Wearable Learning

Team Name:

Team Members:

First Name:_____
Last Name Initial: _____

First Name:_____
Last Name Initial: _____

First Name:_____
Last Name Initial: _____

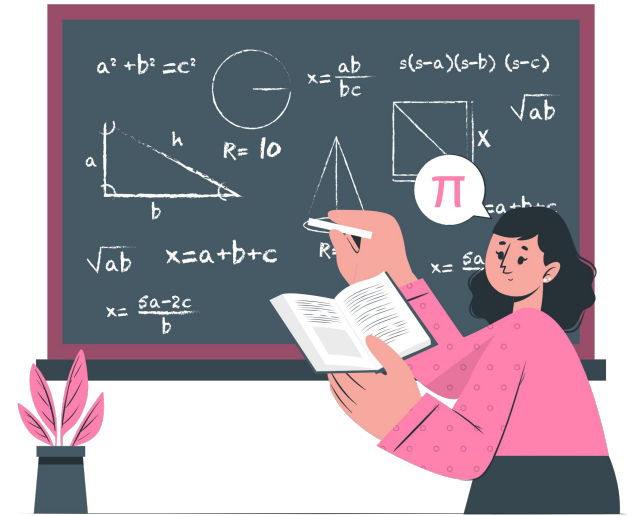**First Name:**_____
Last Name Initial: _____

2.1 Brainstorm

Group Activity: Design a Math Game!

Today you are going to design a math game with your team. This game is for your classmates to play and practice their math.

We want you to:
1. Design a Math game
2. Sketch the game on the next page

The game has to meet these criteria:
- A game that other kids can play in school as part of math class (it could be played in the classroom or outside in a playground/park or in the gym)

- The game has to teach (or allow students to practice) some math concept about one of these math topics:
    - 1. Fractions
    - 2. Operations + - x / ( ) with numbers
    - 4. Geometry (shapes or volumes)
    - 5. Measurement (length, area, volume, etc.)
    - 6. Decimals or Percents
    - 7. Statistics (data, mean, median, mode, etc.)
    - 8. Equations or Expressions

- The game should have at most 9 players, and if there are teams, at most 3 teams (of 3 players each)

- The game **must be active**; it should require physical movement by the players

- Ideally, movement should be related to the math concepts in *some* way

- The game should involve mobile technology (cell phones)

- We want you to specify the game (show us how your game works) on these pads on paper, and we will ask you to explain how it works later

Draw/Sketch/Describe the Game in the next Page!

2.1 Brainstorm

Draw/Sketch/Describe your game here

2.1 Brainstorm

Draw/Sketch/Describe your game here

2.2 Describing your Game

About the game itself...

1. What is your game about? What is the goal of your game?

2. Is it based on a game that you have played before? If so, what game is yours based on?

3. What math concepts are involved in your game?

4. Where can your game be played? (e.g. in a classroom, in a computer lab, in a gym, in a park, etc.)

5. Does your game become more difficult as it progresses?

2.2 Describing your Game

About the players...

6. Does your game involve teams or individual players? If teams, how many teams are there? How many players per team?

7. How many total players does your game require as a minimum? Is there a maximum possible number of players?

8. How old should the players be? What grade?

9. Are players working together or competing with each other?

10. Do you need someone to facilitate the game (like a teacher or another student)?

2.2 Describing your Game

About the materials...

