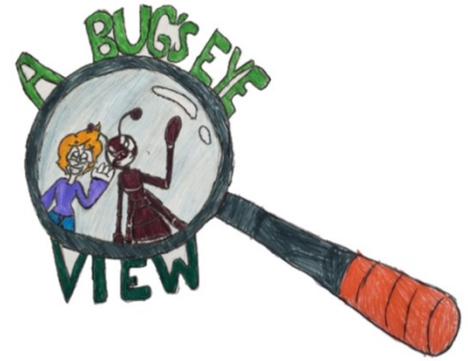


Creativity and Inspiration

Why do we need bugs? What good are insects in our everyday life? What things can we find in an everyday backyard garden? In our exhibit, *A Bug's Eye View*, we decided to explore these ideas. Visitors that enter this exhibit will feel like they have shrunken down to a bug's size. Once you pass through the giant magnifying glass, you will be surrounded by giant blades of grass, ants the size of large dogs, enormous spider webs and a towering flower. Our focus on this project is to educate children about insects, plants, and soil and how they affect the ecosystem. Kids can climb into ant hills, explore the inside of a flower, learn about ants and spiders close up, and witness decomposition first hand. This exhibit will be highly educational and teach children about the creepy crawlies in their backyards by giving them a unique bug's eye perspective.



We wish to educate all ages about the science of the outdoors. The patrons will be taught about bees, how their hives are built, and why they are important in our world. Kids will learn the science behind anthills and spider webs. Insects have their own ecosystem and they connect to ours. Both children and adults will become transfixed with these interesting subjects. Children will learn the importance of ecology in our world, which is not a subject that young children are commonly taught. With today's access to the internet, the youth will be able to research more on these big and diverse subjects beyond what we teach them. This exhibit will stand out in Science City because of its immense focus on the ecosystem and the outdoors.

Most of the inspiration for our idea of insects and flowers came to be when a couple of students in our class suggested insects as a topic. When someone mentioned ants and ant hills most of the students agreed, though some students still disagreed because the idea was very broad and unpolished. We started looking at other outdoor science exhibits and we ran across a picture of a giant blade of grass in a park. That was the spark for the "Bug's Eye View." We all agreed that learning about bugs and plants would be even more amazing if we could see things from a bug's perspective.

There are four main reasons this exhibit is important and will remain relevant in the future. First of all, bugs and plants are most likely going to remain for a long time- they won't become extinct anytime soon. Secondly, kids should be educated on how important bugs and plants are for a healthy planet and ecosystem. They are necessary for the survival of humans and for a balanced food chain. Healthy soil is essential to growing food and bugs, bees, and decomposition are the key to healthy soil. Kids also need to understand how plants and bugs work to understand their importance in this world. Finally, our first instinct is fear when we see bugs, but after kids learn about their importance, they might be less afraid and fewer bugs may end up under our shoes.

Interactive Exhibit Engagement

Have you ever wondered what it would feel like to be as tiny as ant? We can make that happen with our new exhibit, *A Bug's Eye View*. Whether it's climbing on the spider web, hiking through the green grass, or going through an ant hill, kids will have a blast interacting with this exhibit. People will love the flower tower, as they learn and gaze upon the exhibit and Kansas City. As they go up through the stem they will learn about photosynthesis, and when they get to the top they will learn about pollination and what part flowers play in the ecosystem. That

won't be the only exhibit that visitors will enjoy. They can also visit our arachnid area where they'll find the Spider Webs, which are a great and educational experience to learn how spiders climb and make their webs. It will host a number of facts and videos up and around the climbing ropes. To read all the facts one would have to climb like a spider around the web. After that, you can go and see the Decomposition Log. There is also a cutaway area where you can see what happens underground in the soil.

Children are curious creatures and they will have many questions when they enter our exhibit, but luckily they will find the answers by the time they leave. Questions such as, What is soil and how is it made? How do ants work together to help the soil? Which spiders are harmful to people and how can we stay safe? How do spiders help our ecosystem? How do decomposers help regenerate the soil? Why are bees important in our world and how can we protect them? How do flowers and plants reproduce? Where do seeds come from?

Adults and young ones will be intrigued by the exhibit, for it will teach everyone the wonder of nature's recycling process from fungi, bugs, and plants. It will show the amazing way the log provides nutrition to the other organisms around it. Everyone will also enjoy The Honeycomb Builder, where kids can learn how and what happens inside of a beehive hosted by the common honeybee. Young children may be able to build a smaller honeycomb, but they will still be actively engaged in the activity. People will have an un-bee-lievable time constructing their own honeycomb. All ages will be able to tour the inside of the ant hill and enjoy the Flower Tower.

