



# TeachEngineering

STEM Curriculum for K-12

How Sweet Are You? Engineering Smarter Solutions Using Data-Driven AI



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# Thirsty? Which One Would You Choose? Why?



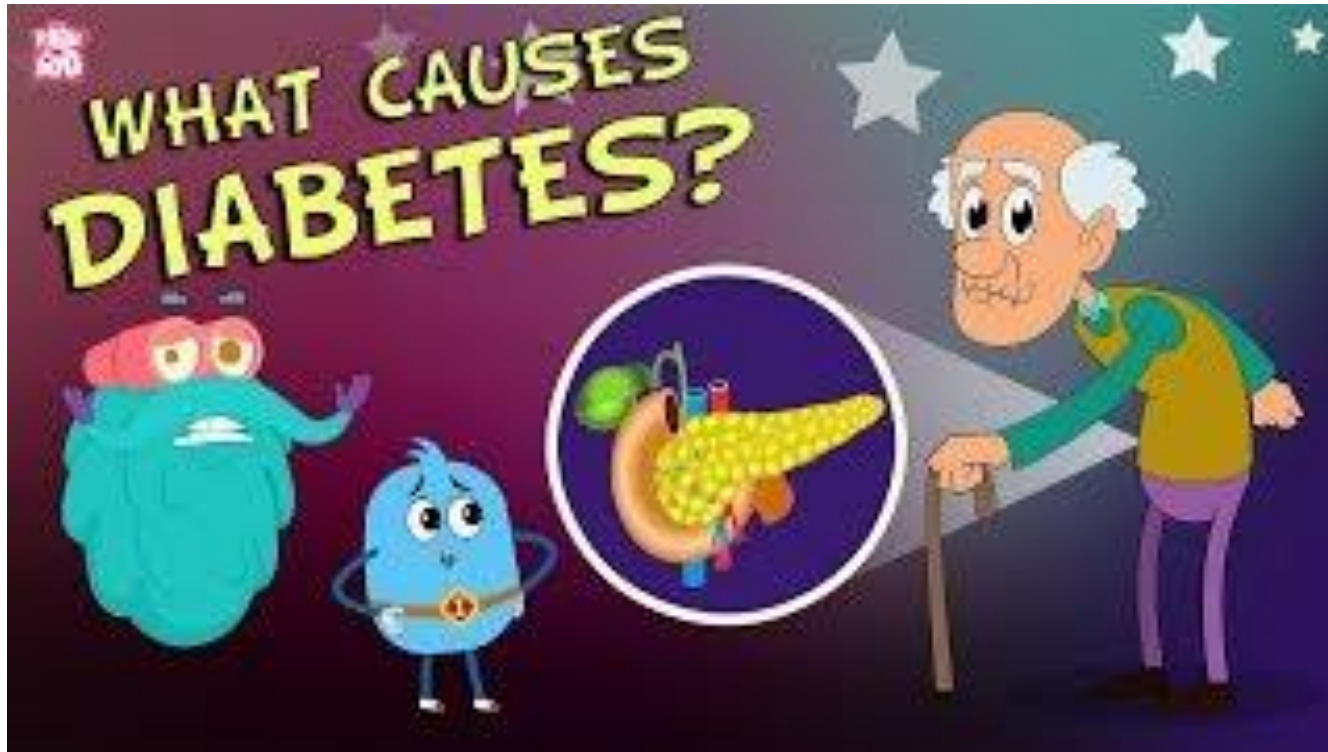
## Did You Know?

- When there is too much sugar in the blood, the kidneys remove the extra sugar.
- When doctors look at your blood sugar, they are concerned with the sugar dissolved in your plasma.
- Plasma is water with dissolved molecules. Plasma is a solution.

# What Is Sugar?



# What Is Diabetes?



## Think and Talk With a Partner

1. What do you already know about diabetes? Have you heard of it before?
2. How do you think food affects our bodies, especially when it comes to sugar?
3. Can you think of any foods or drinks that might have a lot of sugar in them?
4. Why do you think it's important for doctors and scientists to understand how different foods affect our bodies?

## How Sweet Are You?

Challenge: Your task is to help doctors predict how certain foods affect a person's blood sugar levels.

# Activity 1

1. Read the [article](https://kidshealth.org/en/kids/carbs-diabetes.html) and make notes in your STEM/Science journal.

<https://kidshealth.org/en/kids/carbs-diabetes.html>





# Activity 1 - Glucose Paper Test

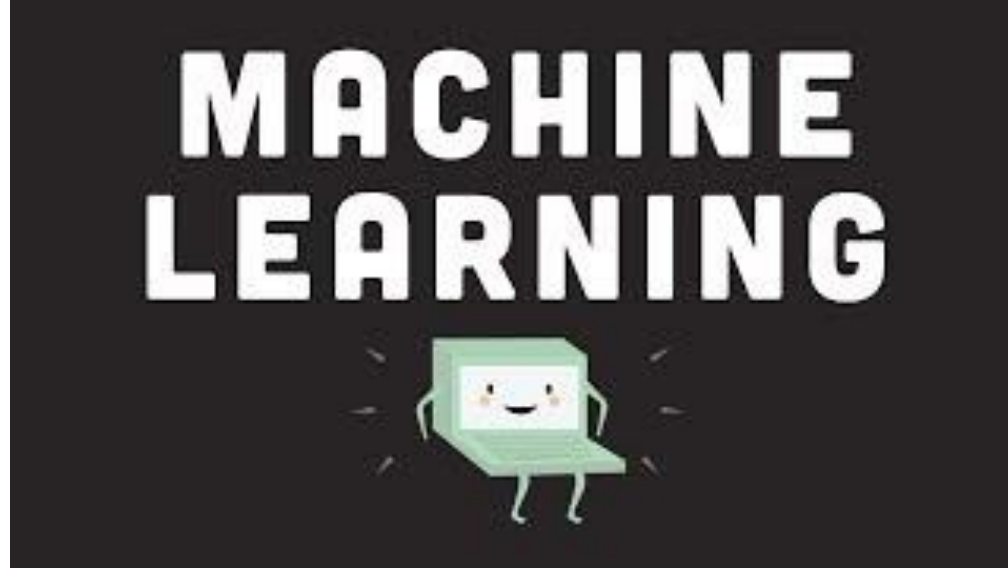
- Dip a glucose test strip into the 10% glucose solution (use gloves or a clothes pin).
- Wait for the time specified by the test strip manufacturer.
- Observe and record the color change or digital reading on the your group's data sheet.
- Repeat the process with the other solutions.



# Activity 1 - Gathering Data

- In teams, use chart paper and markers to create a graph to represent the data gathered in your datasheet.
- Once done, have a gallery walk and make observations about the other graphs. What things are similar? What things are different?

## Activity 2 - What Is Machine Learning?



## Activity 2 - Machine Learning Tutorial

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**Machine  
Learning  
for Kids**

[machinelearningforkids.co.uk](http://machinelearningforkids.co.uk)

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## Activity 2 - Now It's Your Turn!

Adapt the tutorial in image recognition to have a machine learning system recognize foods that have high levels of glucose.



Double-check your food choices by using the [Glycemic Food Guide](#)