Thank you for allowing us to come in and present to your students during your class time. We greatly appreciate your dedication to arranging time on your schedule for us. We also appreciate your feedback. Thank you!

-Ilana Ravindra
-Hussein Jomaa



hosa

Immune System Presentation
Presented by: Hussein Jomaa, Ilana Ravindra, and Kaiden Cobertley
HOSA Health Education

Teacher evaluation:

Date: 1.9.20
Teacher name: Gayle Quell
Grade level: 2
School: Rose M. Ellis

Please give us feedback on how you think we did with any comments:

- Very well prepared
- They really enjoyed the game!
- Your presentation was very informative!

Was there anything you wanted to see done differently?

I wish you could have had more time so you could have slowed things down, but I know this was out of your control.

hosa

Do you think this lesson was beneficial to the students?

Yes

Circle how you would describe each of the following categories:
1. Disagree
2. Fair
3. Agree

The topic is related to health education	1	2	(3)
Grade level appropriateness	1	2	(3)
The lesson was useful	1	2	(3)
Google slides presentation	1	2	(3)
Interest level	1	2	(3)
Activity	1	2	(3)
Interactive with kids	1	2	(3)
Came prepared	1	2	(3)

Teacher signature:

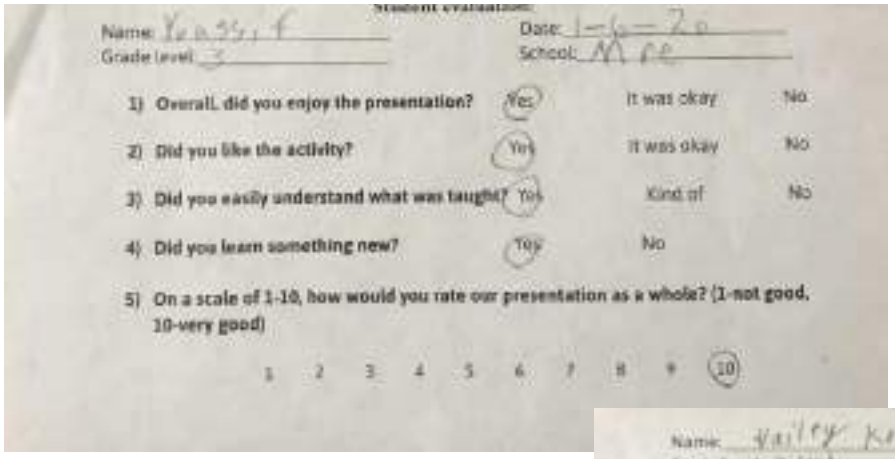
x Gayle A Quell

Thank you for allowing us to come in and present to your students during your class time. We greatly appreciate your dedication to arranging time on your schedule for us. We also appreciate your feedback. Thank you!

-Ilana Ravindra
-Hussein Jomaa

Thanks for including us! Best of luck to you all

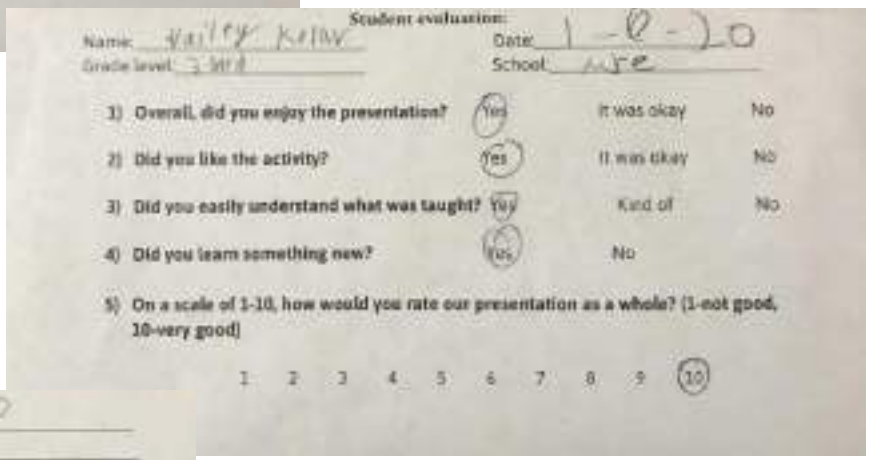
Feedback Tools



Name: [illegible] Date: 1-6-20
Grade level: 3 School: Mine

1) Overall, did you enjoy the presentation? Yes It was okay No
2) Did you like the activity? Yes It was okay No
3) Did you easily understand what was taught? Yes Kind of No
4) Did you learn something new? Yes No
5) On a scale of 1-10, how would you rate our presentation as a whole? (1-not good, 10-very good)

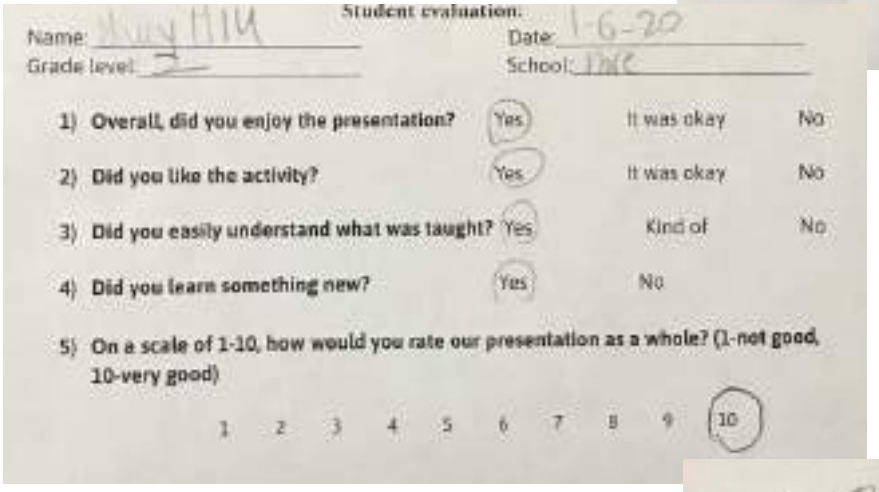
1 2 3 4 5 6 7 8 9 10



Student evaluation:
Name: [illegible] Date: 1-6-20
Grade level: 3rd School: Mine

1) Overall, did you enjoy the presentation? Yes It was okay No
2) Did you like the activity? Yes It was okay No
3) Did you easily understand what was taught? Yes Kind of No
4) Did you learn something new? Yes No
5) On a scale of 1-10, how would you rate our presentation as a whole? (1-not good, 10-very good)

