



The Science of a Ferris Wheel



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Ferris wheels are complicated. Who built it? Why? How? I had so many questions. Let's me show you the answers!

Introduction

Have you been on a Ferris Wheel before? I have! Have you ever wondered how a Ferris Wheel works? I have! Here are the answers to many questions about the science behind Ferris wheels.

Purpose

My purpose is to build and understand how the Ferris wheel works.

History of the Ferris Wheel

It all started 100 years ago, when the Eiffel Tower had just been built in Paris. In Chicago, the world fair had been organized by David Burnham, a famous architect. The reason for this is that he wanted the World Fair to beat the Eiffel Tower in popularity, and so he called upon people to make a wonder greater than the Eiffel Tower. One of them was a 33 year old engineer named George Washington Gale Ferris Junior. He imagined a giant, spinning, bicycle wheel in the sky. He wanted people to see their city from a giant height. However, Daniel had already rejected a lot of ideas and thought of Ferris's as unsafe, and so Ferris's idea was rejected. But Ferris didn't give up. He was going to build it himself, then. After some convincing, he got investors to pay for the construction. Once it was done, he named it the Ferris wheel, it got very popular very quickly, and there were a lot of newspapers on it. At 37, he passed away without any money because he got into a legal fight with the organizers of the fair.

Source: The Dr. Binocs Show.

How it works

It works a lot like a wheel of an electric bike. The electricity powers a motor, which spins the axle, which spins the wheel . The strange thing is that you feel lighter at the top of the Ferris Wheel and Heavier at the bottom. This is because at the bottom of the ferris wheel, the centripetal force, or acceleration (the force that points toward the center of wheel) is going upward in direction, against gravity, and so you feel heavier than your true weight. When you are at the top, the centripetal force is pointing downward in the same direction as gravity and so you feel lighter. You will feel your true weight in the middle, when the centripetal force is not interacting with gravity.

Procedure

Time lapse video of me building a K'nex Ferris Wheel!

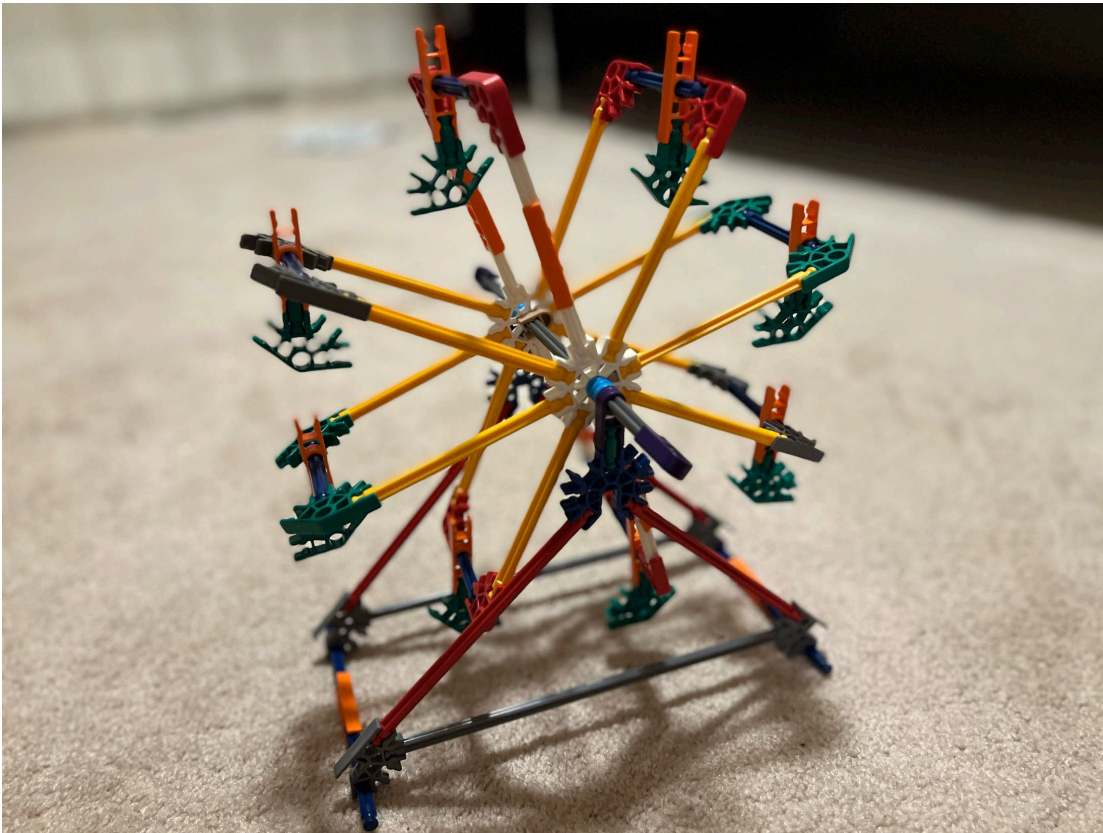
<https://www.youtube.com/watch?v=hAmRtoyrOX8>

Here is the video I used to build the ferris wheel. You can build it too!

https://www.youtube.com/watch?v=lclvo_ZoUJo

Result

Here's the result. It has the axle, the wheel, and the Carriages.



Conclusion

In Conclusion, Ferris wheels are really cool with lots of information behind it. We have...

- + Learned about the history of the Ferris wheel
- + Learned the science behind the Ferris wheel.
- + Built our own Ferris Wheel

Hope you had fun with this!