AUSTRALIAN STEM VIDEO GAME CHALLENGE

ST. EMILIE'S CATHOLIC PRIMARY SCHOOL

Harvest Haven

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Game Design Document

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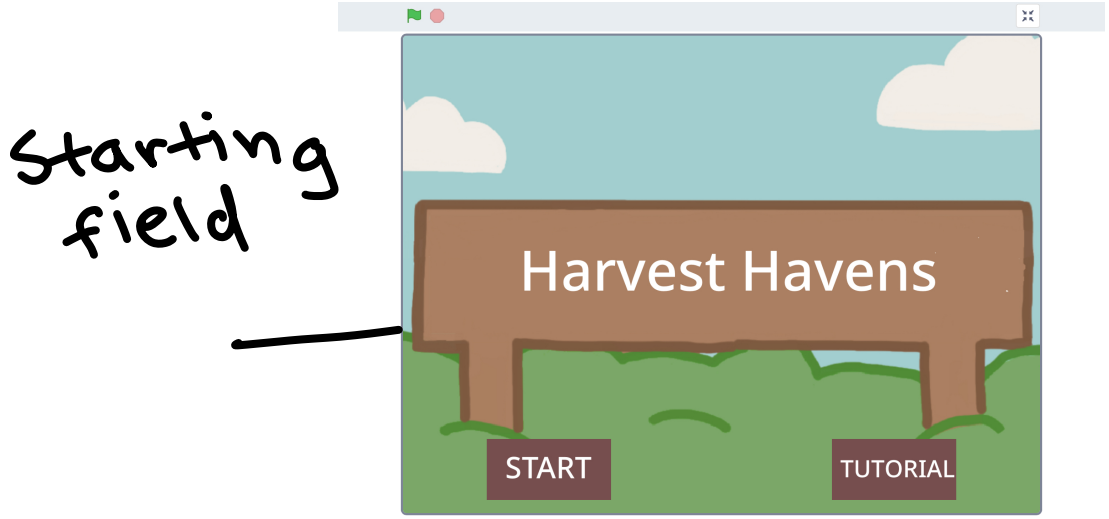
Game Overview

Game Overview – Game Title

Possible Names

- Sunset Gardens
- Twilight Fields
- Growing Game
- Grow your farm
- Farm Fields
- Farm Construction
- Harvest Haven



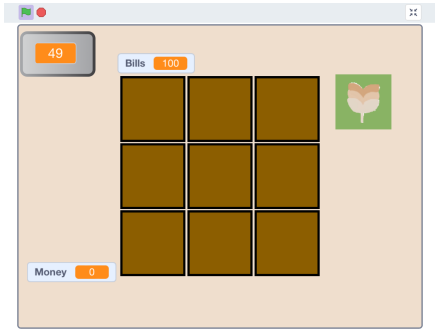
Chosen Name: Harvest Haven

How does the name of your game help players to recognise what this game is about?
As the name comes from 'Harvest', which implies that the game has something to do with farming and growing crops. Haven, on the other hand, means a safe place, and this game is supposed to be just like that.

Game Overview – Game Description

Sell your game to the reader – What is it about? What kind of game is it? Who is it for? Game Description 1

The Growing Game is a farming simulator. In this game, Brooke (you) must plant and harvest as many crops to earn enough money to pay all her bills in time. This game is intended for the player to grow different types of fruits or crops. Brooke's Grandpa (Grandpa Rider) gives her his farm because of retirement, and it is up to you to grow and take care of the farm. To grow a plant you will need to tap on what you want and it will appear in the growing area where you will wait for around 5 seconds for your plant or fruit to grow. Once it's finished, you have to tap it and it will show a 'collected' button which means money has been added to your bank account.



Fields design (right)
New day/level sign (left).

Your field is going to have 9 sections and the start. You then have to pay for new fields. If we have time, several predictors that would try to eat your plant or fruit. Caterpillars, worms and wasps are more likely to show in the easier levels. Or we could add a dead sprite when you take too long collecting the crops. Each level/day will have a timer, if you have enough money to pay you go onto the next day/level otherwise a 'Game Over' sign will show up. This game has lots of growing (construction) and lot's of harvesting (destruction) when you tap on the fields.

Example
Super Mario Bros. is a platform game. In the game, ***Mario must race through the Mushroom Kingdom and save Princess Toadstool (later Princess Peach) from Bowser****. Mario jumps, runs, and walks across each level. The worlds are full of enemies and platforms, and open holes….* https://simple.wikipedia.org/wiki/Super_Mario_Bros.#Gameplay

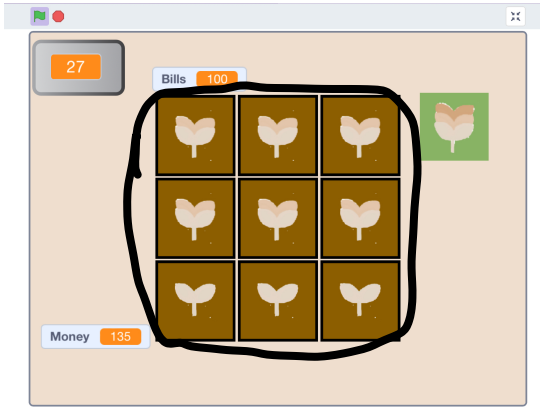
Game Overview – Game Description

Sell your game to the reader – What is it about? What kind of game is it? Who is it for? Game Description 2

The aim of the game is to get to advanced levels where it would take longer to grow crops. You have to quickly harvest your plants from any insects to destroy it or a darkish green wheat (depending on the level e.g. A pumpkin in level 2 would be a different colour to the wheat). would show which means the wheat is dead.