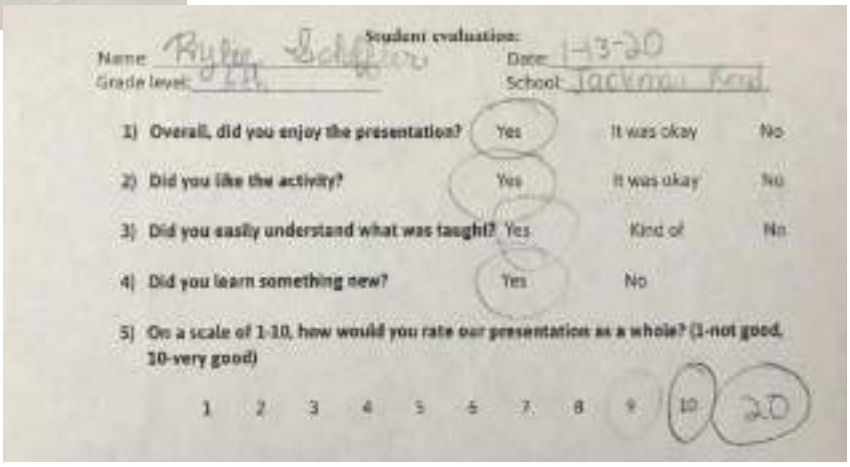
1 2 3 4 5 6 7 8 9 10



Student evaluation:
Name: [illegible] Date: 1-6-20
Grade level: 2 School: Mine

1) Overall, did you enjoy the presentation? Yes It was okay No
2) Did you like the activity? Yes It was okay No
3) Did you easily understand what was taught? Yes Kind of No
4) Did you learn something new? Yes No
5) On a scale of 1-10, how would you rate our presentation as a whole? (1-not good, 10-very good)

1 2 3 4 5 6 7 8 9 10

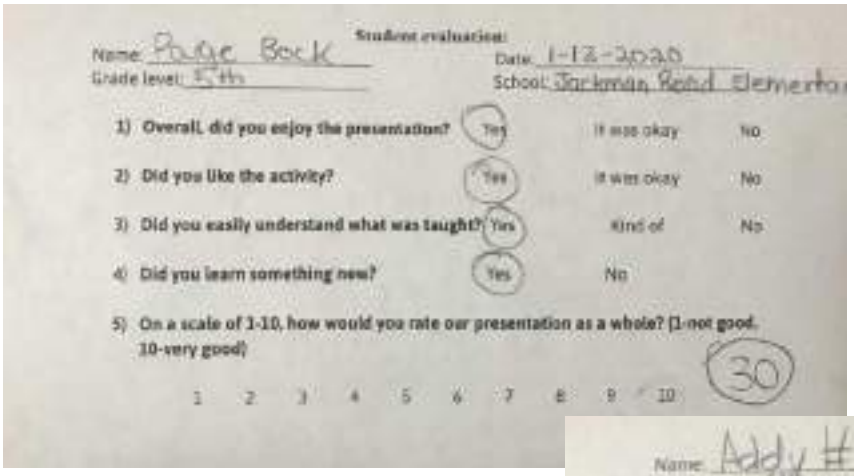


Student evaluation:
Name: Ryley Schiffern Date: 1-13-20
Grade level: 2nd School: Jackson Park

1) Overall, did you enjoy the presentation? Yes It was okay No
2) Did you like the activity? Yes It was okay No
3) Did you easily understand what was taught? Yes Kind of No
4) Did you learn something new? Yes No
5) On a scale of 1-10, how would you rate our presentation as a whole? (1-not good, 10-very good)

1 2 3 4 5 6 7 8 9 10 20

Feedback Tools



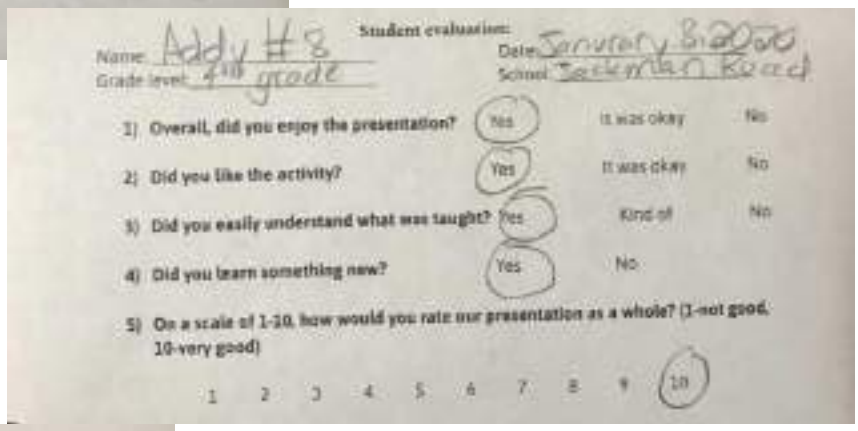
Student evaluation:

Name: Paige Beck
Grade level: 5th
Date: 1-13-2020
School: Jackman Road Elementary

1) Overall, did you enjoy the presentation? Yes / It was okay / No
2) Did you like the activity? Yes / It was okay / No
3) Did you easily understand what was taught? Yes / Kind of / No
4) Did you learn something new? Yes / No
5) On a scale of 1-10, how would you rate our presentation as a whole? (1-not good, 10-very good)

1 2 3 4 5 6 7 8 9 10

30

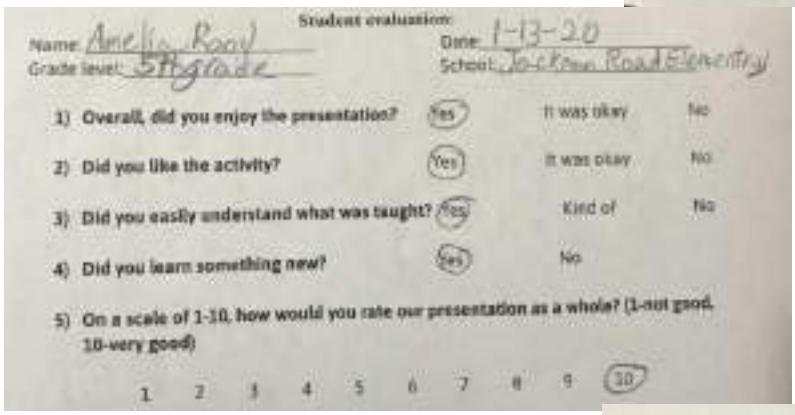


Student evaluation:

Name: Addy #8
Grade level: 4th grade
Date: January 8 2020
School: Jackman Road

1) Overall, did you enjoy the presentation? Yes / It was okay / No
2) Did you like the activity? Yes / It was okay / No
3) Did you easily understand what was taught? Yes / Kind of / No
4) Did you learn something new? Yes / No
5) On a scale of 1-10, how would you rate our presentation as a whole? (1-not good, 10-very good)

