# Educational Game Project
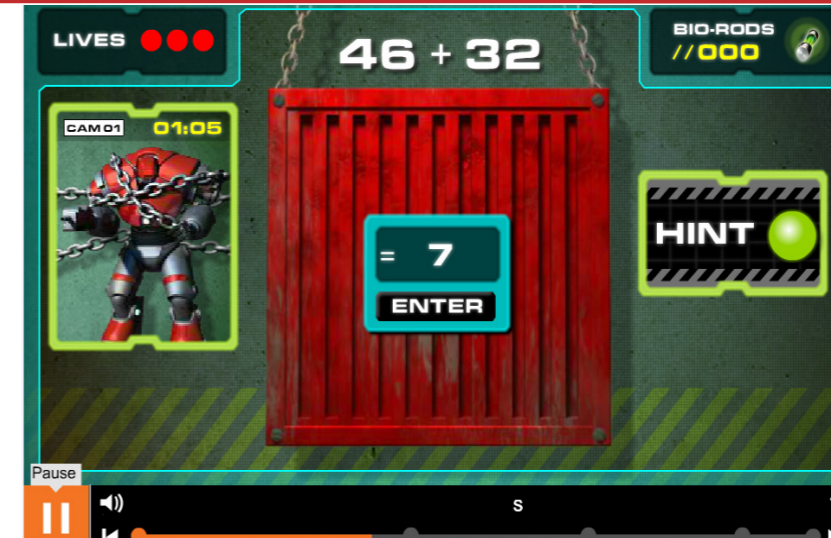## Units:1,18,45 and 68   By Isaac Murphy

Game research

Typing Aircraft: the premise of the game is straight forward, you type the word on the incoming aircraft and it gets shot down, pretty simple. However i do struggle to see how this game is appropriate for children as you are shooting down planes and that if you don't they bomb your city. The colours are eye catching and the controls are easy enough to handle.
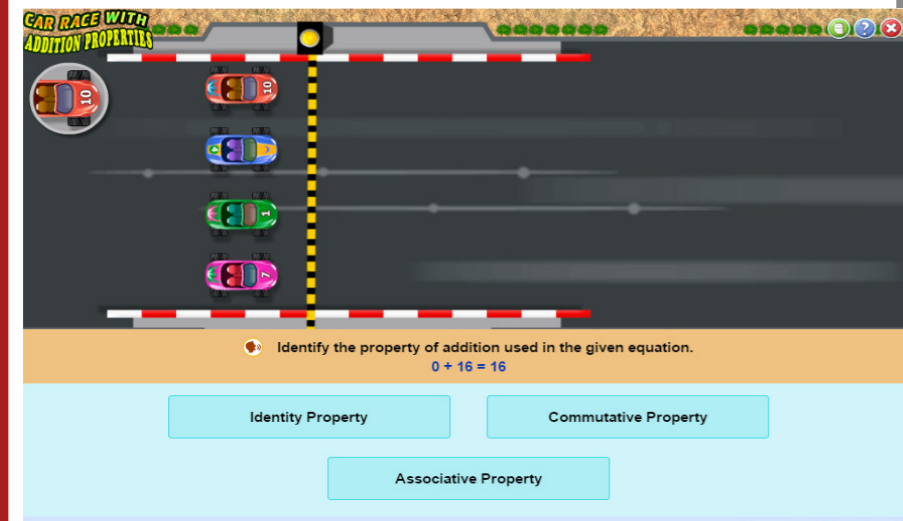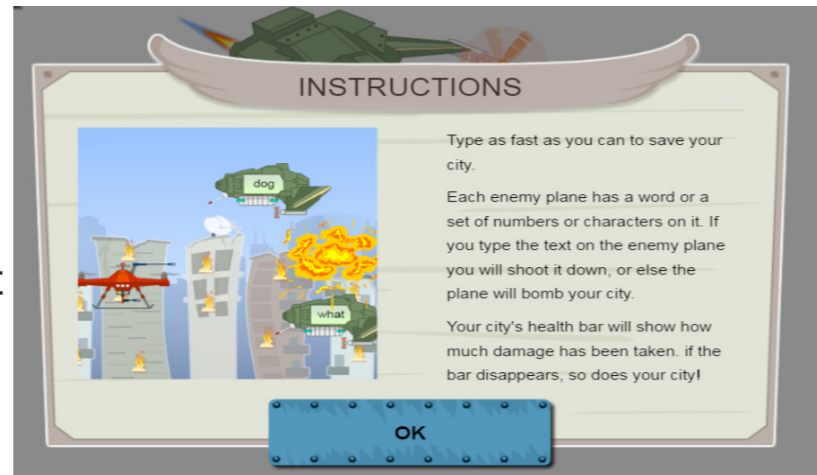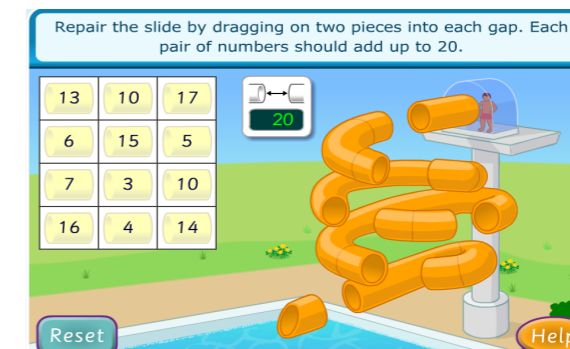
Properties of addition with car racing: this game i found difficult due to the fact that i did not learn the properties of addition but the game in general seems to be well made for the child audience, it is engaging and the colours are well planned out.

2110 Mental Maths: This game is for the higher age range of children around the 7-8 range due to the complexity of the game and the stylings of it. The style of the game is post-apocalypse via robot revolution, which tends to suit itself for the older children. The aim of this game is to collect as many "Bio-rods" before time runs out and the "war-bot" breaks free from its chains. You accomplish this by answering correctly the question given to you from the top of the screen.

Starship Maths; Number Jumbler:
All of the minigames within this "game" are all really well laid out and explained, the colours are very well suited to the younger audiences and the characters look friendly enough, the name of each minigame pretty much sums up what you have to do for each one, whether if it's odd or even or missing signs they are all pretty much straight forward apart from "win the money" which is basically add up to coins and select the right answer.

Slide repair: This game is fairly easy and straightforward, you win by choosing two numbers that add up to the one shown in the box and you drag those two numbers to a gap in the slide to fix it, the colours are bright and eye catching and controls are easy point and click style.
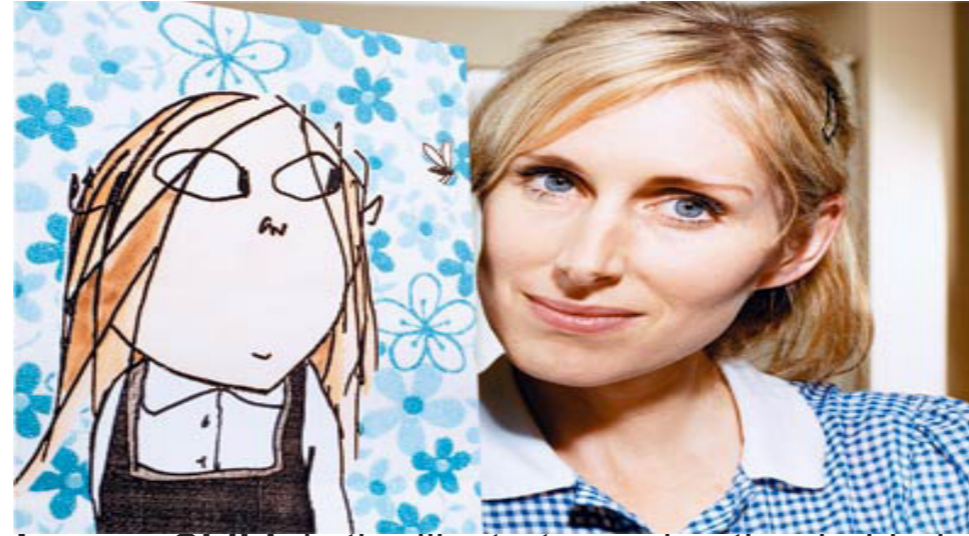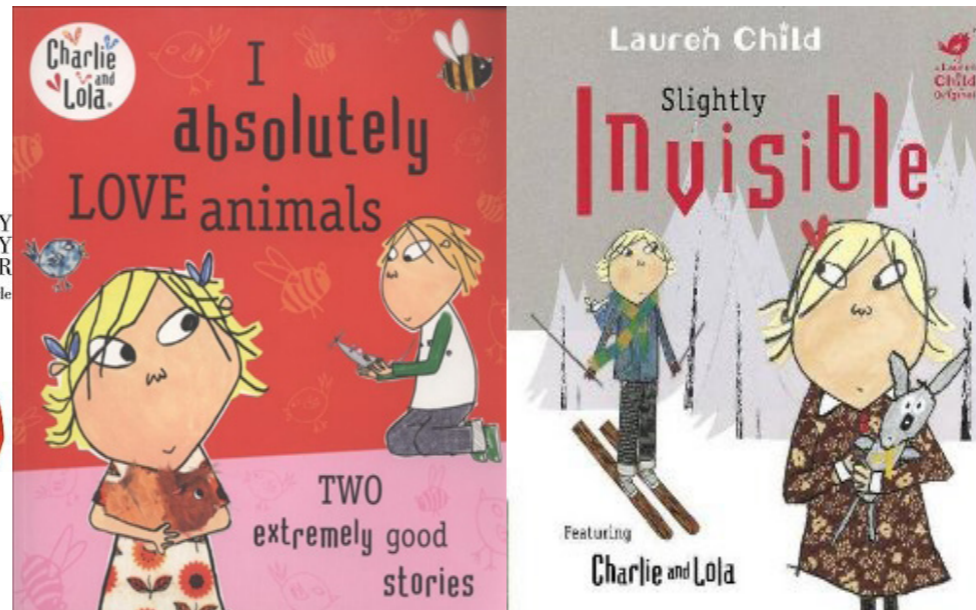
Illustrator Research
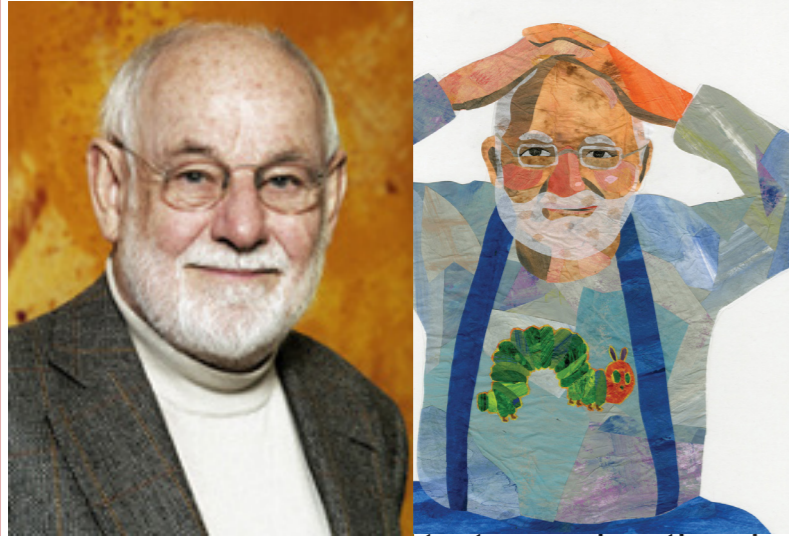
Eric Carle: is the illustrator and author behind the very hungry caterpillar and 1,2,3, to the zoo children's books. Eric was born in Syracuse New York in 1929, he then moved to Germany with his parents when he was six. His career of being a children's illustrator began when Bill Martin Jr, who was a well respected educator and author asked him to illustrate one of his stories.
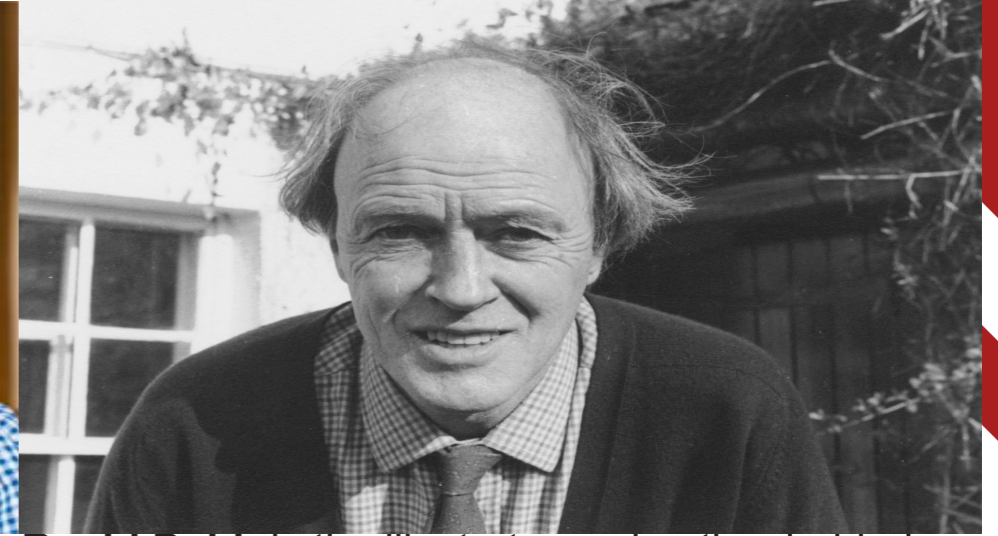
Lauren Child: is the illustrator and author behind the Charlie and Lola books and TV shows. She was born in 1965 in Wiltshire. she started writing books and novels in 1999 and has gone on to create the well known "Charlie and Lola" and "Clarice Bean" novels.

Roald Dahl: is the illustrator and author behind many well known children's books such as "The twits", "Charlie and the chocolate factory" and "Fantastic Mr Fox". Dahl was born in Llandaff, Wales on the 13th September 1916. Most of his Inspiration for his stories stem from when he was a child at boarding school.

The art style behind his work is very simplistic and bright which is perfect for gabbing children's attention. His books are easy to read and are easy to remember from a young age.
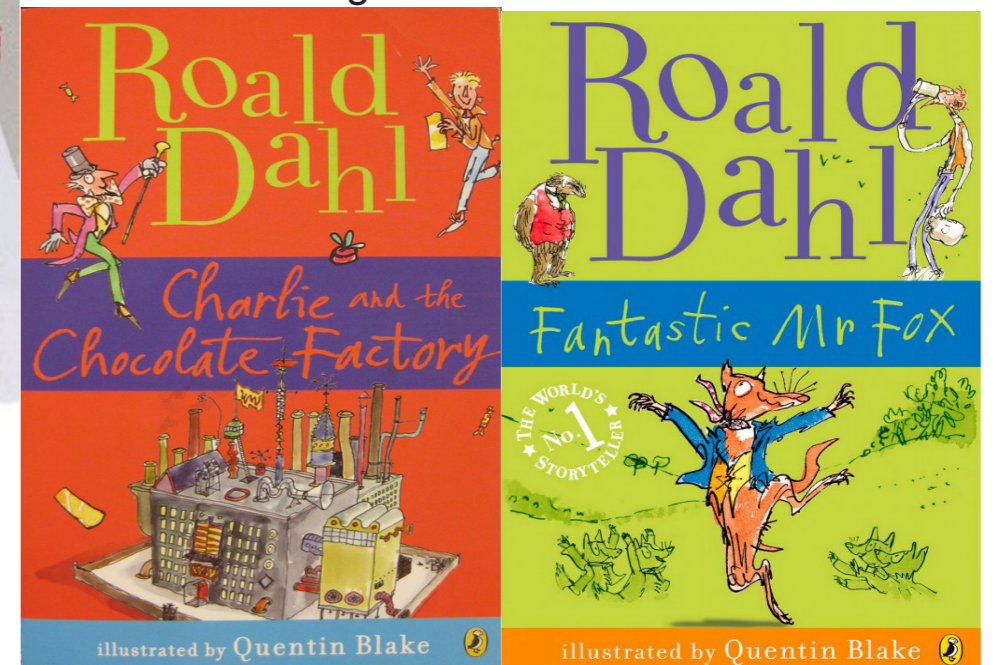
Lauren's art style is very messy and the drawings are simplistic but in the way that she uses textured images to colour in her characters is very clever. the overall look of her books are eye catching for children and adults alike.

Granted Dahl didn't illustrate his books but the way he made them so that they caught the attention of children made him a household name and a beloved author.

Nursery ryhme and fairy tale research

Goldilocks and the three bears

The story of goldilocks and the three bears revolves around a young girl named goldilocks and she walks into a house in the middle of the wood s owned by a family of bears who for the sake of plot and story convenience have gone out for a walk to let their breakfast cool down. Meanwhile Goldilocks goes through the bears house eating their food breaking their chairs and falling asleep in their beds. in the end the bears come home and find goldilocks asleep in baby bears bed and chase her out of their house.

The moral of this story is to never trespass into peoples homes.

At the table in the kitchen, there were three bowls of porridge. Goldilocks was hungry. She tasted the porridge from the first bowl.

"This porridge is too hot!" she exclaimed.

So, she tasted the porridge from the second bowl.

"This porridge is too cold," she said

So, she tasted the last bowl of porridge.

"Ahhh, this porridge is just right," she said happily and she ate it all up.

Incy Wincy Spider

The Nursery rhyme Incy Wincy Spider is based on a spiders struggle to climb up a water spout (drain pipe) as it constantly gets washed back down the pipe when it starts to rain.