This game is more of an interactive game where you touch the screen (Touch Screen). You can play this on nearly any digital device that works and is easily reliable. This game is a farming simulator.

This game is more suitable for kids over seven, Because it does not have much violence and is not too old for them, and kids around seven might enjoy constructing and destroying



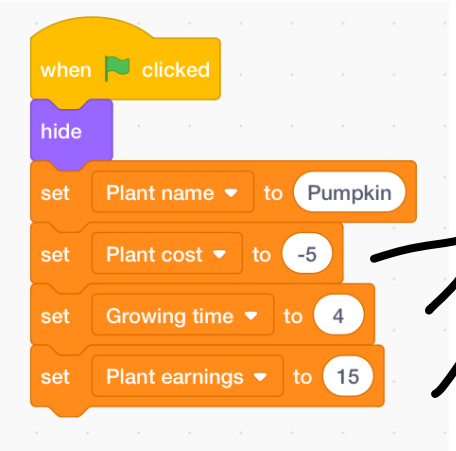
This is what a basic level 1 game field looks like (left).

Example
Super Mario Bros. is a platform game. In the game, ***Mario must race through the Mushroom Kingdom and save Princess Toadstool (later Princess Peach) from Bowser****. Mario jumps, runs, and walks across each level. The worlds are full of enemies and platforms, and open holes….* *https://simple.wikipedia.org/wiki/Super_Mario_Bros.#Gameplay*

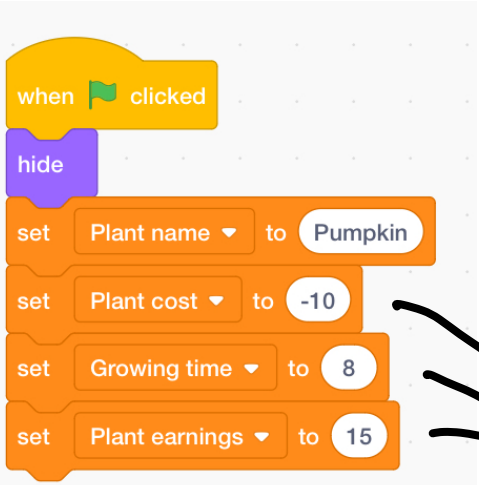
Game Overview – Audience

Who are you making this game for? Is it intended specifically for children? Adults? All ages? Why? How will you show this? Audience 1

When the user is using our farming simulator, it is important to consider the age of the user. We decided that this game should be for 7-year-olds, our game should be designed to be easy to use, engaging, and educational. The graphics are supposed to be fun and visually appealing and characters that would catch the child's attention. Considering this game has very little, but suitable violence we think people would still want to play it.



We can change the cost, Growing time and the earnings to be harder like this



We wouldn't consider these games for kids over 12 because this game was aimed for 7 year olds and we think that 12 year or over would think of this game as too easy for them. Some features of this game that may become engaging to the children might be the intensity and the patience of the plants growing and finding out what crops they should be growing by the time limit, the money and the bills.

Game Overview – Audience

Who are you making this game for? Is it intended specifically for children? Adults? All ages? Why? How will you show this? Audience 2

We tried adding harder features for the users who have a lot of experience in coding and gaming. We can show this is also playable for more experience because we tried making the clock go faster and the crops to construct longer. We can prove that this game farming simulator is suitable for 7 year olds because in real farms they only shoo away the pests and they don't do anything inappropriate for kids to see which is better for them and the pictures we used are appropriate for any age.

Timer on top left corner.

This farming simulator should also encourage the child to think critically and make decisions, such as when to collect their crops and how to win and earn more money quicker than other ways.

Game Overview – Characters / Roles

Who is the game about? Who/what are the main characters in your game? What role do they/will they play in the story? What is their motivation for these roles within the game?

This game is about a girl who was given a farm by her Grandpa Rider and has to take care and build her farm. There will be a bills button for you to pay the bills. If we have spare time hopefully we could add pests in the game.

Grandpa Rider

- Gave us farm and money
- Tells us what to do /does the tutorial
- Grandpa that always helps us

Brooke

- You are Brooke
- Main character
- Grows crops
- Shoos away insects and pests
- Harvests crops
- Gets money and levels up things

Pests (example)

- Level 1 caterpillers
- Scared easily

- Level 2 Beetles/ locusts
- Does more damage to crops

- Level 3 racoons
- Shooed 2 times
- More damage

- Level 4 Racoons
- We added more racoons
- Twice more damage

- Level 5 Everything
- Harder to scare
- More damage
- Harder to restore

Pest are used to annoy you and destroy plants and fruits.

Game Overview – Environment

Where does the game take place? Under what conditions? Do these conditions have any effect on the gameplay that you might need to consider?

This game typically takes place on a farm made in scratch, under various weather and seasonal conditions such as rain and sun. These conditions may have an effect to the game, as they can affect the growth of the crops.

Sometimes if a light rain appears the crops may essentially grow faster, which is going to help the user with this game. We also considered the colours of our fields that match summer and winter. If we have extra time we could consider making this feature one of the extras.

Game Overview – Theme

How will your game address this year's Australian STEM Video Game Challenge theme?

