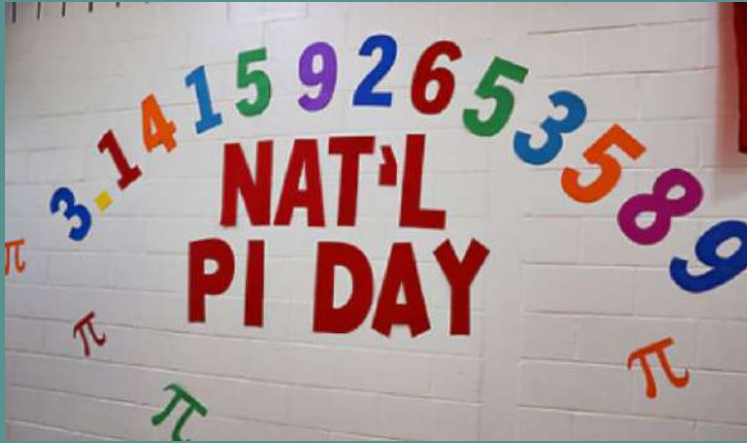


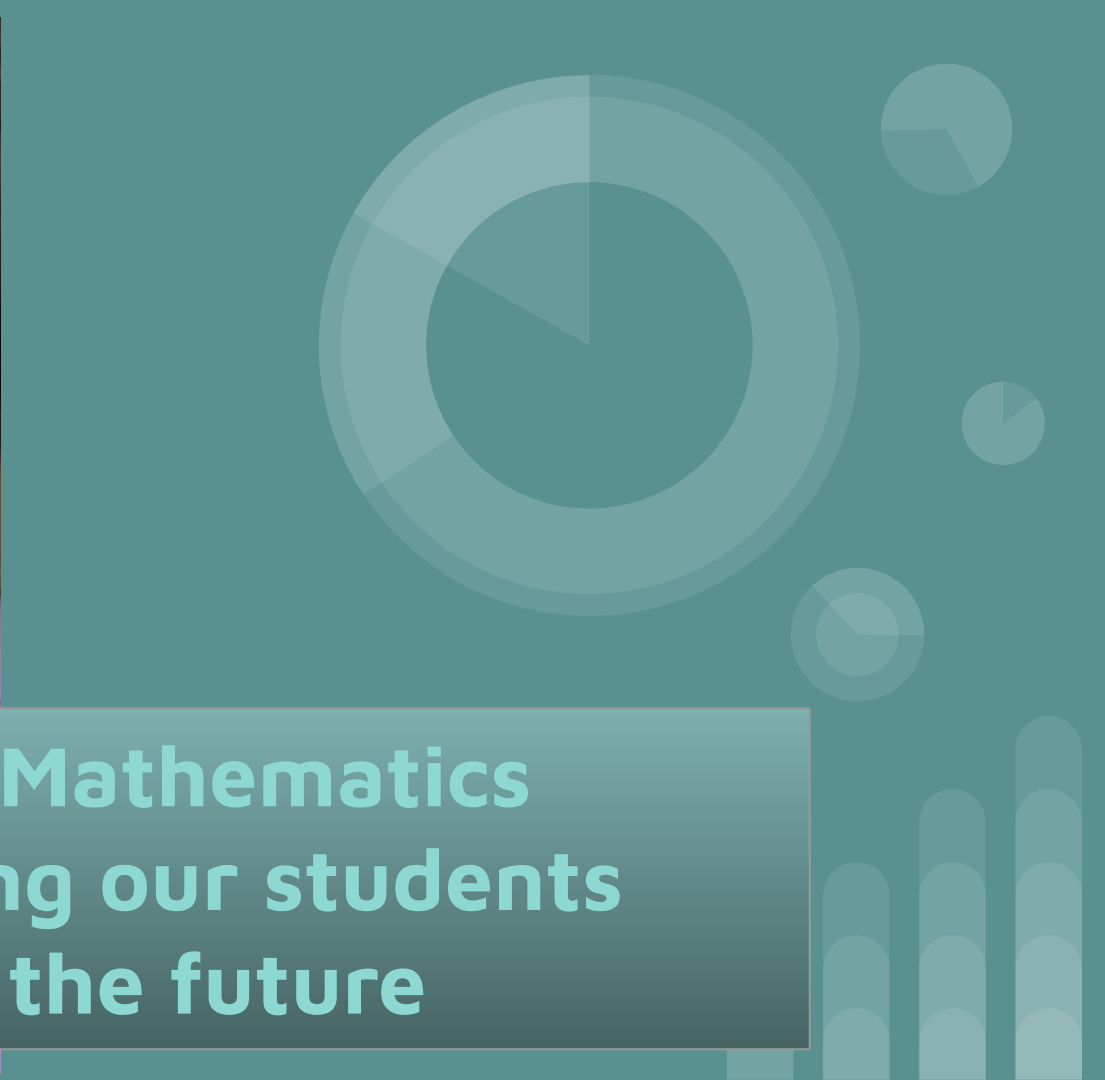
# Smithtown Mathematics

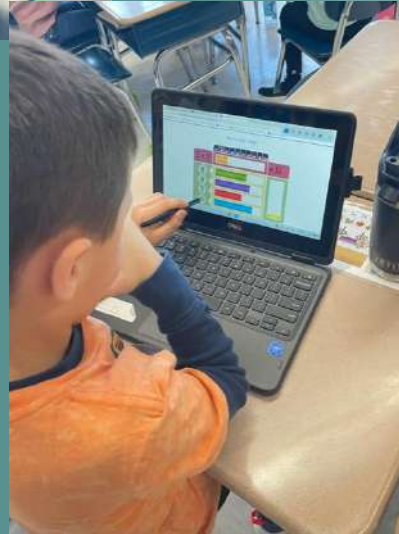
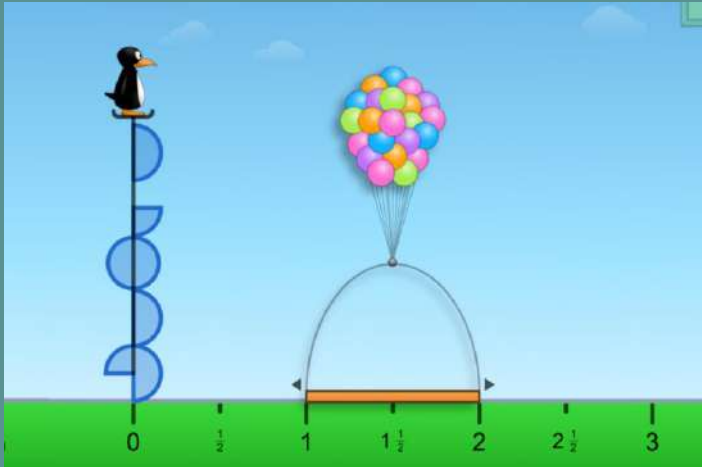


Board of Education Meeting - January 24, 2023  
Angelica Babino, Director of Mathematics



