

# Big Data

What's the weather like today? Look outside and make some observations.



Next question: Do you need a coat? How about an umbrella?

Your observations provide valuable information that helps you make a decision.

In other words, you collect and analyze **data**.

**Data** can help us understand the past and make plans for the future.

**Data** can help us solve problems and make decisions.

In fact, there's a school that needs a Data Scientist like YOU to help them solve a problem.

We just got this message.

## Message from Main Street Middle School

We are having a terrible problem with students arriving late to school. How should we address this problem? We think we need to have stricter rules and more punishments. Even the teachers are starting to show up late! We are planning a meeting for the school community to talk about this problem. The meeting is Wednesday at 3:30pm. We need students, parents and teachers to attend so we can tell people the need to be on time—or else! Any advice would be appreciated.

Do you understand what's causing the problem? Can you plan the solution?

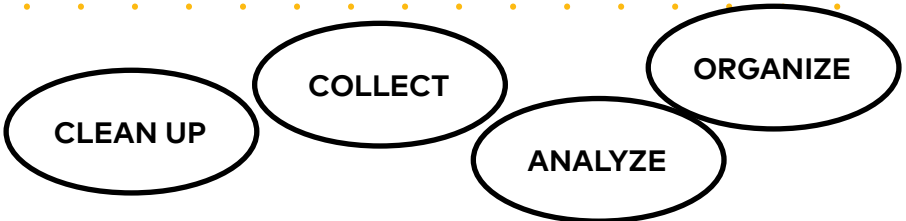
Not yet? Don't worry. Let's use **BIG DATA**.

**Data**  
**Facts and**  
**statistics**  
**collected together**  
**for reference or**  
**analysis**

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There are 4 steps to the process.

But it's important to complete these steps in the correct order.



**Put the words above in order. Which step should you do first, second, third and fourth?**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Did you choose **COLLECT** as the first step? That's right!

Before we can use the data, we have to collect it.

To begin, take a look at all of the collected data below. Read through each card.

<p><b>ANNOUNCEMENT DATA</b></p> <p>High School information session Wednesday at 4 pm.</p>	<p><b>RESEARCH/TREND DATA</b></p> <p>A new survey shows kids prefer getting information via text and e-mail.</p>	<p><b>WEATHER DATA</b></p> <p>Heat wave next week.</p>	<p><b>TRANSPORTATION DATA</b></p> <p>City trains delayed this week due to weather.</p>
<p><b>ANNOUNCEMENT DATA</b></p> <p>The library is now open 7 days a week</p>	<p><b>TRANSPORTATION DATA</b></p> <p>Bus driver shortage. City says it is limiting service until more drivers are hired.</p>	<p><b>RESEARCH/TREND DATA</b></p> <p>A new study shows praise is more powerful than punishment for kids ages 10 to 14.</p>	<p><b>WEATHER DATA</b></p> <p>Heavy rain all day Wednesday</p>
<p><b>TRANSPORTATION DATA</b></p> <p>There is a new bus stop in front of the library.</p>	<p><b>WEATHER DATA</b></p> <p>Record-breaking rain-fall in past two weeks.</p>	<p><b>RESEARCH/TREND DATA</b></p> <p>A new survey of favorite rainy day activities has <b>READING</b> at #1.</p>	<p><b>ANNOUNCEMENT DATA</b></p> <p>Popular teacher workshop—Teaching with Technology—Wednesday at 3pm.</p>

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Wow! That's a lot of data! What should we do next? What is Step 2?

If you said **ORGANIZE**, you are right!

**How could we organize our data so we can see it more clearly?**

**Write your ideas below.**

Then what should we do next? What is Step 3?

If you said **CLEAN UP**, you are correct!

Now, you may know how to clean up your room, but how do you clean up data?

Cleaning up data means getting rid of data that doesn't seem important or relevant.

**Look back through the data cards on page 2. Cross out the data that doesn't seem related to the problem we are solving.**

So now our collected, organized and cleaned up data looks like this:

<b>WEATHER DATA</b>	<b>TRANSPORTATION DATA</b>	<b>RESEARCH/TREND DATA</b>	<b>ANNOUNCEMENT DATA</b>
Heavy rain all day Wednesday	Bus driver shortage. City says it is limiting service until more drivers are hired.	A new survey shows kids prefer getting information via text and e-mail.	High School information session Wednesday at 4 pm.
<b>WEATHER DATA</b>	<b>TRANSPORTATION DATA</b>	<b>RESEARCH/TREND DATA</b>	<b>ANNOUNCEMENT DATA</b>
Record-breaking rainfall in past two weeks.	City trains delayed this week due to weather.	A new study shows praise is more powerful than punishment for kids ages 10 to 14.	Popular teacher workshop—Teaching with Technology—Wednesday at 3pm.

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We only have one thing left to do. **ANALYZE!**

Read through the organized data cards again. Think about all of the data and respond to the questions below.

What do you think is causing the school's problem?

Is their plan for a meeting on Wednesday a good one?

What would you suggest the school do next?

How should they let people know about the plan?

Well, they took your advice. Let's see how it went!

**Thanks for using Big Data to help Main Street Middle School!**

Thank you for your suggestions! We didn't realize what an impact the bad weather and transportation problems were having. We just assumed kids were oversleeping. And you were right that Wednesday afternoon was not a good time for a meeting. Instead, we took your advice and made an announcement praising those students who had been making the extra effort to arrive on time. We will also send out reminder emails and text messages. And the weather will soon get better. Thanks again!

**You are a Girls4Tech Data Scientist!**

CERTIFICATE OF ACHIEVEMENT

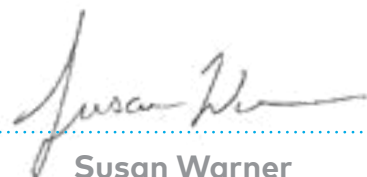
Congratulations!

YOU ARE A CERTIFIED

girls<sup>4</sup>  
tech™  
DATA SCIENTIST



Michael Miebach  
CEO, Mastercard



Susan Warner  
Founder, Girls4Tech