1 2 3 4 5 6 7 8 9 10

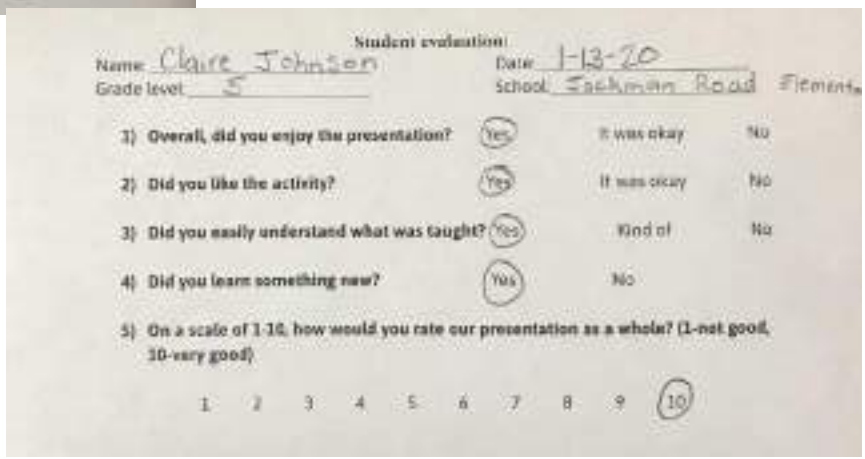


Student evaluation:

Name: Amelia Rood
Grade level: 5th grade
Date: 1-13-20
School: Jackman Road Elementary

1) Overall, did you enjoy the presentation? Yes / It was okay / No
2) Did you like the activity? Yes / It was okay / No
3) Did you easily understand what was taught? Yes / Kind of / No
4) Did you learn something new? Yes / No
5) On a scale of 1-10, how would you rate our presentation as a whole? (1-not good, 10-very good)

1 2 3 4 5 6 7 8 9 10



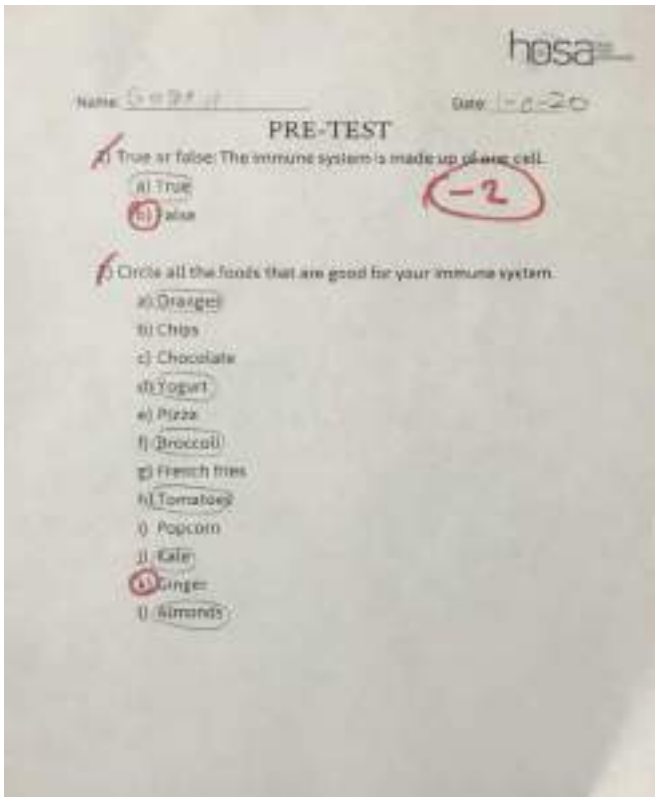
Student evaluation:

Name: Claire Johnson
Grade level: 5
Date: 1-13-20
School: Jackman Road Element.

1) Overall, did you enjoy the presentation? Yes / It was okay / No
2) Did you like the activity? Yes / It was okay / No
3) Did you easily understand what was taught? Yes / Kind of / No
4) Did you learn something new? Yes / No
5) On a scale of 1-10, how would you rate our presentation as a whole? (1-not good, 10-very good)

1 2 3 4 5 6 7 8 9 10

Feedback Tools



hosa

Name: [illegible] Date: 1-6-20

PRE-TEST

1) True or false: The immune system is made up of one cell.

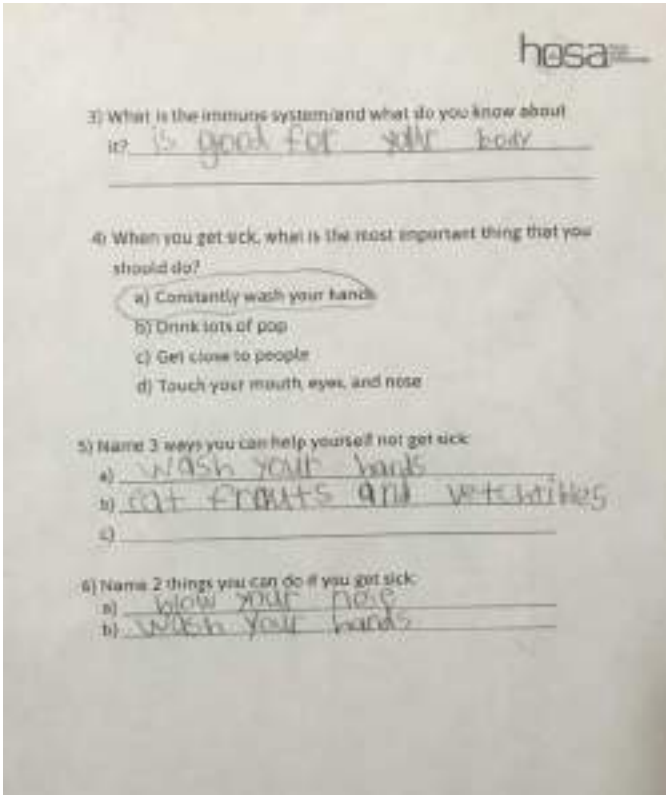
a) True

b) False

-2

2) Circle all the foods that are good for your immune system.

a) Oranges
b) Chips
c) Chocolate
d) Yogurt
e) Pizza
f) Broccoli
g) French fries
h) Tomatoes
i) Popcorn
j) Kale
k) Ginger
l) Almonds



hosa

3) What is the immune system and what do you know about it? is good for your body

4) When you get sick, what is the most important thing that you should do?