**SCSD Mathematics**  
**Preparing our students**  
**for the future**



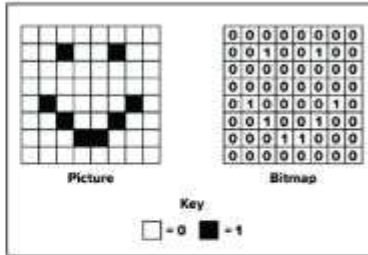




## Activity 2: Image Decoder

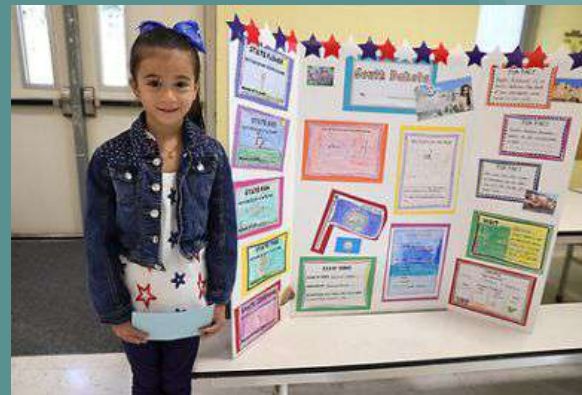
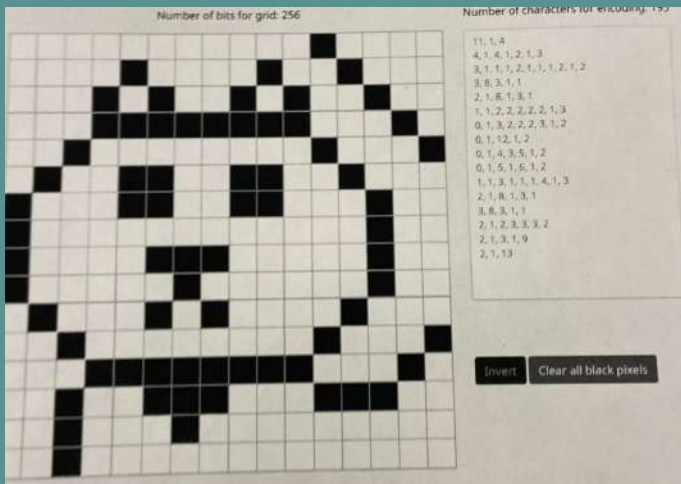
### Introduction

