Operation Kidfit Recommendation Report

A Comprehensive Health Exhibit Recommendation
for the
Rochester Museum and Science Center
by the
Sixth Grade Class of the
Gensesee Community Charter School

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Presented on
June 15, 2010

Preface

In the fall of 2009, Ms. Bennett asked our sixth grade class to create a health exhibit for the Rochester Museum & Science Center. This was our yearlong task. We, the entire sixth grade class, would like to thank Ms. Bennett for this opportunity to do such a magnificent service. During our elementary school years, the museum has done so many good things for us. We have visited the museum to study exhibits many times over the last seven years, and the museum has been so generous with its resources, its space, and its time. In return, we are happy to present the museum with our hard work and our ideas.

Preparation

We are well prepared to design a health exhibit. We have dedicated the whole year to learning about health because we knew we needed to know all about health to make an exhibit about it. In the fall, we studied disease, specifically six main epidemics that were found through time. These diseases were Athenian Plague, Malaria, Black Plague, Small Pox, Cholera, and Yellow Fever. We learned about how diseases are transmitted and how they affect the human body. We also learned how governments dealt with the epidemics.

In the winter we first learned about cells and the immune system. But, we spent most of the time learning about the integumentary, respiratory, nervous, digestive, musculo-skeletal, and circulatory systems. Specifically, we studied how nutrition and exercise were two important ways to keep your body systems healthy.

We also started preparing for the 5K race we were hosting for kids ages 8-18. We created a workout video that included four parts – warm-up, cardio, strength and flexibility, and cool-down. We wrote a training manual that accompanied the video and held a "5K Training Night" to prepare kids for training to run the 5K.

Four Cities

We also became experts on exhibit design. Our class split into four groups and traveled to Columbus, Ohio; Pittsburgh, Pennsylvania; Houston, Texas; and Denver, Colorado. We spent four days in world-class museums learning about how they design their exhibits. We visited COSI, The Carnegie Museum of Science, The Health Museum, and the Denver Museum of Nature and Science.

At COSI we visited the *Grossology* exhibit, which teaches about disgusting things that happen in your body like vomiting, boogers, burping, and passing gas. We also became part of one of the exhibits. In this exhibit, called *Labs in Life*, we participated in the Presidential Fitness program. We were also subjects in an experiment to see if Wii Fit actually works.

At the Carnegie Museum of Science, we spent a lot of time in the *Sportsworks* exhibit. We learned how sports keep your body fit while you're having fun. We also participated in the kitchen science program called "Dr. Payne's Hideous Brain." We made an edible Jell-O brain while learning about numerous parts of the brain.

The exhibits at The Health Museum were slightly out of date. We learned that they are in the process of updating all of their exhibits. They have about four exhibit concepts that they are currently implementing. They are very interested in incorporating technology into their exhibits. They told us about an iPhone application that they are trying to integrate into their future exhibits. Their programs were phenomenal. They offer a lot of information in an interactive way. For example, we participated in a program called "The Beat Goes On" in which we dissected a sheep's heart, learned about the anatomy of a heart, and learned the choices you can make to keep your heart healthy or cause heart failure.

At the Denver Museum of Nature and Science, we spent time in the *Expedition Health* exhibit. We each had a keycard called a "Peak Pass" which we used to track data on our own body systems at each activity. We also had a virtual partner that completed the activities with you on the Peak Pass screens throughout the exhibit. This exhibit taught us about how our body changes. In addition, we visited a traveling "Bodies" Exhibit that was unveiled on our last day of the trip. This exhibit showed us how bodies can be seen as a form of art.

We interviewed many people that were extremely important to the function of the museums. We talked to museum presidents, exhibit designers, managers, program designers and coordinators, educators, floor staff, and guests. We asked a lot of questions and took tons of notes.

We experienced exhibits so that we knew how they worked and what features were the most interesting.

We observed guests to determine what most attracted them and how long they stayed at a single exhibit. We took note of the ages and genders that participated in each exhibit. We also observed the interactions between the visitors to see if certain exhibits caused more conversation than others. We noticed that some exhibits were almost addictive, and some exhibits actually caused arguments!

We witnessed programs at each museum. We dissected animal parts, we cooked up human organs, we made boogers, we evaluated the amount of sugar in different food items, and we measured our heart rates. Then we reflected at the end of each day to help us organize our thoughts and brainstorm new ideas for our own exhibit.

The Design Process

In each museum we collected information about the exhibit design process. We learned that the process is really long and that each museum uses pretty much the same process:

- The first thing each museum does when designing a new exhibit is to ask community members what they want.
- Then you have to come up with the main topic.
- The third step is to decide on the target audience. However, sometimes the target audience is decided upon before the topic.
- Once you have the main topic, the design team brainstorms everything related to the topic.
- You probably know what comes next! The design team has to narrow down all the content ideas and choose one specific area to focus on.
- The next step is to decide upon the learning targets for the exhibit. Then you find the theme and the storyline.
- From there, the team works together to produce ideas for exhibits and displays.
- The last step is to edit the ideas according to the space and budget.

Sometimes this process changes depending on whether there are donors involved. Donors may want one specific topic or age group, so their input comes first.

Quality Exhibits

Through our experiences on the Four Cities trip, we learned about what makes a good exhibit. The most important thing to make a good exhibit is balancing design and content so that there is a clear message that is repeated over and over but in a fun manner. Visitors should have fun, but learn at the same time. To do this in an effective way, you have to sneak in the important information.

We also learned that exhibits about health should not be punitive. You don't want to make visitors feel bad about themselves, but you do want them to learn how to make their lifestyles healthier. A good exhibit is made so that people can learn new things each time they come. Good exhibits allow visitors to make personal connections to the content. People will invest more of themselves if they can get something out of it that is related to their lives. We observed in each city that some of the exhibits had activities that were especially appealing to visitors. These activities involved mysteries, competition, water, games, explosions, and throwing objects. We also noticed that people like to go inside things like tunnels, oversized body parts, and replicas of vehicles. Kids also like exhibits where they can control things or where they can pretend to be a different character or a grown-up.

The most compelling thing we learned about exhibit design was how to make an immersive exhibit. An immersive exhibit makes you feel as though you are in a different place or time period. The exhibit space is designed to look as though you have just been transported to a different place. The lighting, the materials, the structures, the sounds, the floor staff in costume and in character, and the way the exhibit is laid out all create the illusion and the vibe that you are somewhere else in space and time. The best way to make an immersive exhibit is to make it so that when you walk in, you feel like you just walked into a Disney attraction.

Immersive exhibits may also have a mystery or a problem that the visitor must solve. The mystery or problem should have layers so that you have to come back many times to find the solution. The exhibit should give you shivers, make your heart pound, and give you butterflies in your stomach. These elements combine to make you feel extremely engaged in the exhibit and the content.

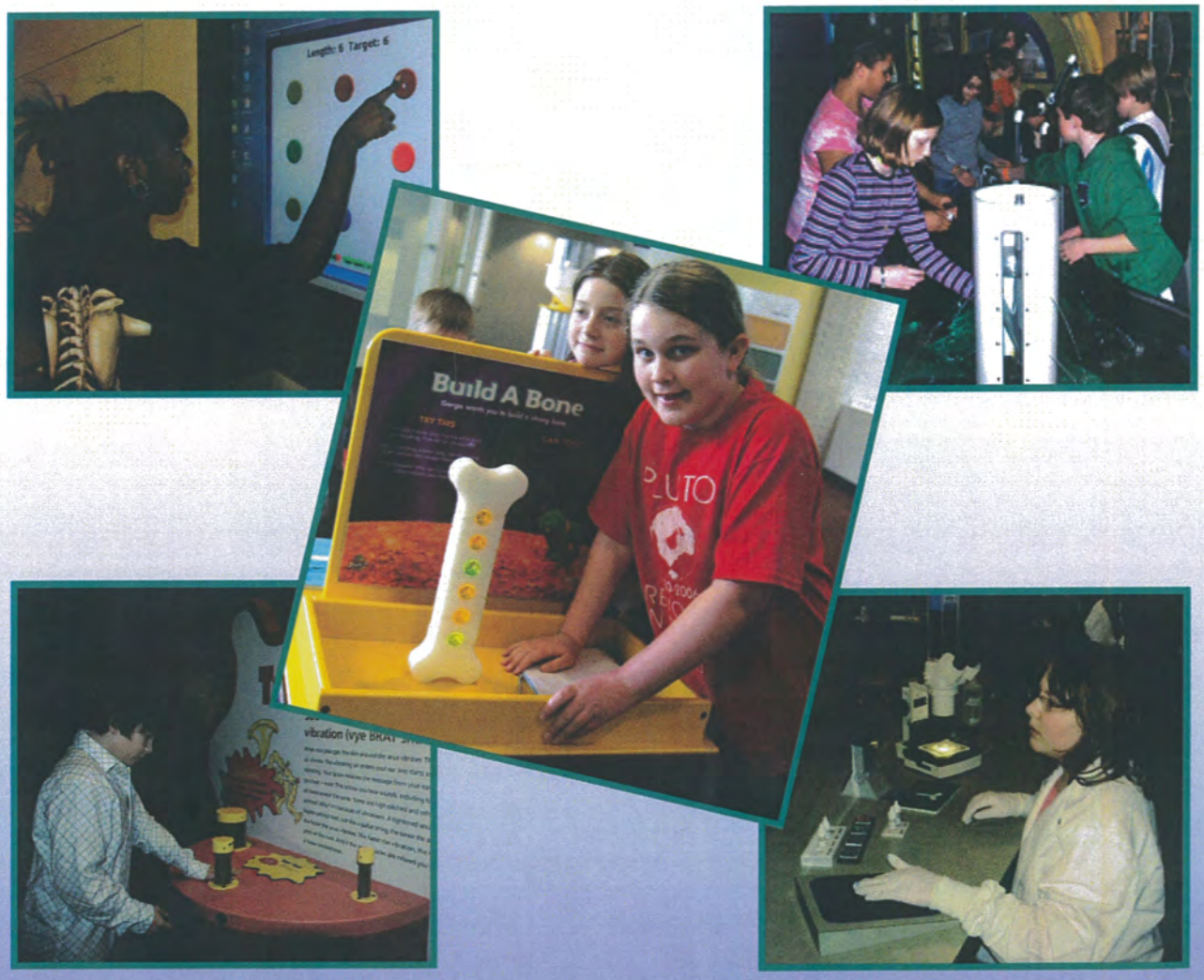


Exhibit Overview

The sixth grade design team had many steps they had to take in order to create this exhibit. First, we identified the problem. We realized that childhood obesity is an issue for Monroe County. Through our online research and an article we read about the Michelle Obama's initiative, we found out that 39% of children in Rochester are obese and in the entire USA, 32% are obese. But, the international percentage is only 13%! Therefore we think a health exhibit is a great need for our community.