The construction part for this video game is to necessarily build a farming simulator on scratch that allows the user to construct crops and harvest crops. When you have enough money (by growing crops) you can buy new fields so your farm looks better and to earn more points.

Full grown wheat.

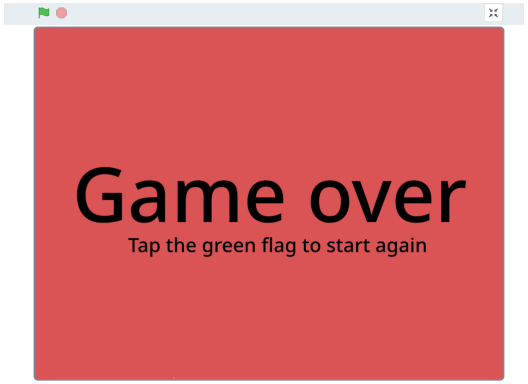
The destruction part of the game is to tap on the fully grown crop (example on tutorial) or fruit. You can use your shovel to harvest the crops. Once you harvest the crops a sound effect would appear. Another destructive feature we've added is insects. The insects are specialised to destroy crops faster than you can harvest your crop. Clearing space is also another example of destruction, players are able to clear more space (fields) once earned enough money.

Gameplay / Mechanics

Gameplay / Mechanics – Objectives / Goals

What sort of game are you making? What is the aim of the game? What is the player trying to achieve?

We are trying to make a farming simulator. The player is trying to simulate a successful farming game. The aim of the game is to grow crops and harvest it to receive money then paying your bills after that. The player is trying to pay all the bills in time, complete all the levels and unlock new fields.



Game over sign (left).

we also added sound effects

If the player doesn't have enough time or enough money for the bills a Game over will show up. We made a sign at the end that said 'thank you for playing, congrats you won!' to let the player know that they have completed playing our game. If one of our team members is free we would get them to program an animation telling the user they have finished the game.

Gameplay / Mechanics – Perspective

What will be the players' perspective when playing the game?

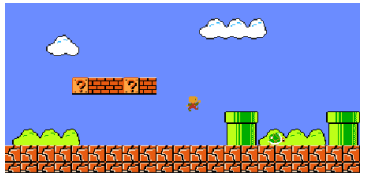
We decided to use a different type of perspective for our game like a graphical user interface. A graphical user interface (GUI) is a type of interface that allows users to interact with electronic devices such as iPads, Computers and mobile phones. Using GUI, users can navigate through different applications, perform action, and access various features by clicking or tapping on the graphical elements displayed.

Will they experience the game from a first-person point of view? From the side (like a platformer)? From a top-down perspective?

We used a graphical user interface perspective because we think it's easier to look at and it is what we normally look at anyways.

Will it be a two-dimensional (2D) or three-dimensional (3D) game?

The game will be two dimensional (2D). We chose it to be two dimensional because it would easier to look at it and it would look more like an original game. Some games that are 2 dimentional are Super Mario Bros, Sonic the hedgehog and The Legend of Zelda.



Super Mario Bros 2D (left).

Sonic the Hedgehog 2D (Left).

Gameplay / Mechanics – Controls

How will players actually play or interact with the game?

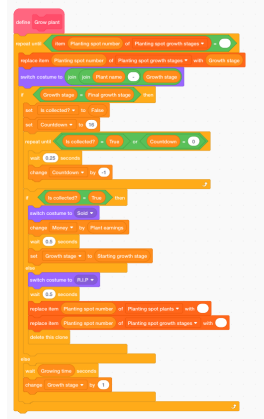
Players will be able to play and interact with the game by touching and tapping the screen. The user will have to listen to the instructions (tutorial) to play our farming simulator.

What are the controls?

At the start of the game, there is a 'start' and 'tutorial' button. It you click the start button, there will also be a 'skip' button there, but aside from that, the game is mainly touch-based.

How will they work?

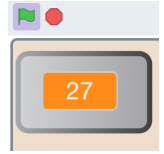
In our game, we used a lot of broadcasting, especially for the introduction and tutorial, but in the main segment of the game, we didn't want to keep duplicating the code over and over again for each level, we wanted to make a code that would apply to every level or 'day' without having to duplicate it. In the code shown below, it goes through the growing stages of the plant/crop and changes the costume according to the current growth stage. When the plant is ready to harvest, a hidden countdown will start, allowing the user a certain amount of time to harvest/collect the plant. If they collect the plant in time, their money variable will go up and the same plant will start to grow again, but if they don't collect it in time, the plant will die and they will have to plant it again.



Gameplay / Mechanics – Reference points / Originality

Are there other games that have similar gameplay mechanics? Similar functionality? Similar stories or characters?
A farm game from Scratch for the most part is like a similar version of our game. Except they only grow potatoes, which is quite boring but our game is fun because in real life you need to pay all your bills in time. Some games in Scratch gave us some inspiration for some of the features to do with our game.

How will your game be different?
Our game would be more different because we focus more on a farm and it has level's not a whole map. We also added new fields when you pass more advanced levels. Like normal farm games it's all about growing and harvesting but in this game we also added the usual features, however we put a timer so it can be more intense but also fun at the same time.



Why will people prefer to play your game over these games?
People would want to play this game more because it's really easy to understand and you only need very little gaming to no experience at all to play the game. Lots of people in our class say they really like the farming simulator.

Is your game different enough to be worth making? Why/why not?
This game is making because we think it's going to be a really enjoyable game when it finishes. We hope the end result is going to be simple but not too complicated because it can confuse the player and it won't be as much fun.