One way to store black and white images in a computer is to represent each pixel in the image with a 1 for black and a 0 for white. The grid of 1s and 0s is called a "bitmap." On the right is an example of a smiley face image and its corresponding bitmap representation. Can you see how the 1s make the face?

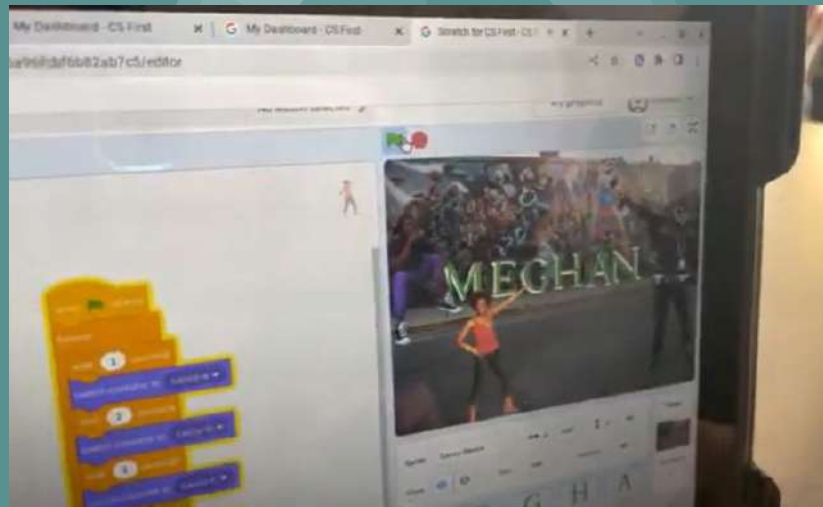


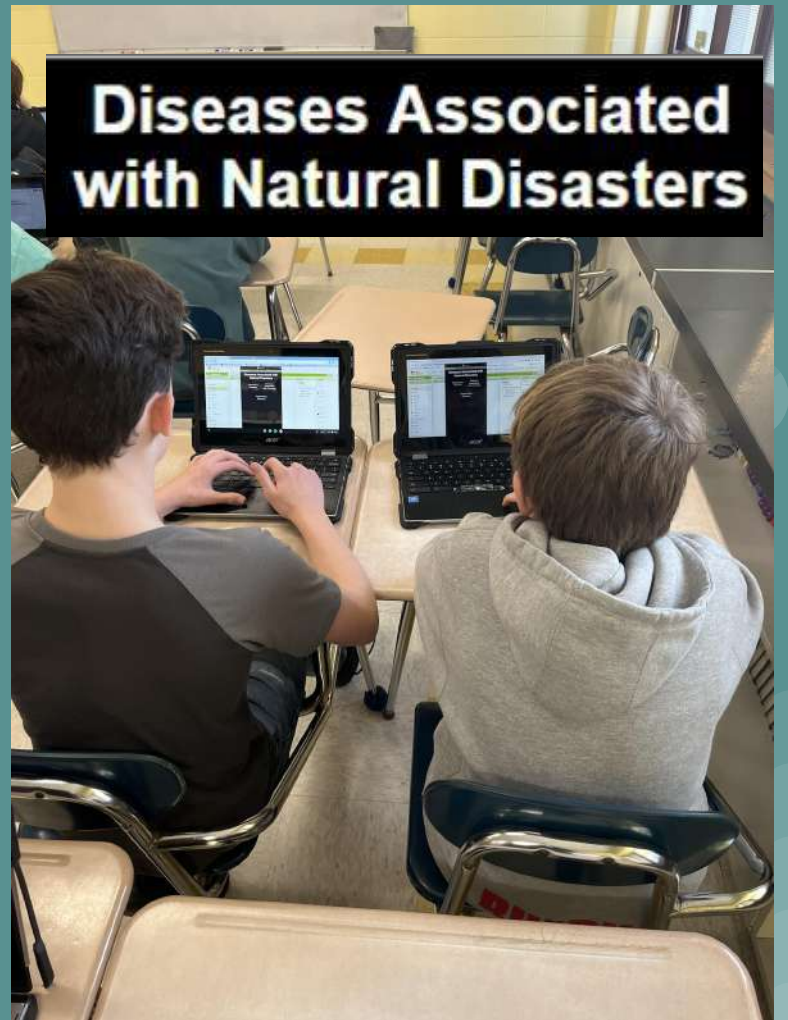
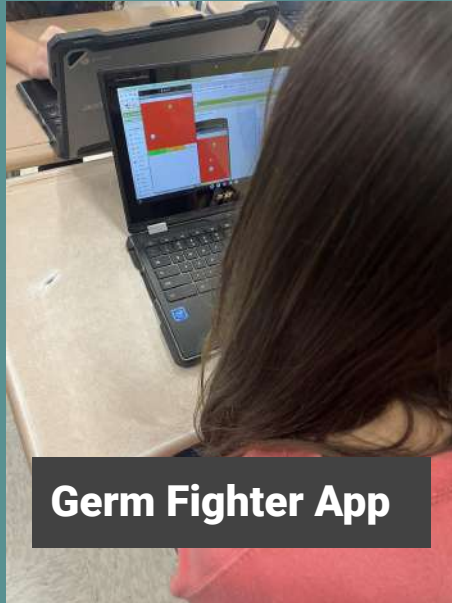
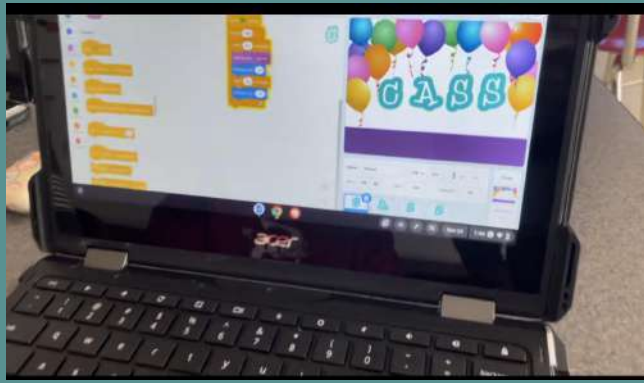
However, converting all those 0s and 1s is tedious, especially as the image gets larger in file size.