11. How do players interact with their phones? (for instance, do they have to enter answers? How?)

12. Are there many questions? If so, how do you move from one question to the next?

13. Can the players get stuck? Can they help if they are stuck? How? Who gives them help (the phone or a human)?

14. Are there other objects involved (hoola hoops, cubes, rope, cards, etc.)? What are they? How many?

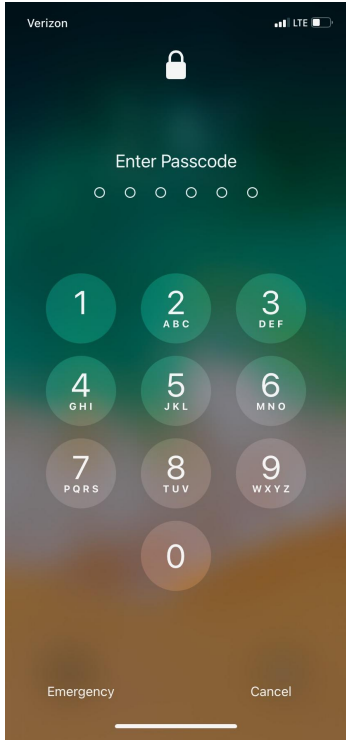15. If there are objects, do they need stickers with color codes?
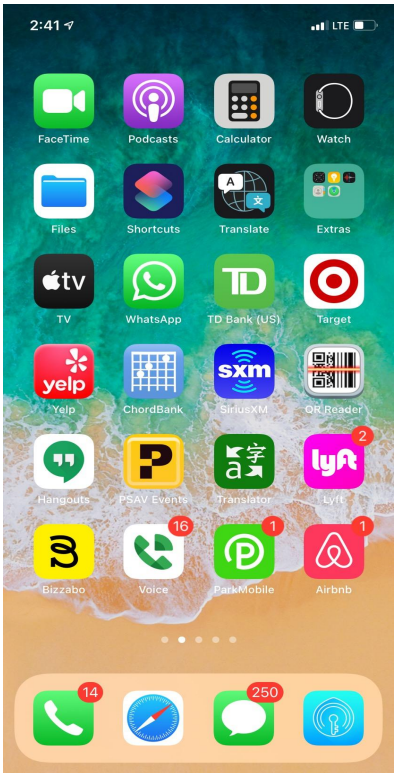
3. How things work

Opened ← State

Twist
handle and
pull

Twist
Handle
and push

Transition

Closed
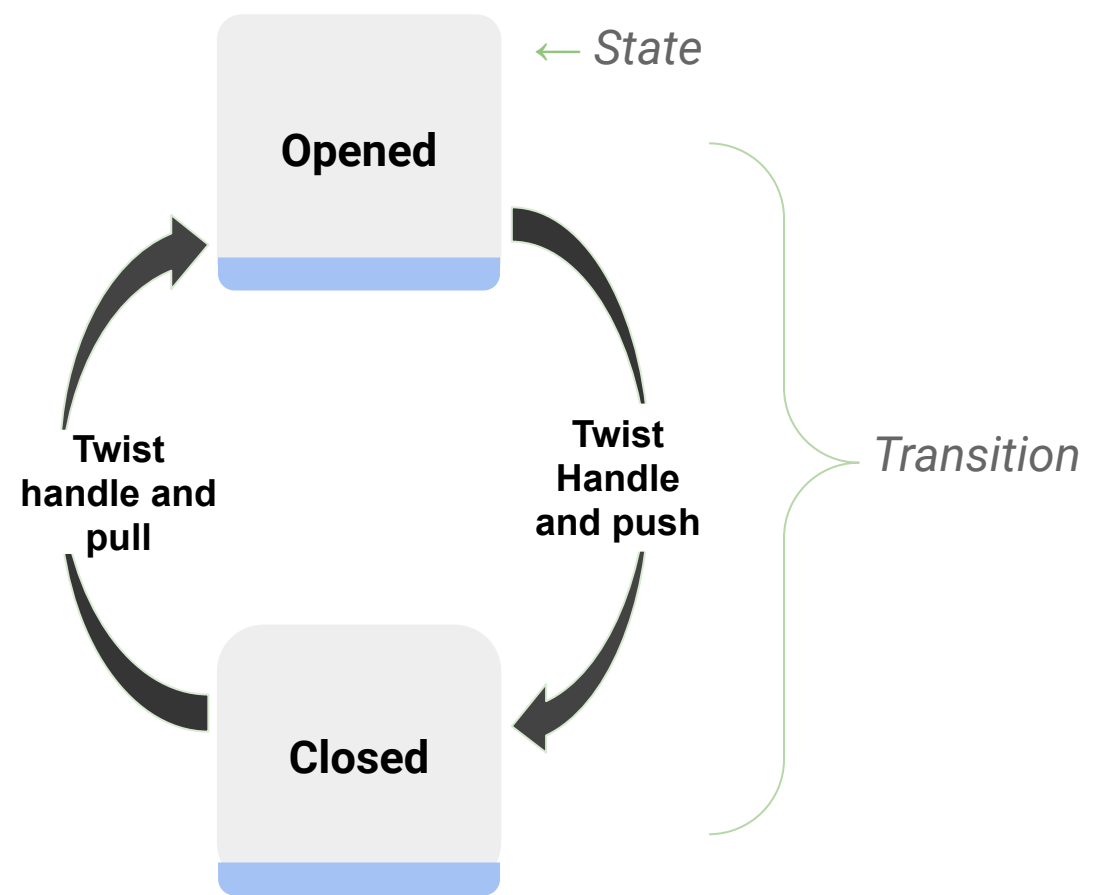
Finite State Machine Diagram
for the door