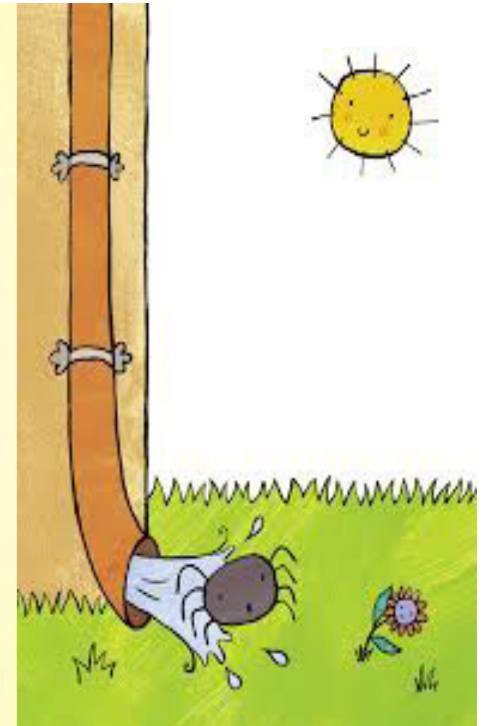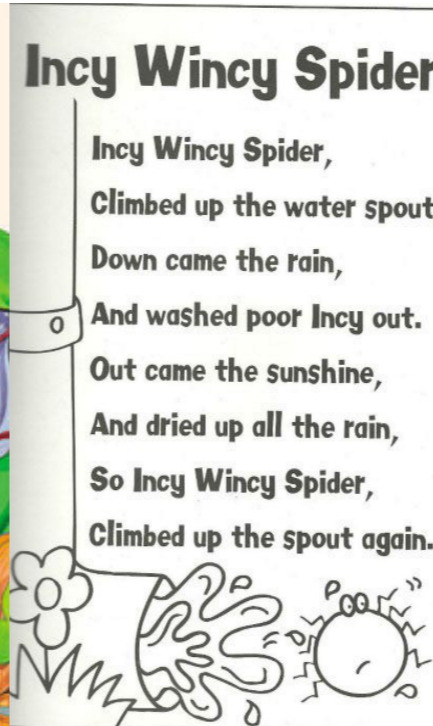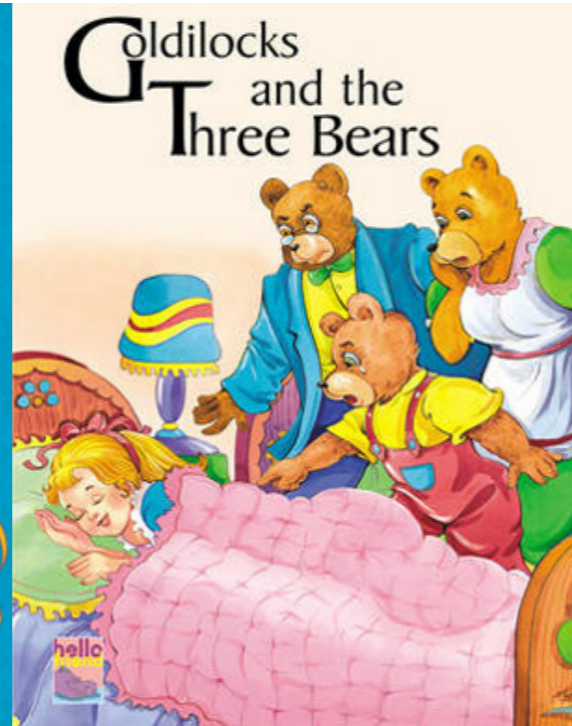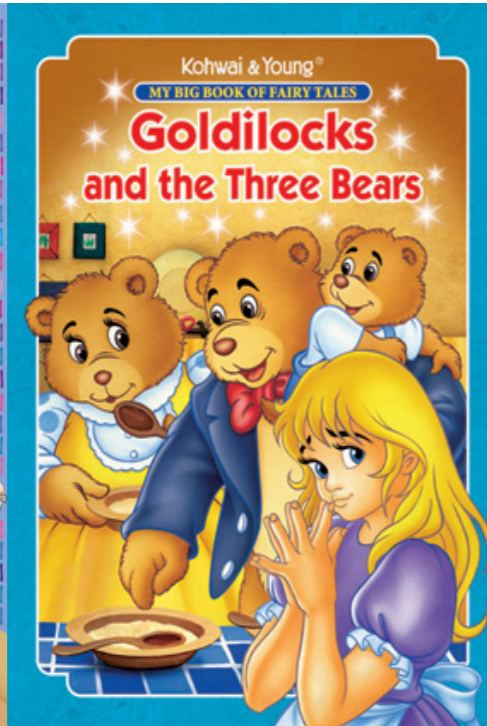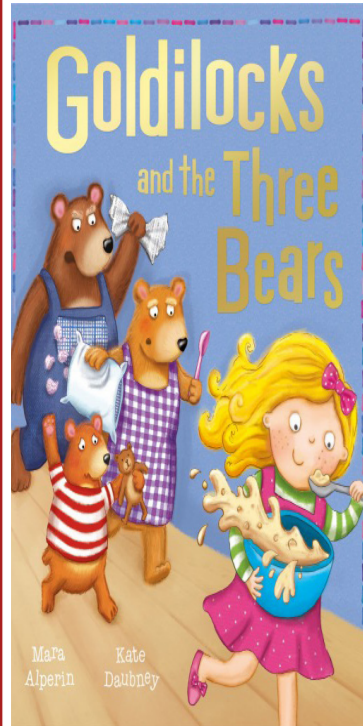The moral to the rhyme is to never give up.
Incy Wincy spider climbing up the spout
Down came the rain and washed the spider out
Out came the sunshine and dried up all the rain
And Incy Wincy spider climbed up the spout again

1. Chairs

Teaching - Literacy

Spell words to finish a sentence to progress up the chair to reach the top.

2. Porridge

Teaching - Science

Use the thermometer to measure the temperature to see whether its edible.

3. Beds

Teaching - Maths

She has to count sheep and then say how many sheep she counted before moving onto the next bed.

Level Design

4. Escape

Teaching - Final Quiz

Goldilocks has to run away from the 3 bears, asking questions from all aspects to jump over obstacles.

Goldilocks

Literacy

Education

Science   Maths

7-8 — **Age Range** — 3-4
— 4-5
6-7
5-6

Incy Climbs Pipe

Answer questions to avoid rain drops

2. Incy gets Wet

Answer questions to avoid moss lumps.

question

moss

Level design
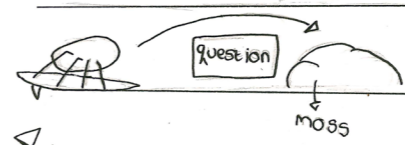
3. Incy dries in the Sun

· Answer questions to collect sun rays.

4. Incy Climbs back up

· Answers questions to avoid leaves.

Incy Wincy Spider

Literacy

Education

Science   Maths

Nursery Rhyme

7-8 — **Age range** — 3-4
— 4-5
6-7
5-6
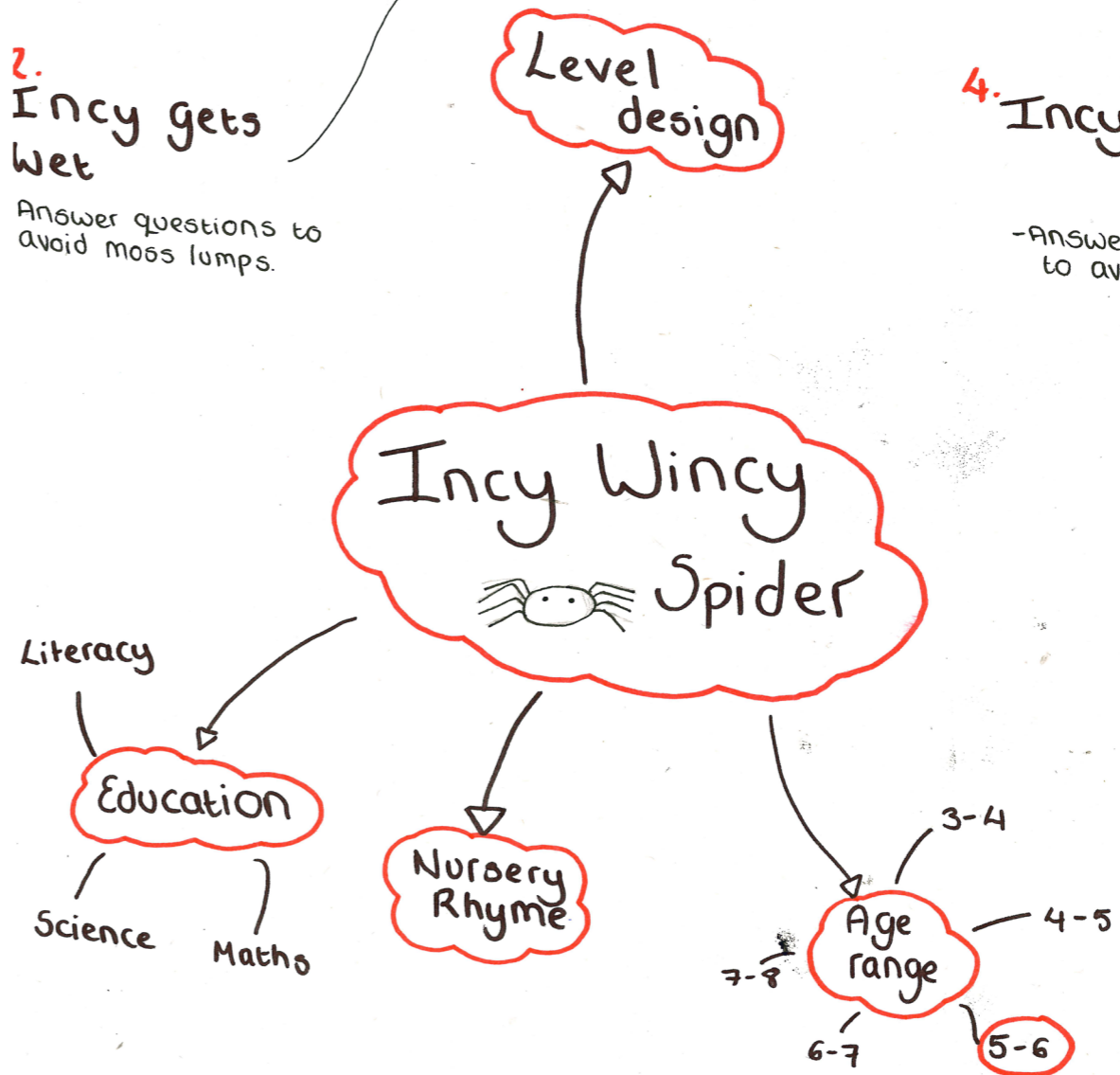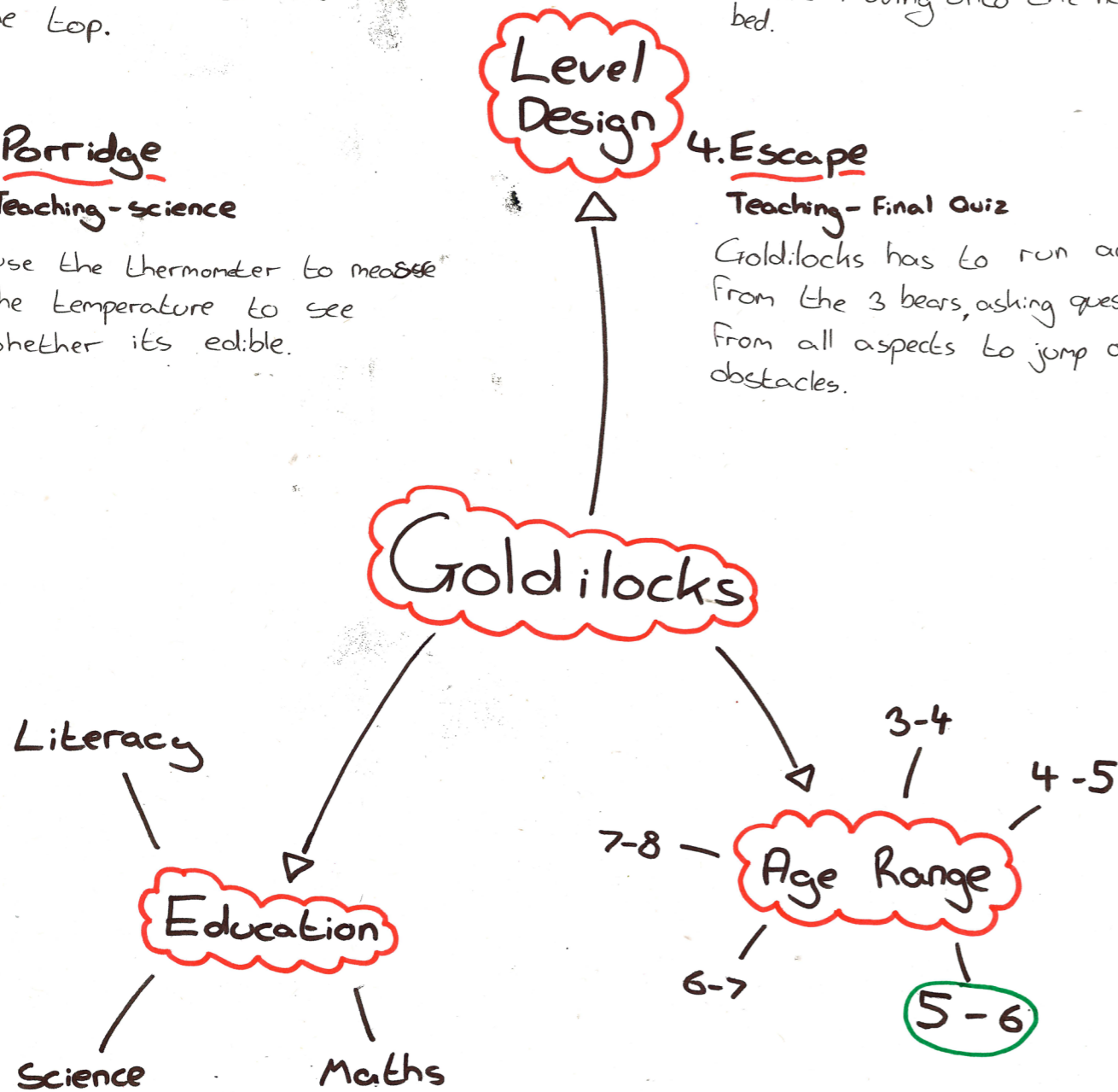
Goldilocks Design

Research

Bear Design

Research
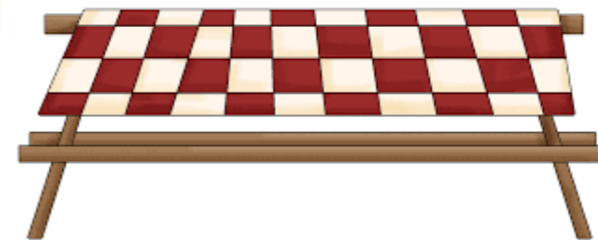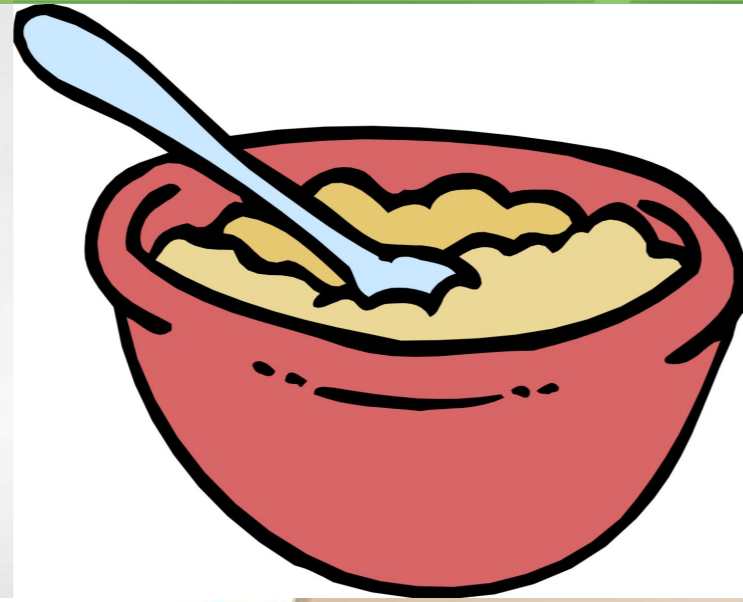
Art Style Research

Cell Shading:

The sly raccoon series uses Cel-shading to help attract the younger audience while also giving the game a 'toony' feel, the style helps with the game play as it makes objects within the world stand out more and it makes it easier to navigate through the world.

The Borderlands series uses Cel-shading for their style to help convey that the game is a little bit mental with all the characters, weapons, enemies and objects. It also adds to the game play by making the environment and overall feel of the game more exciting and crazy.

Steam Punk:

Dishonored's steam punk style is quite unique from other steam punk styled games due to the fact that the game revolves around whale oil and analogue contraptions. Its art style also helps with game play in the fact that you feel a part of the world you're playing in.

Guns of Icarus is a very steampunk styled airship naval battle type game where you have a team of players working together to take down another team's airship, the style adds to the feel of the game by making the ships seem more rudimentary and fragile as they look like they were just held together by bold and straps. It also adds to the game play by making the player work around the limits of the materials of the craft.

Pixel :

Minecraft pixel style is one of the reason it is selling so well by the fact that it helps make the game look simplistic and nostalgic in a way, it helps with game play because of the simple looks of the game it makes every little block look different and easily distinguishable making the game easier to play, also you can add different resource/texture packs so you can make the game look how you want.

Metroid was one the first games I believe to feature 16bit graphics which gave it he pixel art style which gave the environment a lot more variety and it also made the game play feel new and special.

Photorealism :

The last of us was an extremely beautiful game in just the settings alone on the PS3 but when naughty dog remastered the game for the PS4 it really shown how beautiful the game could be and it also added to the gameplay by making the game look like it could be a real life situation.

Grand theft auto's photo-realistic style helped make the game look as real as possible while still being in a made up city. The sunrises and sunsets in the game help bring a sense of beauty to the game when you are not robbing liquor stores.

