

## Possible Game Ideas

The goal for the game this year is to launch the game on the google play store for the android and PC platform. Last year, our game worked well but the graphics were not as strong as we might have wanted. It was, however, a significant improvement over the previous game that we wrote in Scratch.

It makes sense to spend some time exploring video games again this year. These games are organized around the types of games based on the settings and the behaviors of the characters. By starting with older game, you can follow the development of graphics and sound that make the games more engaging. You can also see how the programmers added small elements of “flare” to distinguish the game from similar games.

You should also be thinking about how you could take the design themes of a game and modify them to meet our needs. In many cases, I provide some ideas to kick start your own creative process. Try to take some time to generate two to three ideas of your own for each type of game. It is ok if you think your ideas are dumb. Many of the best games seem stupid until you start playing.

Problems we might considering games to solve...

- 1) sorting waste to reduce materials that go to a landfill
- 2) reducing waste with reusable packaging materials
- 3) refusing to buy things that are disposable
- 4) using a water bottle instead of buying water
- 5) compost food scraps to send less waste to the landfill
- 6) use cloth instead of paper towels
- 7) use cloth instead of tissues
- 8) buying from the bulk section to reduce packaging waste
- 9) get yourself off of mass mailings to reduce your paper waste
- 10) ban plastic bags in South Burlingont

## 1D0A Games

### Pong (1D0A)

<https://www.atari.com/arcade#!/arcade/pong/play>

Many people consider this the first video game. In this game, you control a paddle that moves to intercept a ball. The ball bounces off of the paddle, and the walls, to allow you to try to place the ball so that your opponent cannot reach it in time. The atari online versions has much better graphics than the original game but the game play is very similar. The controller moves in a single dimension. This could be adapted in many ways, such as using trash and the pong paddle to place the trash in a proper space.

### Kaboom (1D0A)

<http://www.classicgamesarcade.com/game/21674/kaboom.html>

In this game, you control a barrels that are used to catch falling bombs. There is a unity demonstration version of this game that could be used as a sorting game. This could be modified to make a three hole barrel where you have to catch the right waste in the right barrel or something explodes!

### SuperBreak Out (1D)

<https://www.atari.com/arcade#!/arcade/superbreakout/play>

Super Break Out will will a lot like pong but it uses the reflecting ball to remove tiles from a puzzle. You can see this is still a 1D game because the controller only moves in a single dimension. However, this game is much more fun because you can break the tiles. In this game, you might explore layers of a landfill to get important resources out by releasing those objects from the tiles that represent the landfill. You might also collect the objects, as they fall, and place them in the correct sorting bin.

### Wings

Wings is an iPad game where the main character can be moved by tilting the iPad to steer the character toward the larger of two quantities. This is designed to help users rehearse their multiplication facts. This is a top down scrolling game that could be modified to have a boat scooping waste from a river, lake or ocean by tilting the boat toward the waste.

### MotionMath

Motion math is an educational game for iPad that uses the gyroscope of the iPad to control a bounding ball. The iPad is tilted to get the number to drop on a specific place along a number line, which corresponds to the value of the number.

### My ideas

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One dimensional shooting games...

Tempest (1D1A)

<http://my.ign.com/atari/tempest>

Tempest moves in a single dimension but it appears to move in two dimensions and the ship can shoot objects, making game play much more interesting.

Space Invaders (1D1A)

<http://www.freeinvaders.org/>

The main character in space invaders moves along a single dimension but the character can shoot. The protective barriers make these game unique and add to the hide and shoot mentality of the game.

Galaga

<http://www.freegalaga.com/>

Galaga is much more sophisticated than space invaders because of the colors and variety of alien behaviors. For example the ships do fly-byes and you have to watch-out for ships coming up from beneath you. This adds to the flare of the game. You can even allow your ship to be captured and they have two ships fighting side by side if you rescue your ship.

MathBlaster (1D1A)

Math blaster for the Ipad is a 1D1A game that is similar in many ways to tempest but it is controlled by the movement of the ipad gyroscope. The users controls

My ideas

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## Two Dimensional Games

Two dimensional games come in several varieties, based on the movement of the background. There are single scene games. A dungeon type game connects single scenes together. Scrolling games have a large, continuous field of play that can be observed as the character moves through the field. These games are top down when character moves vertically or side scrolling when the character moves side to side. Finally, there are open worlds that scrolling continuously top down and side to side.

(2D0A)

Pac Man

<http://www.classicgamesarcade.com/game/21593/pac-man-classic-arcade-flash-game.html>

Pac Man is a maze type game that people enjoy playing. In the game, pac-man eats all of the dots while avoiding the ghosts. This could be adapted to allow the dots to be waste to pick-up and for pac man to avoid the ghosts in an effort to sort waste properly. We might think of the refuse option here as well and design the ghosts as plastic fork, spoon and knife.

Frogger (TD2D1ATD)

<http://www.classicgamesarcade.com/game/21607/frogger.html>

Frogger is a game where the character avoids a series of obstacles. This might be a fun sorting game where each type of waste represents a different level and you try to sort it properly.

Donkey Kong (2D1ATD)

[http://www.webworkslc.com/games/Donkey\\_Kong.cfm](http://www.webworkslc.com/games/Donkey_Kong.cfm)

This game has a main character, Mario, who is trying to rescue his girlfriend from a gorilla. The gorilla rolls barrels at Mario while Mario must climb ladders to get to his girl friend. Mario can jump the barrels. There are different levels with ladders in different positions, making the game progressively more difficult.

My ideas

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2D1A

### Missile Command

<http://my.ign.com/atari/missile-command>

Missile Command is a classic example of a basic shooting game. In this game, you fire missiles at incoming missiles to destroy them. While the original version used a roller ball, the internet versions of the game track the mouse position.