Another way to encode such images is called Run Length Encoding. Instead of representing each pixel in the bitmap with a digit, Run Length Encoding represents an entire row of pixels with the number or count of consecutive white pixels in a row, followed by the count of consecutive black pixels. It switches between these counts until the row is complete. The same logic is repeated for each row.



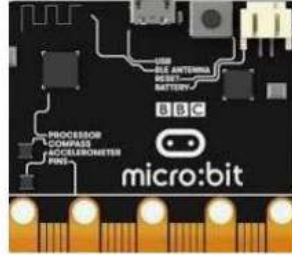






# Computer Science for Innovation

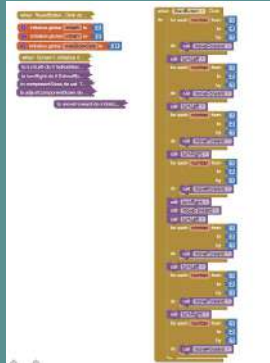
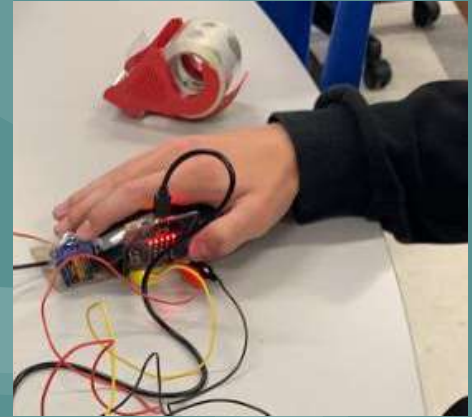
Half Year course (.5 credits)