Level Designs Initial Sketches

Idea of using a thermometer to help tell the temperature of the porridge
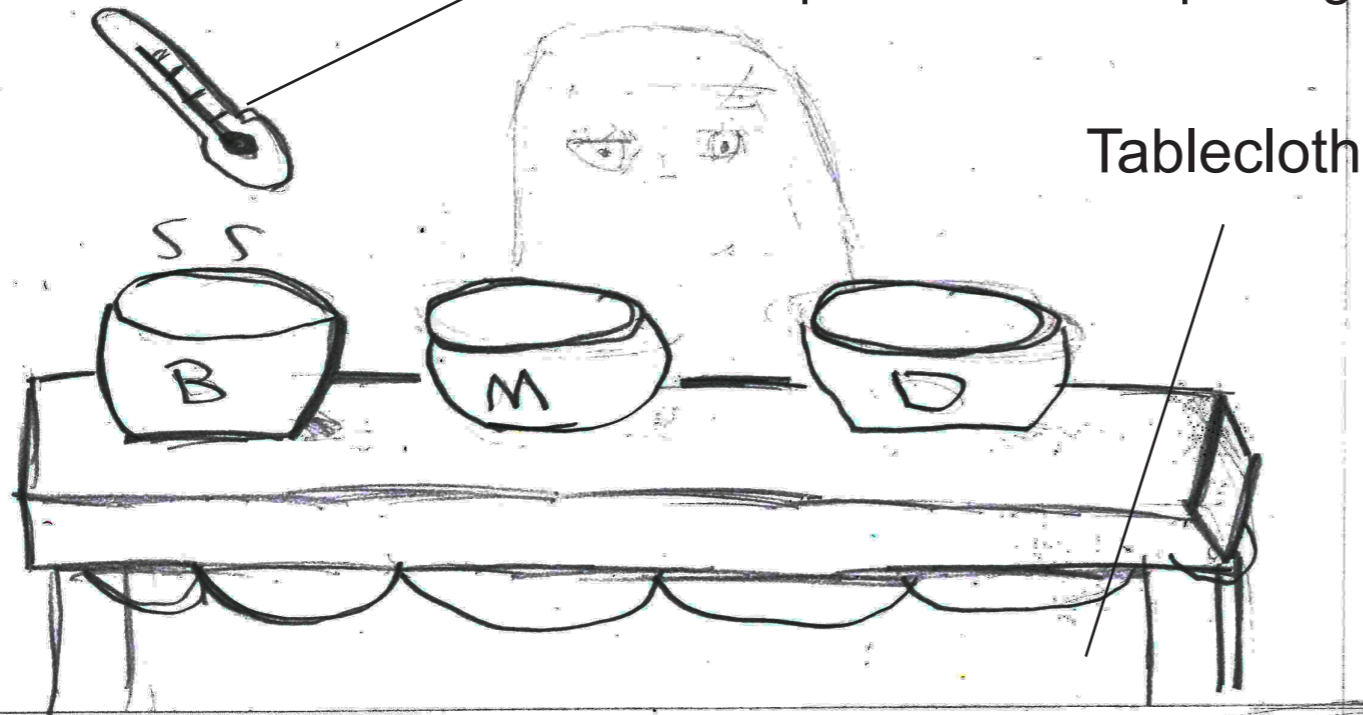
Use The Thermometer to find the best temperveturer To eat the Porrise

Tablecloth

SS
B
M
D

100°C
5°C
50°C

50g
10g
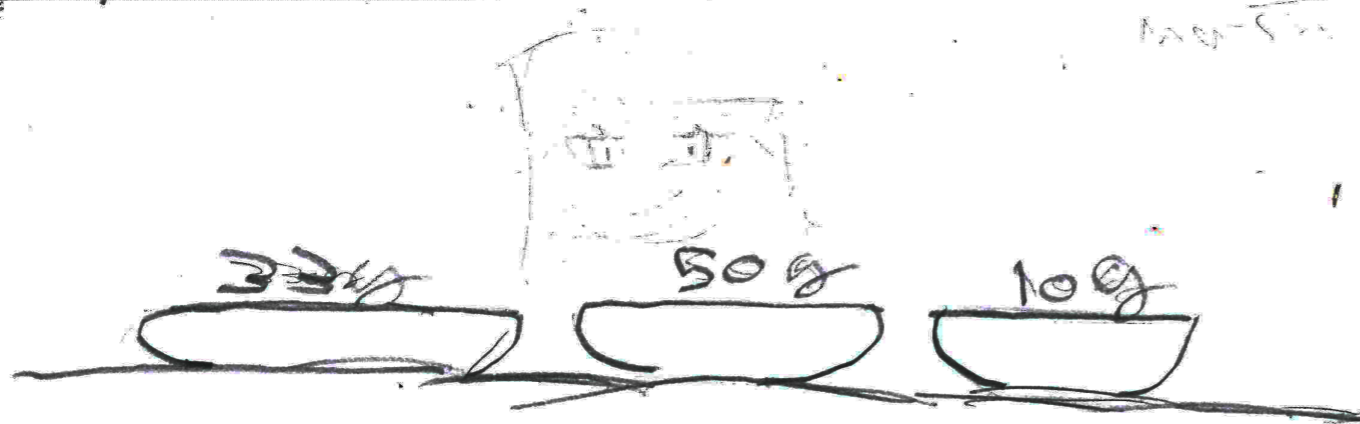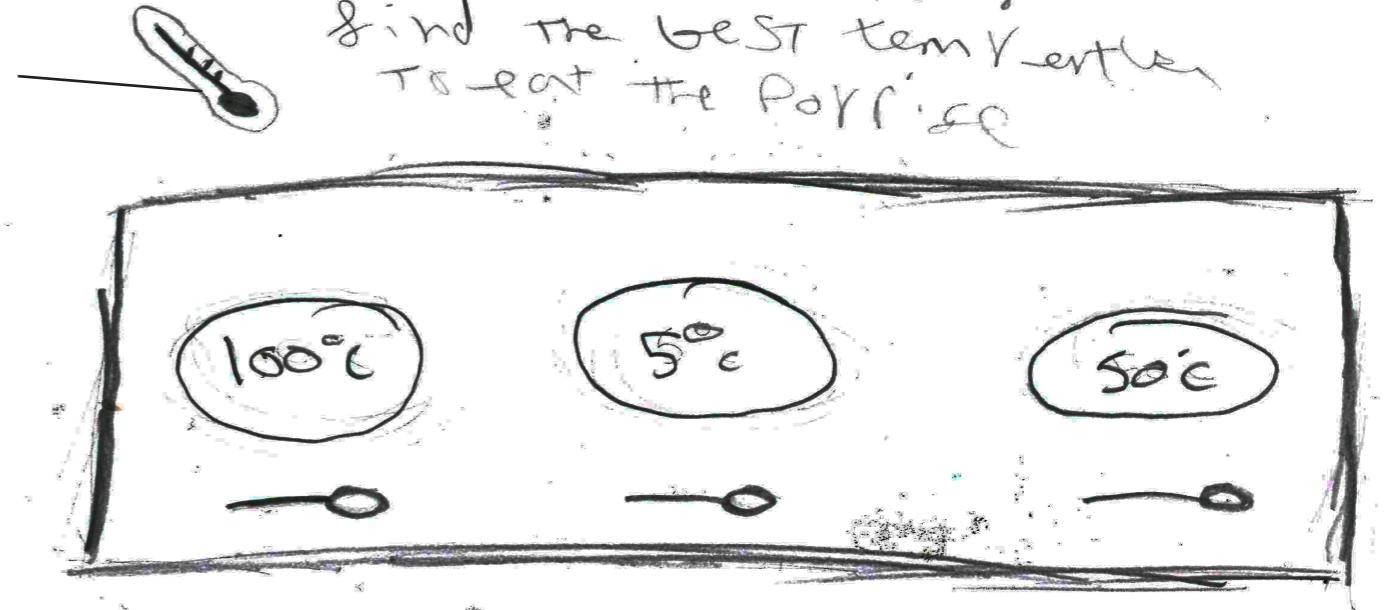
which bowr has The most porridge in

@ 1er pror 1 bowl

Having the weight of the porridge could help for a maths game

I didn't really have a clear idea of what i was going to do with my level unlike my previous projects where i normally had an idea from the beginning, so i just did some random drawings in the hope one would work.

Level Designs Development Sketches

Top down view for the questions and answers part of the level

I had an idea of using a top down view of the table for answering the questions, and that the answers you could select from the bowls of porridge

Normal view to navigate around the level

The idea for the normal view to navigate the level, didn't take much thought I just decided to make it look like a stereotypical cottage/wood-lodge kitchen area.
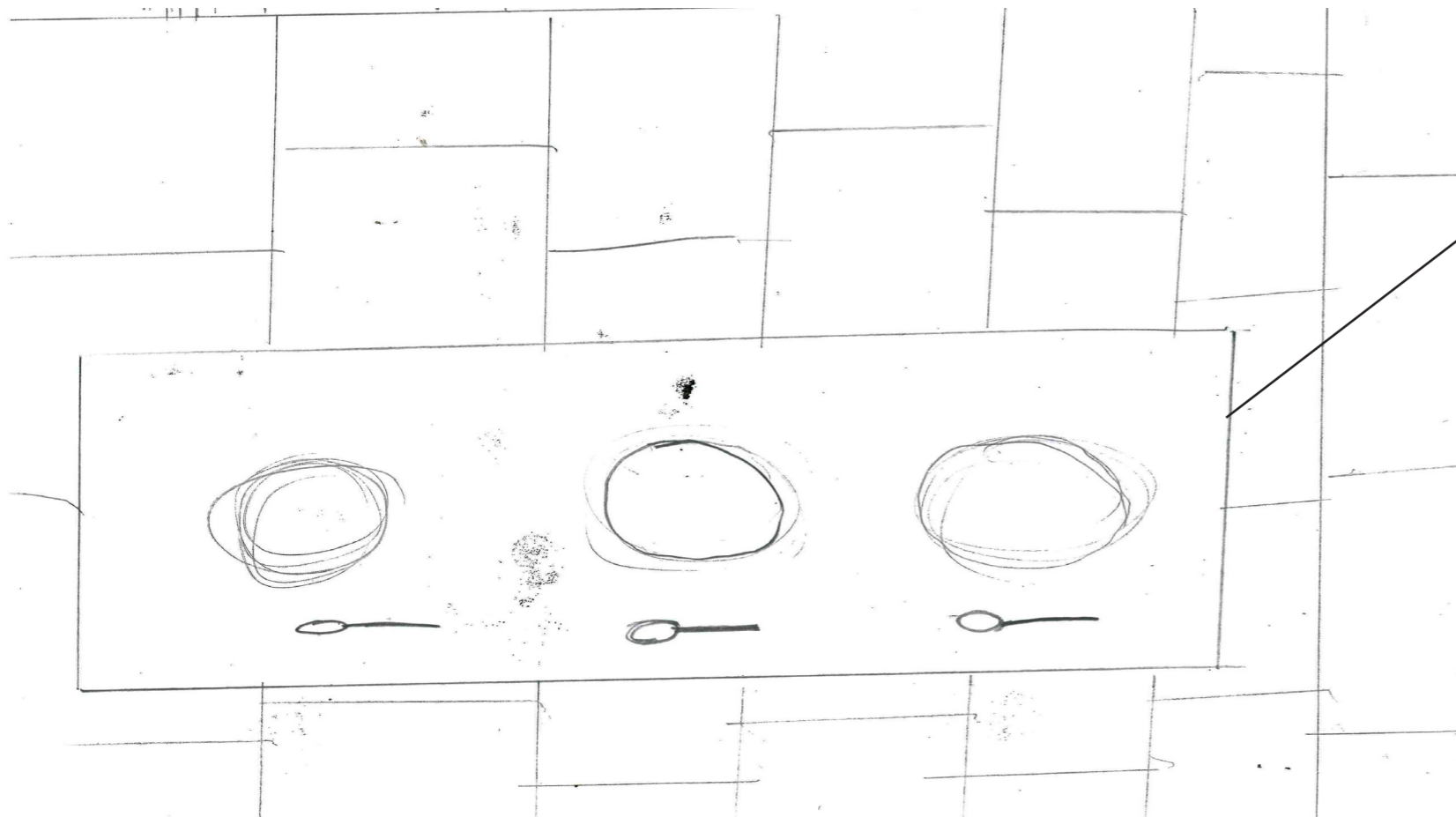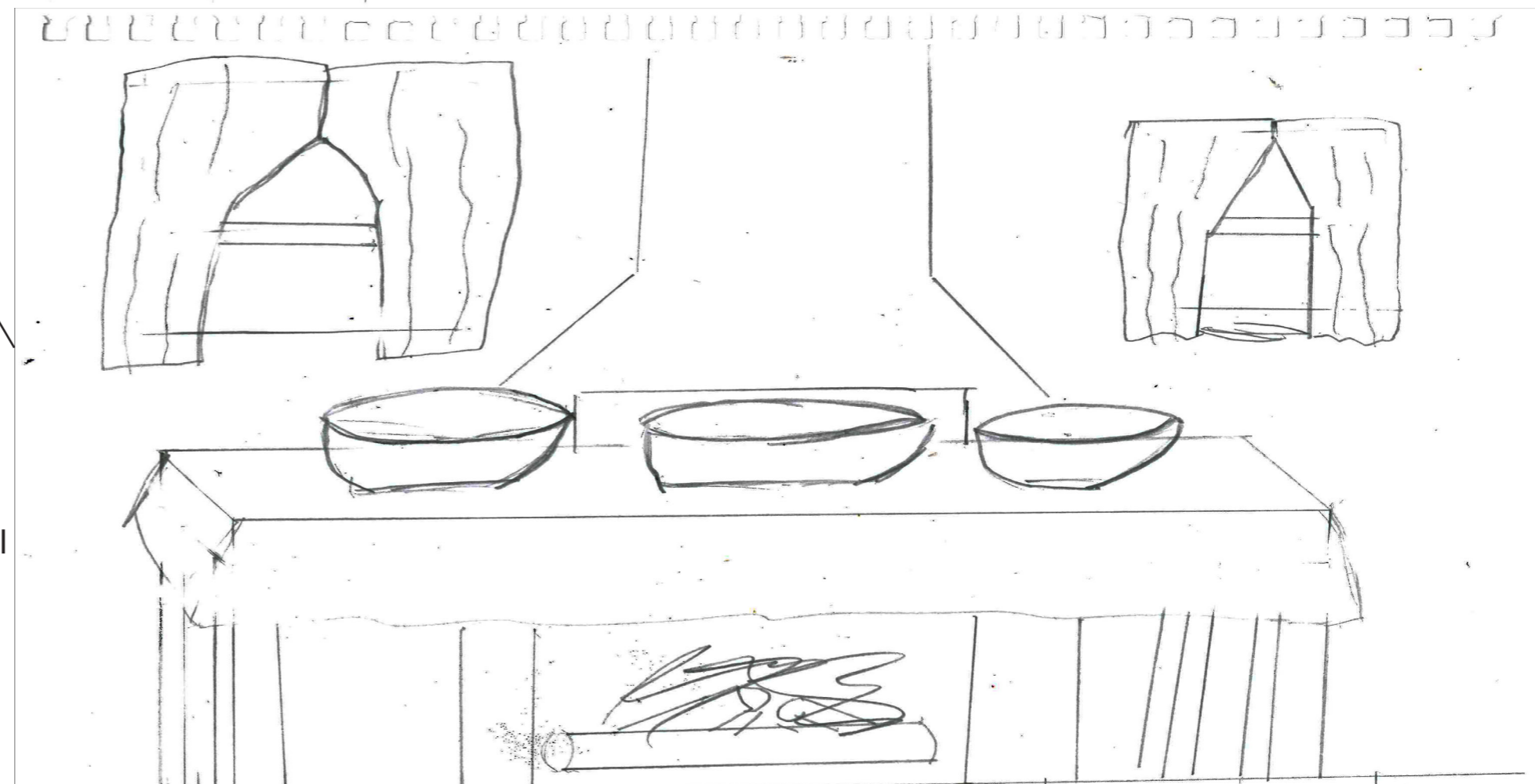
Fireplace to give a more cozy look

My Final Design for my level is sticking with the kitchen look but i have decided to make it more detailed.
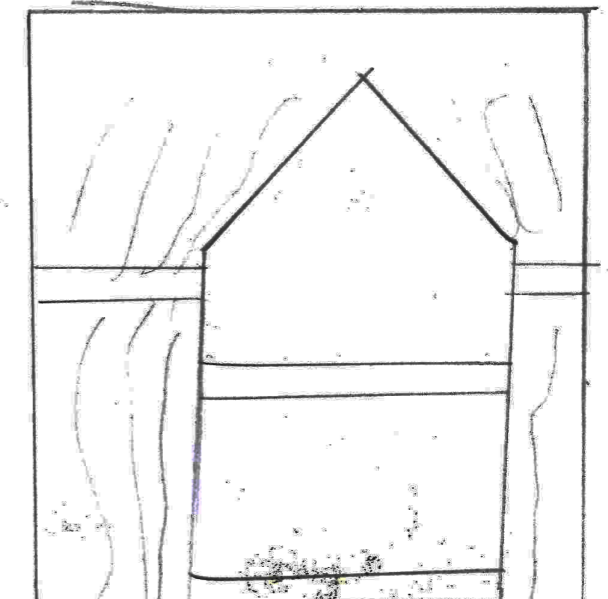
The Level will work by Goldilocks walking into each bowl of porridge and answering three questions of varying difficulty, before moving onto the next bowl and answering 3 more, in total there are 9 questions