From our research, we know that it is important to "know your audience" before you design an exhibit. Therefore, we had to find a target audience that would be appropriate to solve our identified problem. Because the problem is childhood obesity, we decided on school-age children ages 8-14 years old.

After we found the target audience, we knew that we needed to decide on a big idea for our exhibit. So we decided that we wanted to show guests what choices affect our bodies. We chose this big idea because we believe that the problem with childhood obesity is that kids don't know how to make healthier choices.

Once we identified the problem and the big idea, we brainstormed selected content ideas. We narrowed the list to four content areas: healthy foods, drinks, exercise, and preventative care.

After that we chose our exhibit theme. To do this, we brainstormed ideas that could get our point across but at the same time, still be fun. During this process, we had to reject some ideas. For example we wanted to design a "Choose Your Own Adventure" exhibit, but it was too broad. Then we wanted to design a "Becoming Immortal" exhibit in which visitors would uncover the Fountain of Youth, but it was too confusing for our target audience. So then we altered our immortal idea to make it more futuristic with time travel elements, but it wasn't that exciting and that idea just flew out the window. But finally we chose a theme that was exciting, suspenseful, contemporary, dark and mysterious, and overall immersive for our target audience. Without further ado, we now present to you OPERATION KIDFIT!

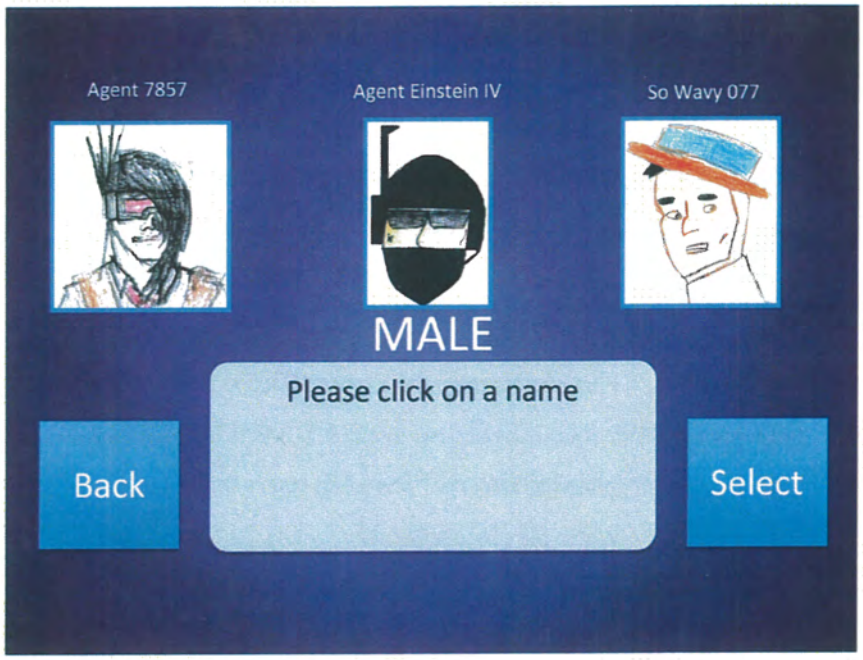
Operation KidFit Storyline

According to the Greater Rochester Health Foundation's Healthy Hero Campaign, this generation may be the first one that does not live as long as the previous one. In our research, we discovered that proper nutrition, exercise, and preventative care are the keys to living a healthy and long life. The goal of this health exhibit is to "Save a Generation." We created an exhibit that is immersive and we decided that visitors would take on the role of spies. As spies, visitors have to complete twelve different missions and defeat four dastardly villains. While completing their missions, visitors learn about proper nutrition, preventative care, and exercise.

Visitors enter the exhibition through a large room called *Headquarters*. In this room they receive an Agent Keycard. The keycard is their identification card. It records their age, height, and eye color. Then the program records visitor progress through the exhibit so they can keep track of their mission status. They can even leave and come back at a later date because

Screen Shots

Log-in Screens



Special Agent keycard

the information will be saved. The card is also a lifeline to the visitor's partner, who is a virtual special agent. There are kiosks throughout the exhibit that require the Agent Keycard.

As visitors approach the main Message Center, they're given the mission and directions about picking up an Agent Keycard. Visitors progress to any kiosk in *Headquarters* and pick a Virtual Special Agent from six choices. There are three female and three male virtual agents. Once visitors choose a Virtual Special Agent partner, they are free to enter the exhibition and start the missions.

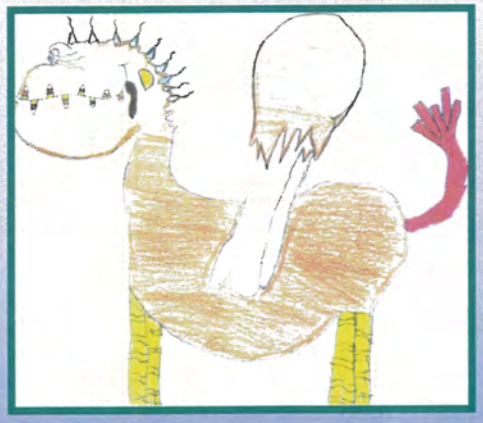
Upon leaving *Headquarters*, visitors will find twelve different exhibits. The exhibits are grouped into four main sections: Exercise, Food, Drink, and Preventative Care.

Exercise Section

First, visitors enter the Exercise Section where they face Mrs. Couch Potato. She is the villain of exercise and her foremost power is to make visitors lazy. She has droopy red eyes and potato-like features. She has a couch mobile that she drives around in.

Within the exercise section, visitors start in the *Operation Strength Course* where they test their strength and jumping ability. Here they train for the upcoming missions while learning about strength. Then they go on to *The Laser Tunnel* and avoid lasers while learning about stretching. Here visitors will open locked doors by answering questions about flexibility. Lastly, they go to the *Train Chase* and run after Mrs. Couch Potato on a treadmill. Here visitors are learning about achieving their target heart rate. When they complete the mission, visitors jump off the train into a pit of foam blocks and go into the Food Section.

Food Section



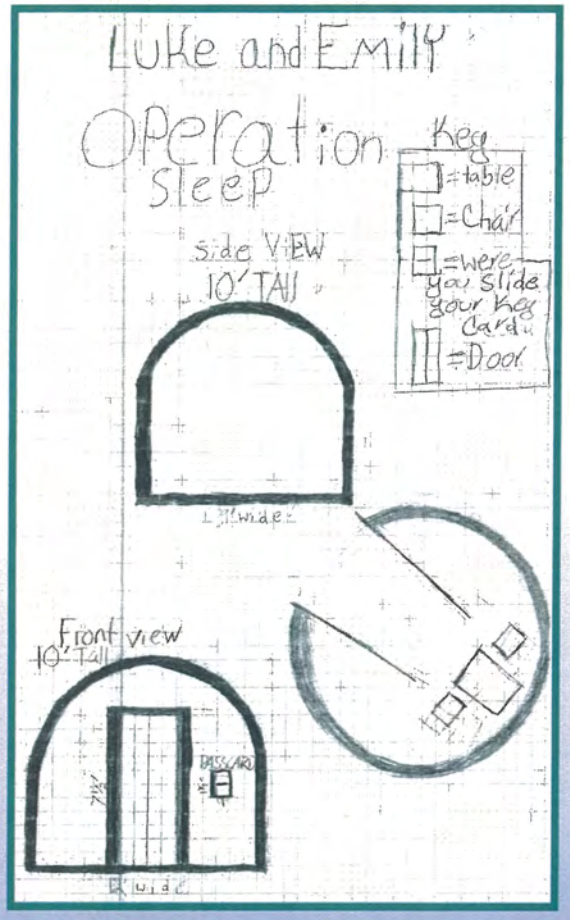
Foodzilla is the pet of the other three villains and he lives in the Food Section. He is made entirely out of junk food and he looks somewhat like a dinosaur. He has pepperoni eyes, chip ears, French-fry legs, chicken wing arms, chicken finger fingers, a fruit roll-up tongue, candy corn teeth, and a licorice tail.

Within the food section visitors enter *Foodzilla's Challenge*. Here they climb a pyramid, grab food, and descend down a slide to throw the healthy food into Foodzilla's mouth in order to defeat him. Next, they enter *Foodzilla's Lab* and scan ingredients before they sort them into different categories in a briefcase. Finally, they enter *Mission Nutrition Labels*, where visitors sort through good and bad foods by creating a well-balanced meal using nutrition labels for guidance. Then, visitors move onto the Drink Section.

Preventative Care Section

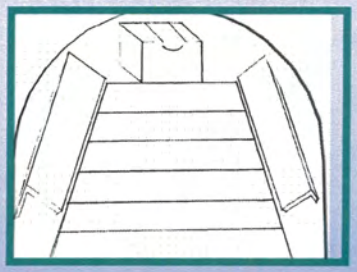
Preventative Care is probably one of the most important factors for the health of our generation because it is how we maintain a healthy lifestyle. This section of the exhibit helps visitors learn about how to keep their bodies healthy. In *Operation Sleep*, visitors learn about the importance of sleep. This exhibit also explores sleep deprivation and how sleep affects the body. In *Journey Through the Immune System*, visitors learn about how a germ attacks the immune system and how to prevent germs by hand washing. In *Screen Scare*, the visitors will learn about what habits can be formed when there is an overabundance of screens in bedrooms. In conclusion, Preventative Care is the most effective way to end the exhibit experience because it is the best way to help keep kids healthy.