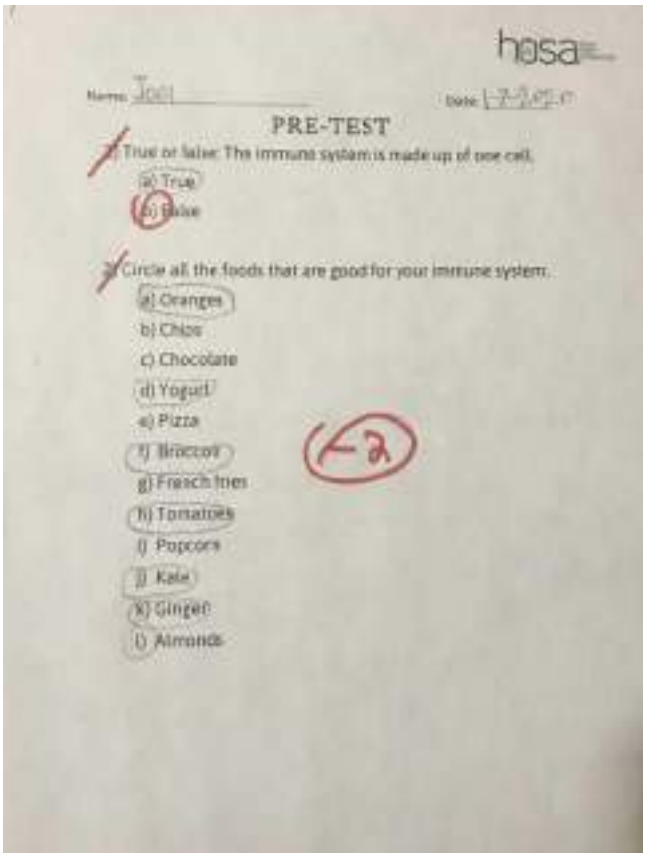
a) Constantly wash your hands
b) Drink lots of pop
c) Get close to people
d) Touch your mouth, eyes, and nose

5) Name 3 ways you can help yourself not get sick:

a) wash your hands
b) eat fruits and vegtables
c)

6) Name 2 things you can do if you get sick:

a) blow your nose
b) wash you hands



hosa

Name: Joel Date: 1-7-20

PRE-TEST

1) True or false: The immune system is made up of one cell.

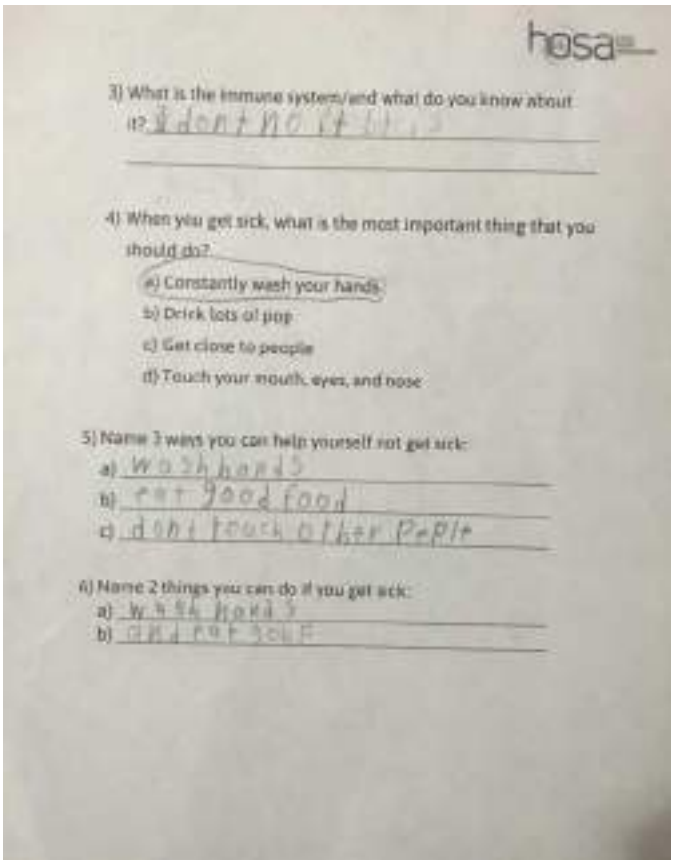
a) True

b) False

2) Circle all the foods that are good for your immune system.

a) Oranges
b) Chips
c) Chocolate
d) Yogurt
e) Pizza
f) Broccoli
g) French fries
h) Tomatoes
i) Popcorn
j) Kale
k) Ginger
l) Almonds

-2



hosa

3) What is the immune system and what do you know about it? I don't no it

4) When you get sick, what is the most important thing that you should do?

a) Constantly wash your hands
b) Drink lots of pop
c) Get close to people
d) Touch your mouth, eyes, and nose

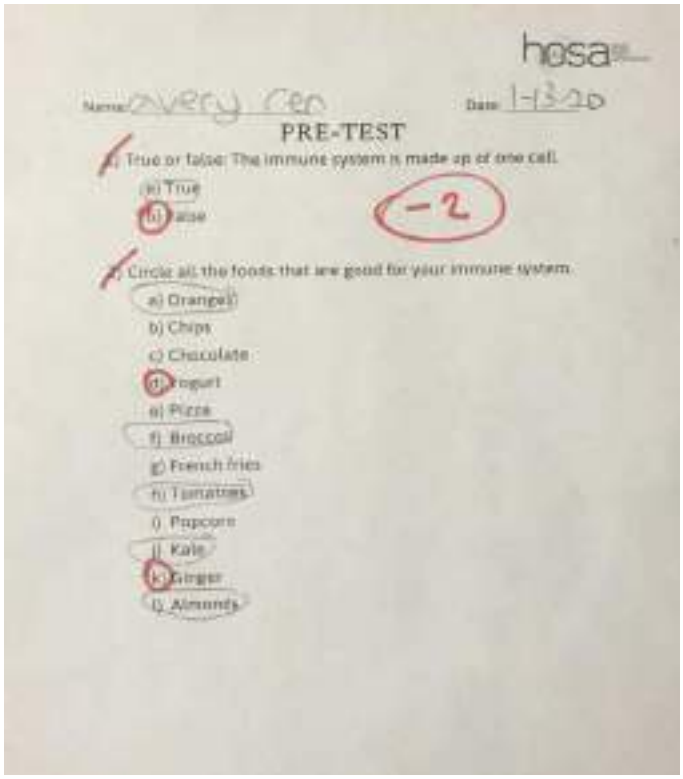
5) Name 3 ways you can help yourself not get sick:

a) wash hands
b) eat good food
c) don't touch other ppls

6) Name 2 things you can do if you get sick:

a) wash hands
b) and eat soup

Feedback Tools



hosa

Name: Avery Cen Date: 1-13-20

PRE-TEST

1) True or false: The immune system is made up of one cell.

a) True

b) False

-2

2) Circle all the foods that are good for your immune system.

a) Oranges

b) Chips

c) Chocolate

d) Yogurt

e) Pizza

f) Broccoli

g) French fries

h) Tomatoes

i) Popcorn

j) Kale

k) Ginger

l) Almonds

hosa

3) What is the immune system and what do you know about it?