Level Designs Rest of Group

Emily

Initial Designs
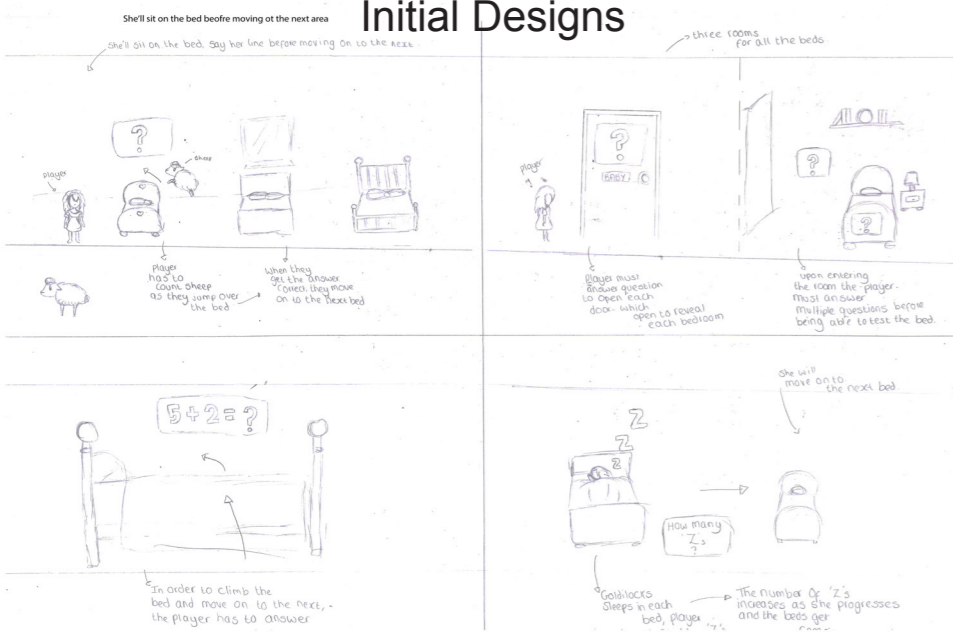
Development Designs
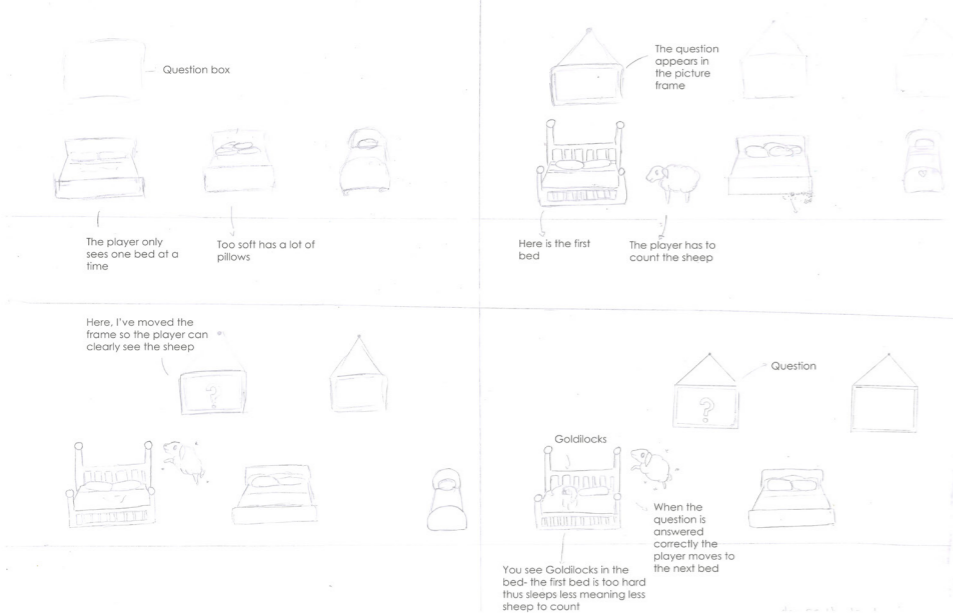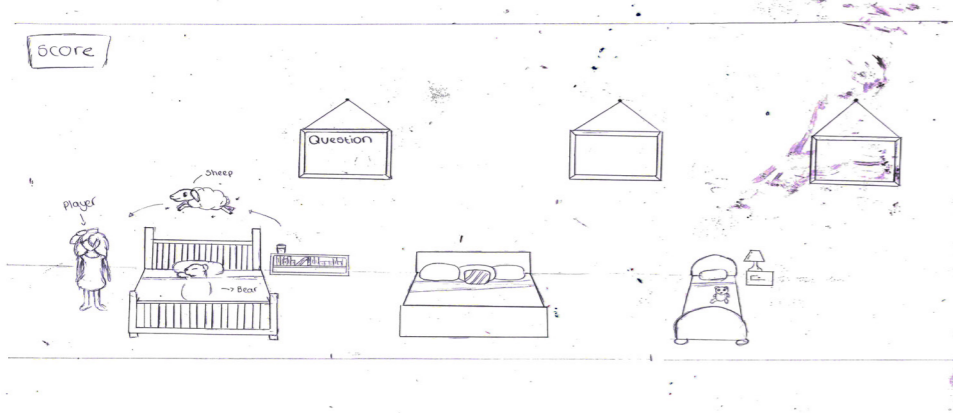
Final Designs

Adam

Initial Designs
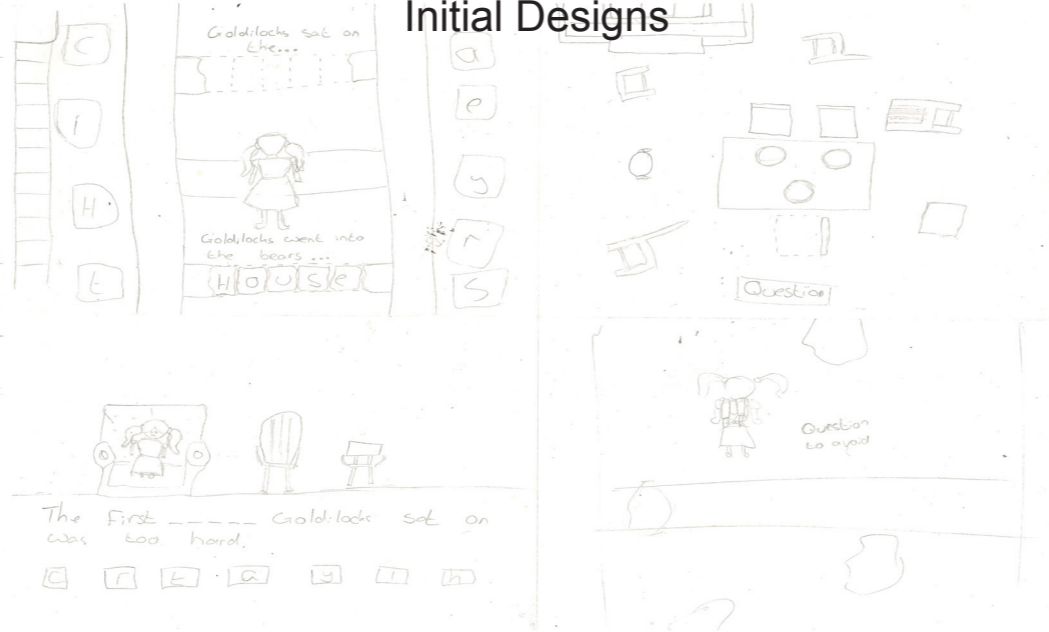
Development Designs
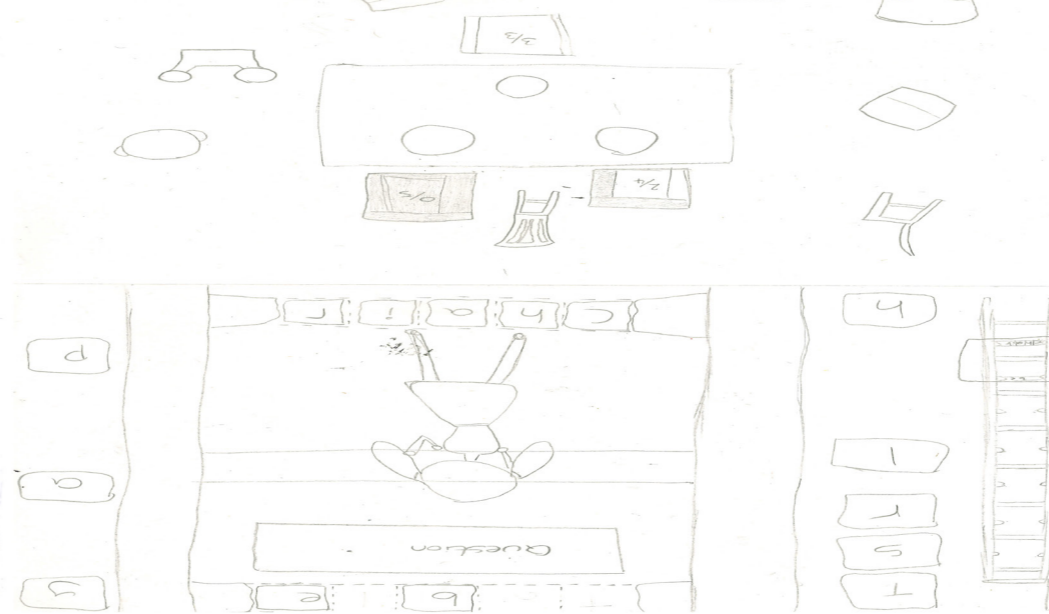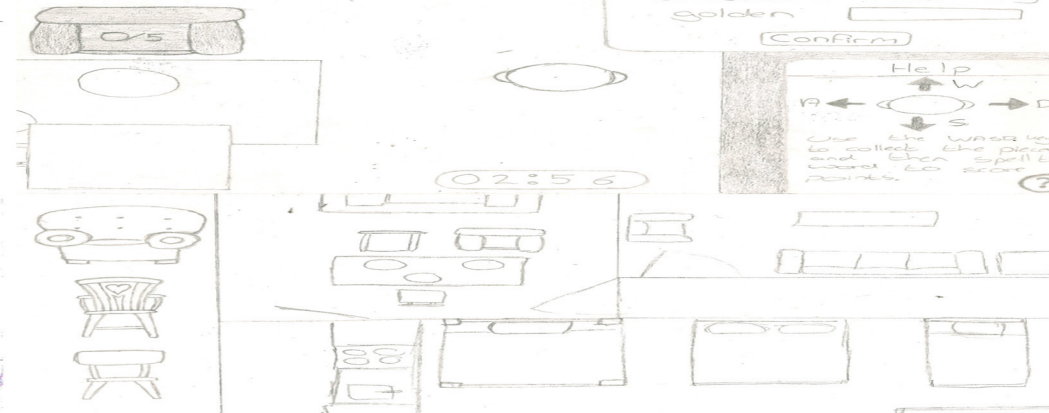
Final Designs

Jamie

Initial Designs
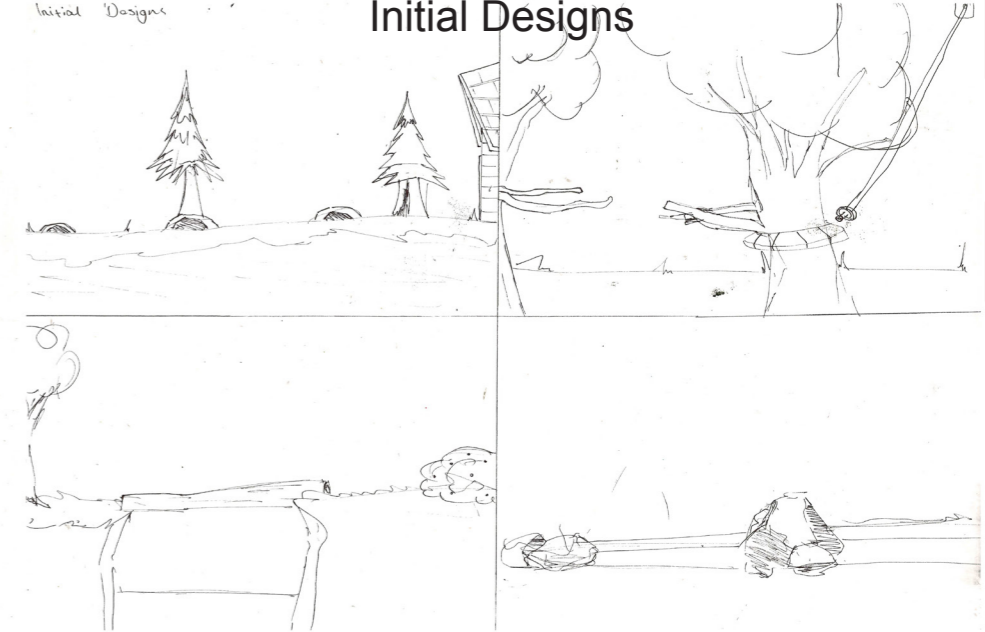
Development Designs
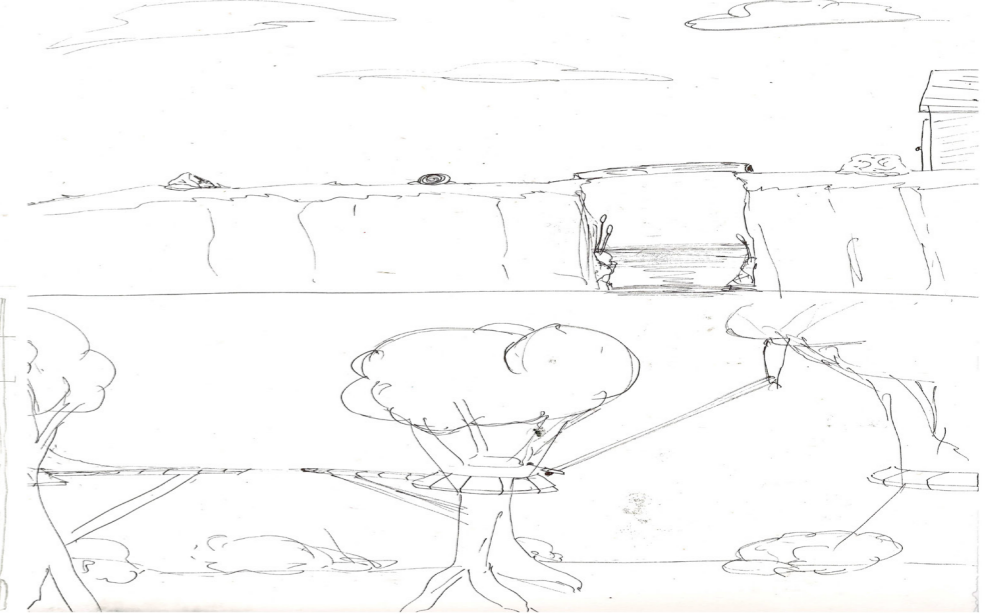
Final Designs

My Level Description

Theme of game: Goldilocks and the three bears

What educational aspect are you working on: Addition

How many levels and where your level fits into this: My level will be the second out of the four levels

What will the player have done before they get to your level: In the first level the player breaks the chairs and they will need to collect the pieces of the chairs to repair them but in order to collect the pieces the player will answer spelling questions.

Describe in detail, how will your level work:
At the start….. You start in the kitchen/dining room which has a very rustic log cabin-ish type look about it and you walk up to each bowl of porridge which is placed on a table in the middle of the room that has three chairs placed next to it and get a set of questions in which you have to answer correctly to obtain the porridge. When you have collecting the porridge you will be helping a bear eat.

What appears on the user interface (and what will change, ie score will go up by 1 point) : a timer for each of the questions and a three life system for wrong answers, there will also be a score in the corner. Questions will also appear on the user interface for the player to answer, the correct answer will also appear on the interface hidden amongst a variety of other incorrect answers.

What is moving on the screen automatically: Steam coming off the porridge and flames coming off the fire in the fireplace.

The controls are: A is left, D is right, W is up and S is down.

What the player has to do: simple addition puzzles to obtain porridge.

What challenges they have to overcome: maths puzzles such as "2+3=?" and "if you have 16 oats how many more are needed to get to 20?". The player will either have to type on the keyboard to get the right answer or select the correct answer from a variety of different answers. There are 9 questions 3 for each bowl going up in difficulty from cold (easy) to hot (hard)

How the scoring works: whenever the player collects a bowl of porridge the counter goes up 1.

How do they progress through the level:the player has to go around the room and collect each bowl of porridge.

What is the end point: to have all three bowls of porridge which will help fight the porridge monster by gaining a bear friend.

Colour Palettes

Style Sheet
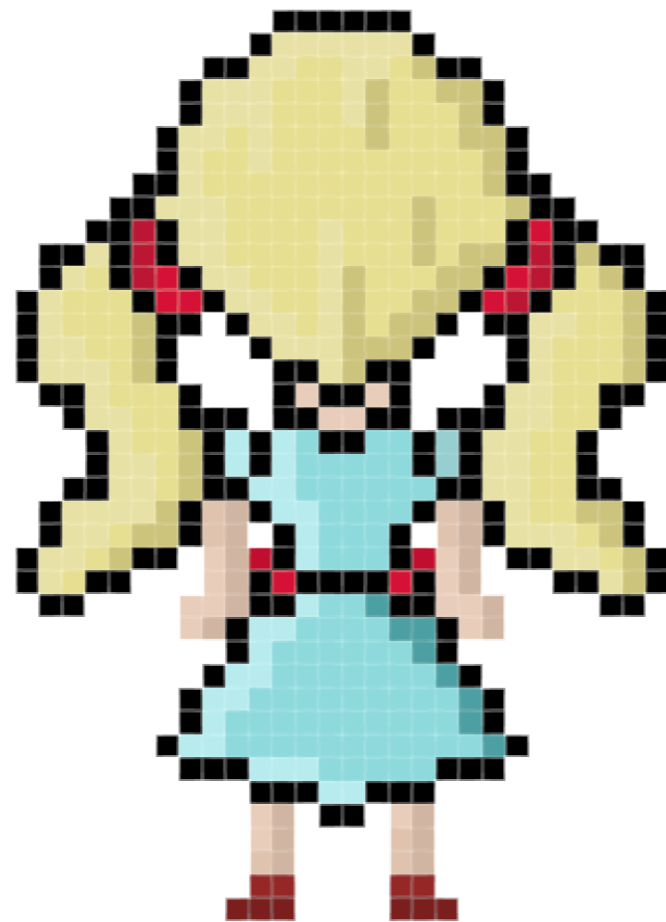
We have chosen the style of Pixel Art for our art style of the game as we wanted something that would be easily replicable and that we could have an easy standard to it to follow. We also had not drawn in this style before so it would be a new thing for all of us, putting us all at the same level of quality as each other. For this we were mostly inspired by terraria as it works in a pixel art style and also included a similar size pixels to what we wanted to achieve, we looked into minecraft too but decided that the pixel size of minecraft was too large for us.

We are going to follow a standard that we will follow so that the pixel art is all of similar size on the game, we'll be working off the idea of roughly 25 pixels for drawing items that are 1 foot tall and using that scale. For example if an object was 2 feet tall then the drawing of this would be 50 pixels tall. We will also be going off the idea of 695 pixels by 450 pixels for the background.

We will also need to include some more traditional aspects to the game so we will include some mixed media in the designs. We will use this in the way to make it still look like pixel art by importing the texture while the Photoshop file is still very small. Then we can size this up to make the quality not poor when imported into unity. Although the full texture will not be visible, it will still be a mixed media piece and will look more like the actual image than if we had to create this ourselves.