The Bug's Eye View exhibit takes advantage of the outdoor environment by showing the user what it would feel like to be an insect. The sky is literally the limit on what you can learn. This exhibit will encourage students to want to know more about the unseen world around them or even want to be an entomologist. The amazing experience will provide a fun and interesting time for children of all ages to learn and play.

There are plenty of opportunities to experience nature first hand by climbing, building, observing, and testing but there will also be many places where you can read, watch videos, interact with displays, and just enjoy being outdoors interacting with nature.

Constructability

For the surface, we will be using Polysoft Playground surfacing, which is made by a company called AquaSeal. We will use that for the flooring and the anthill, which we talked about earlier. It is soft and has a fall protection height of 10 feet, so if some kid decides to have fun by jumping off the top of a giant bug, they will be fine. We've done the research, spoken to representatives from the company, and this is our safest option. Most of our equipment and displays will need to be custom made. We can prevent injury by eliminating any sharp edges on the equipment, and coating the lunch tables with silicon like the ones that you see at parks. We have found heavy duty materials such as galvanized steel, industrial plastic, and other sturdy mid-use materials to use for the equipment and displays.

Our exhibit Bugs Eye View exhibit will last well into the future. The surface will have underground drainage system so rain and snow can drain out through the ground and need less repairs. The website-based company, *Play by Design*, would be perfect for building our unique parts for this exhibit. Based on what they have previously made, they should be able to make many of the elements for us, such as the ants, honeycomb elements and more. We have tables that look like leaves, twigs, and mushrooms. We will need a line of ants as big as large dogs and the flower tower is something that will definitely need to be custom built. Their plastic would not rust and would last for a very long time. <http://www.playbydesignonline.com/>

| Item | QTY | Price For One | Estimated Final Cost |
|---|--------------|---------------|----------------------|
| Polysoft Playground Surfacing | 12,000 Sq Ft | \$13 | \$156,000 |
| Clear 48IN x 72IN x Acrylic Sheet | 10 Sq Ft | \$349.95 | \$4,000 |
| Plastic | 150 Sq Ft | \$2.29 | \$343.50 |
| Galvanized Steel | 49 Sq Ft | \$10.80 | \$518.400 |
| Manila Barge Rope | 600 Ft | \$2.32 | \$1,160 |
| Custom Elements (Decomposition Log, Honeycomb, Grass) | N/A | N/A | \$100,000 |
| Final | N/A | N/A | \$267,014.90 |

Social media

Our exhibit will include an instagram page consisting of zoomed in pictures of our exhibit. A hashtag will also be incorporated prompting to kids to take a “selfie” or picture of themselves by the picture and share the hashtag. The pictures on the page will be scattered around the exhibit so kids will be inclined to search for the pictures. The pictures will also have a question about that piece of the exhibit, there will be instructions that say something along the lines of “all answer to the question will be answered via direct message”. We will use the direct message feature on instagram to receive incoming answer to the questions. We will also have a twitter account that has the links to videos such as, “*A Disastrous Year for Bees*” by the New York Times or “*The Incredible Physics of Ants*” by the New York Times.

Student Involvement

To complete this project, lots of research must be done. The students in our class researched bugs, and all kinds of critters. We used websites like National Geographic to find accurate information. When designing the elements in the exhibit we looked at diagrams of flowers, insects, and plants. Meeting with our Burns & McDonnell mentors was also a very important part of our process. They encouraged us to take risks and had great suggestions for putting together our proposal. We also needed guidance when working on our diagram. We wanted a specific angle and perspective for our drawing, but it was difficult to achieve. Luckily, we had an artist give us tips for creating the perspective we wanted. We learned that including a horizon line would create the effect we were after.

An outside exhibit lends itself to so many possibilities. One of our first ideas was an exhibit on fire. However, after much discussion, we abandoned this idea because of safety and obvious weather concerns. We also tossed around the idea of global warming as a topic. We thought that we should stay away from a topic that is so controversial and might not be relevant after a few years. An exhibit on music and sound was appealing to us, but those that have visited Science City pointed out that there are several music and sound elements in the city already. The Bug's Eye view idea won out and we haven't looked back since.

After experiencing our breathtaking exhibit, people might find careers in this subject interesting. Career paths in biology, plant sciences, bug sciences, and others may be suggested in our exhibit. These careers are very important, as people need bugs and healthy soil and still will in the future. They are a vital part of a healthy ecosystem.

Resources:

"Bugs, Bug Pictures, Insects - National Geographic." *National Geographic*. N.p., n.d. Web. 13 Oct. 2015.

"World's Weirdest: World's Biggest Spider." *World's Weirdest: World's Biggest Spider*. N.p., n.d. Web. 8 Oct. 2015.

"Natural Resources Conservation Service." *Soil Health*. N.p., n.d. Web. 6 Oct. 2015.

<http://aquaseallc.com/installing-playground-surfacing-for-playground-safety-fun/><http://www.playbydesignonline.com/>