4) When you get sick, what is the most important thing that you should do?

a) Constantly wash your hands

b) Drink lots of pop

c) Get close to people

d) Touch your mouth, eyes, and nose

5) Name 3 ways you can help yourself not get sick:

a)

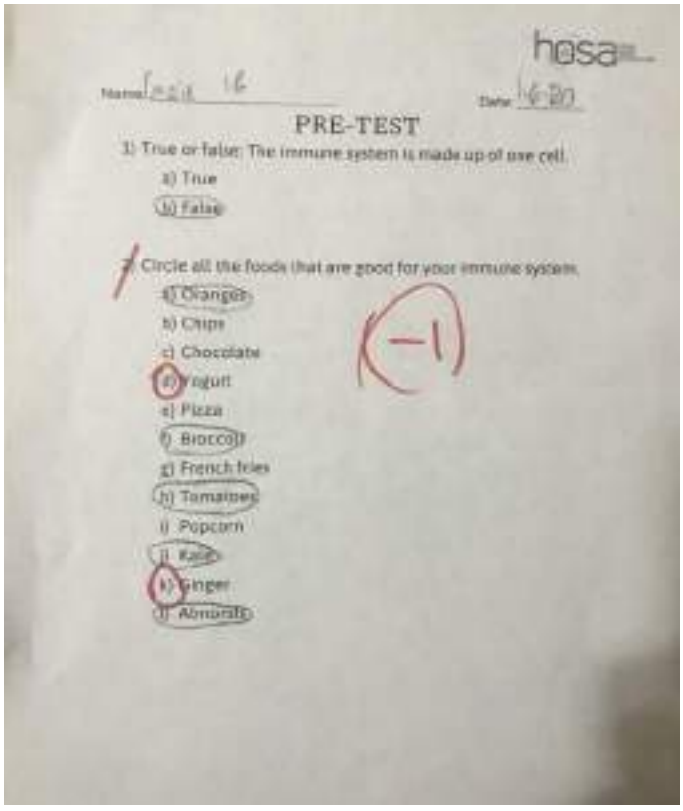
b)

c)

6) Name 2 things you can do if you get sick:

a)

b)



hosa

Name: [illegible] Date: 1-6-20

PRE-TEST

1) True or false: The immune system is made up of one cell.

a) True

b) False

2) Circle all the foods that are good for your immune system.

a) Oranges

b) Chips

c) Chocolate

d) Yogurt

e) Pizza

f) Broccoli

g) French fries

h) Tomatoes

i) Popcorn

j) Kale

k) Ginger

l) Almonds

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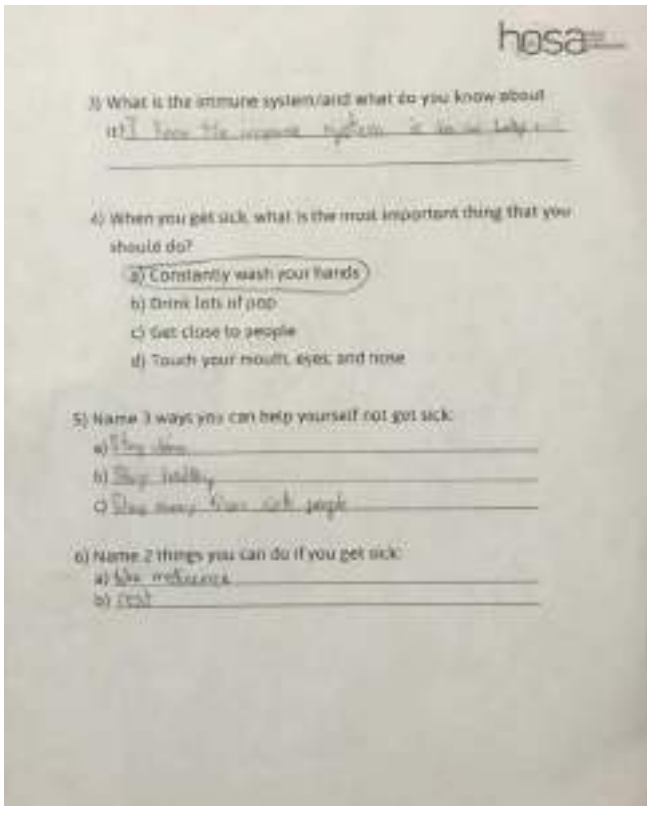


hosa

3) What is the immune system/and what do you know about it?

4) When you get sick, what is the most important thing that you should do?

a) Constantly wash your hands

b) Drink lots of pop

c) Get close to people

d) Touch your mouth, eyes, and nose

5) Name 3 ways you can help yourself not get sick:

a)

b)

c)

6) Name 2 things you can do if you get sick:

a)

b)

Feedback Tools

hosa

Name: Chloe Date: 1-13-20

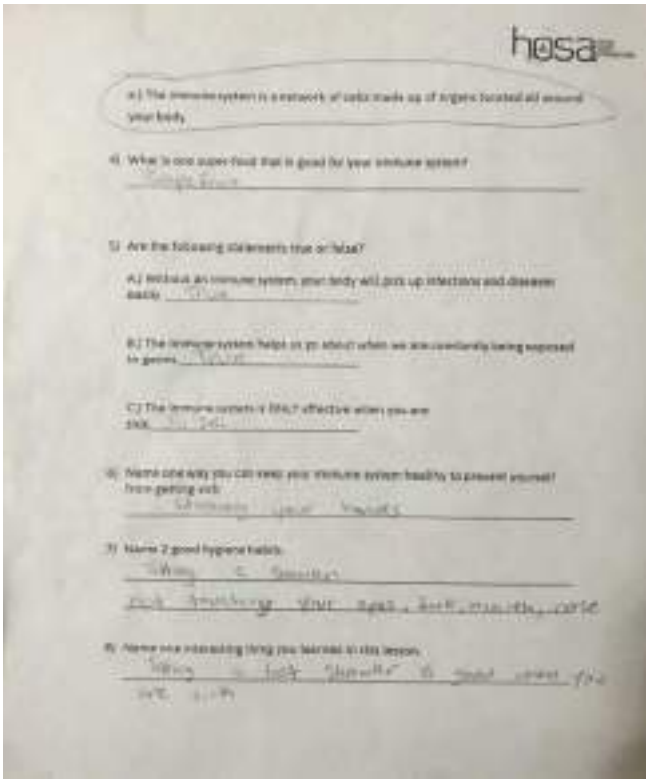
POST-TEST

1) True or false: You should pick at your wounds
a) True
b) False

2) Circle all the things that are good for your immune system
a) Exercising
b) Not eating
c) Lack of Sleep
d) Yogurt
e) Pizza
f) Getting proper amounts of sleep
g) Smoking/Drugs/Alcohol
h) Balanced meals
i) watermelon
j) Drinking Pop
k) Citrus fruits
l) Kale
m) Drinking water and staying hydrated
n) Almonds

-0
100%

3) Circle the options that are true about your immune system
a) Needed for survival
b) The immune system attacks and fights germs to keep us healthy
c) It is located only in one spot of the body
d) It's made up of only one cell


hosa

a) The immune system is a network of cells made up of organs located all around your body