Operation Sleep



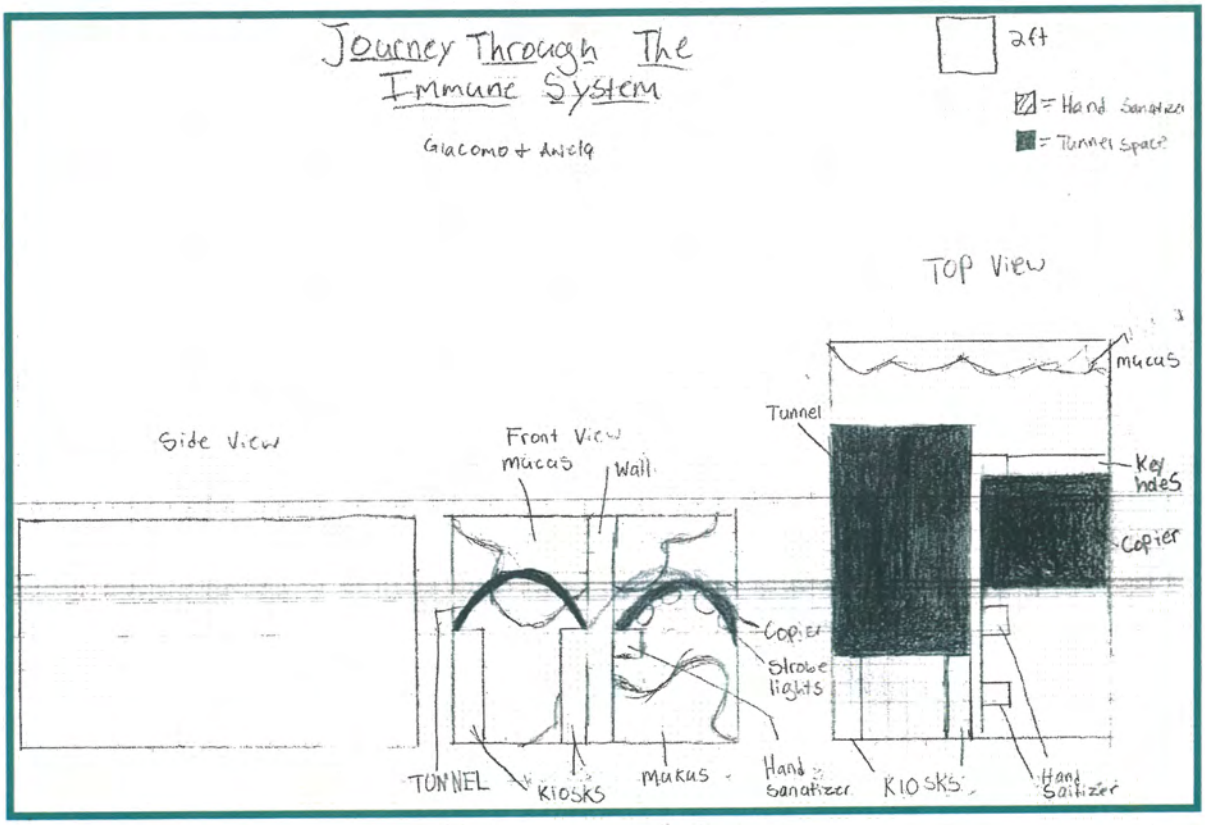
In *Operation Sleep*, visitors learn about how sleep affects people; whether it's too much or too little. In addition, visitors learn what they can do to help themselves sleep and relax more effectively to keep their minds well rested. This content is important because many kids do not get enough sleep. This is a gigantic problem that adds to childhood obesity.

When visitors come from *Maze Phase*, they walk into a dome-shaped room with dim lighting. As the visitors walk through the room, there is a lighted path that they follow. When the visitors get to the chairs they sit down in a chair. Once they are seated, they start to play Mindball against Count Sallow who is heard over the speakers. To play Mindball, visitors have a headpiece that reads their brainwaves. The object is to relax so the ball travels.



When the visitors exit they go to the kiosk and insert their keycard to get a printout of their brain activity during the mind ball game. Then visitors have the option to go to *Journey Through the Immune System*.

Journey Through the Immune System

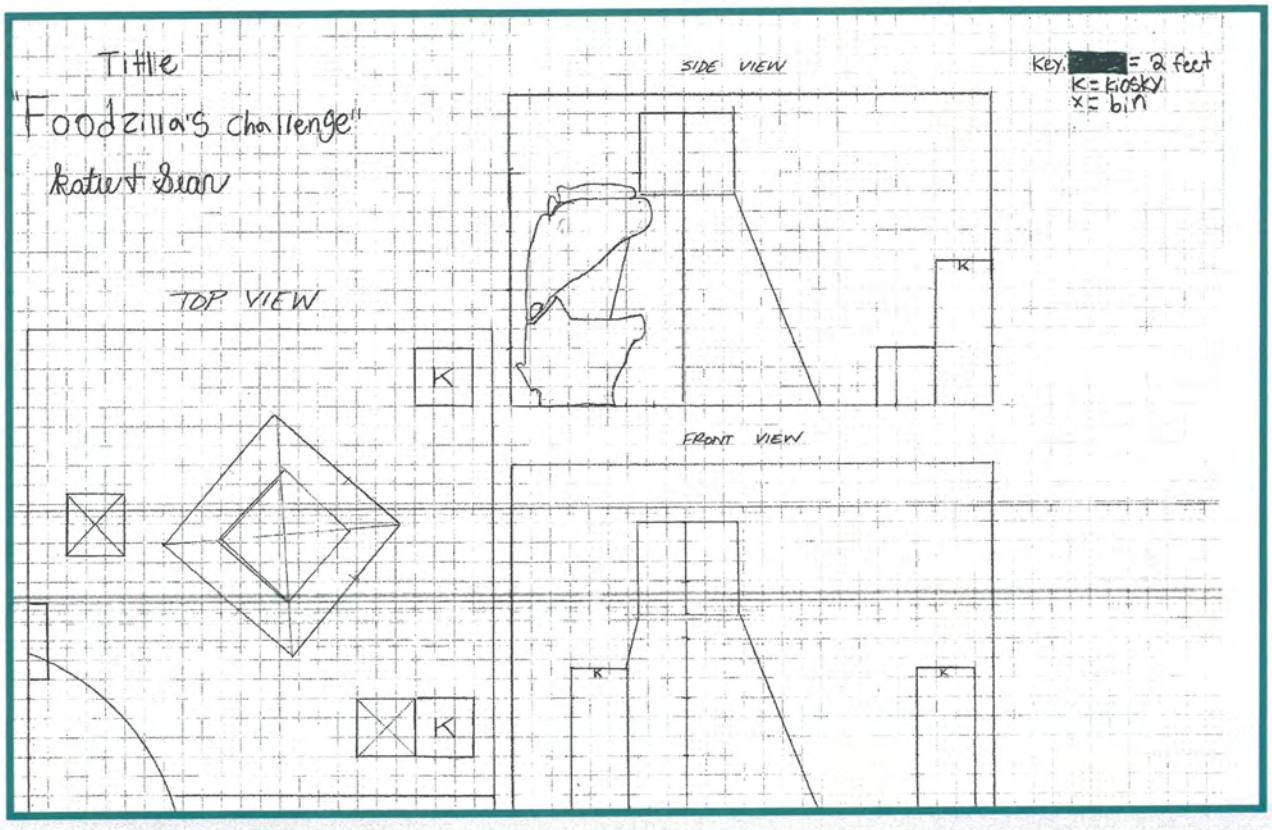


In this exhibit, visitors learn how the immune system works and how germs go through the body. The content of this exhibit is crucial because not many people know the function of the immune system and how it fights off germs. The visitors also learn how washing hands is one of the many ways to keep from getting sick and to help the immune system.

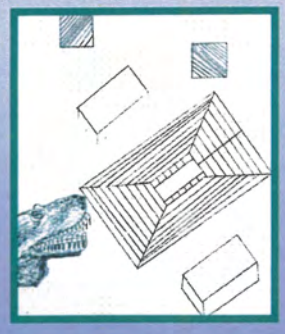
During this exhibit, the visitors impersonate a germ in order to see how germs go through the human body. Visitors first enter their keycard into one of the two kiosks to sign in, and then they go through a tunnel that expands so it looks like they are shrinking. The walls of the tunnel are made to look like an esophagus. At the end of the tunnel, there is a 3D mural of the back of an infected throat filled with mucus that visitors can feel and observe. As they exit the tunnel, they turn right to try to get in to another room by finding the correct keys for the door. When visitors go through the door, they go through a "copier" to be copied. The copier is an arch filled with strobe lights, which need the right key to be activated. After that, the visitors go down a hallway. On the visitors' left, there is a wall that triples the shadows that pass through it. On the other wall, there is a station where visitors use glow germ to show how to wash their hands to protect themselves from germs. As the exhibit concludes, the hallway comes to an end and visitors exit the exhibit. At the end of this exhibit, we are hoping that visitors take away how the immune system functions and how to stay on guard from unhealthy germs.

