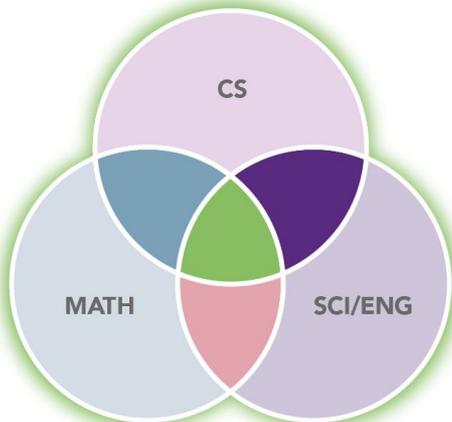




Building A Middle School Computer Science Program

Martin Luther King Middle School - Berkeley
Beth Cornwell & Amy Talley

RELATIONSHIPS BETWEEN COMPUTER SCIENCE, SCIENCE AND ENGINEERING, AND MATH PRACTICES



■ CS + Math + Sci/Eng

• Model

- S2. Develop and use models
- M4. Model with mathematics
- CS4. Developing and Using Abstractions
- CS6. Testing and Refining Computational Artifacts

• Use computational thinking

- S5. Use mathematics and computational thinking
- CS3. Recognizing and Defining Computational Problems
- CS4. Developing and Using Abstractions
- CS5. Creating Computational Artifacts

• Define problems

- S1. Ask questions and define problems
- M1. Make sense of problems and persevere in solving them
- CS3. Recognizing and Defining Computational Problems

• Communicate rationale

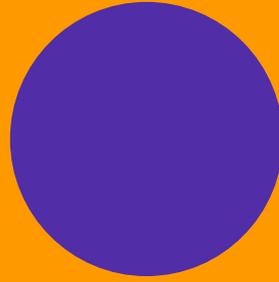
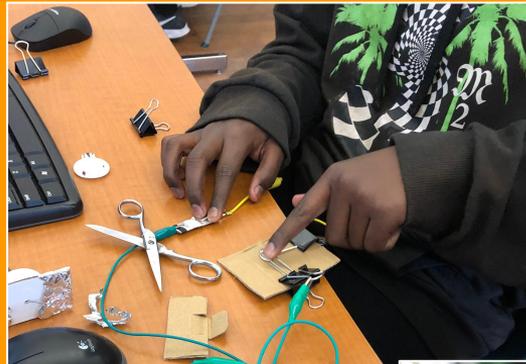
- S7. Engage in argument from evidence
- S8. Obtain, evaluate, and communicate information
- M3. Construct viable arguments and critique the reasoning of others
- CS7. Communicating About Computing

Current
recommended
Computer
Science
Standards
intersect with
Math, Science,
and
Engineering