### Asteroids

<http://www.freeasteroids.org/>

This game has a ship that rotates and fires at asteroids. There is considerable range of motion with the shooters because the ship can rotate and move forward/backward and side to side based on firing the rockets when facing a particular position. While this motion is very complicated, it is really easy to program using a physics engine.

### Angry Birds

[http://freeangrybirdsgame.org/play/angry\\_birds\\_online.html](http://freeangrybirdsgame.org/play/angry_birds_online.html)

In angry birds, the user launches birds at a tower system made of sticks. The objective of the game is knock down the sticks.

### Presidents versus Aliens

In presidents versus Aliens, the users answer questions about the presidents. If the user is correct, the user can launch a president at a stack of aliens. There are a variety of special powers that develop in this game such as alliance infection. There are also barriers with different properties that can be used to direct the flying president head. This plays very much like Angry Birds but has an educational component.

### Tetris

<https://www.freetetris.org/game.php>

Tetris is a single screen 2D puzzle game where you can rotate pieces to place them together in a grid. The game music is excellent and the gentle increase in speed helps to get people hooked.

### Stack the States, Stack the Countries

This Ipad game is an educational game where you have to answer questions about various geographic locations. If you answer correctly, the location will drop toward the ground where you stack the locations on top of one another to make a shape that is taller than the goal. The programming elements are very similarly to tetris as is the game idea but the inclusion of the facts and the potential of your shape to fall makes the game engaging and educational.

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## 2D2ATD

### Centipede (2D2ATD)

<http://chrome.atari.com/centipede>

In this game, a centipede and other organisms, attack from the top down. There is a single screen and the main character shoots the centipede as it comes toward the main character. Once a section is shot, it turns into a mushroom, which is a barrier to other organisms coming to attack the main character.

### 1942 (2D2ATD)

<http://game-oldies.com/play-online/1942-coin-op-arcade#>

This is a top down scroller where the main character fights against other airplanes. The planes can move side to side.

### Spy Chaser (2D1A)

<http://game-oldies.com/play-online/super-spy-hunter-nintendo-nes#>

This game is different from some of the other games because the user can control the character's speed. This gives a level of control to the game that is not present the others games we have explored. Similarly, the guns on the spy chaser change throughout game play and the screen scrolls.

## My Ideas

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## Side Scrolling Games (2D1ASC)

### Defender

<http://www.classicgamesarcade.com/game/21638/defender.html>

This is a space shooter game where the main character shoots alien ships to stop them from taking humans. This could be modified to be an action sorting game with three levels, such as trash, recycling and compost where the defender tries to stop aliens from taking the good waste.

### Super Mario Brothers

<http://www.8bbit.com/play/super-mario-brothers/851>

This game evolved from Donkey Kong and takes the same character on a much longer journey to be united with his girlfriend. In this game, Mario jumps over mushrooms and turtles that are attacking him.

### Pitfall

<http://www.ultimatearcade.com/game/pitfall>

This game brought more complicated behaviors to video games with a main character that can swing on ropes, climb ladders and jump over obstacles. The obstacles are clever and has a jungle theme.

### Nihulumbra

This ipad game takes a great deal from this genre by allowing the character to spray items on the walls using a drag feature of the touch pad. This allows the character to bounce, stick, freeze and set fire to a variety of game objects. The game has stunning music and beautiful settings that involve deep, dark caves and snowing landscapes.

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## Dungeon Games/Open World Games

Dungeon games refer to open mazes that allow users to move both vertically and horizontally for game play. While there are levels, the characters can often move freely between the levels in order to acquire items to be used to solve puzzles. These games were often inspired by role play games because the player immerses themselves into the game. In addition, there might be choices for the character to make which elevates the game beyond the simple shoot or avoid game.

### Zelda

<http://www.8bbit.com/legend-of-zelda-the>

This is the classic dungeon game. The main character moves in four directions and can attack and use items in an inventory. The game takes a long time to complete but it tells a story as the player travels through the game.

### Metroid

<http://www.8bbit.com/metroid>

This game is similar to Zelda in that the character can move vertically and horizontally and can attack using items in an inventory. The game also takes a long time to complete and it has a surprise ending.

### Limbo

This is a beautiful Ipad game that tells a dramatic story with stunning visuals. It is incredibly violent and provides no instruction in game play. In many cases, the character must solve puzzles using a variety of strategies such as pushing objects, stacking objects, dropping objects, jumping and so on.

### Journey

This is a startling beautiful open world game for PS3. In this game, the user navigates a tremendous world on a quest for knowledge. The animations are phenomenal and the visuals and effects can take your breath away. The soundtrack was written and performed by the Czech Symphony.

### My Ideas

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Go through all of your ideas, make your pitch for your best idea.

1) Describe your game idea...

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2) What problem would this game solve...

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3) Describe the characters and how they move and their actions

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4) Describe the setting, how it moves and why it is interesting

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## Composting and Trash Games

<https://www.khanacademy.org/computer-programming/trash-or-recycle-compost/4617174069149696>

This is a shorting game with the raw code from Khan Academy.

<http://kids.nationalgeographic.com/kids/games/actiongames/recycle-roundup/>

This game was some great graphics and sound but it is not much of a game.

<http://climatekids.nasa.gov/recycle-this/>

<http://www.sciencekids.co.nz/gamesactivities/recycling.html>

[http://www.kviekids.org/pbskidsgo/games/composing\\_compost.htm](http://www.kviekids.org/pbskidsgo/games/composing_compost.htm)

<http://nicktoons.nick.com/games/back-at-the-barnyard-compost-the-most.htm>

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