Foodzilla's Challenge

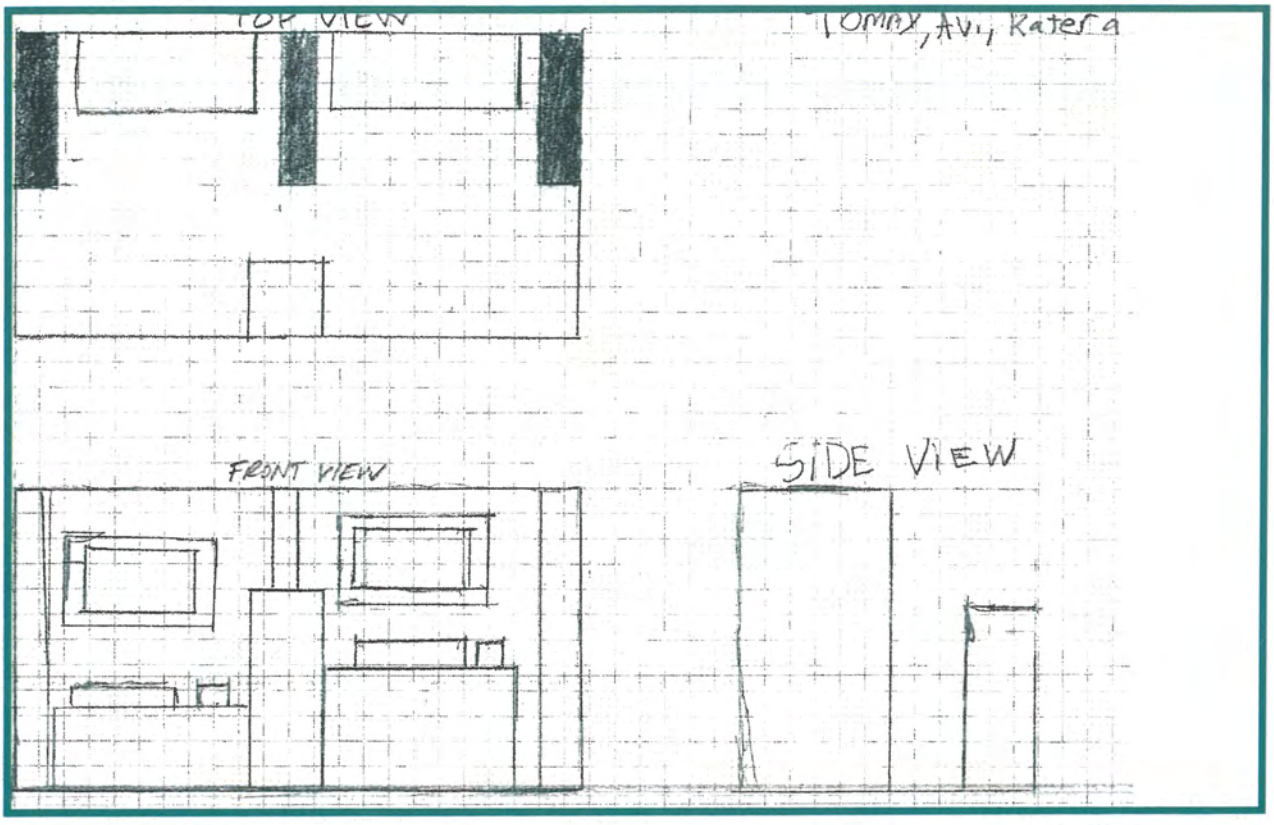
In *Foodzilla's Challenge*, visitors learn about the five main food groups, what healthy foods are, and what unhealthy foods are. Visitors come from *The Train Chase*, log in, and complete the first part of *Foodzilla's Challenge*. Visitors grab food from the bins, sort them, and velcro them onto color-coded sections designated for the five main food groups. This teaches them what the five main food groups are.



At the second part of *Foodzilla's Challenge*, visitors climb up the rock wall onto a platform at the top of the pyramid. They grab one fake food that they want from the shelves on the platform. Then, they slide down the pyramid to throw the food into Foodzilla's mouth. If it is healthy, it weakens him and an indicator light rises. If it is unhealthy he'll say "MMM, good" and the light will decrease. They can do the activity as many times as they want until Foodzilla is defeated. Once they have weakened Foodzilla to the point of defeat, then he roars like a dinosaur and the visitors can move on.

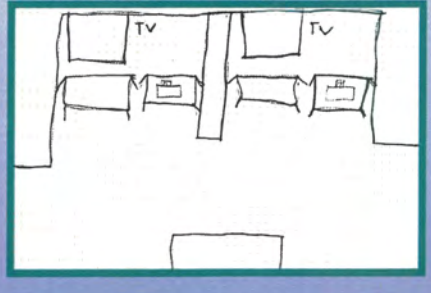


Foodzilla's Lab

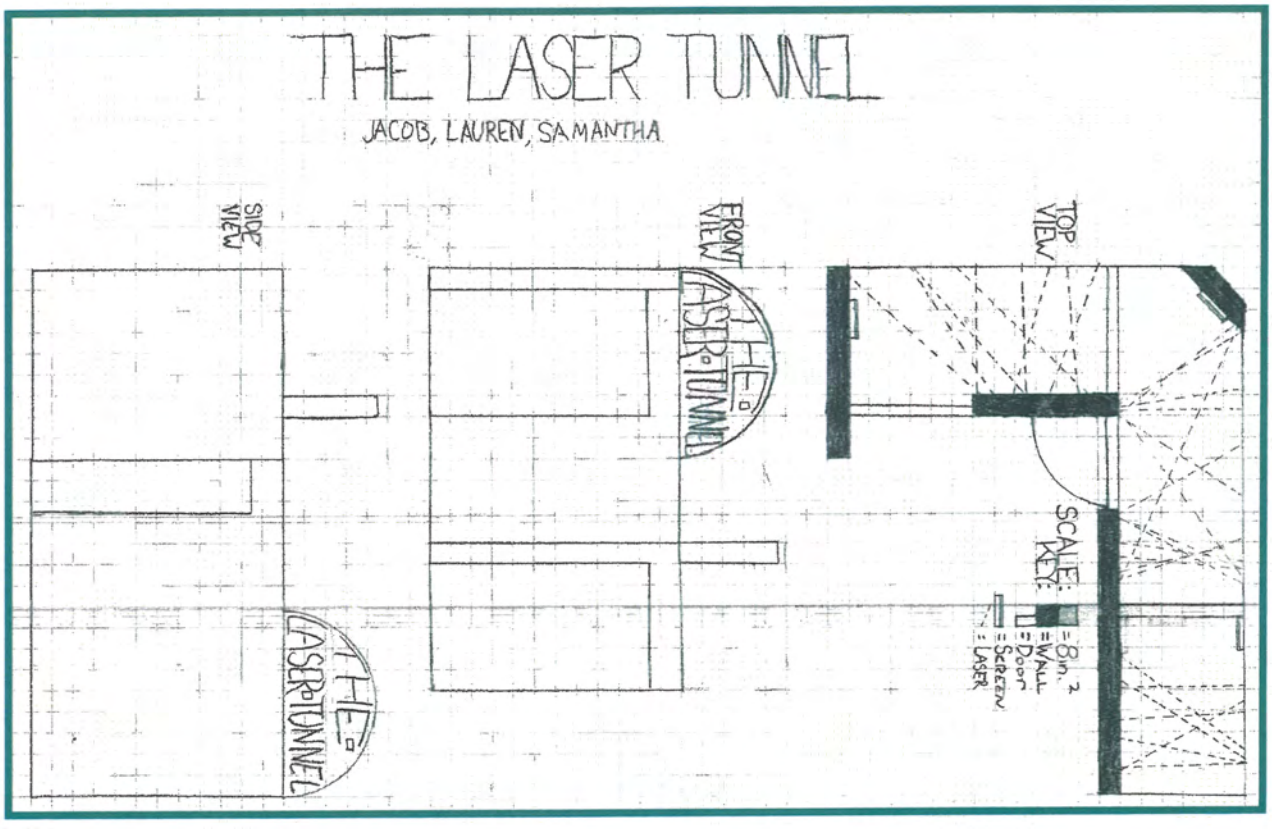


In *Foodzilla's Lab*, visitors learn about the chemically processed ingredients that are put in a lot of food we eat today. Some of these ingredients are processed sugars, trans-fats, artificial flavoring, hydrogenated oils, and preservatives. We believe this content is important because people don't really know what is in the food they eat. We are worried about chemically processed ingredients and how they affect the body.

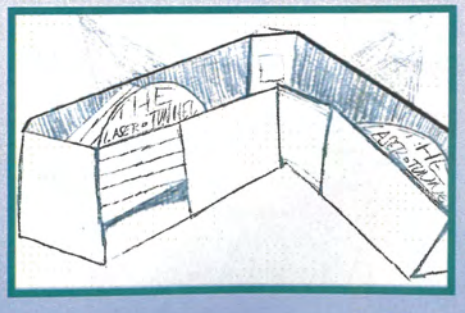
Visitors walk up to a kiosk located in the middle of the exhibit. They check in to get their mission. Their mission is to sort healthy ingredients from unhealthy ingredients. Next, they go to a table that contains a briefcase divided into two parts. One side is labeled "healthy" and the other side is labeled "unhealthy." The table also contains ten vials labeled with the names of healthy and unhealthy ingredients, such as artificial flavoring, preservatives, trans-fats, hydrogenated oils, processed sugars, natural sugars, whole grains, proteins, calcium, and natural flavors. Visitors insert their keycard in a slot to activate the screen in front of them and to begin the mission. The screen will give instructions. Visitors sort the vials into the two categories in the briefcase. Then they close the briefcase. The screen gives the message, "Mission Accomplished" if they have placed all the ingredients in the proper categories. If some of the ingredients are misplaced, the screen says, "Access Denied. You have ____ correct; please try again." When the mission is accomplished, it is recorded on the keycard and visitors may go off to their next mission.