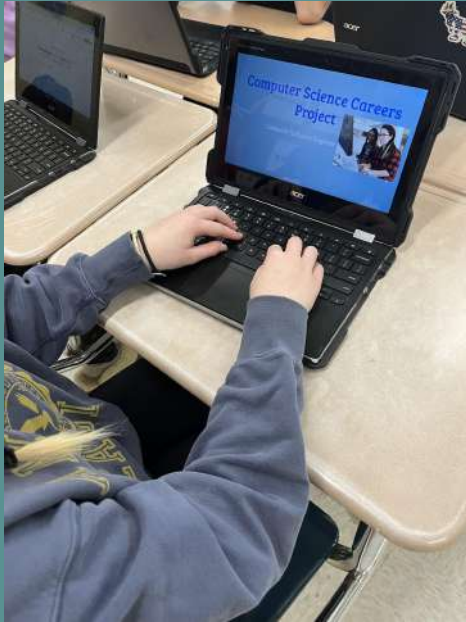
Combines Project Lead the Way

courses: Innovators and Makers and App Creators

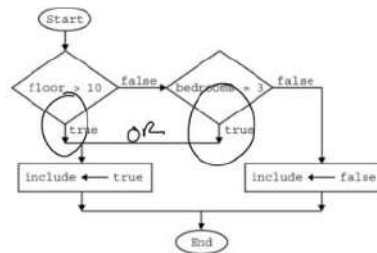
- Learn the basics of computer science through block coding
  - Build with technology hardware and software
    - Be creative and work with peers
  - Find hands on solutions for real world problems



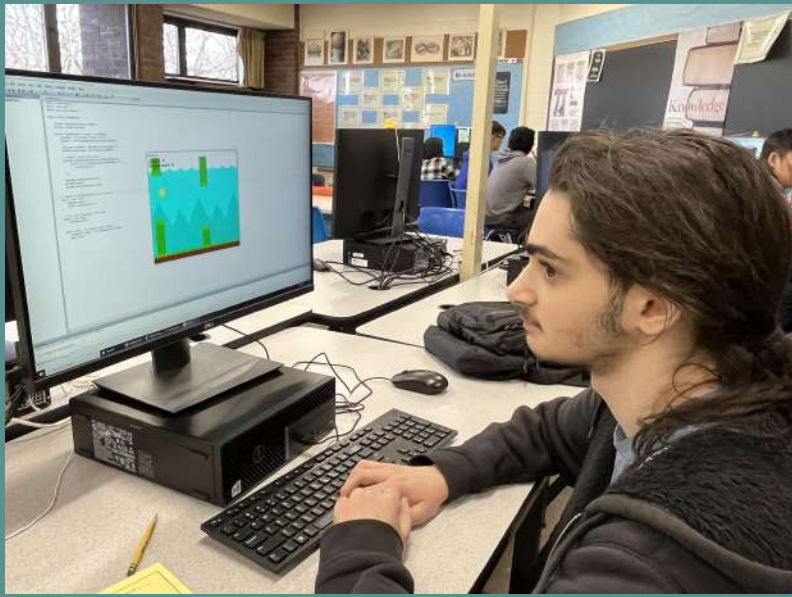




Block	Explanation
Oval ○	The start or end of the algorithm
Diamond ◇	A conditional or decision step, where execution proceeds to the side labeled <i>true</i> if the condition is true and to the side labeled <i>false</i> otherwise
Rectangle □	One or more processing steps, such as a statement that assigns a value to a variable









...I am not the only one who struggles with coding...