Technical Requirements

Technical Requirements - Platform

What environment will the finished product run in?

The environment will overall finish in Scratch. You can access the farming simulator by going to the Scratch website and using any digital device that allows scratch to work.

What will you use to build your game?

We would need to use a lot of our time, Scratch and our iPads to complete our farming simulator game idea. We first completed the sketches on paper or on the app sketches. We used some of the visuals for Brooke and Grandpa Rider from the internet where we found some pictures that would be suitable for the game and got some ideas from each picture and put it all in Brook and Grandpa Rider.

Example apps

Scratch logo

Sketches School

Technical Requirements – System Requirements

What sort of system, specifications or peripherals will the end user require in order to play your game?
A digital device that allows scratch to work is probably what we are looking for. We suggest using an iPad because it is landscape and our farming simulator is landscape(it's easier to look at). A peripheral hat we also suggest using is a mouse because we will need a lot of tapping in the game and to not get tired of tapping you can use a mouse but if you don't have one it's okay your finger will do.

We advise using an iPad since it has landscape mode and our farming simulator is landscape, making it easier to use and look at.

Digital devices we reccomend using.

iPad (left)

Computer (right)

Apple mouse (right)

Technical Requirements – Resourcing / Capability

What tools will you need access to in order to fulfil your technical requirements?
The tools we used to fulfil our technical requirements was scatch, sketches school, iPads, whiteboards and lot's of paper to list down our ideas.

What skills or abilities are required?
Skills we needed to create a farming simulator was we needed to know how to code quite alot, trying to design the designs to look better and the GDD to be filled with lot's of information and pictures that ae going to be explained.

Which member(s) of the team will take responsibility for the technical requirements?
We think Alicia and Kyleigh would have to take the responsibilty because they are doing the coding and they made most of the code. We also think that Jessica needs to make the GDD with lots of information and Charlene to make and code the music and the ending illistrations.

Whiteboards (left)

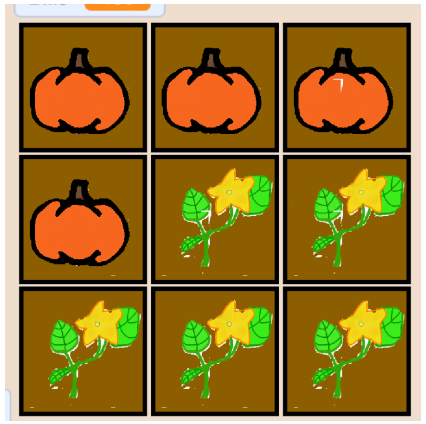
Item we mostly used

Visuals / Artworks / Graphics

Visuals / Artworks / Graphics - Style

What will the basic look of the game be? How is this represented in the visual appearance of the characters and environments?

We have Brooke and her Grandpa at the start for the introduction to tell the user why they're playing as the main character Brooke. Then we will have a tutorial for the user to know how to play the basic game. There will be a light brown background. Fields in an array(3x3 maybe). The background would feel pretty relax, it would feel like a farming lifestyle feel. That's why we put Brooke in a hat and overalls because that's what farmers usually wear when farming.



This is our basic field (3x3).

We put Grandpa Rider in a less farming style because in the story he retires and you can only see him again once you have finished the game.

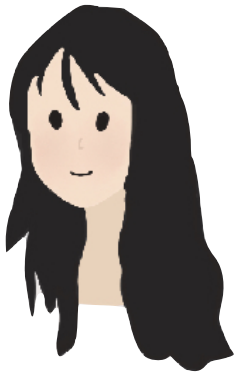
This is Brooke we made a hat and a shovel so it looks like she is the farmer.

Visuals / Artworks / Graphics - Process

How will you go about achieving your desired visual style? How will you get from the concept stage to the finished product?

The ending illustrations would look better than the very first draft because at the start we only had a purple circle with a smiley face and then we slowly evolved Brooke into more of a realistic character. We also created her Grandpa Rider along the way. The character looks like this because we wanted it to look as farm life as possible and it looks simple. We would go from the concept stage to the finished product by getting our designer to make Brooke and Grandpa Rider look like someone could tell what the game was about without using any code. Our team listed lots of ideas and some accessories from the internet to create the characters.

Draft (Brooke)