Laser Tunnel

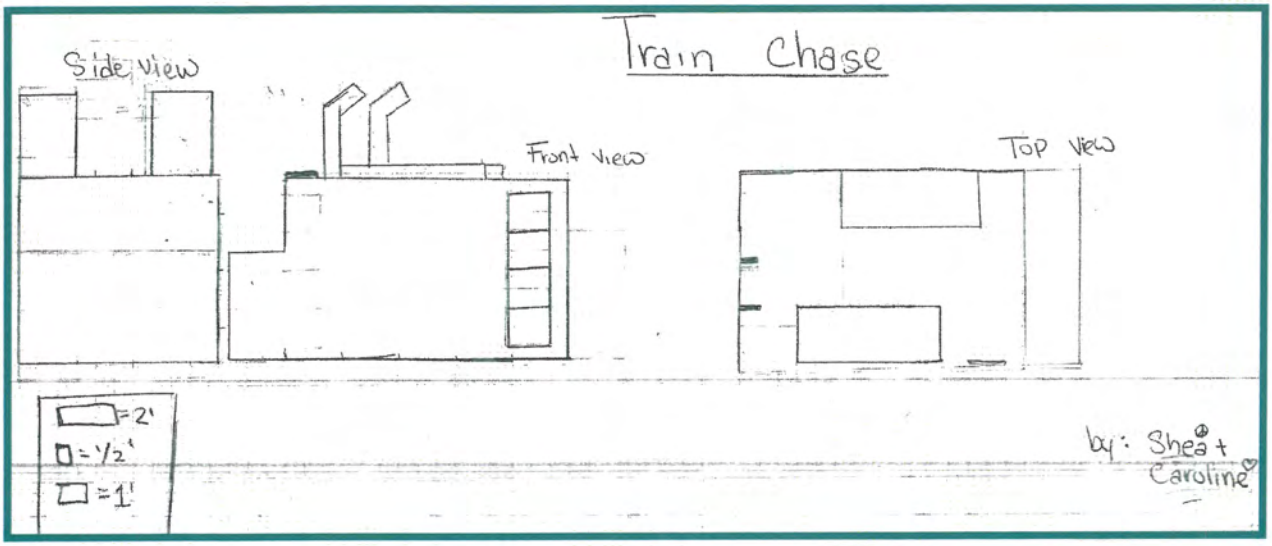


The purpose of *The Laser Tunnel* is to learn about flexibility. In this exhibit, visitors learn about flexibility exercises. They learn about different types of stretches such as "downward dog" and the "butterfly stretch." They also learn about the purpose of stretching. We believe this content is important because it teaches visitors what flexibility exercises are and why they are important.



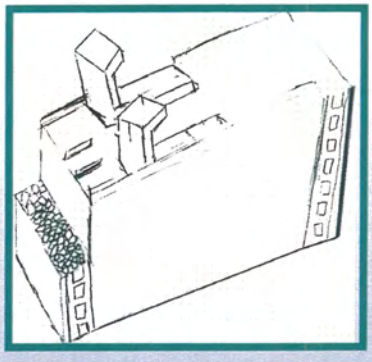
As visitors come from the *Operation Strength Course* exhibit, they walk into *The Laser Tunnel*. The *Laser Tunnel* is a dim tunnel where visitors have to try to avoid lasers by using their flexibility to dodge them. Then, after visitors are done and they get to the first door, they have to answer the first question. Once they pass, they have to dodge another series of lasers. Once visitors answer the last question, the last door opens and they exit the tunnel. Then they go to *The Train Chase.*

The Train Chase



In this exhibit, visitors learn about their target heart rate. The target heart rate is a unique rate that is desirable for exercise. Knowing one's target heart rate is important so they know how hard they need to work in order to receive the benefits of cardiovascular exercise.

As visitors come from *The Laser Tunnel,* they arrive at *The Train Chase*. In *The Train Chase,* visitors climb a ladder up to a six and a half foot tall "train." On the top of the train, there are two treadmills. On each treadmill there is a screen with a built-in kiosk. There is also a calculator as part of the log-in screen. Visitors insert their keycard that has their recorded age and that age will be subtracted from 220. This gives them their maximum heat rate. A target heart rate is between 60 and 80 percent of a maximum heart rate. Once they are given their target heart rate, they start running to catch Mrs. Couch Potato until they reach that number. Sensors located on the handlebars of the treadmill monitor their heart rates. The exhibit is called *The Train Chase* because there is a large screen next to visitors that makes them feel like they're moving on top of the train. The point of this exhibit is to defeat Mrs. Couch Potato by reaching their target heart rate.

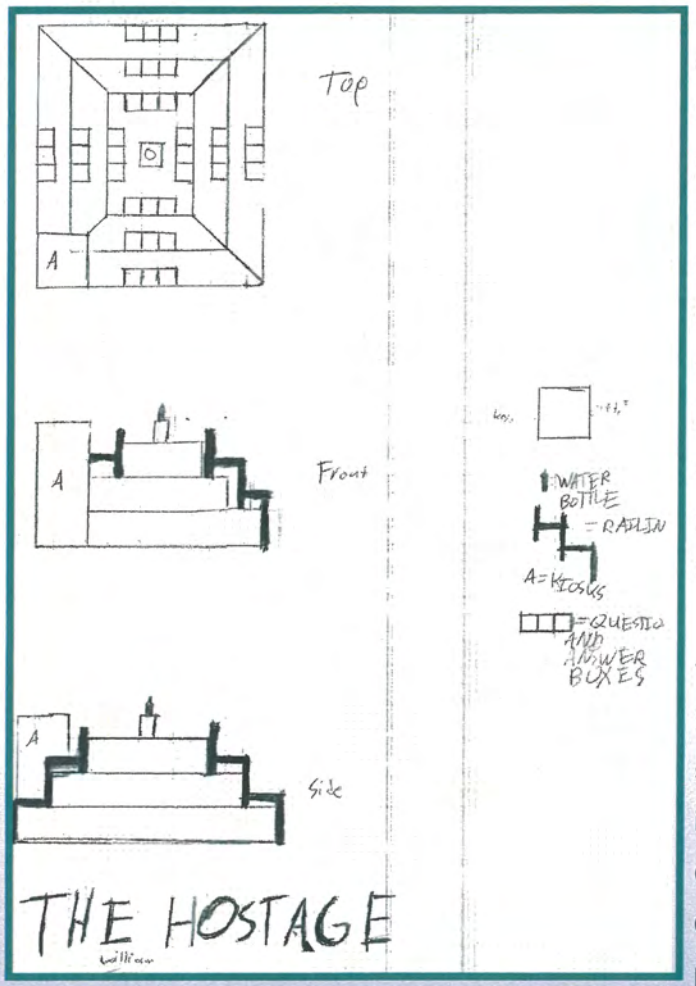


Food Section

For the food section of the exhibit, guests learn about healthy foods. The first exhibit is called *Foodzilla's Challenge*. This exhibit explores the main food groups on the food pyramid. The next exhibit in the food section is called *Foodzilla's Lab*. Here visitors learn about chemically processed ingredients that are put into different foods. They also learn about the positive effects of vitamins and minerals. Finally, visitors come to the exhibit called, *Mission Nutrition Labels*. Here, visitors are taught how to read nutrition labels to create a well-balanced meal.

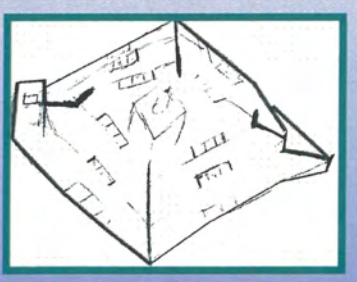
right healthy drinks to create the antidote that will save the agent. To collect healthy drinks, they put their keycard in the pillar's slot. Then they transport their keycard to the agent's bottle. The visitors continue to find healthy drinks to fill the agent's bottle until the antidote has successfully been created. As a result, the partner virtual agent is saved and the visitors will have defeated Dr. Fructose. However, if the visitors collect the unhealthy drinks for their partner, Dr. Fructose gains more power and their partner agent becomes weaker.

The Hostage



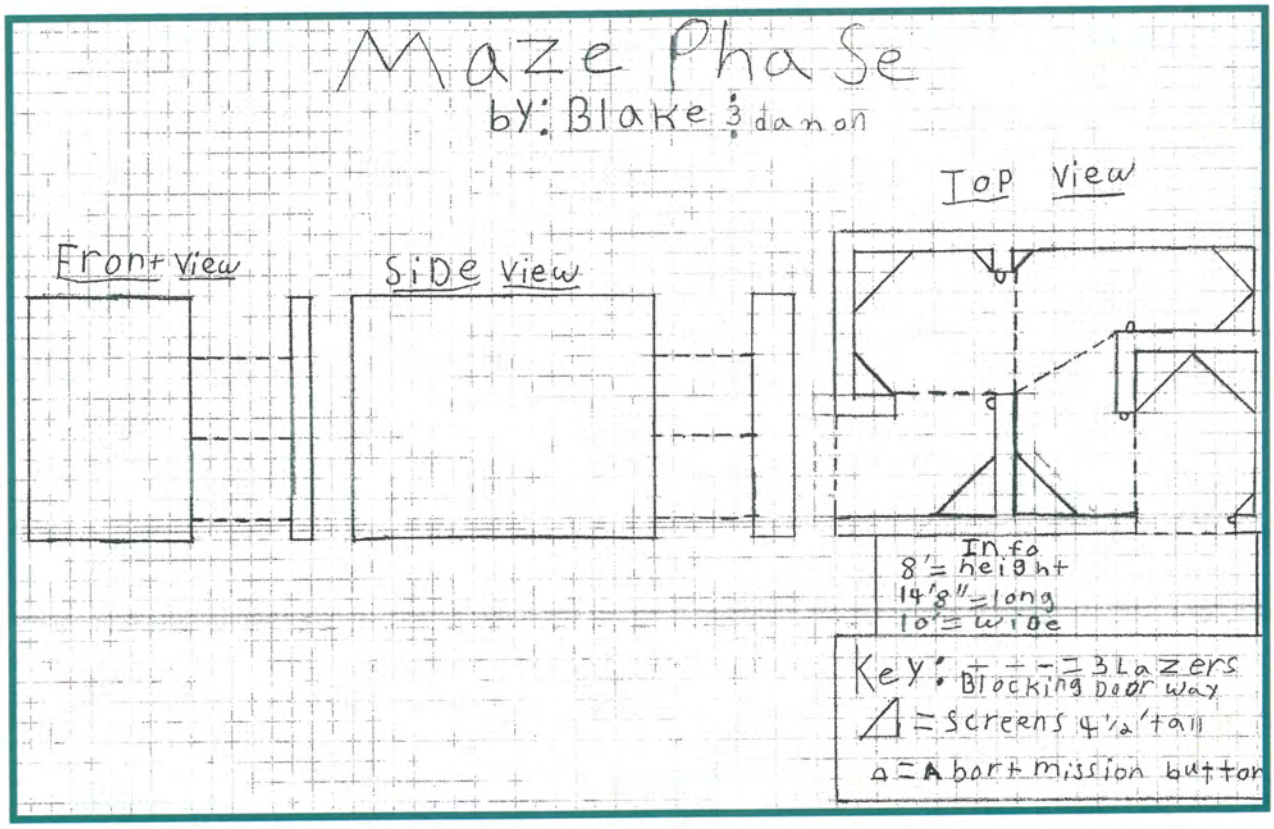
In *The Hostage*, visitors learn about the importance of water to the body and how much of the earth's water is drinkable. This is important because some of the visitors may not know that they don't drink enough water. According to our classroom research many children are chronically dehydrated. Here are some examples of the things the visitors will learn: What is the nutrition label for water? What is the difference between water and soda? How does water help your body? How does water help your blood stay healthy? How does it help to maintain a good metabolism? Also, visitors will learn the fact that a soda a day can lead to gaining a pound a month.