Chosen Art Style: Pixel
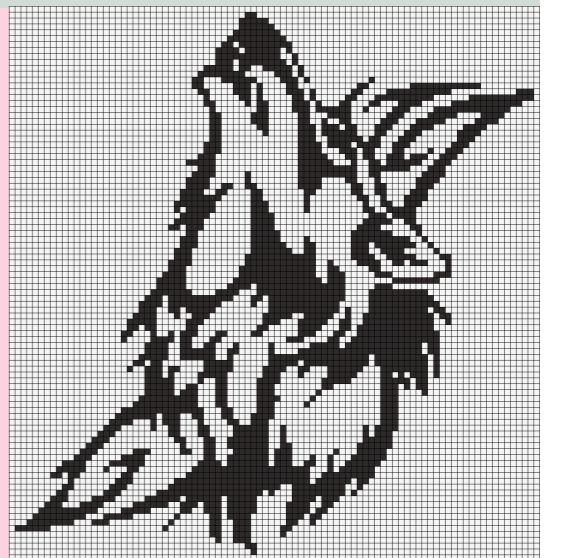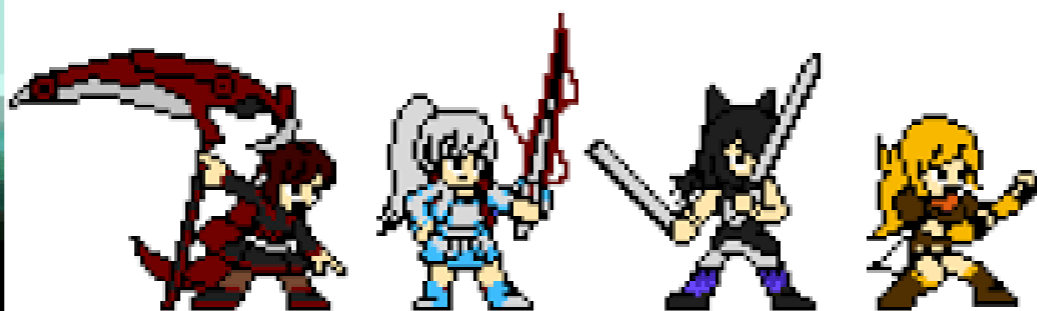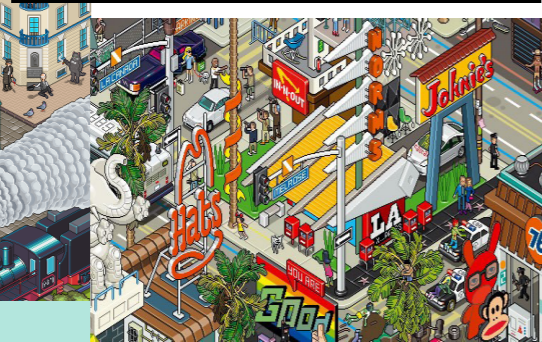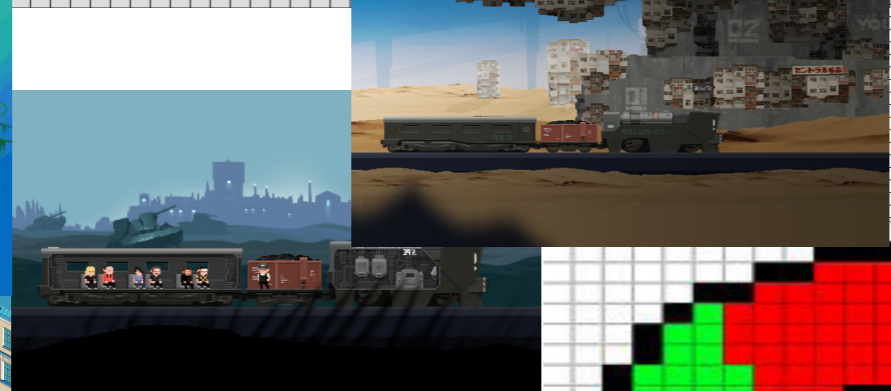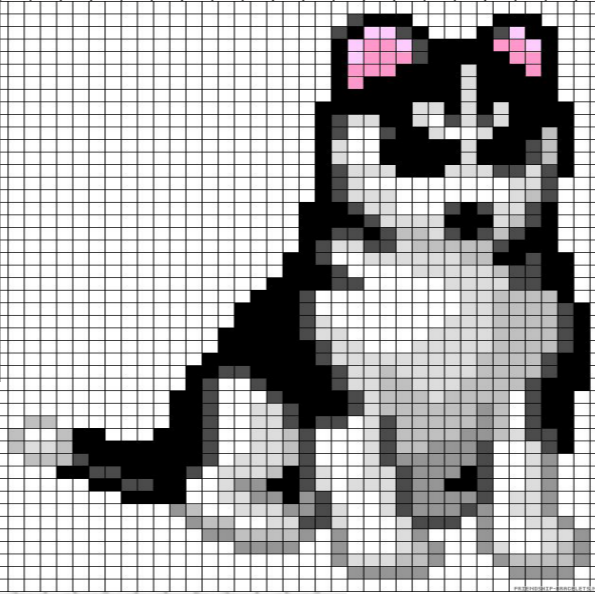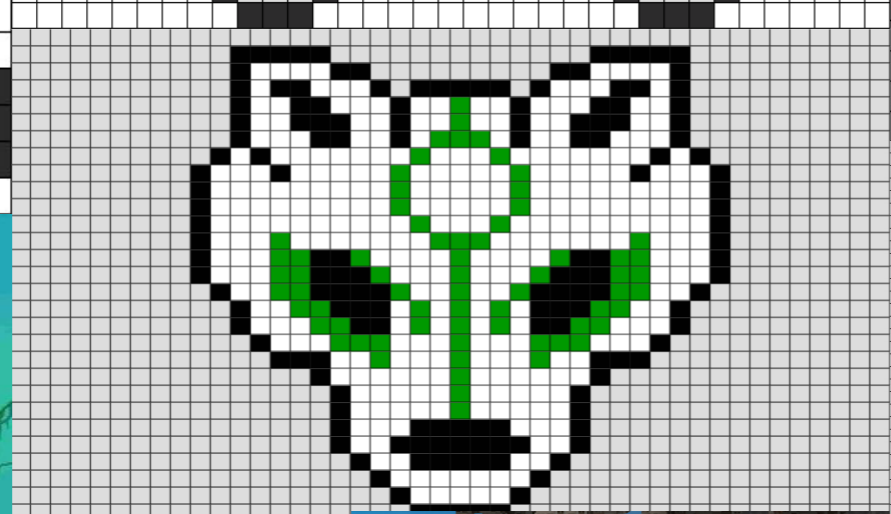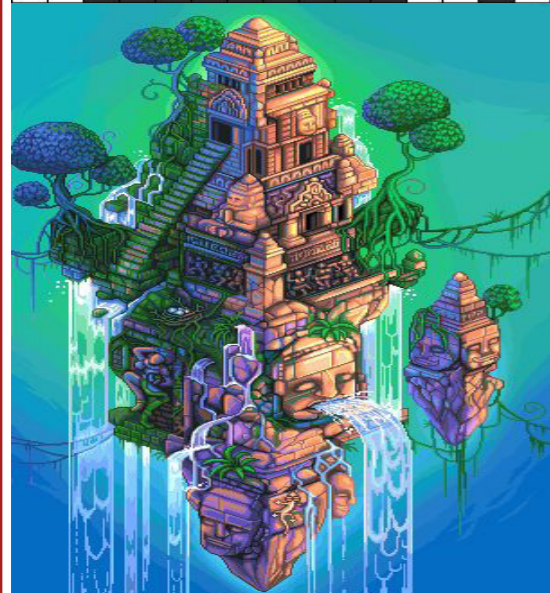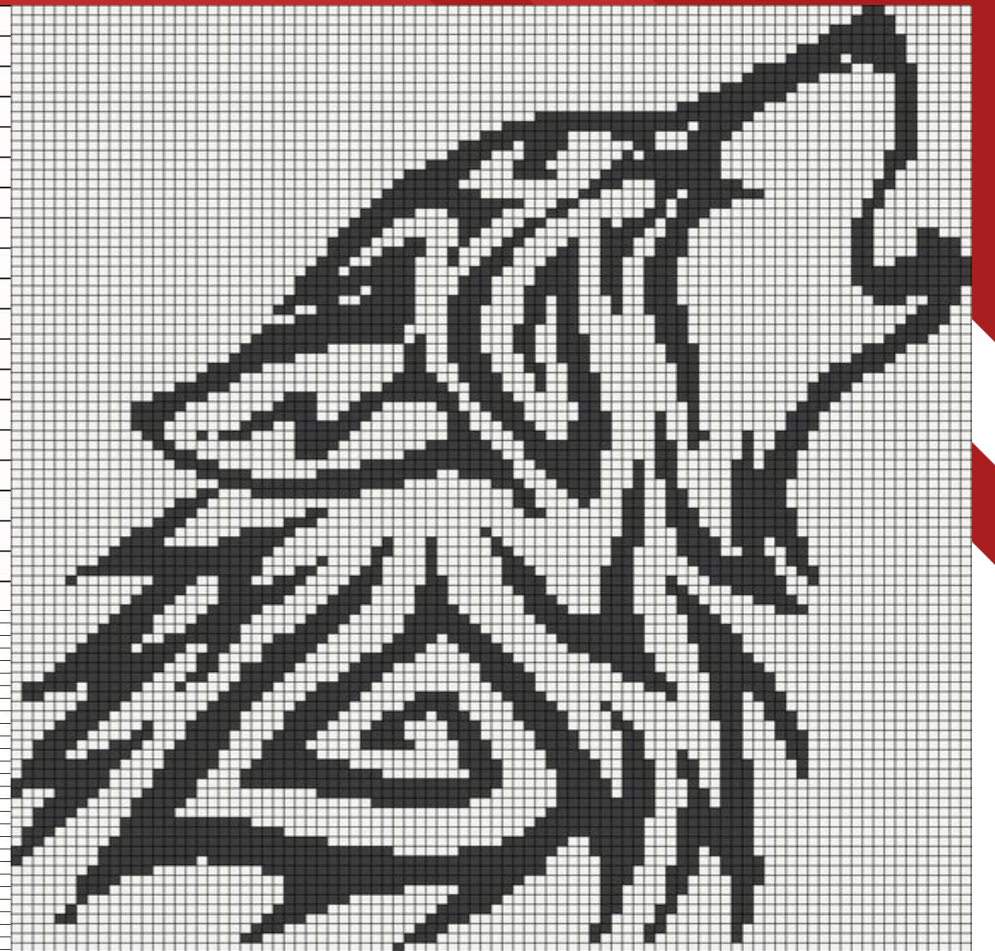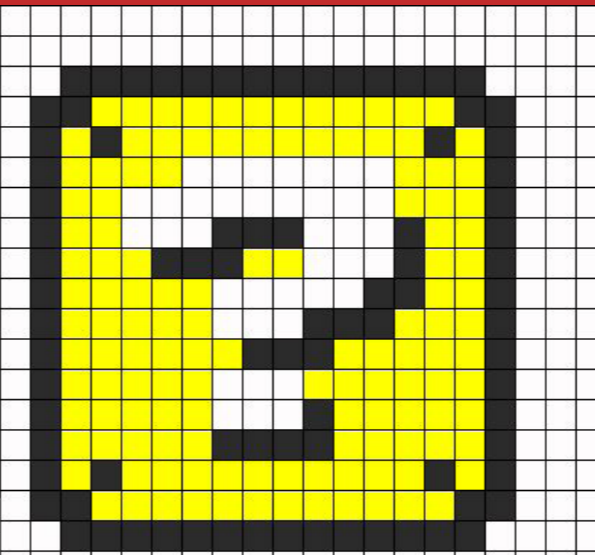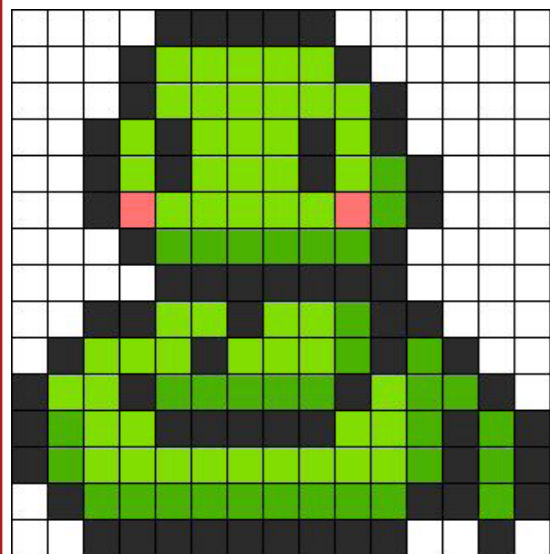
Asset Creation
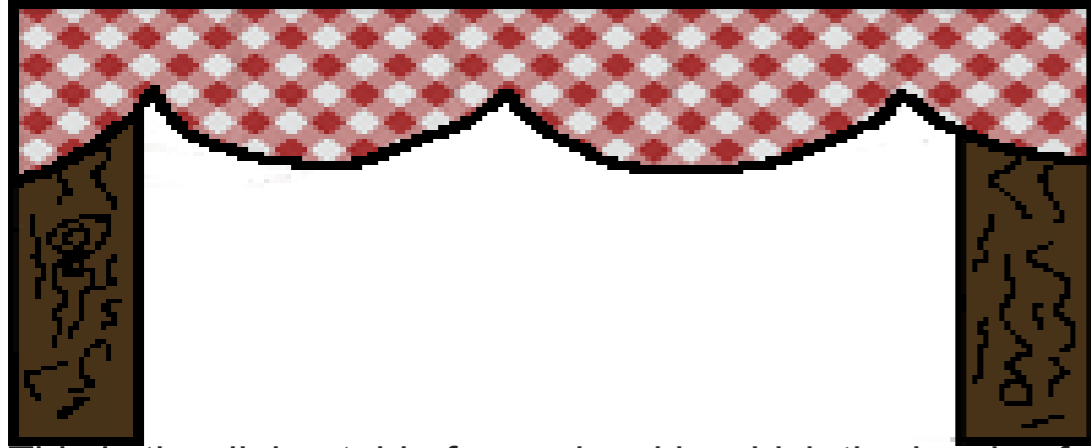
This is the dining table for my level in which the bowls of porridge sit on

Bowl of porridge or just a bowl since you can't see the porridge.
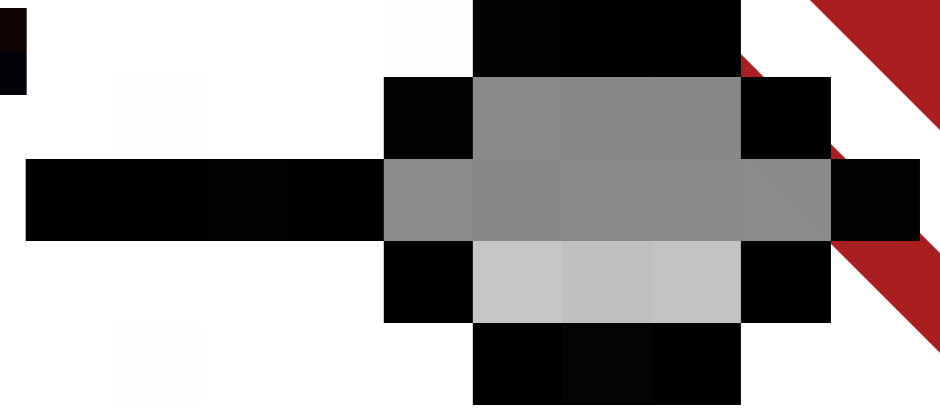
Small Spoon: this is to be used in my main level just to be sat next to the bowls of porridge
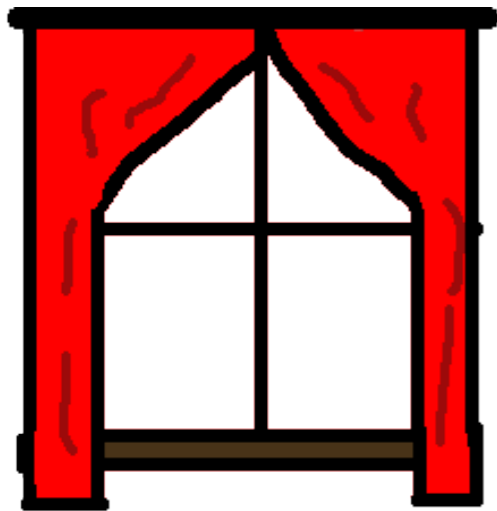
Window

Picture of the bear family, the actual picture is an image from google images

Picture of the bears cousins, the image is from google images.
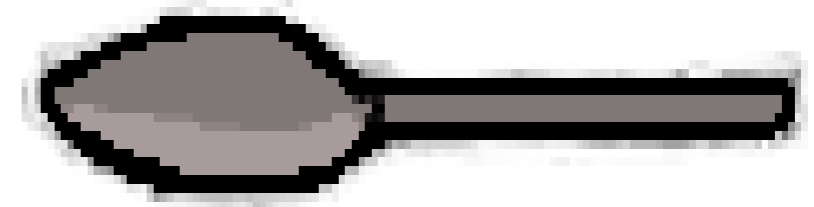
Big spoon used for the final level in defeating the porridge monster
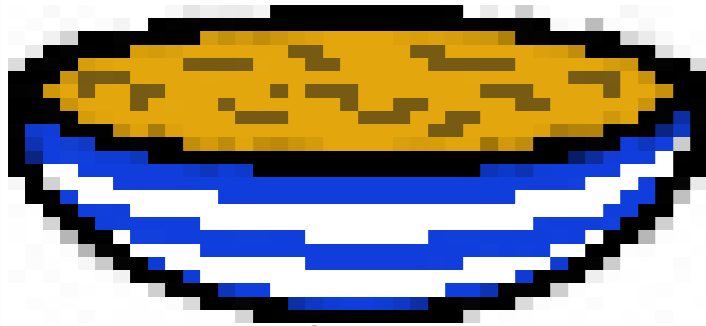
Remade bowl of porridge to give a better view for my level.
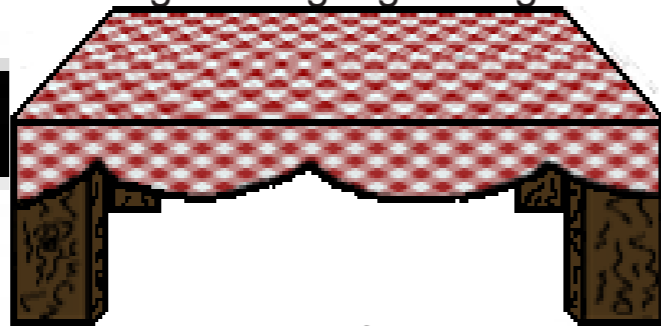
Remade version of the table to give the more perspective look for the level.

Question Sheet

The Questions I have used in my Level are set into three difficulty's which are set to each bowl of porridge.