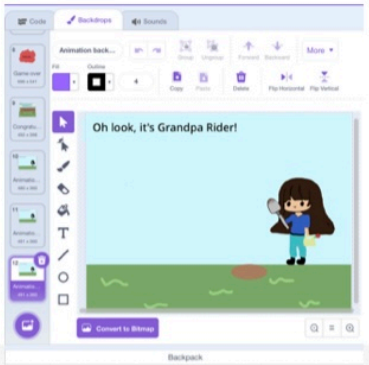
Second stage

Grandpa Rider

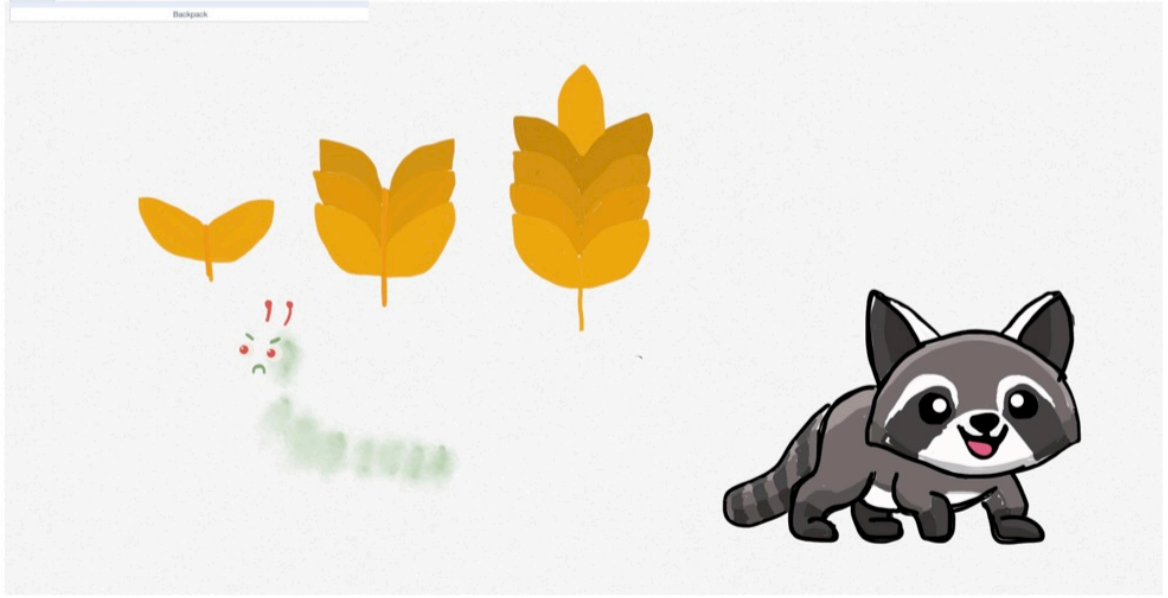
Brooke

Extra Artwork

This is extra artwork that we thought we were initially going to use but we didn't get to use due to changes.



We wanted to add an animated ending for the game over but we didn't have enough time.



We wanted to add insects or animals to destroy the crops but we didn't have enough time to code them.

Initial apple crop design

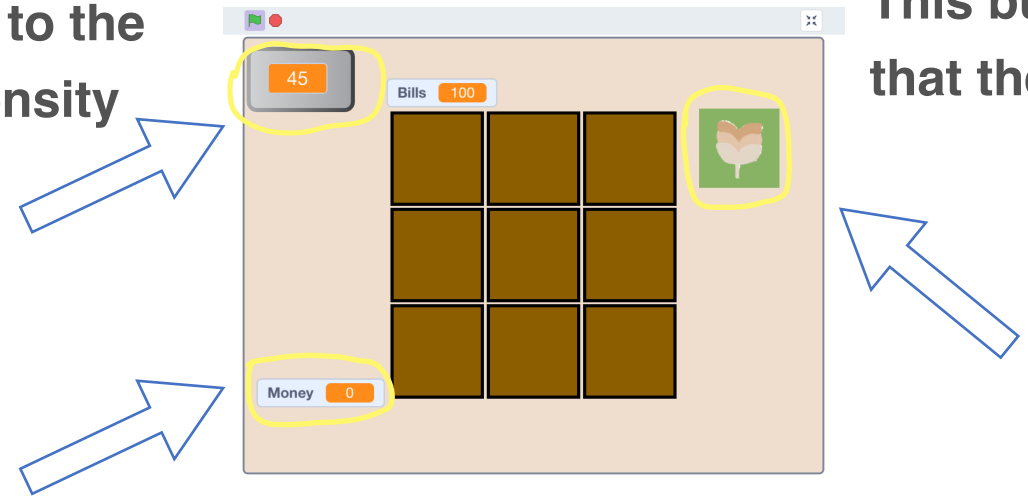
Timeline

Timeline - Deadline

When does your game need to be ready for submission?

We thinks it's best for the game to be completed 2-3 weeks before handing it in, because then we could double check to make sure everything is working properly and the Game Design Document to be finalized. We also need to check with everyone if they agree the game is good enough and has a few extra features so the game is unique.

This timer is an extra feature to the game so it can add more intensity to the game.



This button is to let the code know that the user wants to grow wheat.

The variable 'Money' let's the user know how much they have spent on growing and how much profit they have made from growing wheat or Pumpkin.

Timeline - Timeline

How does the deadline affect other components of your game?

The deadline affected us to program faster which made us generally put definitely less detail in our farming simulator. We also created a list of things we needed to complete on notes when we were behind.

What components are the priorities for you to begin work on immediately? What components can wait?

Our first main priority was getting the actually main coding done and adding more things that have construction and destruction in it. We need to start finishing our main code so the actual game is working. The extra components that can wait are the extra fields, levels, insects and the starting and the ending tutorial.

When will your game need to be ready for testing?

We did all the illustrations at the end and used draft drawings to particularly make it kind of easier for the coders. We want our game to be tested once the main programming is completed. We hoped we could get people to try a draft base of our game but it took longer than what we expected.