Visitors first go up to the kiosk to get their mission from their agent. The mission is to save the water bottle that has been taken hostage by the villain, Dr. Fructose. To save the water bottle, the visitors go up a ziggurat that is protected with lasers and each stair has a different question about water. If the visitors answer incorrectly or trip the lasers, the water bottle slowly sinks into the pedestal at the bottom of the ziggurat. To complete the mission and save the water bottle, the visitors must answer the questions correctly.



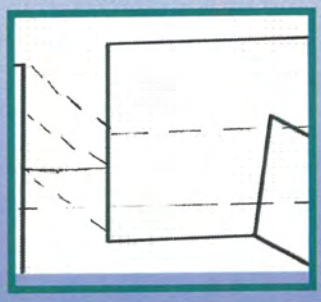
At the end of this activity, the visitors have learned many things about water. They also learn that they will need more water now because they were just working their body by climbing the ziggurat.

Maze Phase



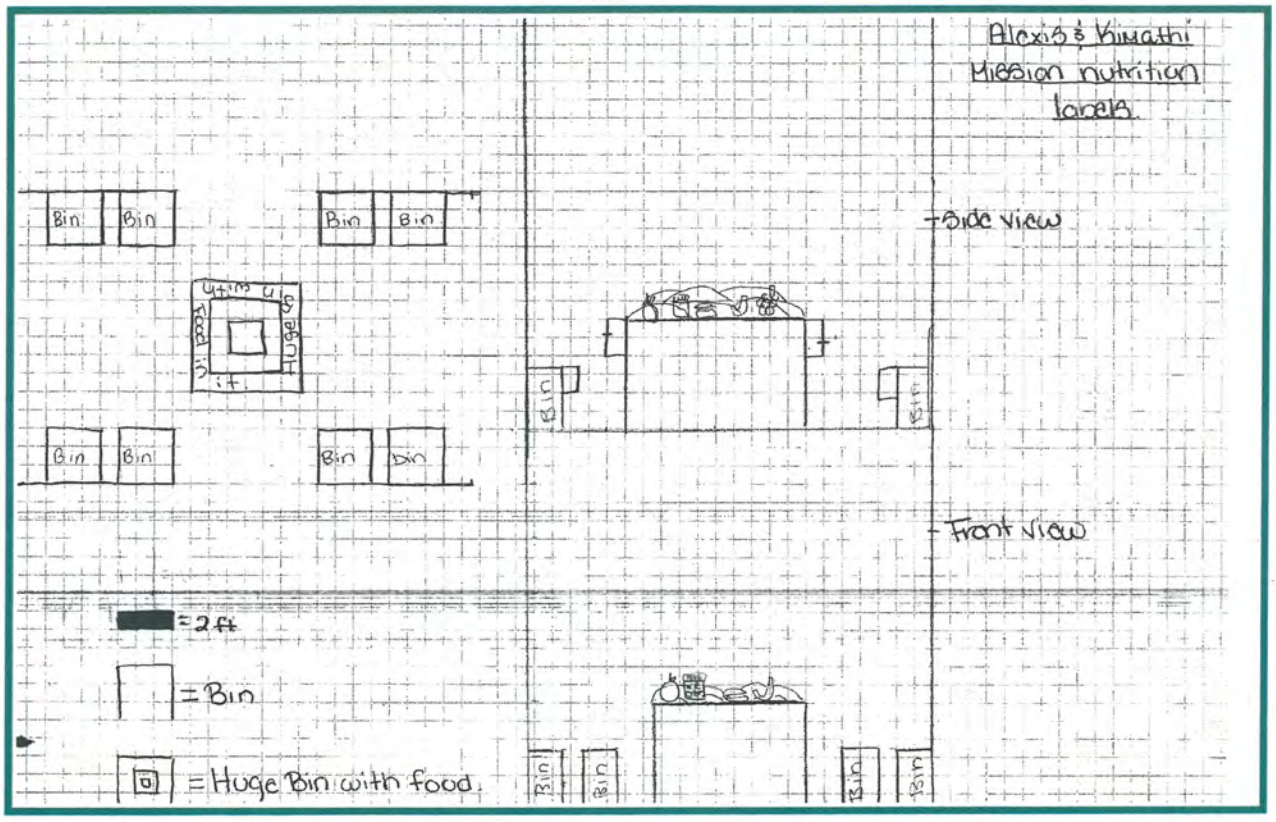
In this exhibit, visitors learn about the difference between healthy and unhealthy drinks like water, G2, V8, milk, coffee, apple juice, orange juice and pop. If too many unhealthy drinks are consumed, the chances of becoming obese are greater because of HFCS, sugar, and extra calories. We believe this content is important because it is helpful for teaching visitors about good (healthy) drinks and bad (unhealthy) drinks.

Before visitors enter *Maze Phase*, they insert their keycard to sign in. Then, visitors walk through a maze that has many video screens along the way. The screens depict Dr. Fructose holding different types of drinks. Each branch of the maze is blocked by a laser beam. In order to make their way through the maze, visitors zap "bad" drinks on each of the video screens. Zapping the bad drinks allows them to collect points toward completing their mission and gives them access to the next branch of the maze. But, they need to be careful not to zap the good drinks! Visitors lose points for zapping the good drinks. They also lose points for breaking the laser beam before they zap the bad drinks. In order to accomplish the mission, visitors must accumulate a predetermined number of points.



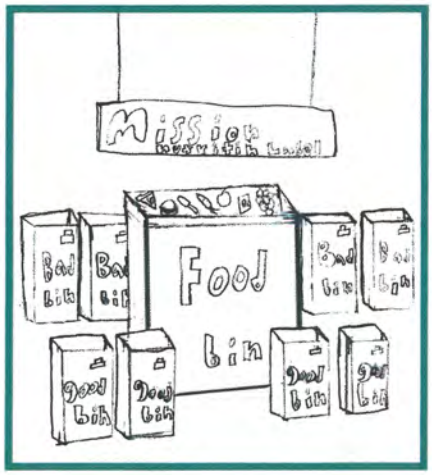
When visitors finish the *Maze Phase*, they will go to the kiosk and the card records that the visitor accomplished the mission. They also see their final score on the kiosk screen.

Mission Nutrition Labels



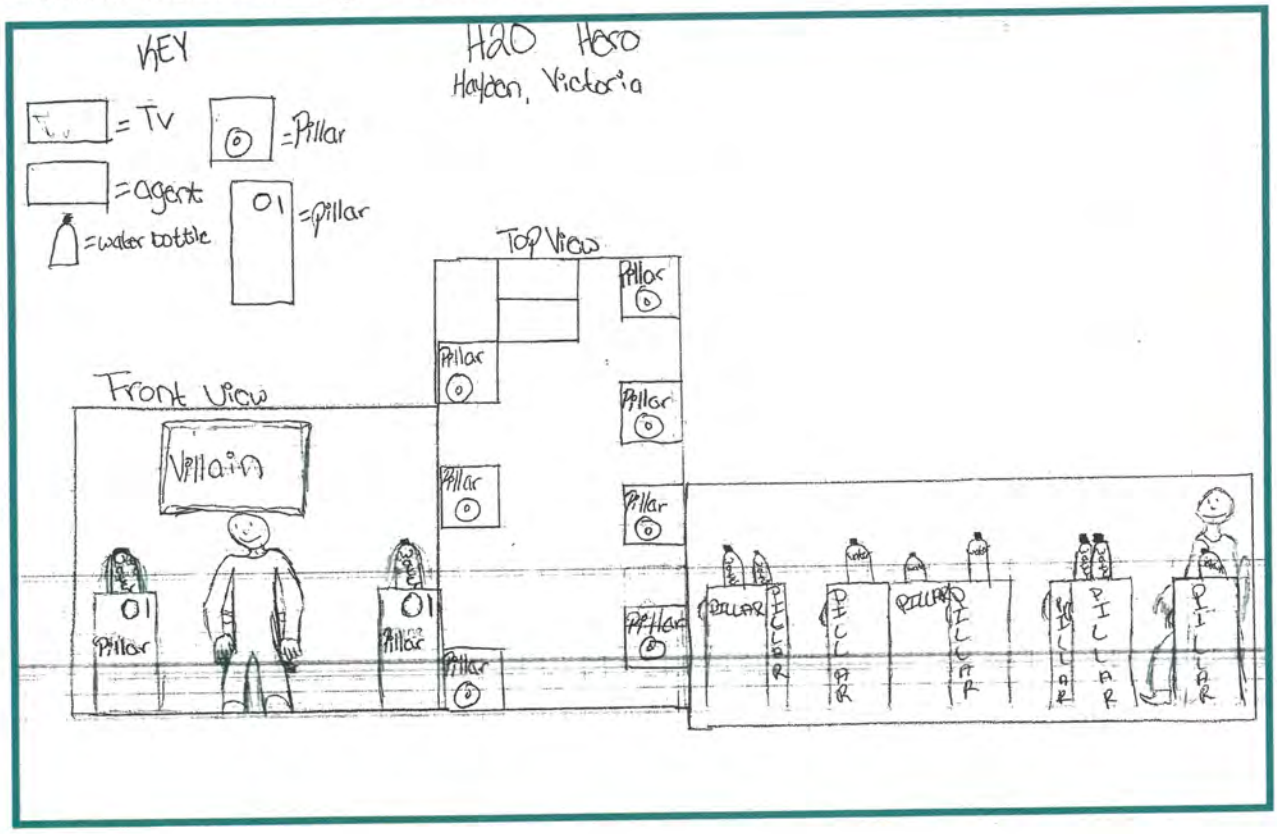
In this exhibit, visitors learn the chemical composition in healthy meals and unhealthy meals. We think this content is important to learn because we want people to know what they are eating and how they should eat.