4) What is one superfood that is good for your immune system?
Oranges

5) Are the following statements true or false?
A) Without an immune system, your body will pick up infections and diseases easily True

B) The immune system helps us go about when we are constantly being exposed to germs True

C) The immune system is ONLY effective when you are sick False

6) Name one way you can keep your immune system healthy to prevent yourself from getting sick
Washing your hands

7) Name 2 good hygiene habits
Wash your hands
Don't touching your face, eat healthy, sleep

8) Name one interesting thing you learned in this lesson
Why a cold shower is good when you are sick

hosa

Name: Avery Harrison Date: 1-13-20

POST-TEST

1) True or false: You should pick at your wounds
a) True
b) False

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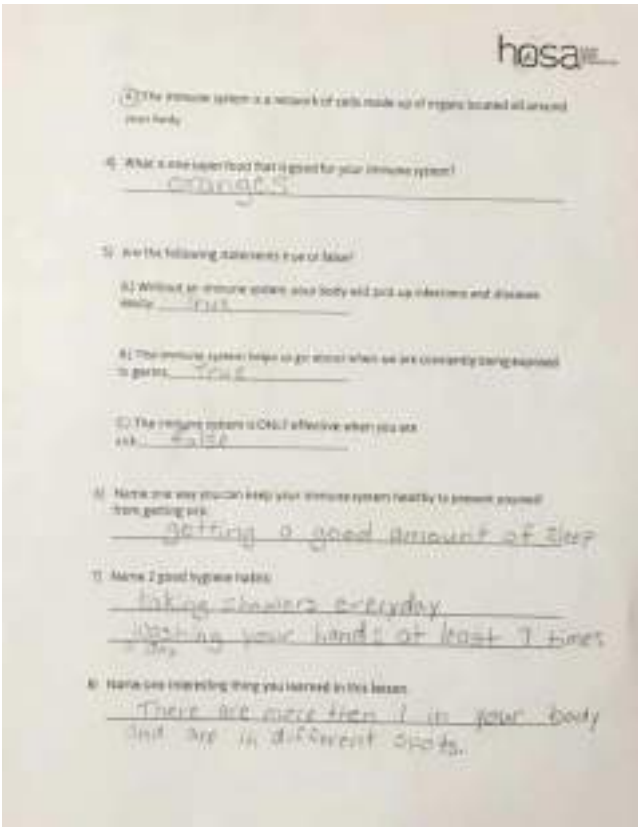
A+

2) Circle all the things that are good for your immune system
a) Exercising
b) Not eating
c) Lack of Sleep
d) Yogurt
e) Pizza
f) Getting proper amounts of sleep
g) Smoking/Drugs/Alcohol
h) Balanced meals
i) watermelon
j) Drinking Pop
k) Citrus fruits
l) Kale
m) Drinking water and staying hydrated
n) Almonds

3) Circle the options that are true about your immune system
a) Needed for survival
b) The immune system attacks and fights germs to keep us healthy
c) It is located only in one spot of the body
d) It's made up of only one cell


hosa

4) The immune system is a network of cells made up of organs located all around your body

4) What is one superfood that is good for your immune system?
Oranges

5) Are the following statements true or false?
A) Without an immune system, your body will pick up infections and diseases easily True

B) The immune system helps us go about when we are constantly being exposed to germs True

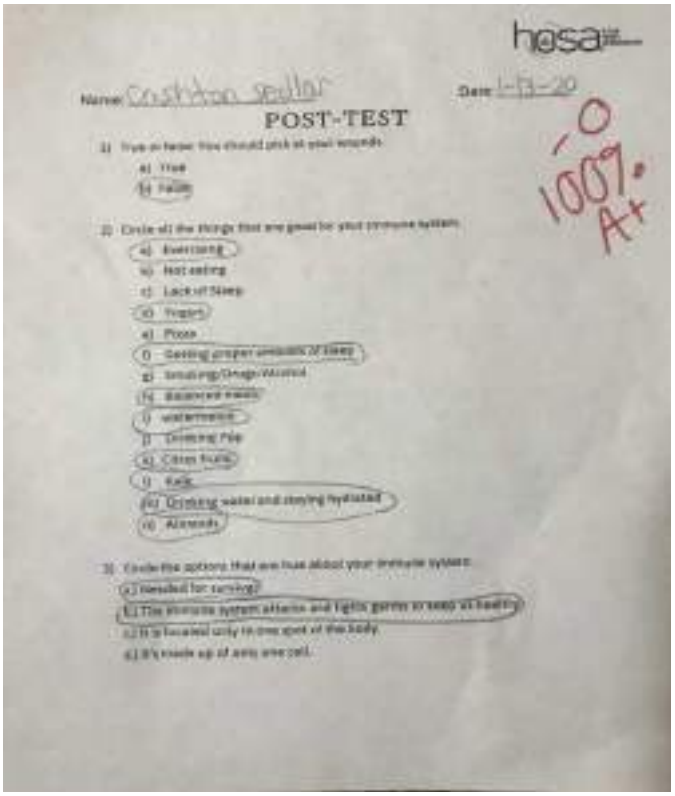
C) The immune system is ONLY effective when you are sick False

6) Name one way you can keep your immune system healthy to prevent yourself from getting sick
Getting a good amount of sleep

7) Name 2 good hygiene habits
Taking showers everyday
Washing your hands at least 7 times a day

8) Name one interesting thing you learned in this lesson
There are cells in your body and are in different shapes.

Feedback Tools



hosa

Name: Cashton Stellar Date: 1-13-20

POST-TEST

1) True or false: You should pick at your wounds
a) True
b) False

2) Circle all the things that are good for your immune system
a) Exercising
b) Not eating
c) Lack of Sleep
d) Yogurt
e) Pizza
f) Getting proper amount of sleep
g) Smoking/Drugs/Alcohol
h) Balanced meals
i) watermelon
j) Drinking Pop
k) Citrus fruits
l) Kale
m) Drinking water and staying hydrated
n) Almonds

3) Circle the options that are true about your immune system
a) Needed for survival
b) The immune system attacks and fights germs to keep us healthy
c) It is located only in one spot of the body
d) It's made up of only one cell