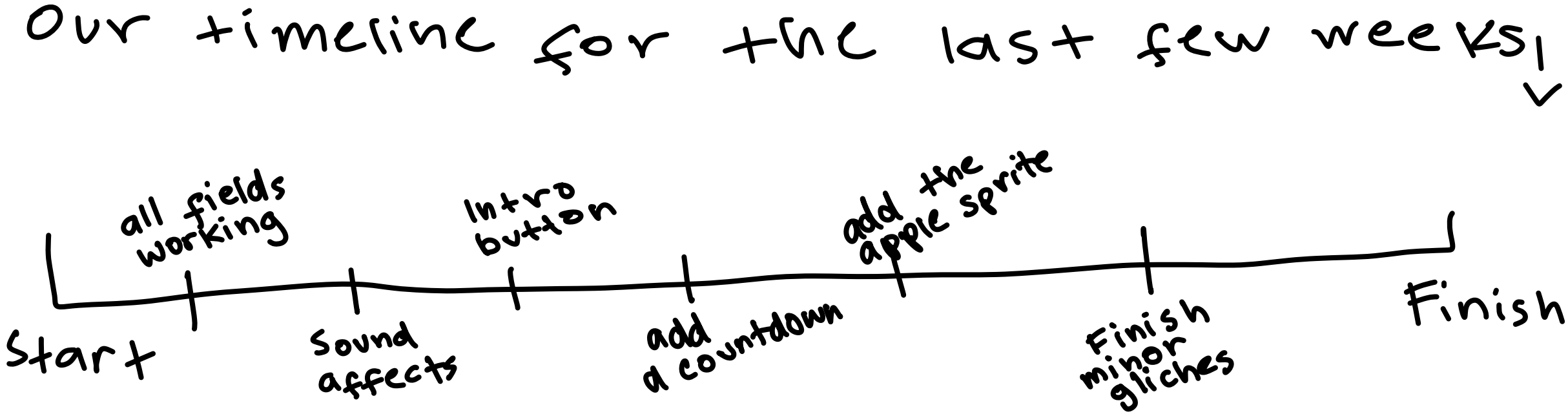
- [x] Set size of planting spot boxes
- [x] Make pumpkin plant option
- [x] Make apple plant option
- [ ] Show wilted plant instead of R.I.P
- [x] When plant is collected show hoe over plant then sold
- [ ] Code apple, pumpkin option and apple option(when i recieve level starting, if level = 3 or level is more than 3, show pumpkin)
- [x] Audio

Example of list (left).

Timeline - Responsibility

Which member(s) of the team will take responsibility for meeting deadlines? How?

We think all members are responsible for meeting deadlines because everyone did different parts of the video game. We had two students working on the main coding and one student working with the Game design document, and another one doing a little bit of both. We think that if someone doesn't focus or commit to the part they have chosen some of the blame would go to them because than our game wouldn't be as good as we imagined and it's not as fair to the other team mates who has to do their part.



Other Considerations

Other Considerations – Submission Guidelines

How will you ensure that your game is acceptable for submission?
In the final version of our game, we would only title it finished, when it has few to no bugs. In our game, we want to incorporate as much constructing and destroying as possible.

What steps will your team take to ensure that your game adheres to the submission guidelines?
In addition to checking if all the code works correctly, we will also look at the final designs. After the game is handed over to the judges, our team will follow the submission guidelines by not modifying any of the code or editing any of the game.

Other Considerations – Other

Are there any other things you might need to consider before you begin work on your game?

We needed to consider how many extra things we should put in the game, because if we had too much ideas we could only use a limited amount of ideas and it might give the coders a lot of pressure with how much work they have to do. We did add extra features in our game that were only possible to do within the time frame. We had to consider the time frame and the positions our group members wanted. We needed to be aware what our game is about and how it could fit in the construction and destruction theme this year.

All the things we wanted in our game:

Animals coming at night to destroy crops.
relistic designs
when rain comes the crops grow faster.
timer

What we got:

Instead of animals when people don't tap it quick enough the crop dies.

Timer

Progress Updates

Progress Update #1 - 13th of March

What has gone right so far?

We have gotten all the main drawings uploaded to Scratch, the Game design document nearly completed and started programming the introduction.

What has gone wrong(or changed) so far? How have you resolved or dealt with this?

We have accidentally put all of our characters into the same sprite as different costumes. We are going to delete that one sprite and add all of our characters again as seperate sprites. We have also altered our scoring system to days/levels you survive based on the amount of money you have to pay off the bills.

Are you on track with your timeline?

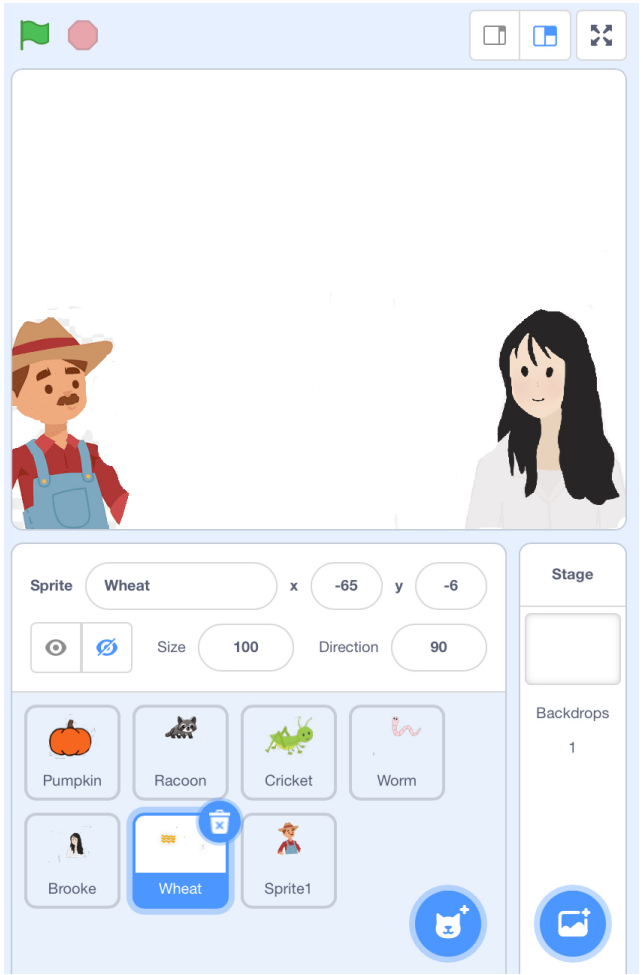
I think were just a little bit behind the timeline but I think we could catch up if we spend more time coding at home.