Our exhibit has eight stands with either plates or bowls on them. Visitors enter their keycard into the card slot on the main bin, so when they finish the activity, they can have all of their data saved into their keycard. Visitors use the stands' scanners and the foods' nutrition labels to show them what kinds of chemicals are in foods (such as carbohydrates, fats, and proteins). Then they put the food on the plate or bowl. After they've made their meal, they press the "done" button and a screen tells them if they have too much sugar, fat, or other chemical agent in their meal. Visitors have to repeat the process until they have a healthy meal. After they've made their healthy meal, visitors press "clear" and they have passed the mission.



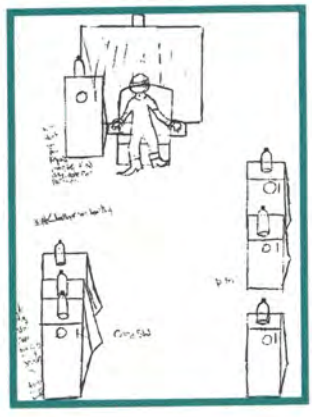
Drink Section

This section focuses on making healthy drink choices. Our first exhibit is *H_2O Hero*. This exhibit focuses on the serving sizes people should drink each day and what drinks have High Fructose Corn Syrup (HFCS). Our second exhibit is called *The Hostage*. This exhibit gives healthy facts about water. Our section of the exhibition concludes with *Maze Phase*. Here visitors will learn the difference between "good" and "bad" drinks.



H_2O Hero

In our exhibit, *H_2O Hero*, we have two very important things the museum visitors will learn. The first thing they learn about is serving size. The reason why understanding proper serving size is important is because it helps people know how much they should consume a day. The second thing that visitors learn is choosing between milk, orange juice, energy drinks, and soda. The reason why we think that choosing between those drinks are important is because we want our visitors to see how unhealthy drinks affect their body and how good drinks help their body grow and make it healthier.



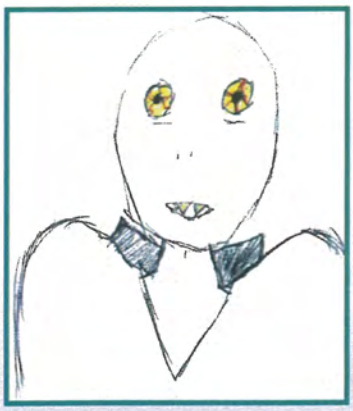
When the visitors are in this exhibit, their mission is to make an antidote to save their virtual agent who is being held hostage and poisoned by HFCS. As they enter *H_2O Hero*, they see eight pillars with futuristic-looking bottles sitting on top of them. Within each pillar is a slot for the Agent Keycard. In order to save their virtual agent partner, visitors need to collect the

Drink Section

Dr. Fructose is the villain for the Drink Section. He has rotten teeth, a curly mustache, and he is sweaty and obese. His superpowers include an endless supply of High Fructose Corn Syrup (HFCS) and he can also poison drinks at will. Dr. Fructose is hyper, foolish, bumbling, and impulsive. He has sudden sugar highs and crashes. He also has the ability to hide unhealthy drinks all over his body and attack with his fructose blaster.

Visitors enter the Drink Section through *H_2O Hero*. In this exhibit, the Special Agent Partner is poisoned by Dr. Fructose. It is up to the visitors to save him. From here they go to *The Hostage* where they learn about the importance of water by climbing up a ziggurat and answering questions about water in order to save a special water bottle, which is being held hostage by Dr. Fructose. As visitors finish *The Hostage* exhibit, they move onto *Maze Phase*. In this exhibit, visitors shoot as many bad drinks as they can while trying to avoid shooting the healthy drinks. They learn about healthy and non-healthy drinks. Finally, visitors move onto the Preventative Care Section.

Preventative Care Section



Count Sallow is the mastermind of the villains in the exhibition and he dwells in the Preventative Care section. He is a transparent vampiric character with fangs and an arrogant attitude. He is cruel, cranky, and clever. His special powers include changing into a television by day and spreading germs at night. He has a spooky voice and a cape. He can be stopped by using medicine, vitamins, vaccines, soap, and limiting screen time.

The first exhibit visitors enter is *Operation Sleep.* This is a dome structure holding a Mindball game where visitors relax their brainwaves in order to control the ball on a track. They play against Count Sallow in an effort to get more relaxed and learn about the importance of sleep. The next exhibit is *Journey Through the Immune System*. Here, visitors actually become germs in order to learn about the immune system. They first enter an enormous mouth, and walk into the esophagus. Here they go through the process of becoming a germ and by the end, visitors learn about the importance of hygiene. Finally, visitors enter Count Sallow's lair, *Screen Scare*, where they need to identify five screens in the lair that promote unhealthy habits.

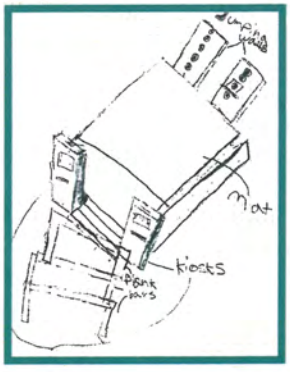
At each exhibit there will be a screen where visitors slide in their keycard to record and read information. There will be twelve rankings and as visitors complete each mission, they will advance in rank. This way, visitors will want to return to experience the exhibition again. Once they have achieved top ranking, visitors will have "Saved A Generation" and learned about health and nutrition in the process.

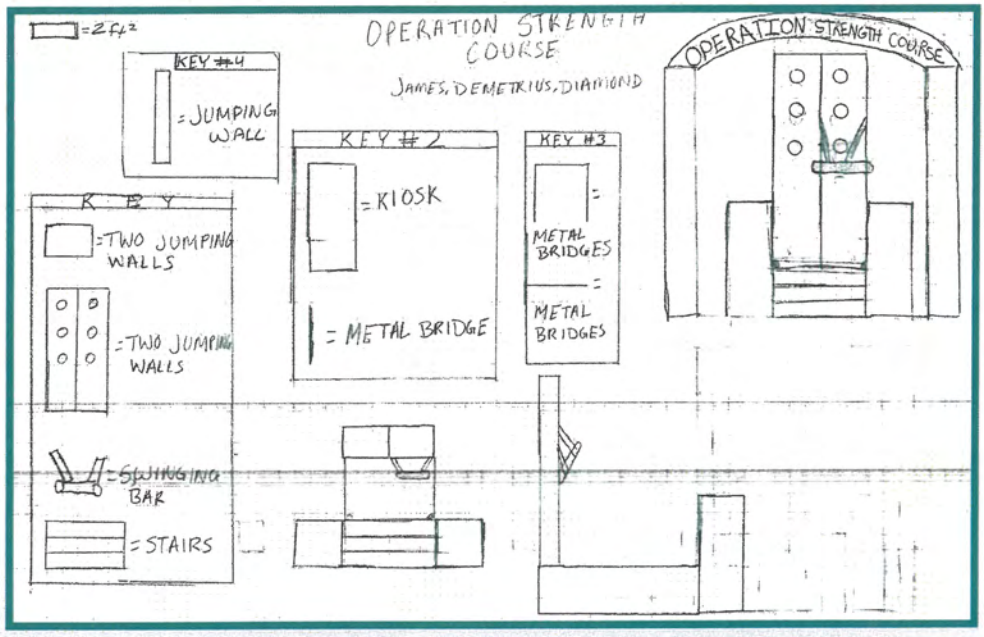
Exhibit Descriptions

The Exercise Section

In the Exercise Section, each of our exhibits focuses on a different type of exercise. The *Operation Strength Course* teaches strength. The visitors learn how to hold a correct plank position and what muscles work with different activities. The *Laser Tunnel* educates visitors about flexibility. In the exhibit, visitors learn how to do different stretches properly, and they also learn why stretching is important. The *Train Chase* focuses on cardiovascular exercise. The exhibit teaches visitors about their target heart rate.

Operation Strength Course



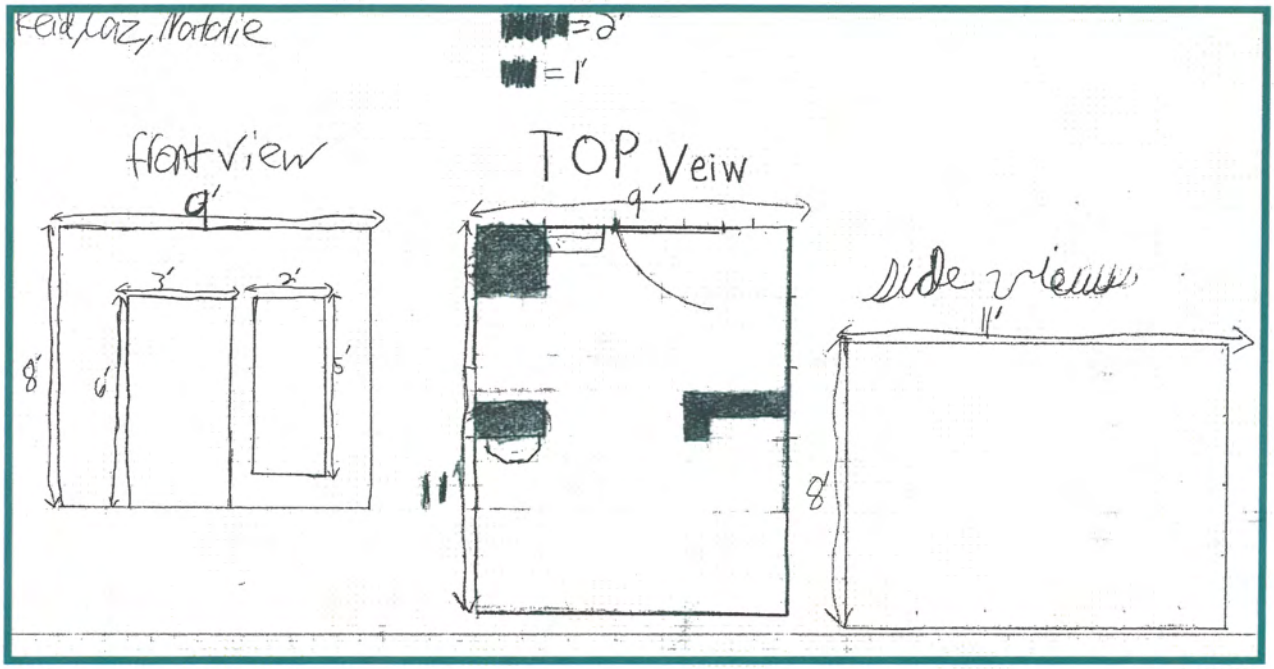


In this exhibit, visitors learn about strength. Strength is important because everyone needs to build up the muscles in their body. Visitors also learn about fast twitch muscles. Activities such as running and jumping use fast twitch muscles. This is important so visitors know what muscles they use while doing different activities so they do not injure themselves.

