

How Long Must I Wait?

Introduction

It is almost inevitable that you will wait in line for a ride at an amusement park. How long you will have to wait depends on how many people are in front of you, how long the ride takes, and how many passengers the ride can accommodate. This exercise will teach you how to estimate your wait.

Learning Objectives

Using a watch to time how long it takes for x number of people to go on a ride and then using math to determine, for example, how long you would have to wait in line for a ride depending on how many people are in front of you.

Materials Needed

Worksheet MA 1a, pencil, calculator, watch (can be a stopwatch or wristwatch)

Instructions

1. This activity can be done alone or in a small group, teacher's choice.
2. Start your stop watch (or write down the time from your watch) as soon as they begin to load the train. You can do this watching or riding.
3. Stop the watch (or write down time) as soon as the same train comes back to the station and is completely unloaded.
4. Use the start and the stop to determine the time it takes for one ride (including load and unload time).

Explanation

By knowing how long a ride takes, how many passengers it can accommodate, and how many people are in front of you, you can determine approximately how long you will have to wait. Some amusement parks have signs at the entrance to the que lines displaying approximate wait time for guests.

Going Beyond

- Figure out how many people can ride per hour if they are running all three trains. How can you do this if they are only running two trains? This would be the maximum capacity for Wild Thing in one hour.
- Time some of your other favorite rides to see how long you would have to wait in those lines.

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The Wild Thing

Use a stopwatch to time how long it takes for a train to load, go around, and unload. Start your stopwatch as soon as the gates open for people to enter the ride, after that same train comes back and is unloaded, stop your watch. Keep a close eye because they may be running 2 or 3 trains, so be sure you wait for the same train.

Start: _____ Stop: _____ Time: _____

A Wild Thing train can accommodate 36 passengers per trip. If they are running just one train, how many riders can go on Wild Thing in one hour?

What if they are running two trains? (Hint: start timing when they load first train and end after they unload the second train)

If there are 500 people in line that are in front of you, approximately how long will you wait in line before you get to ride? Assume they are running just one train.

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How long will you wait if 950 people are in front of you and they are running two trains?

Look at the difference in wait times from the last two problems. In the second problem, there is not quite twice as many people in line, but they are running twice as many trains. One would think that obviously the line in the second problem will be shorter, is this true? Why or why not?

Estimate how many people are in front of you and write that number down. Then, calculate how long will you have to wait to get on the ride.