The first bowl is the easiest difficulty with basic addition questions:
- 2 + 3 = ? with the answer being 5
- 3 + 3 = ? with the answer being 6
- 5 + 5 = ? with the answer being 10

The second bowl is the medium difficulty having multiplication sums added:
- 11 + 9 = ? with the answer being 20
- 4 x 3 = ? with the answer being 12
- 9 x 4 = ? with the answer being 36

The last and third bowl is supposed to be the most difficult questions having the player have to do subtraction without having to be told to in order to work out the questions
- 16 + ? = 20 with the answer being 4
- 6 + ? = 15 with the answer being 9
- ? + 7 = 14 with the answer being 7

These questions fit in with the Governments requirements of what our chosen age range should be capable of doing including :

Perform mental calculations, including with mixed operations and large numbers

Level Review Sheet

I have collected the feedback from when we let other members off the class try out our individual levels, people enjoy the pixel art style, but have commented about the blurry background and how some assets are not sharp enough in detail, other have commented about how the movement and sprite sheet seems to bug out and not work.

Everyone has commented on how the character still moves after you finish the questions without any input, I already knew about this bug and the only way I have found to help with this is awkward to say the least, there is also a bug that after each question you have to click on the answer box for the new question otherwise the old question will show up again. This bug also happens when you finish a set of questions, where you go to control the character and the last question pops up again, the only way I have found on how to deal with this bug is to click the screen immediately after finishing a set of questions, also after clicking the screen if you press the "D" key you will regain control of goldilocks.

There was one comment on how the trees in the background look completely different to the rest of the level, to which I agree but, I'm no artist and they are the best I can do for trees.

Poor quality trees

Low Detail Bowls

Game Design Summary

Game Title:
Bear With Me

Format (Perspective and Platform):
Our games format is a 2D sidescroller perspective game with one element of top down perspective, we chose the sidescroller because we like the style of it for its simplicity and ease of concept for a child to be able to grasp. The top down element was chosen by one of our team members because he felt that it would best convey his ideas for his own level.

Genre:
The objective of this project is to create an educational game for a selected age group of children i.e: 5-6. This required us to teach them numeracy and/or literacy with questions appropriate for their age group, with the questions getting increasingly more difficult but not exceeding what they are capable of. The mechanics of the game have to be relatively simple as not to confuse the children and so that it is not so difficult they cannot play the game.

Market Research:
For us to understand what is appropriate for a childrens game, in which he had to do some research by playing a selection of games already catered for that audience from well known and respected childrens websites, as well as watch a selection of children television programs from sources such as Cbeebies, CBBC, Citv and Cartoon network. We took inspiration and design ideas from these sources and thought of ways in how we could incorporate them into our game and our individual levels.

Target Audience:
Our target audience is children aged 5 to 6 in the key stage 1 group of the UK education system. We took great care in reading through and incorporating the requirements from the governments educational requirement criteria. With our chosen age group being year one and just starting to learn basic sums including simple multiplication, we had to make our questions challenging to keep them interested but not so much that they could not answer them.

Language:
The language we have chosen to produce our game in is English, as it is our native language and with the short space of time we have to create our game, adding more languages would be too difficult. Yet if we did have more time to complete this project we would consider translating our questions into other languages.

Territories:
Our game will be released for the UK and possibly US and Canadian territory's as they speak and understand the chosen language well. However due to us not knowing the age limits/requirements for the other countries our levels and questions may end up being either too easy or too difficult for their children.

Objective:
The objectives within our game range from Goldilocks helping fix the chairs for the bears to counting sheep to help them sleep. In the end the bears will help Goldilocks defeat the porridge monster.

Theme:
Our chosen theme for our game is Goldilocks and the three bears. The art style for our game is pixelated as it is a simple way to get a good look as well as it being eye catching.

Structure:
We have structured our game so that it is linear and follows the story in chronological order. Though the is the ability of choose which level the user wants to play in the start menu. The first level will be from the top down perspective and set inside the bears house, goldilocks will have to answer literacy questions based on a sound that plays, if the answer is correct goldilocks will collect a piece of the three chairs. The level is completed when all three chairs have been re-built. The second level is from a side view of the kitchen/dining room with all the following levels sharing the same view perspective, in the second level Goldilocks collects the three bowls of porridge for the bears to eat, each bowl of porridge has three questions linked to them before Goldilocks can pick it up, the level is completed when the last bowel of porridge has been collected. The third level is set in the bedroom and Goldilocks has to collect the "z"s in order to help baby bear sleep, with each "Z" she picks up she has to answer a numeracy question otherwise the player cannot continue, the level is completed when the player has collected all of the "Z"s and baby bear has gone to sleep. Level four is set outside the house and the player has to answer a set of numeracy questions in order to defeat the porridge monster. The game is completed when the porridge monster has been defeated.

Features:
We're planning on having custom sounds for our game

Characters:
The playable character of the game is goldilocks who in tern ia the main protagonist. the other characters in this game are daddy bear, mummy bear, baby bear and the porridge monster. but they are only background characters with no way of interaction between the player apart from when the porridge monster is defeated at the end.

Mechanics:
The controls for our game are simple and follow the arrow keys layout as any other form of controls would be too confusing and advanced for our age range. We will also be using the mouse to click on any buttons that appear in our game.

Story:
The story for our game follows the basic story of goldilocks, however in our story instead of the bears chasing goldilocks away, they help her defeat the porridge monster.

Environment - where and when is it set?:
Our game is set in the present day, in the middle of a German forest. The first level will be set through out the bears house, the second level will be set in the kitchen/dining-room, the third level will be set in the bedroom and the last level will be set outside the bears house.

Sprite sheet of sprites used

The only sprite sheet that i used
in my level was the goldilocks one
created by Jamie

Level Design With Mixed Media

SCORE=

QUESTIONS
GO HERE
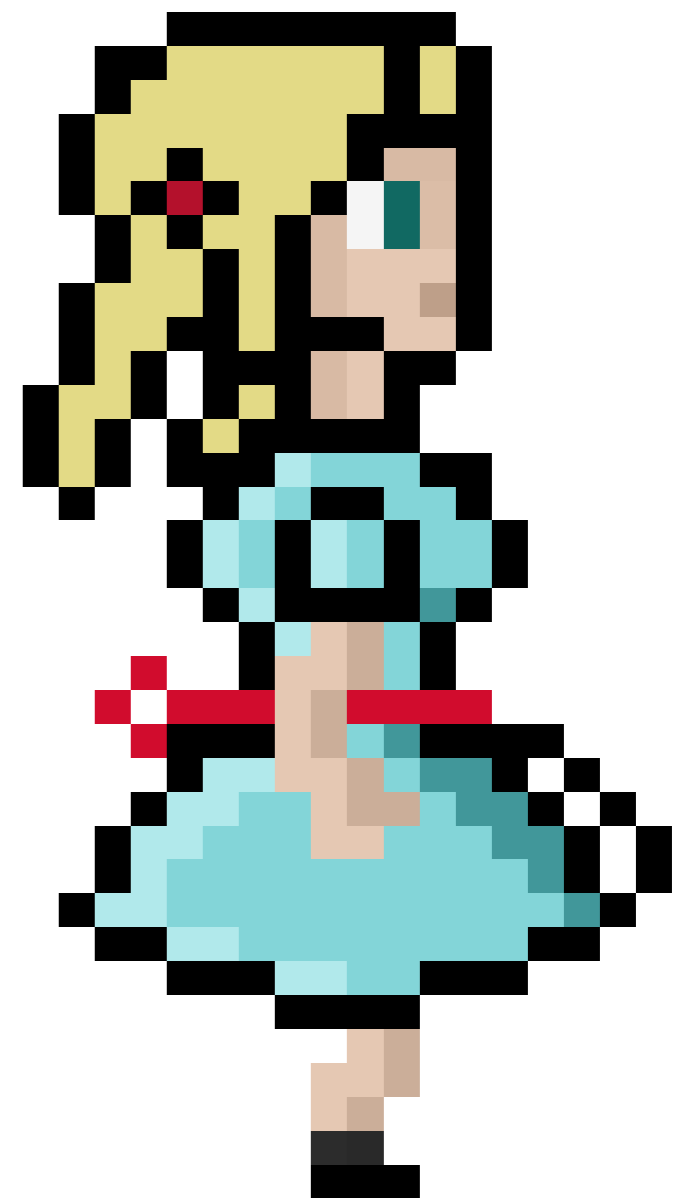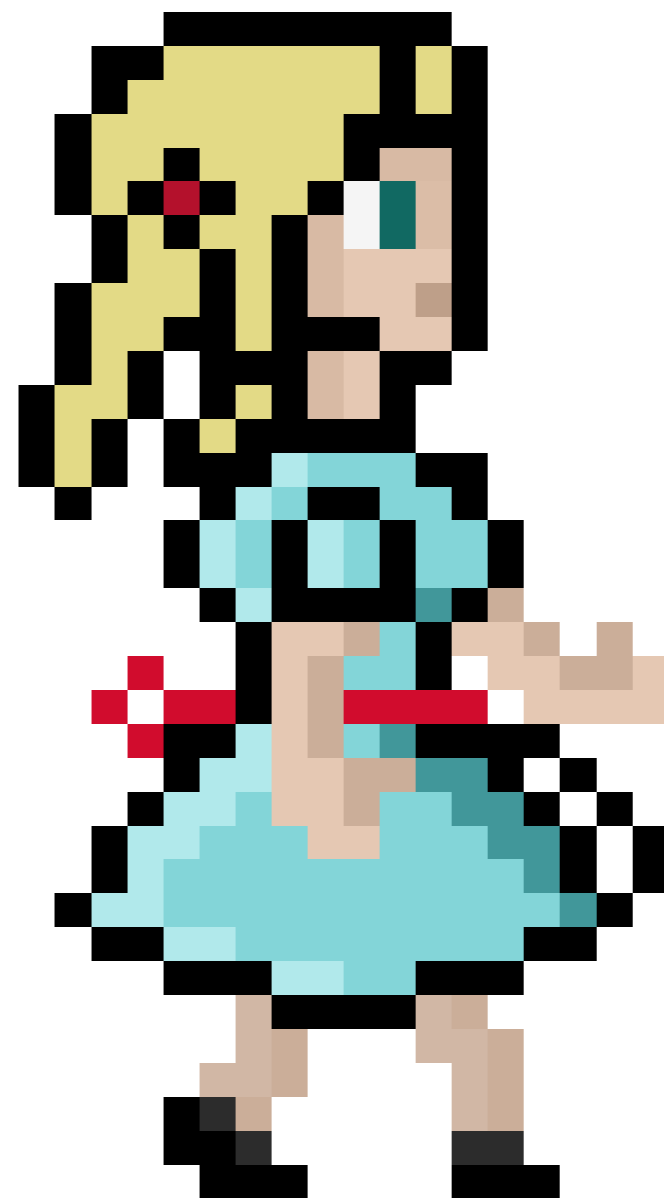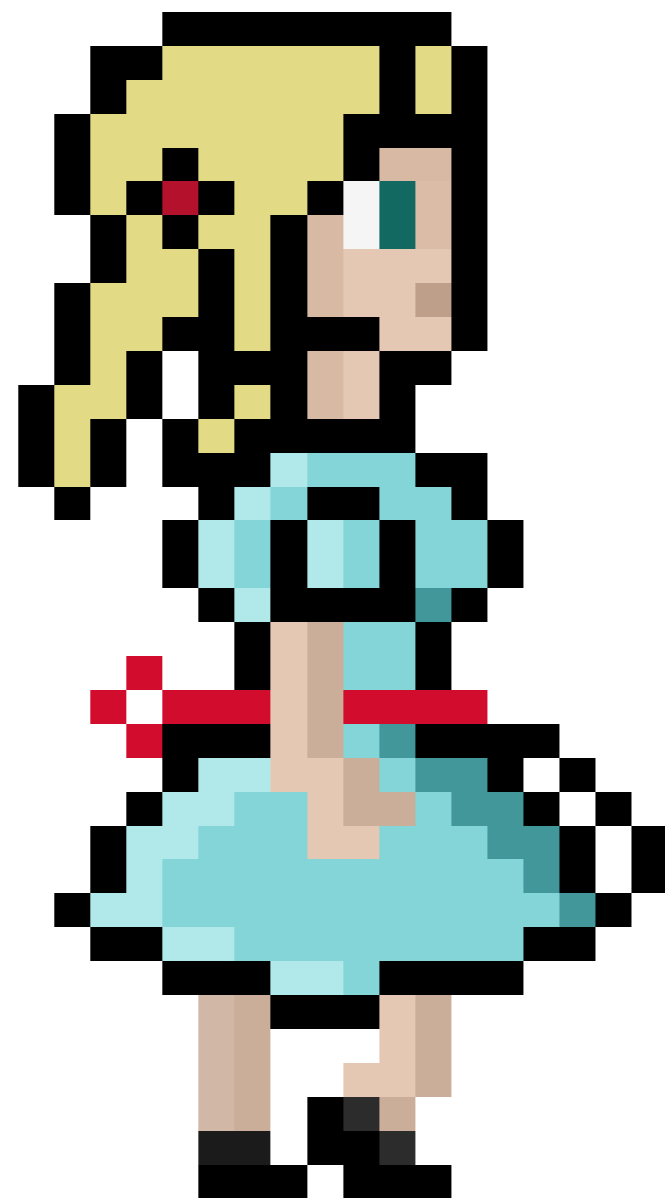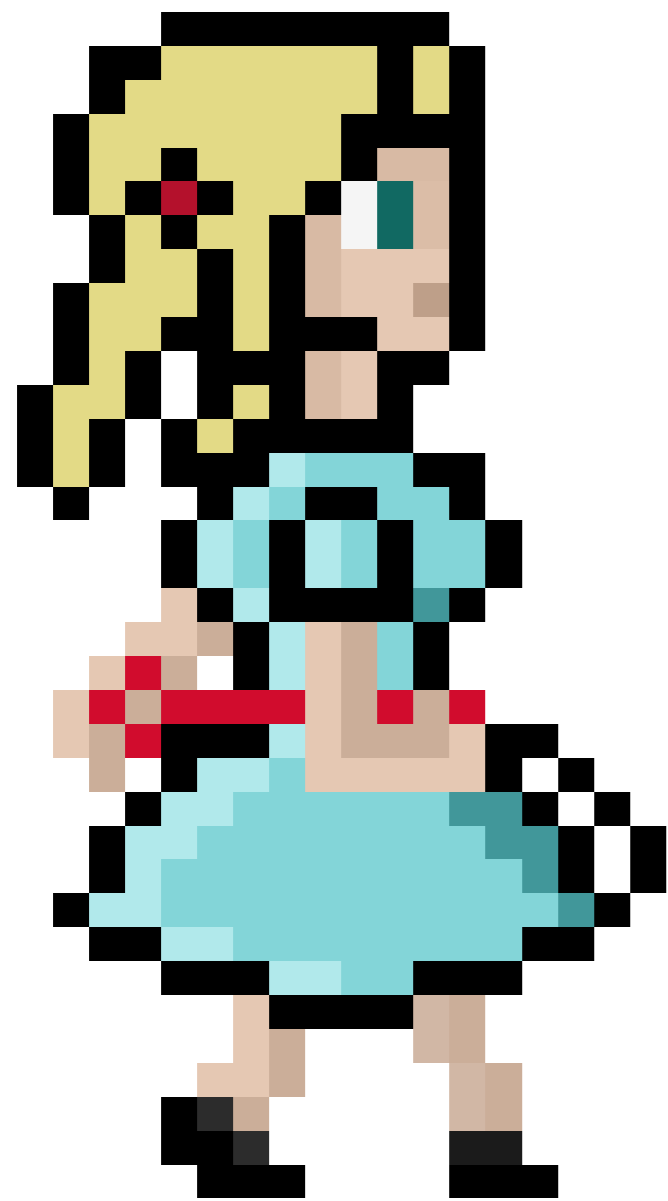
Final Level Design With Mixed Media

Building my level within UNITY
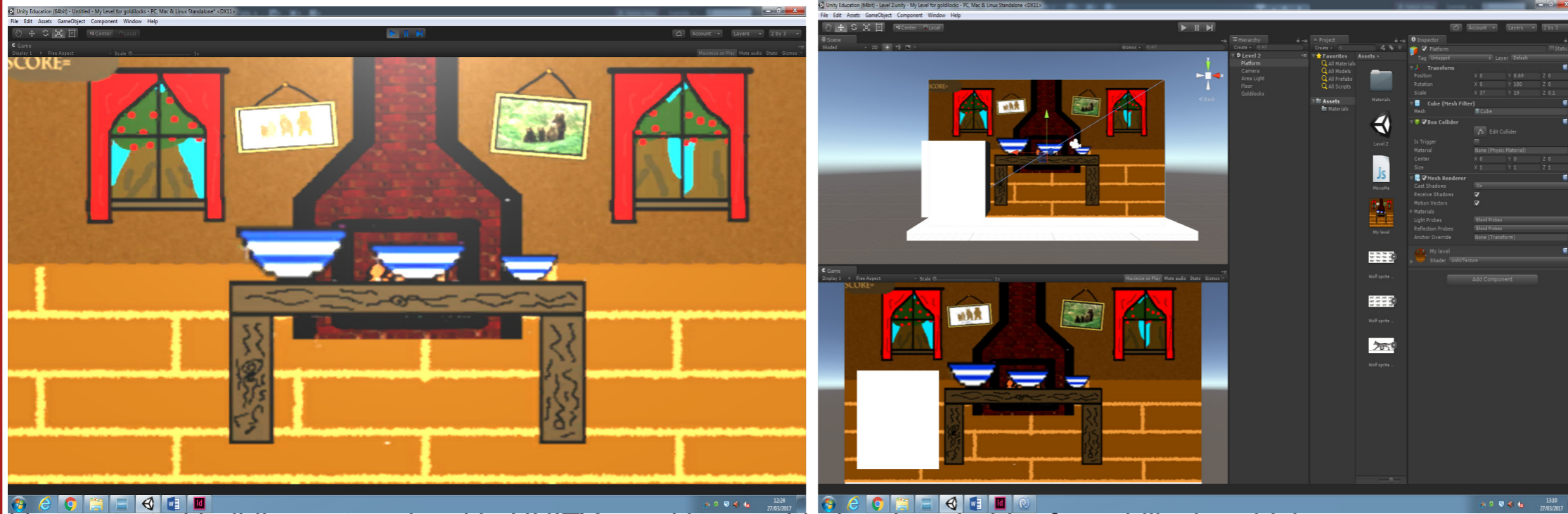
I have started building out my level in UNITY now i have added a place holder for goldilocks which moves .