As visitors come from *Headquarters*, they hold a plank position and crawl through mini metal bridges. This teaches them how to hold a correct plank position. Next, visitors go to a kiosk to see what their next task is. Then they walk up three stairs where there is a mat. Visitors have their choice to swing on swinging bars or jump to test their jumping ability. Then visitors go to the next exhibit, called *The Laser Tunnel.*

We hope people learn that there are a lot of ways to exercise and maintain a healthy lifestyle through this exhibit. There are also a lot of ways to have fun doing it so people can be healthy while having fun.

Screen Scare



In this exhibit, visitors learn that sometimes making simple changes to their lifestyle can make their life healthier. We believe that children have too many opportunities to sit in front of screens in their bedrooms. We think identifying unhealthy habits like screens in bedrooms is important because when people make unhealthy choices as a child, it affects them when they're older. Therefore, we have designed an exhibit that helps to identify screens that promote an unhealthy lifestyle. This is important because even the smallest changes can make a big difference.

As visitors come from *Journey Through the Immune System*, they find themselves in Count Sallow's dark, small apartment. The doors slowly open with a scary "creak" and then they go straight towards the kiosk. After visitors scan their keycard, they are free to go wherever they want. They search for screens in Count Sallow's bedroom and scan them with their keycard. If the participant scans a screen that promotes unhealthiness, a small green light turns on to show that they're correct. When they scan a screen that helps to stay healthy, however, the light flashes red. There are five unhealthy screens to scan, but visitors only need to scan four to proceed. When they're done, visitors can stay and help other agents, or they can leave the exhibit and sign out at *Headquarters*.

Programming

Once visitors have experienced the exhibit, they may be eager to learn more. Programming is a key element to successful exhibits. While exhibits provide a taste of content, programs allow visitors to have a more in-depth experience. These experiences are not meant to teach everything, but to teach just enough to leave participants curious to learn more.

While in the four cities we experienced a variety of programs. While the structure of each program differed, we learned that all good programs:

- Create curiosity. They are exciting and visually stimulating. They leave the audience wanting to know more.
- Are focused. "Less is more." Participants are more likely to learn something from a program that has clear learning targets and does not try to teach too much. Limiting the content to a few things allows that program to go more in-depth. This will result in the audience really understanding and remembering what the program is trying to teach.
- Are unique. In COSI we learned the expression "not straws and strings." This means that programs should include materials that teachers can't get elsewhere and activities that they can't do on their own. The program should make students and teachers want to come back and see it again. Each program should have qualities that make it different from other museum experiences.
- Are interactive. The audience needs to be actively engaged. Depending on the type of program, this could involve several volunteers from the audience or it could be some kind of activity or experiment that everyone gets to do.
- Connect to the individual. The audience is more likely to engage in the program and remember what is being taught if they somehow relate to the content. Programs about health might include activities that allow participants to learn more about their bodies. These experiences might include learning about how their own body works or how outside factors might affect their body.

We walked away from the four cities full of program ideas. Below are a few highlighted programs and how we might be able to adapt them to our health exhibit.

Opening Day

It is the opening day of Operation KidFit and parents are arriving with their children. Kids will hear about a cool spy exhibit and they will beg their parents to go. What better way than to give them every ounce of knowledge on the opening day?

We have many ideas that will boost health awareness.

One idea is to have a "Behind the Scenes of *Operation KidFit*" center to show how this exhibit was formed. The mock-up of the exhibit could be displayed along with documentation of our experience on creating the exhibit. We also thought it would be cool to show "*Operation Kidfit* in the Making" to share the work we put into this exhibit design and the research conducted in the four cities.

Since we ultimately want kids to learn how to maintain a healthy lifestyle, we have several ideas that could complement the Preventative Care section of the exhibit. To go along with our MindBall exhibit, we were thinking it would be important for people to know just how your mind is pushing the ball and what brain waves you give off to move the ball. We also think that kids could learn more about how to aid their bodies in protecting them from illnesses. Kids can also learn about the cause and effect of things like smoking and what it does to their body.

To familiarize kids with the four villains, we also had an idea about showing what choices Count Sallow, Mrs. Couch Potato, Dr. Fructose, and Foodzilla could have made to be healthier.

We were thinking that some of these Opening Day activities could come back every month because a lot of people will miss out on the first day. This will be a great opportunity to really learn important information not always addressed in the exhibits.

Glow Germ

Have you ever heard of Glow Germ? One day in our classroom we experienced Glow Germ firsthand. Glow germ is a lotion or a powder. It is a special substance that glows under a black light. The glowing dots represent germs that are on your hands if they are not thoroughly washed. During our classroom activity, we were able to observe the Glow Germ that stayed on our skin after washing. This allowed us to see how well we washed our hands and to see how we could improve on washing them.

After we did this activity we thought of a way the museum could use Glow Germ as a program. Our idea could be used as an in-house or an outreach program for all ages. We could have a sink with soap, another station with hand sanitizer, and a station with nothing to clean your hands with. Then visitors can do an activity with an object that they all have to touch (that secretly has Glow Germ powder on it). After that visitors could choose which group they want to go to (hand sanitizer, water and soap, or nothing). Next they would follow the directions of the station they chose. After they do that, visitors would be shown their hands under the black light. Visitors should notice that the group that did nothing has the most Glow Germ under the black light. But, they would also see that hand sanitizer is good, but not as good as soap and water. Then visitors would be given suggestions on how to wash their hands better.

Overall we thought this was a good program because all kids and adults get to participate if they want to.

Science Experiments

In Houston, we saw a few programs on various parts of the body. In the in-house classes (called "Seeing is Believing" and "Take it to Heart"), we learned about the heart, lungs, and eyesight. During our experience we learned about anatomy, the causes and effects of good and bad choices, and how all of the body systems link up through specific parts of the body. In addition, as a fun aspect, we actually got to dissect a cow's eyeball, and a sheep's heart to learn about the basic anatomy and how it functions. This provided us with a hands-on experience that left us wanting to learn and do more. All this added up to an overall very fun and interactive experience that we would love to do again.

We think we could do something like this as an *Operation KidFit* program because in our experience, these activities were fun for almost all ages. In addition, they have a direct content connection so visitors can learn a lot. In other words, they really don't have to hide the content behind a theme or storyline. For instance, we could have a program in which visitors would do something interactive or hands-on. However it doesn't have to be dissecting a body part. It could possibly be a program in which visitors would experiment with how different chemicals in the body can change behaviors. Visitors would learn the positive and negative effects of what is happening in the human body.

Research Labs

We also suggest that the RMSC should think about starting a lab for research studies. At COSI in Columbus, the science museum teamed up with Ohio State University to make a program called *Labs in Life*. This study was not just made for the amusement of the visitors, but for several other important reasons. For example, one of the studies was called, "Are Wii Really Fit?" It was a study to see if the Wii Fit video game actually helps people become fit. Visitors were able to participate in these studies and some of us were even chosen! We would suggest partnering with a university in the area, like University of Rochester, because it's a new way to get visitors to participate in actual scientific research on health.

Stage Shows

When we were in Denver, we saw two theater stage shows that were available to the public throughout the day. One of them was called, "Pirates of the Human Being: Meet Your Microbial Mates." The show is about a pirate who is able to see germs through a telescope. His over-excited parrot, Polly, often reacts to what he sees in the telescope and talks to the audience. The other stage show was called "Superfood Heroes." This show was about a superhero called "Anti-Oxidant" who is on a team of Superfood Heros and their job is to help others keep a healthy body by finding anti-oxidants in super foods. At the end of the show, three kids from the audience were chosen to come up and become the newest "Superfood Hero."

We think that a stage show here at the RMSC could be connected to the Preventative Care section of our health exhibit. A worker or volunteer would come out dressed as a doctor carrying a bag of medical tools. He would call a series of volunteers from the audience and use the tools in his bag to perform a mock check-up on the volunteers. He would be looking for any signs of how they are taking care of themselves while giving tips on how to keep healthy.

Kitchen Theater

In Pittsburgh, we saw two programs that weren't like other programs. These programs were a part of "Kitchen Theater." One of them was called "Dr. Payne's Hideous Brain" where visitors learned about the brain and its parts. They also got to try a part of the cherry Jell-O brain. The second Kitchen Theater program we saw was called "Plant Pop," which is where visitors got to learn what is in sodas today, what plants are in different sodas, and how to make caffeine-free Root Beer from scratch. The best part of these programs was that visitors got to participate in the show by helping to cook the different foods and learn simple things in science by doing it in an interactive way.

Having a kitchen show like this can really spark the visitor with a fun memory they can share with others to motivate them to come to the show. Since this exhibit is about health, there could be a cooking show teaching the visitor about healthy snacks, drinks, and meals that are tasty yet good for you to eat. For example, we have some exhibits about exercise, so we could make energy bars. We also have some exhibits about healthy drinks so we could make organic smoothies. We know that when we see a cooking show that is fun yet educational, we want to share it with all our friends so that they could experience the excitement of watching a live cooking show in front of them. We think that visitors will remember the experience for a long time and they will tell their friends!

Closing Thoughts…

In conclusion, *Operation KidFit* is an exhibit that will stimulate broad community interests and meet Rochester's needs. We are providing an immersive and exciting experience that will educate citizens about the choices they can make that will affect their bodies in years to come. Thus, we can "Save A Generation."

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