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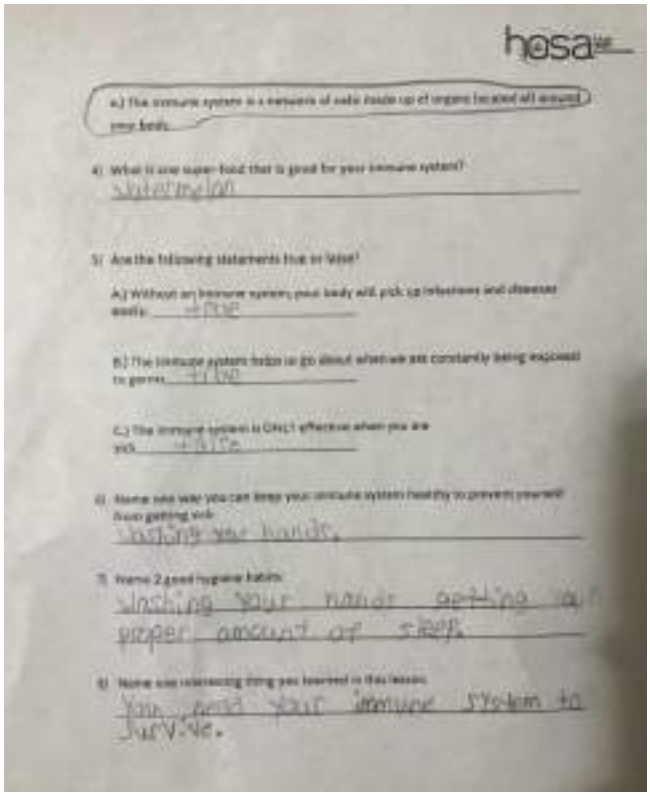
A+



hosa

a) The immune system is a network of cells made up of organs located all around your body.

4) What is one super food that is good for your immune system?
watermelon

5) Are the following statements true or false?
A) Without an immune system, your body will pick up infections and diseases easily. true
B) The immune system helps us go about when we are constantly being exposed to germs. true
C) The immune system is ONLY effective when you are sick. false

6) Name one way you can keep your immune system healthy to prevent yourself from getting sick.
washing your hands.

7) Name 2 good hygiene habits
washing your hands getting a proper amount of sleep.

8) Name one interesting thing you learned in this lesson.
You need your immune system to survive.

hosa

Name: Iva Raigne Date: Jan. 13

POST-TEST

1) True or false: You should pick at your wounds.
a) True
b) False

2) Circle all the things that are good for your immune system
a) Exercising
b) Not eating
c) Lack of Sleep
d) Yogurt
e) Pizza
f) Getting proper amount of sleep
g) Smoking/Drugs/Alcohol
h) Balanced meals
i) watermelon
j) Drinking Pop
k) Citrus fruits
l) Kale
m) Drinking water and staying hydrated
n) Almonds

3) Circle the options that are true about your immune system
a) Needed for survival
b) The immune system attacks and fights germs to keep us healthy
c) It is located only in one spot of the body
d) It's made up of only one cell

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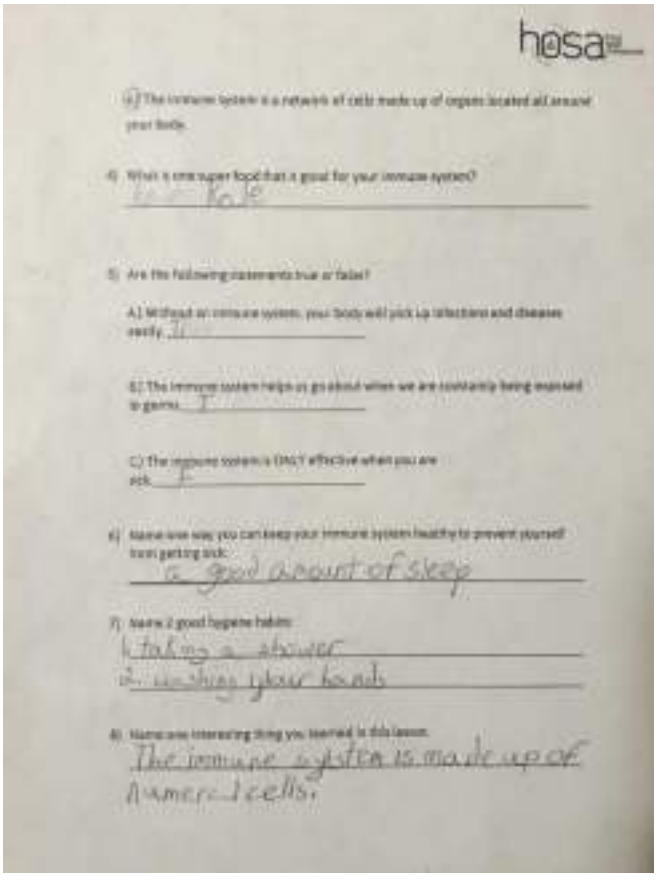
100%
A+



hosa

a) The immune system is a network of cells made up of organs located all around your body.

4) What is one super food that is good for your immune system?
Kale

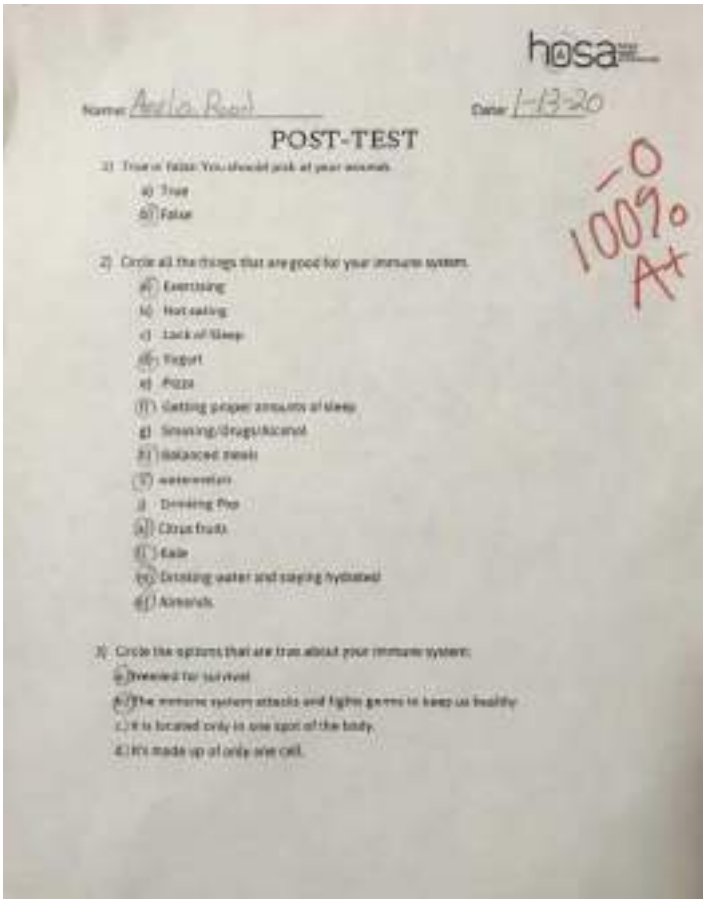
5) Are the following statements true or false?
A) Without an immune system, your body will pick up infections and diseases easily. T
B) The immune system helps us go about when we are constantly being exposed to germs. T
C) The immune system is ONLY effective when you are sick. F

6) Name one way you can keep your immune system healthy to prevent yourself from getting sick.
a good amount of sleep

7) Name 2 good hygiene habits
1. taking a shower
2. washing your hands

8) Name one interesting thing you learned in this lesson.
The immune system is made up of numerous cells.