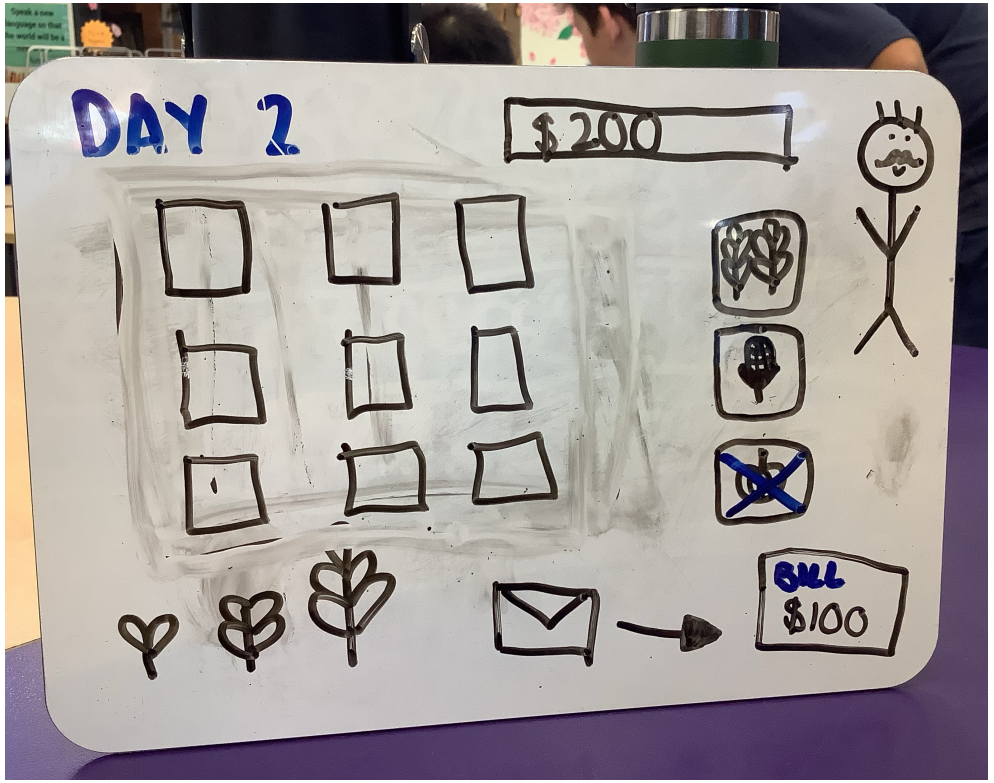
What are the next steps for your group?

Our next steps are getting the main programming and the music ready and completing the game design document and upgrading the designs.

Progress Update #1 - 13th of March

Photo 1. In this picture we have completed a quick draft illustrations of the main characters in the game and





This is our draft base

Progress Update #2 - 8th of May

What has gone right so far?

We nearly finished the game document and we just need to add extra detail to it. We have finished lot's of our drawings and started our introduction for the game.

What has gone wrong(or changed) so far? How have you resolved or dealt with this?

We haven't started on the main programming yet. We haven't really resolved this yet but were going to start it as soon as we finish the illustration.

Are you on track with your timeline?

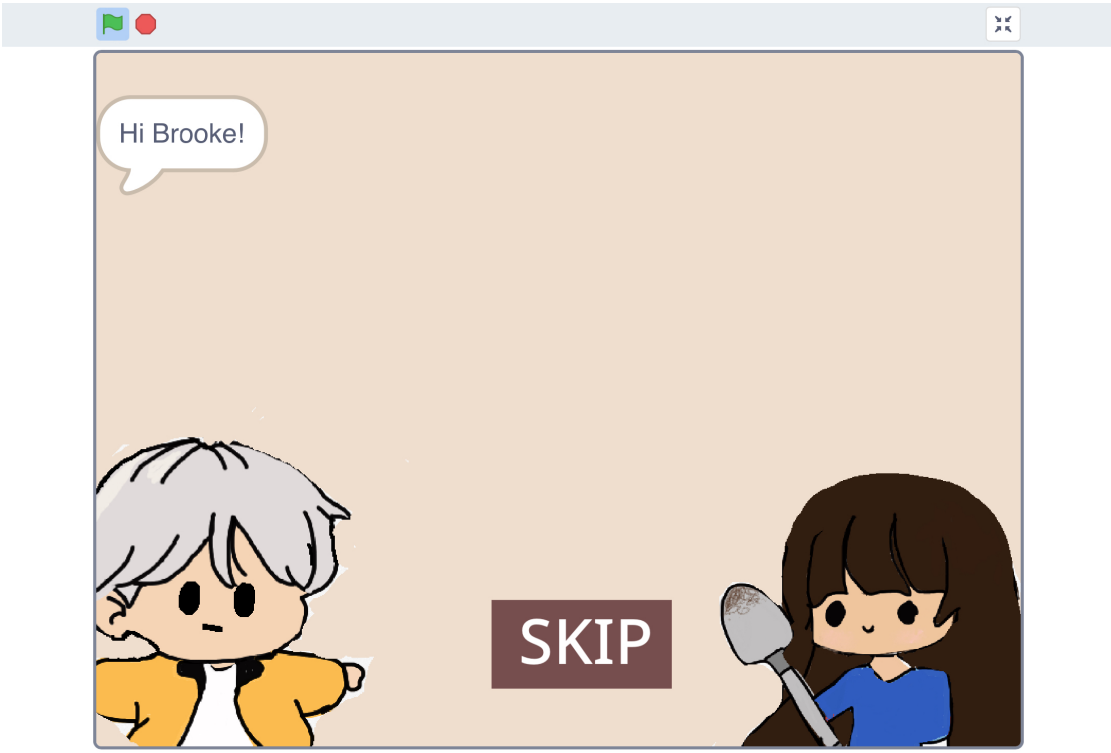
We are a bit behind because we had a lot of big ideas but we had to cancel some of it because we knew we couldn't finish it on time.