- Human Computer Interaction
- Hardware
- Troubleshooting

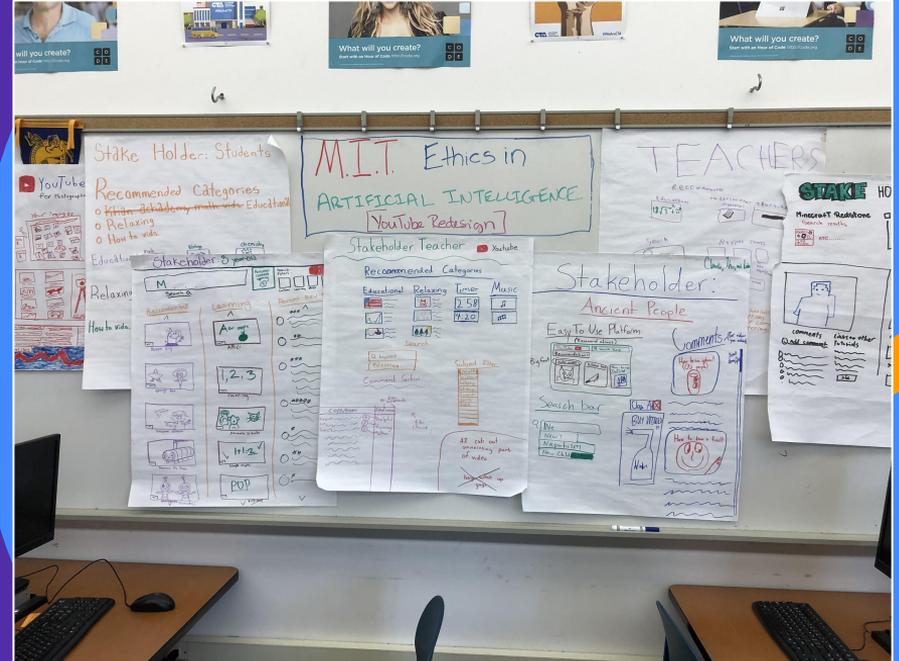


Computing Systems



IMPACTS OF COMPUTING

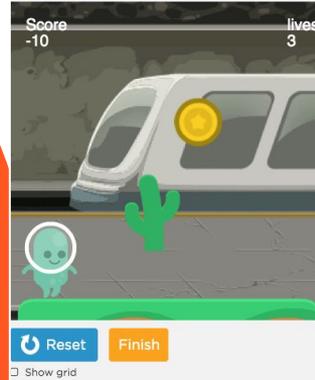
- Culture
- Social Interactions
- Safety, Law, & Ethics



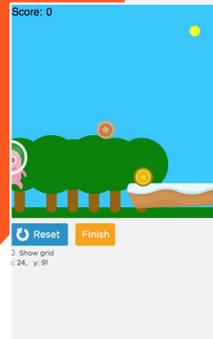
MIT Ethics In Artificial Intelligence

Javascript

Algorithms & Programming



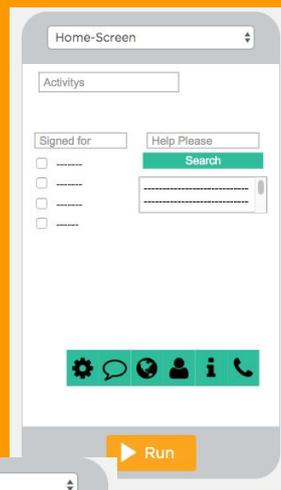
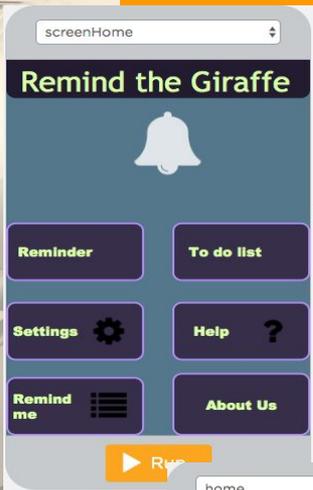
```
Instructions Feedback
Teacher Feedback
View only:
1 // variables here
2 var score = -999;
3 var lives = 999;
4 var subway = createSprite(200, 200);
5 subway.setAnimation(▼ "subway");
6 var ground = createSprite(200, 420);
7 ground.setAnimation(▼ "ground");
8 var alienwalkright = createSprite(100, 300);
9 alienwalkright.setAnimation(▼ "alienwalkright");
10 alienwalkright.bounciness = 0;
11 var cactus = createSprite(randomNumber(0, 400), -40);
12 var ice = createSprite(randomNumber(-40, 400), -300);
13 iceCactusProperties();
14 var axe = createSprite(randomNumber(0, 400), -300);
15 axe.setAnimation(▼ "axe");
16 axe.setCollider(▼ "circle");
17 var coin =
```



```
Instructions Feedback
Teacher Feedback
View only:
1 var player = createSprite();
2 player.setAnimation(▼ "player");
3 player.scale = 0.8;
4 var score = 0;
5 var coin = createSprite(randomNumber(350, 350), randomNumber(100, 100));
6 coin.setAnimation(▼ "coin");
7 coin.scale = 0.5;
8 var badcoin = createSprite(randomNumber(150, 350), randomNumber(100, 100));
9 badcoin.setAnimation(▼ "badcoin");
10 badcoin.scale = 0.6;
11 var player = createSprite(0, 0);
12 player.setAnimation(▼ "player");
13
14 setPlayer();
15
16 function draw() {
17 treesBackground();
18
```



AppLab



IWE List
- paper recycle
- organize bookshelf
- choose 1 subject
- create a hyperdoc

What can you do in
Open Lab?

- Plan your next project
- Join outside classroom!
- colgrov
- Tectrix
- Create Playgrounds
- Wk video
- Microbites!
- Stop Motion Animation
- Sketch
- Tinker Cad
- Plex In A Box (Commission?)
- FinchRobots





You can't be what
you can't see.

Equity in Computer Science



Snap the Gap & Girls Who Code

Jillian Ross Marley Pierce

*2nd Year Students of King Computer
Science*