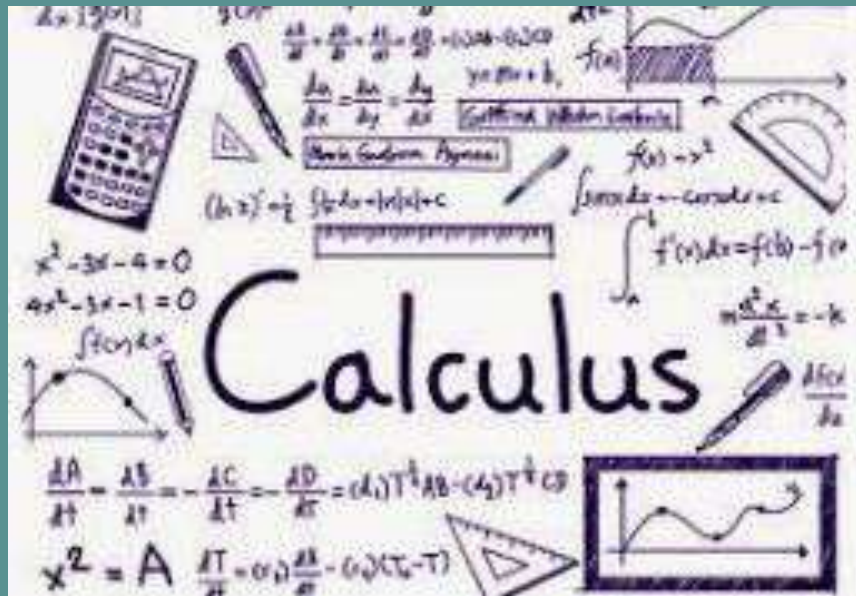
...It will work eventually...

...Everyone makes mistakes and it takes time to figure it out...







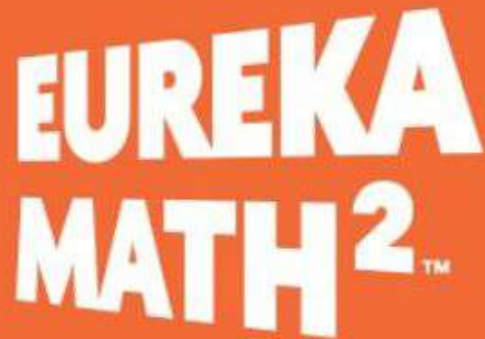




SCSD Mathematics  
Preparing our  
Students  
for the Future



# ADDITIONAL UPDATES AND REMINDERS

The logo for Eureka Math 2, featuring the words "EUREKA" and "MATH" in a bold, white, sans-serif font, with a large "2" and a trademark symbol (TM) to the right of "MATH". The logo is set against a solid orange rectangular background.

**EUREKA  
MATH<sup>2</sup><sup>TM</sup>**



## Learning Center Information

Smithtown High School East - Room 313

Smithtown High School West - Room G307

Monday-Thursday 6:40am - 2:45 pm

Friday 6:40am - 2:03pm





# Mathematics

The Mathematics Department fosters enthusiasm for the subject while implementing standards-based teaching and learning. We are committed to helping our students think critically, persevere in problem solving, and communicate mathematics effectively. We are passionate about helping our students meet their full potential while evolving to meet the demands of a changing world.

## Resources

- [+ Resources Available Through Clever](#)
- [+ Additional Resources](#)
- [+ Learning Center Information](#)
- [+ Department Connected Events/Site](#)
- [+ Department Presentations to the Board of Education](#)



### Director

**Angelica Babino**

Phone: (631) 382-3063

Email:

[ababino@smithtown.k12.ny.us](mailto:ababino@smithtown.k12.ny.us)

[NYS Math Learning Standards](#)



[Smithtown HS East Math Honor Society](#)



[Smithtown HS West Math Honor Society](#)



[All Honor Society Opportunities](#)



[Staff Directory](#)



# For more information about the Smithtown Mathematics Program...

February 8, 2022 BOE meeting Smithtown  
Mathematics 2021/22 (minute 30-53  
<https://youtu.be/ShoCM7wTfdU>

April 27, 2021 BOE meeting on facebook  
Smithtown Mathematics 2020/21 (minute 44-1:16)  
[https://www.facebook.com/SmithtownSchools/  
videos/205351107811964](https://www.facebook.com/SmithtownSchools/videos/205351107811964)

December 14, 2021 Strategies to Address Learning  
Loss ( 2:10-2:38)  
[https://www.youtube.com/watch?v=8Yk\\_G1rxfkE](https://www.youtube.com/watch?v=8Yk_G1rxfkE)

**ababino@  
smithtown  
.k12.ny.us**