I have now added the canvas's that show the questions and score.

This is an early version of my question script.

This is my collect item script for my level.

```
CollectItem.js          ScoreMenu.js

1 #pragma strict
2
3 var Q1Canvas : Canvas;
4 var Q2Canvas : Canvas;
5 var Q3Canvas : Canvas;
6
7 function Start () {
8     Q1Canvas.enabled = false;
9     Q2Canvas.enabled = false;
10    Q3Canvas.enabled = false;
11 }
12
13 function Update () {
14
15 }
16
17 function OnTriggerEnter (other : Collider) {
18
19     if (other.name == "Bowl of Porridge 1"){
20         Q1Canvas.enabled = true;
21     }
22     if (other.name == "Bowl of Porridge 2"){
23         Q2Canvas.enabled = true;
24     }
25     if (other.name == "Bowl of Porridge 3"){
26         Q3Canvas.enabled = true;
27     }
28 }
29
```

```
CollectItem.js

1 #pragma strict
2
3 function Start ()
4
5 }
6
7 function Update () {
8
9 }
10
11 function OnTriggerEnter (other
12
13 if(other.name=="Bowl of Porridg
14     {
15         Destroy(other.gameObject
16         ScoreMenu.scoreNo +=1;
17     }
```

T:\2016\Btec L3 9U
\ISAAC MURPHY I
\UNITY\My Level f

```
1  #pragma strict
2  import UnityEngine.UI;
3
4    var Q1Canvas : Canvas;
5    var Q2Canvas : Canvas;
6    var Q3Canvas : Canvas;
7    var Q1Answer : InputField;
8    var Q2Answer : InputField;
9    var Q3Answer : InputField;
10   static var Q1trigger :boolean;
11   static var Q2trigger :boolean;
12   static var Q3trigger :boolean;
13
14 function Start () {
15      Q1Canvas.enabled = false;
16      Q2Canvas.enabled = false;
17      Q3Canvas.enabled = false;
18      Q1trigger = false;
19      Q2trigger = false;
20      Q3trigger = false;
21 }
22
23 function Update () {
24 if (Q1trigger == true){
25        Q1Canvas.enabled = true;
26        MoveMe.Goldimove = false;
27    }
28 if (Q2trigger == true){
29        Q2Canvas.enabled = true;
30        MoveMe.Goldimove = false;
31    }
32 if (Q3trigger == true){
33        Q3Canvas.enabled = true;
34        MoveMe.Goldimove = false;
35    }
36
37 if (Q1Answer.text== "5") {
38     Q1Canvas.enabled = false;
39     MoveMe.Goldimove = true;
40    }
41 if (Q2Answer.text== "20") {
42     Q2Canvas.enabled = false;
43     MoveMe.Goldimove = true;
44    }
45 if (Q3Answer.text== "4") {
46     Q3Canvas.enabled = false;
47     MoveMe.Goldimove = true;
48    }
49 }
```

This is the nearly completed version of my question and answers script , it works but it still needs the bugs to be fixed

SCORE=27626

Here is a screen shot taken from my level, it still has the place-holder wolf that is standing in for goldilocks as I have not yet received the sprite sheet for her yet, there are still some glitches and bugs that need to be sorted out but in general its coming together well.

```
 5   var Q1ACanvas : Canvas;
 6   var Q1BCanvas : Canvas;
 7
 8   var Q2Canvas : Canvas;
 9   var Q2ACanvas : Canvas;
10   var Q2BCanvas : Canvas;
11
12   var Q3Canvas : Canvas;
13   var Q3ACanvas : Canvas;
14   var Q3BCanvas : Canvas;
15
16   var Q1Answer : InputField;
17   var Q1AAnswer : InputField;
18   var Q1BAnswer : InputField;
19
20   var Q2Answer : InputField;
21   var Q2AAnswer : InputField;
22   var Q2BAnswer : InputField;
23
24   var Q3Answer : InputField;
25   var Q3AAnswer : InputField;
26   var Q3BAnswer : InputField;
27
28
29   static var Q1trigger :boolean;
30   static var Q2trigger :boolean;
31   static var Q3trigger :boolean;
32
33
34
35   function Start () {
36       Q1Canvas.enabled = false;
37       Q1ACanvas.enabled = false;
38       Q1BCanvas.enabled = false;
39
40       Q2Canvas.enabled = false;
41       Q2ACanvas.enabled = false;
42       Q2BCanvas.enabled = false;
43
44       Q3Canvas.enabled = false;
45       Q3ACanvas.enabled = false;
46       Q3BCanvas.enabled = false;
47
48       Q1trigger = false;
49       Q2trigger = false;
50       Q3trigger = false;
51   }
52
53   function Update () {
54   if (Q1trigger == true){
55       Q1Canvas.enabled = true;
56       MoveMe.Goldimove = false;
57   }
58   if (Q2trigger == true){
59       Q2Canvas.enabled = true;
60       MoveMe.Goldimove = false;
```

```
63       Q3Canvas.enabled = true;
64       MoveMe.Goldimove = false;
65   }
66
67
68   if (Q1Answer.text== "5") {
69       Q1Canvas.enabled = false;
70       Q1ACanvas.enabled = true;
71   }
72   if (Q1AAnswer.text== "6") {
73       ScoreMenu.scoreNo =2;
74       Q1ACanvas.enabled = false;
75       Q1BCanvas.enabled = true;
76   }
77   if (Q1BAnswer.text== "10") {
78       ScoreMenu.scoreNo +=1;
79       Q1BCanvas.enabled = false;
80       Q1trigger = false;
81       MoveMe.Goldimove = true;
82   }
83
84
85   if (Q2Answer.text== "20") {
86       ScoreMenu.scoreNo +=1;
87       Q2Canvas.enabled = false;
88       Q2ACanvas.enabled = true;
89   }
90   if (Q2AAnswer.text== "12") {
91       ScoreMenu.scoreNo +=1;
92       Q2ACanvas.enabled = false;
93       Q2BCanvas.enabled = true;
94   }
95   if (Q2BAnswer.text== "26") {
96       ScoreMenu.scoreNo +=1;
97       Q2BCanvas.enabled = false;
98       MoveMe.Goldimove = true;
99   }
100
101
102  if (Q3Answer.text== "4") {
103      ScoreMenu.scoreNo +=1;
104      Q3Canvas.enabled = false;
105      Q3ACanvas.enabled = true;
106  }
107  if (Q3AAnswer.text== "9") {
108      ScoreMenu.scoreNo +=1;
109      Q3ACanvas.enabled = false;
110      Q3BCanvas.enabled = true;
111  }
112  if (Q3BAnswer.text== "7") {
113      ScoreMenu.scoreNo +=1;
114      Q3BCanvas.enabled = false;
115      MoveMe.Goldimove = true;
116  }
117  }
```

Canvas: the canvas is part of the UI which shows any menu items, buttons, or questions.

InputField: The input field is where the answers to the questions get typed in.

The code that states "Canvas.enabled = false;" basically means that the questions are not visible when the level starts.

The "triggers" are the parts that activate when the character walks into them.

The "MoveMe.Goldimove" is a part in the code what activates where the character can move or not, the actual part that moves the character is in another script that's why the "MoveMe." is there linking it to the other script.

The part of the code for the answers is further down but i have put it next to the top half, in the IF statement "(Q3Answer.text== "4")" means that if the player inputs the number four into the text box they will activate the next line of code which gives them a point and moves on to the next question.

So for some mysterious reason my code for the score has gotten rid of one of its bugs, i haven't changed any of it ,but now it suddenly works properly,

The code has been fixed so the bugs are no longer there, but due to how much has been changed and added i cannot show you apart from this small sample of code which also includes a few lines to activate a "well done" screen.

```
53
54   function Update () {
55   if (Q1trigger == true){
56       Q1Canvas.enabled = true;
57       MoveMe.Goldimove = false;
58   }
59
60   if (Q1Answer.text== "5") {
61       Q1Canvas.enabled = false;
62       WellDone.showWellDone = true;
63       WellDone.currentQuestion ++;
64       Q1Answer.text= "";
65       Q1trigger= false;
66   }
67
68   if (WellDone.currentQuestion == 1 && WellDone.showNextCanvas == true) {
69       Q1ACanvas.enabled = true;
70   }
71
72   if (Q1AAnswer.text== "6") {
73       ScoreMenu.scoreNo =2;
74       Q1ACanvas.enabled = false;
75       WellDone.showWellDone = true;
76       WellDone.currentQuestion ++;
77       Q1AAnswer.text= "";
78   }
79
80   if (WellDone.currentQuestion == 2 && WellDone.showNextCanvas == true) {
81       Q1BCanvas.enabled = true;
82   }
83
84   if (Q1BAnswer.text== "10") {
85       ScoreMenu.scoreNo +=1;
86       Q1BCanvas.enabled = false;
87       WellDone.showWellDone = true;
88       WellDone.currentQuestion ++;
89       Q1BAnswer.text= "";
90
91   }
92
93   if (WellDone.currentQuestion == 3 && WellDone.showNextCanvas == true) {
94       MoveMe.Goldimove = true;
95   }
96
```

```
1 #pragma strict
2 import UnityEngine.UI;
3
4 var WellDone1 : Canvas;
5
6 static var showWellDone : boolean;
7 static var showNextCanvas : boolean;
8 static var currentQuestion : int;
9
10 function Start () {
11     WellDone1.enabled = false;
12     showWellDone = false;
13     showNextCanvas = false;
14     currentQuestion = 0;
15 }
16
17 function Update () {
18     if (showWellDone == true) {
19         WellDone1.enabled = true;
20     }
21 }
22
23 function LoadNextQuestion () {
24     showNextCanvas = true;
25     WellDone1.enabled = false;
26     showWellDone = false;
27 }
28
```

This is the completed code for my "well done" canvas that pops up when each question is answered correctly.

The "static var" means that the lines of code that have those items can be used in other scripts without having to re-create them for the new script.

The function "LoadNextQuestion" is the function that when the continue button is pressed, the "well done" canvas closes and loads the next question depending on if the question is the last in the set then it will just close the canvas.

```
1 #pragma strict
2
3 var TutorialScreen : Canvas;
4 var movieClip1 : MovieTexture;
5 var cubescreen : GameObject;
6 var clipLength : int;
7
8 function Start () {
9     movieClip1.Play();
10     clipLength = movieClip1.duration;
11     Wait(clipLength);
12     TutorialScreen.enabled = false;
13
14 }
15
16 function Update () {
17
18
19 }
20
21 function Wait(clipLength) {
22     yield WaitForSeconds(clipLength);
23     cubescreen.gameObject.SetActive(false);
24     TutorialScreen.enabled = true;
25 }
26
27 function closeTutorial () {
28     TutorialScreen.enabled = false;
29 }
```

This is the script that loads the opening animation for my level and also closes it and starts the level.

In the function "start" line it starts the opening animation upon the level starting

The function "Wait(clipLength)" forces the level to stop while the animation is playing. The time that the level is stopped is dependant on how long the animation clip is.

The function "closeTutrorial" closes the tutorial screen that is displayed after the opening animation has ended.

Here is the finished level with the goldilocks sprite and re-designed look of the level, table and bowls of porridge.

After Effects Documentation
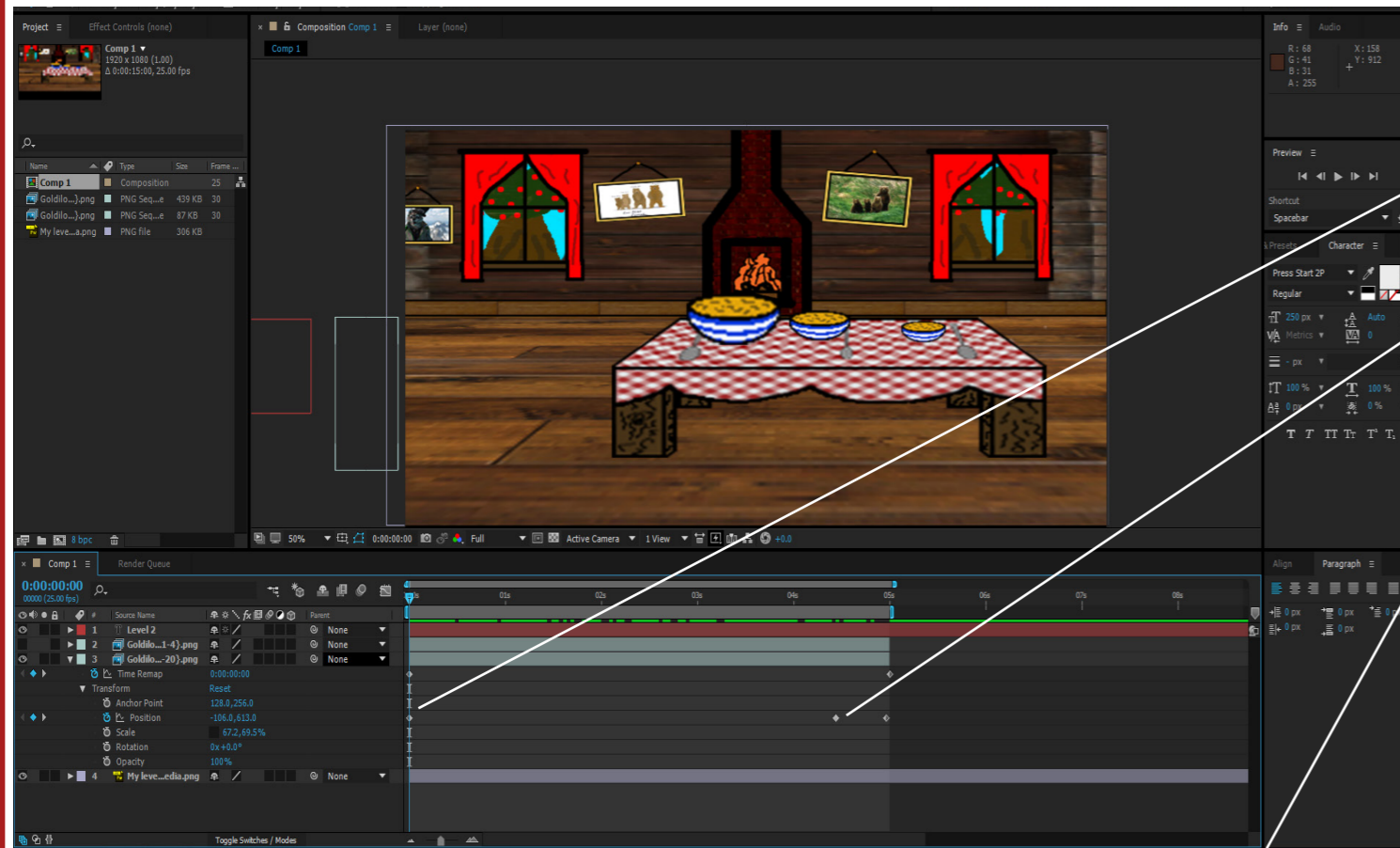
I have created an opening animation for my level in after effects, i begun by adding in the back ground of the kitchen.

i then added they key frames in for the goldilocks and the text.

i then dragged my text and the goldilocks sprite across the screen until the text was at a point where i wanted it. i then created another key frame where i wanted to stop the text moving but keep goldilocks moving.

Below is one of the frames in my final animation sequence.

I have also created the credits animation for the game by creating numerous text boxes and typing in the names of our team and what their roles where.

I then parented each text box to the one above it and slowly scrolled them up to create the scrolling animation.

The animation stops scrolling when the image of our teams logo appears and stays on screen for two seconds before the animation ends.

Once I finished with moving the animation i then rendered it out and saved it, by putting it in the render queue and setting it to a quick-time animation and making sure that the output is H.264, I then clicked render and I was done.