3. How things work

A Locked Phone   **Unlocked Phone**

Password: 123456

Can you draw a Finite State Machine diagram to represent how this phone works? Draw it here

3. Finite State Machine Diagram for <u>your</u> Game

Draw it here! Use boxes to represent SCREENS and ARROWS to specify actions

If you want some help, go to : ***Wearablelearning.org → tutorials*** *and watch:*
the video called: **Game Player**
the video called: **States and Transitions**

4.1 Time to Program!

wearablelearning.org

Here are some instructions to help you in the programming process

TOP TIPS!

Go to **http://wearablelearning.org/#Tutorials** and watch the tutorial video called: **"Making a Game"**

"Making a Game" Tutorial
In this tutorial, you will learn how to create and save your own games from scratch.

This is a **cheat-sheet** with instructions to help you create a new game:

Step 1: Go to www.wearablelearning.org

Step 2: Login using the username and password given by your instructors (or create one if you don't have one).

Step 3: After log in, From the three choices, choose **Game Editor**

Step 4: You are now on the home page! Look at the **Quick Start t**utorial. .

Step 5: To start creating a new game, select the **NEW button** from the toolbar at the top of the screen.

Step 6: You need to give a name to your game, and decide how many teams and players your game will involve.

Step 7: You have two possible choices for programming your game: dragging an **Output State**, drawing an arrow between states, or dragging an **Input Transition** on top of an arrow.

 Output State: this is used to add text, the math problem, hints, or anything the player will SEE or HEAR on each screen of the phone.

 Input Transition: this is used to program what the player has to DO in order to move from one screen to the next.

4.2 Continue Programming

wearablelearning.org

Here are some instructions to help your team in the programming process

TOP TIPS!

Go to **http://wearablelearning.org/#Tutorials** and watch these very useful tutorial videos

"Debugging a Game" Tutorial

In this tutorial, you will learn how to test your game. You will learn about what debugging means and how to run and debug your game to see whether it works.

"Teams, Players, and Scopes" Tutorial

In this tutorial, you will learn to program games for multiple players and teams. You will learn how to show different displays to different players within the same state as well as how to solve common problems that may arise.

TOP TIPS!

As one of the team members is programming the game, another one should be working on this sheet (will be VERY helpful later)

Name of the Game in *WearableLearning.org*:

What is the username of the team in *wearablelearning.org*?

What are physical materials (stuff) that you will need to play the game?

What is the set-up of materials at the start of the game (make a picture):

Notes for people who are trying to set up this game to be played:

4.4 Game Questions

Use this page to write down questions, hints, answers, and the codes that you will use while programming.

Question	Answer	Hint	Color Code (if needed)

5. Observe your game being played

TOP TIPS! To start your game, you need to go to the GAME MANAGER and start a new game instance.

Step 1: Set up the playspace. Are there materials involved in your game? How many players will be playing? Do players have their phones?

Step 2: Go to www.wearablelearning.org, and LOGIN using your username and password, and TAP on *GAME MANAGER*.

Step 3: Click on [+ Start Game] Find your game, and start it.
This will create the Game **PIN** that players need to enter from their phones.

Step 4: Share this game pin PIN the game players.

Post-Game-Play Observations

Did the game go as expected? If not, what were the major issues?

Can you pinpoint the reasons for the issues that malfunctioned? Say in general how you could fix them?