What are the next steps for your group?

Were going to start our main programming for the crops.

Progress Update #2 - 8th of May

This is a photo of us working and introduction.



Progress Update #3 - 19th of June

What has gone right so far?

We have put in extra information in our GDD and our game is nearly finish. The starting tutorial is finish, a few levels are finish and all the illistrations are completed.

What has gone wrong(or changed) so far? How have you resolved or dealt with this?

We are quite behind in the maincoding but all we need to do is copy the code in our starting tutorial and hopefully we then finish it. We changed that we would't want to have 9 fields because it would take quite a long time to code. We have decided to keep our game simple and not too complicated so that the user doesn't know how to play.

Are you on track with your timeline?

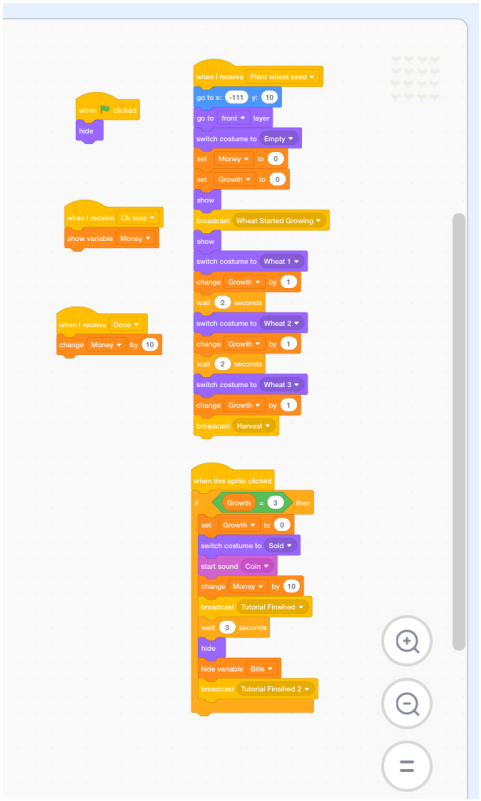
We know that we aren't on track with our timeline because we haven't got enough code to complete the farming simulater and the main code that makes the wheat and crops grow.

What are the next steps for your group?

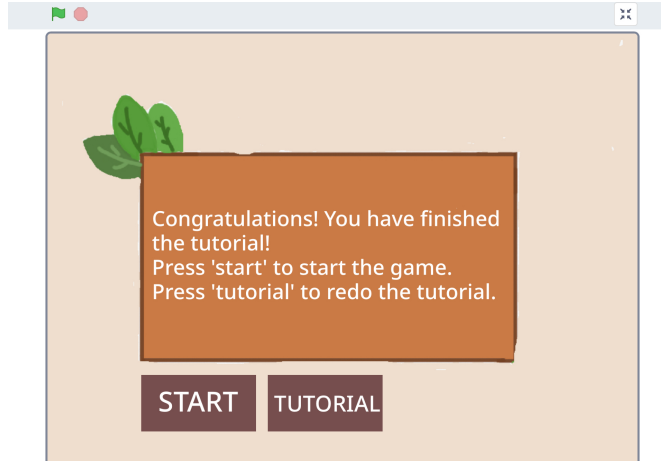
The next steps for our group is that we need to finish all the maincoding as soon as possible because then we can just copy the same code.

Progress Update #3 - 19/6/23

Photo 1- we have completed the final design for Brooke and Grandpa Rider and tutorial finish.



Codes for the wheat



Progress Update #4 - 26th of June

What has gone right so far?
We have finished all of our code, our game is functioning without any glitches and all we have to do is edit costumes and duplicate the code into 2 sprites. We have also finished our entire GDD.

What has gone wrong(or changed) so far? How have you resolved or dealt with this?
We had some things we needed to fix. We have a few gliches in our code and it is very messy and we have random broadcasts and everywhere but we solved it by going through the code and seeing what broacasts and variables we actually needed and we cleaned and ordered our code properly.

Are you on track with your timeline?
We are currently a little but behind on the suggested timeline but we are on track with the timeline we have created.

What are the next steps for your group?
The next steps for our group is to create the end page and the ending animation. We don't have any ways to contact each other through the holidays so we created a texting page in Scratch where we code to text eachother because veryone has access to the Scratch account.

Progress Update #4 - 26th of June

Photo 1- Us testing our game.

Photo 2- Code for wheat (upgraded)