Feedback Tools



hosa

Name: Avela Reed Date: 1-13-20

POST-TEST

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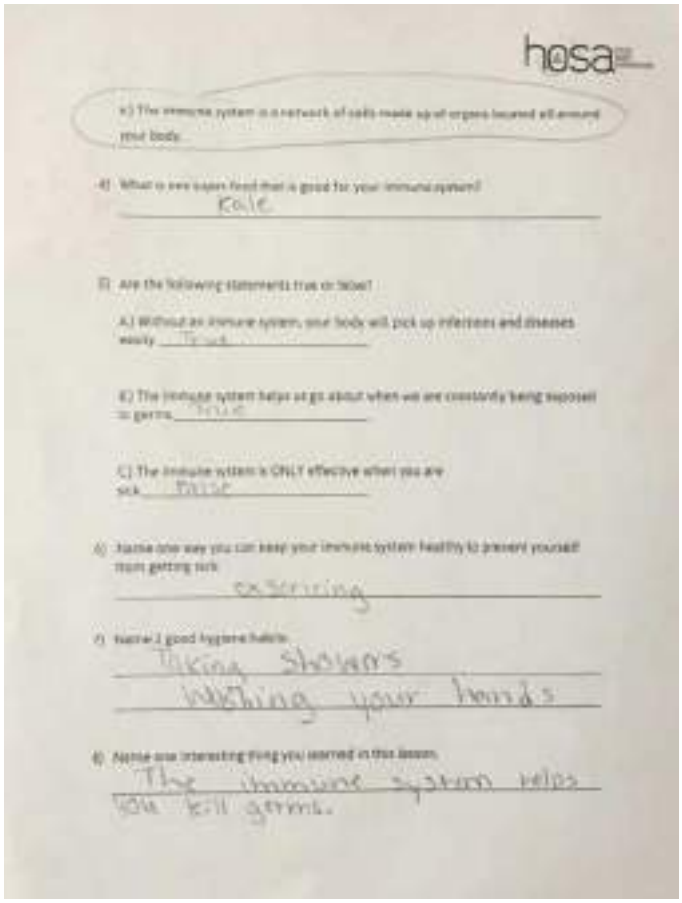
100%
A+

1) True or false: You should pick at your wounds.
a) True
b) False

2) Circle all the things that are good for your immune system.
a) Exercising
b) Not eating
c) Lack of Sleep
d) Yogurt
e) Pizza
f) Getting proper amounts of sleep
g) Smoking/Drugs/Alcohol
h) Balanced meals
i) watermelon
j) Drinking Pop
k) Citrus fruits
l) Kale
m) Drinking water and staying hydrated
n) Almonds

3) Circle the options that are true about your immune system:
a) Invented for survival
b) The immune system attacks and fights germs to keep us healthy
c) It is located only in one spot of the body.
d) It's made up of only one cell.



hosa

a) The immune system is a network of cells made up of organs located all around your body.

4) What is one super food that is good for your immune system?
Kale

5) Are the following statements true or false?

A.) Without an immune system, your body will pick up infections and diseases easily True

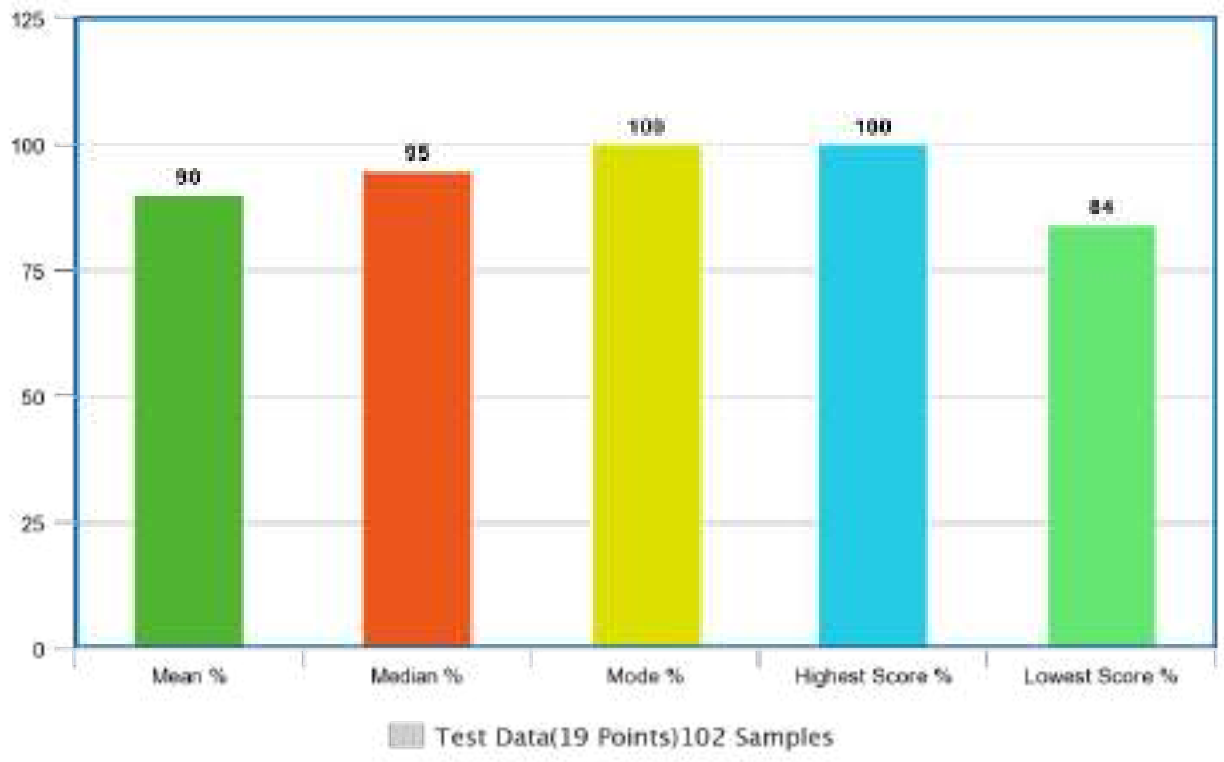
B.) The immune system helps us go about when we are constantly being exposed to germs True

C.) The immune system is ONLY effective when you are sick False

6) Name one way you can keep your immune system healthy to prevent yourself from getting sick
exercising

7) Name 2 good hygiene habits
Taking showers
washing your hands

8) Name one interesting thing you learned in this lesson.
The immune system helps you kill germs.



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