Jamie McFarlane

PLAY

LEVEL

SETTINGS

QUIT

LEVEL 1   LEVEL 2

LEVEL 3   LEVEL 4
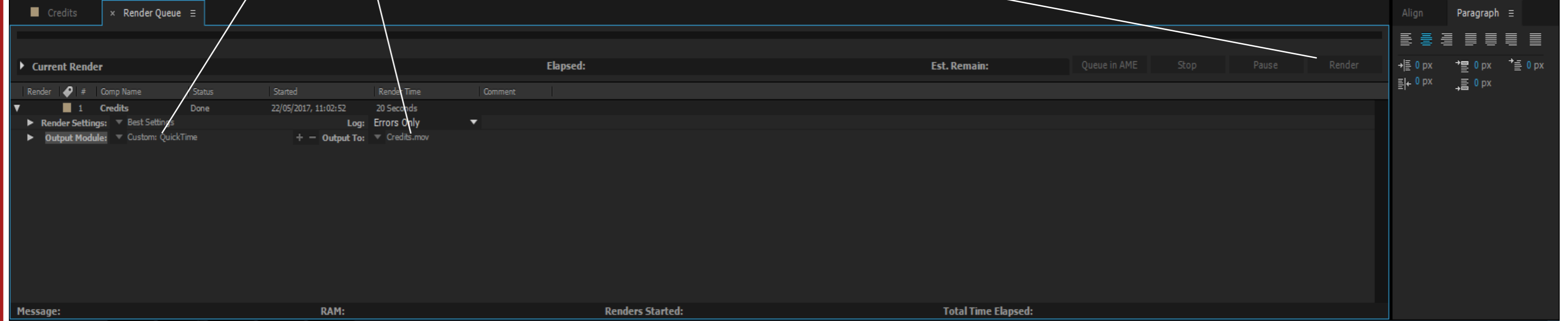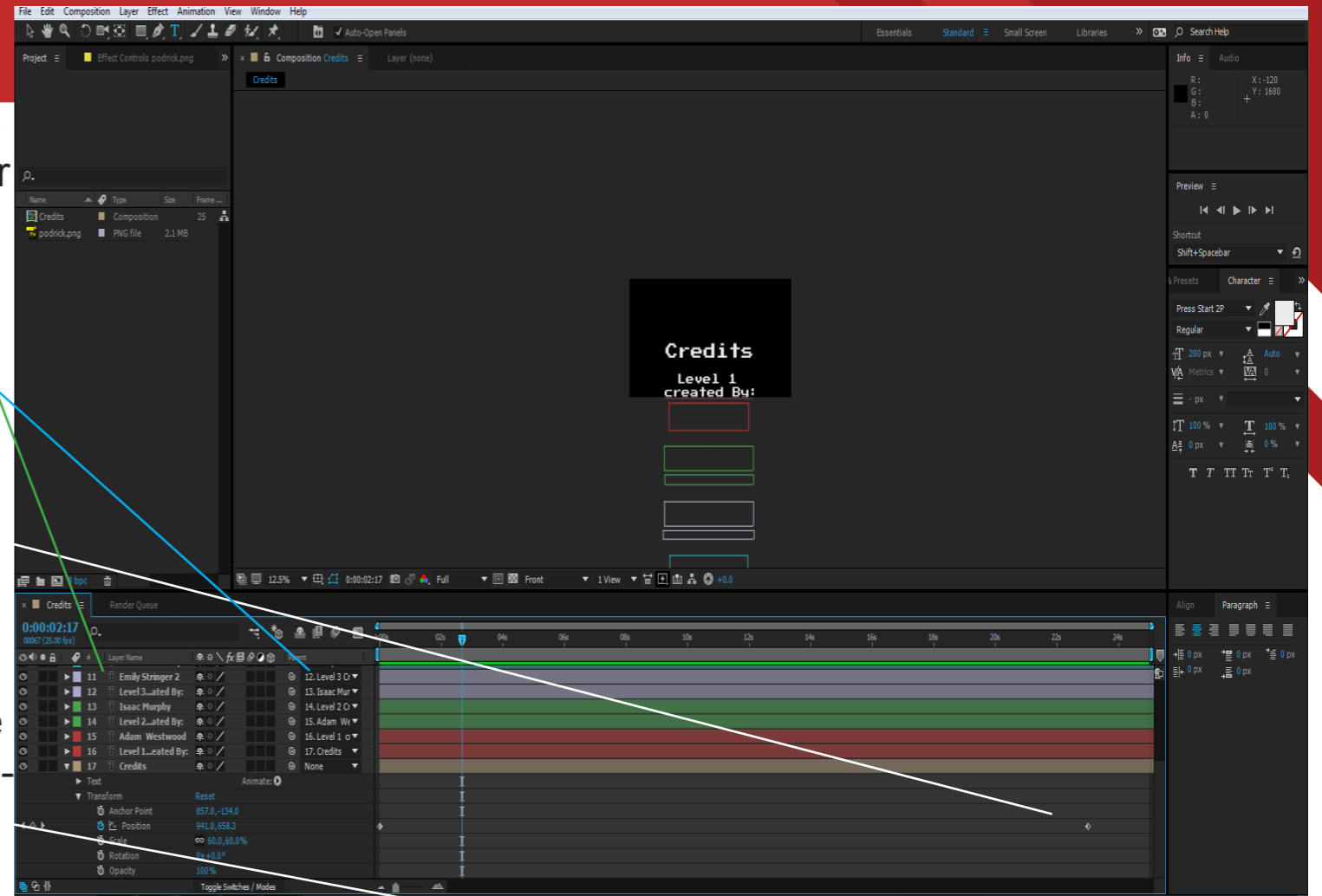
These are all of the menu assets that I created, The Main menu, Pause menu, Level select, Settings menu and the tutorial base screen. All of these
have been put together by Adam and he coded them all to work together, when played they are smooth changing and look aesthetically pleasing with a pop that will intrigue children to play the game.

RESUME

SETTINGS

QUIT

SCORE:

SETTINGS

Sound Effects

Music Sounds

Game Instructions

To play the game,
use the arrow keys
to move golidlocks
around the level,
then use space to
jump.

You need to try and
help the bears in
order to get through
the levels.

↑
← ↓ →

Spacebar
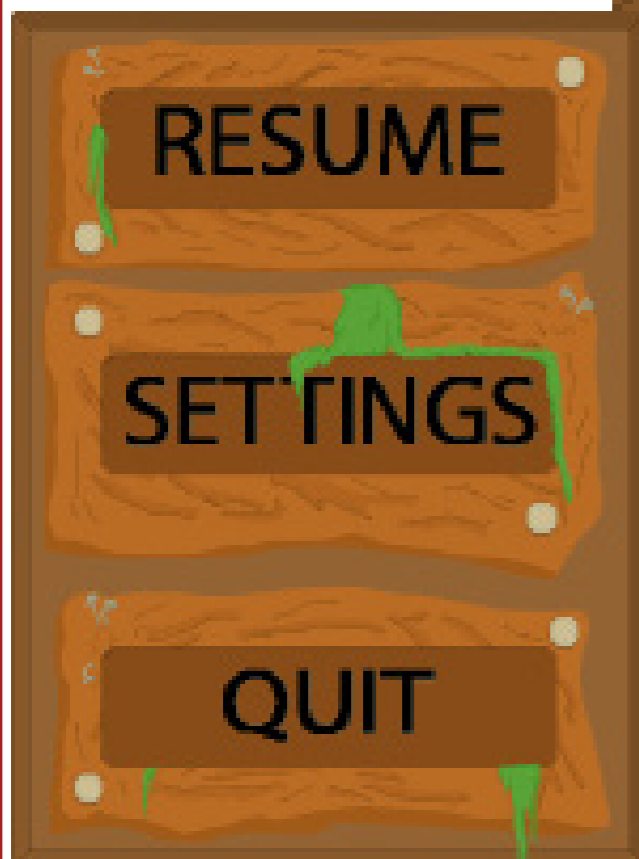
Documentation - Menu Unity

Adam Westwood

After receiving all of the menu asset pieces that I needed for the menu I began piecing I together. I Decided that the pause menu was going to be a canvas over the game instead of a new scene, as this will enable me to quickly attach it to the other levels when bringing them all together. I also decided that the main menu was going to be a new scene so it could have a background. I made each of the screens in the menu, "levels", "options" etc. as different canvases so I could easily code all of the buttons between menus to simply hide and unhide the different canvases. The first thing I did was to bring in all of the assets as images on the individual canvases. I then made the buttons but as they were already on the menu back-ground I set the sprite for the button to be an invisible one so that the button was still click-able but there wasn't anything visual on it. After doing all of this for each of the canvases I set up the code that will link all of the canvases between each other. I then set up the pause menu by copying the settings page into my level and then creating the actual pause menu, and once again I linked all of this up by code and grouped the pause menu in the hierarchy so they were all in the same place, this would make copying it into the other levels easier later on. However due to the time that we had and complexity, we were not able to code the sliders and tick boxes for the settings menu.

Documentation - Menu Unity

Adam Westwood
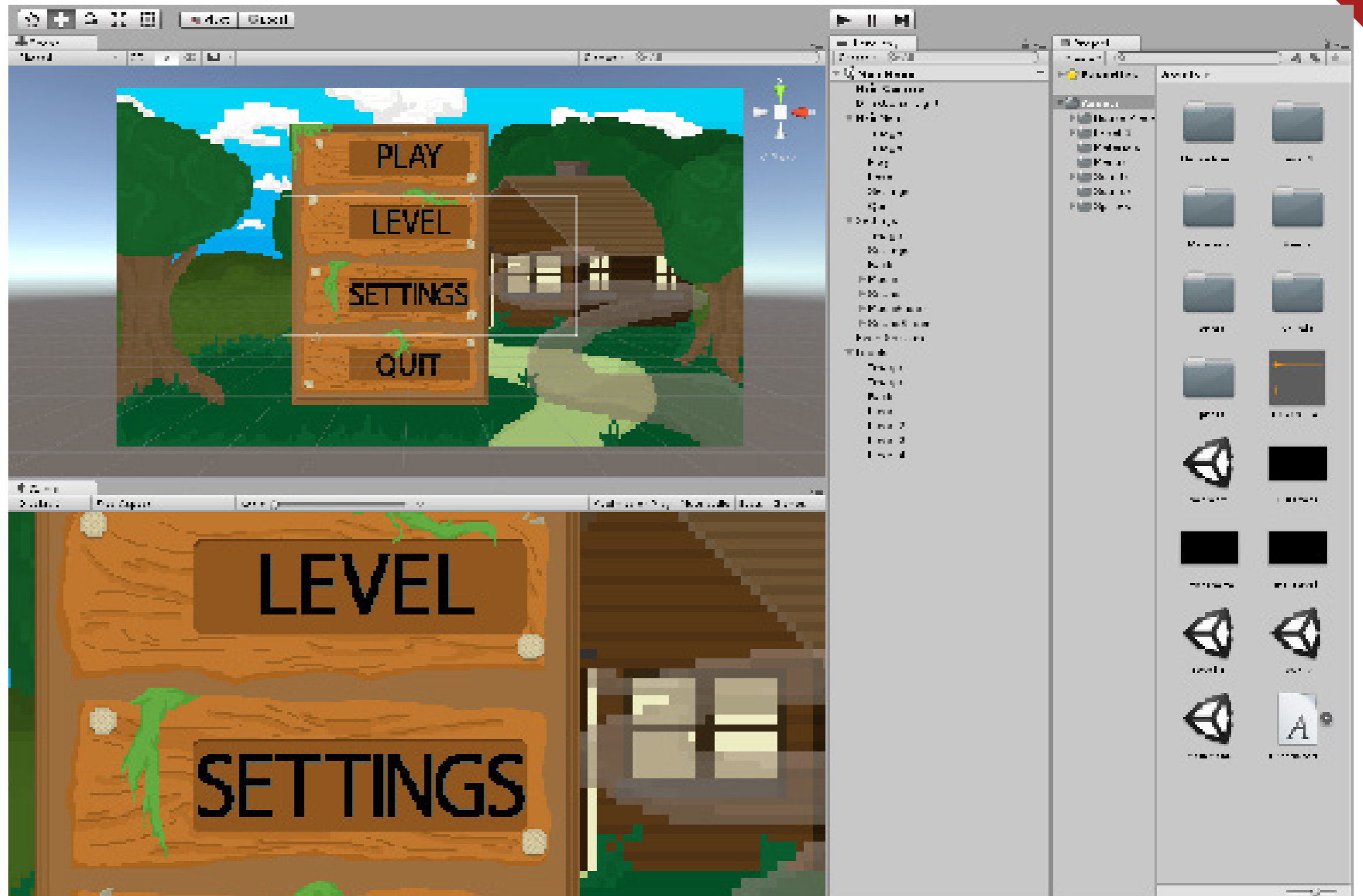
The script below is the levels menu screen script. This contains the 4 function that will be the buttons for the levels and these will each load the scene that is the levels for the whole game. This uses the scene management part of Unity which I have imported at the start of the code.

```
1 #pragma strict
2 import UnityEngine.SceneManagement;
3
4 var Levels : Canvas;
5
6 function Start () {
7 Levels.enabled=false;
8 }
9
10 function Update () {
11
12 }
13
14 function Level1(){
15 SceneManager.LoadScene("Level 1");
16 }
17
18 function Level2(){
19 SceneManager.LoadScene("Level 2");
20 }
21
22 function Level3(){
23 SceneManager.LoadScene("Level 3/bedroom");
24 }
25
26 function Level4(){
27 SceneManager.LoadScene("Level 4");
28 }
```

```
1 #pragma strict
2 import UnityEngine.SceneManagement;
3
4 var MainMenu : Canvas;
5 var Settings : Canvas;
6 var Levels : Canvas;
7
8 function Start () {
9 MainMenu.enabled=true;
10 Settings.enabled=false;
11 Levels.enabled=false;
12 }
13
14 function Update () {
15
16 }
17
18 function PlayButton () {
19 SceneManager.LoadScene("Level 1");
20 }
21
22 function SettingButton (){
23 MainMenu.enabled=false;
24 Settings.enabled=true;
25 Levels.enabled=false;
26 }
27
28 function LevelButton (){
29 MainMenu.enabled=false;
30 Settings.enabled=false;
31 Levels.enabled=true;
32 }
33
34 function BackButton (){
35 MainMenu.enabled=true;
36 Settings.enabled=false;
37 Levels.enabled=false;
38 }
39
40 function QuitButton (){
41 Application.Quit();
42 }
```

The code on the left is for the main menu. This code contains different functions for the different buttons on the screen as well as the variables for the canvases featured in the main menu. Other than the play button in which I have included the scene management code to load up the first scene, I have used the canvas hiding code to change which ones are visible when the buttons are pressed. I have also included some code that quits the application when it is pressed.

To the right is the code for the pause menu, this is following the same principles as the main menu except that when it is opened by pressing the escape key, it also pauses the movement the movement in the same way it does when the questions pop up.

```
1 #pragma strict
2 import UnityEngine.SceneManagement;
3
4 var pause : Canvas;
5 var settings : Canvas;
6
7 function Start () {
8 pause.enabled=false;
9 settings.enabled=false;
10 }
11
12 function Update () {
13 if(Input.GetKeyDown(KeyCode.Escape)){
14 pause.enabled=true;
15 settings.enabled=false;
16 Moving.move=false;
17 }
18 }
19
20 function Resume () {
21 pause.enabled=false;
22 settings.enabled=false;
23 Moving.move=true;
24 }
25
26 function Settings (){
27 pause.enabled=false;
28 settings.enabled=true;
29 Moving.move=false;
30 }
31
32 function Pause (){
33 pause.enabled=true;
34 settings.enabled=false;
35 Moving.move=false;
36 }
37
38 function MainMenu (){
39 SceneManager.LoadScene("MainMenu");
40 }
41
42 function Back (){
43 settings.enabled=false;
44 pause.enabled=true;
45 }
```

Meeting Documentation

Target Audience

We will be targeting 5 to 6 year olds, we believe that this is the perfect age group to introduce them to games related to fairy tales and children's stories. We hope to produce a game that will be fun, addictive and will also have aspects of mathematics, literacy and science. This educational element will be shown through questions they have to answer to progress through the game.

Concepts

For the first of our two concepts, we chose goldilocks, we are going to be sticking with the main narrative of goldilocks which includes goldilocks sitting on the chairs, eating the porridge and sleeping in the beds but we will be adapting it to have educational elements so that the children can learn and have fun at the same time.

For the second concept, we chose incy wincy spider, we are staying with the base idea of incy climbing up the pipe and being washed down but having more action elements and educational elements to interest our target audience as incy wincy spider is usually for younger children.
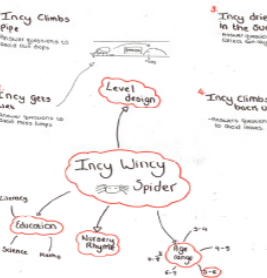
Subject Area

Literacy - We chose to include literacy within the game as it's a key part of the curriculum and is essential for everyday life and for work in the future. We will be including spelling challenges to help our target audience progress academically.

Mathematics - We chose to include mathematics within the game as it's a key part of the curriculum and can be very useful in everyday life and also for certain jobs. We will be including mathematical sums based on the target audiences curriculum.

Science - We chose to include a small amount of science into our subject pool as we came up with a few ideas on how we could include this in our concepts. As our target audience would only be introduced to small amounts of science based activities we thought that by including some science it could intrigue them to learn more about it.
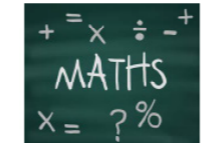
Visual Styling

Cel shading
Cel shading is a technique in which 3D models are rendered to simulate cartoon/comic art and is characterised by prominent outlines and block colour in order to appear 2 dimensional.

Pixel
Pixel art is a technique where individual pixels are combined in order to make an image. In video games the pixel style originated early on when system capabilities were much lower forcing games to have either 2D pixel or vector graphics

Collage
Collage involves collecting various materials likes fabric and paper and compiling them to create an image or design. This can create a very messy but funny look, this style is great for childrens games.

Realistic
A Realistic style often uses extremely high resolution textures and also very high detailed models to create a lifelike visuals, this is very intensive but looks incredible.

We're going to be using the cel shading style for our game as we believe that it looks very aesthetically pleasing and is also simple to create. We believe that using cel shading we can deliver a pretty but also entertaining game for our target audience.

Influences

We were influenced to choose Goldilocks just down to our team name. Bjorn is swedish for bear and we wanted to relate our team to the game that we were creating and the most well known option we had was Goldilocks and the Three Bears. The decision to have Incy wincy spider as our second concept was just a group decision. We had 5 other options and decided that incy wincy spider was the best option for our target audience and also is very well known so it would be popular.
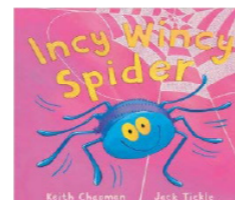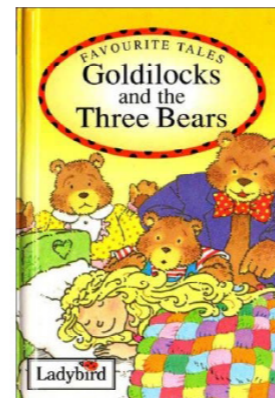
Level Examples

This is just a few level examples for both of our concepts that we came up with. The top image is how the goldilocks level will be displayed and the bottom image is how incy wincy spider will be displayed. Which ever game we choose we will add lots of detail to create aesthetically pleasing levels.

If you have any questions feel free to ask them.

Week 1

For the first week, as we had not yet done much work and we were still coming up with the ideas, we did not have a meeting as such. We got together and made the power-point for the first weeks presentation together. We then got the feedback for this and discussed this in the next weeks meeting.

Feedback

After the presentation we received feedback from the class about some things that were brought up in the presentation. Most of this was about the ideas and the levels such as things that we could do in order to develop them further etc. We also received some constructive criticism as we found out from several members of the class that the art style we originally wanted to do was a 3d art style and therefore we could not use this in our 2d game.

Week 2

On the second week we looked through the feedback and decided that we would change the style. We also discussed what each of our strengths and weaknesses were and gave each of us roles corresponding to what we do best and what we are stronger with doing. We also looked at the assets that we would need for the level and spoke about what we would need

Week 3

For week 3, the main focus was on getting the things ready for the presentation. We talked about who was doing what roles for the week and decided that Jamie and Emily would work on the presentation, while I worked on a style sheet and Isaac looked at doing research into pixel artists. We also discussed what work will need to be done over the next week regarding the Unity.

Feedback

After the presentation we received lots of feedback regarding our concepts and ideas about our game. Most of this related to the idea of the way that the questions were delivered as in the ideas we chose to have the questions delivered in a standard box. However this was a bit plain as some people pointed out so we planned to change this and have different ideas of it in the future and how it will be displayed.

Also some things brought up included the different platforms we could make the game on. We quickly dismissed the idea of different platforms as this would mean that it would not be as playable in classrooms if it was not available on PC.

Level three

This level is set in the bedroom and it revolves around maths. The player has to help the bear get to sleep. They do this by counting sheep. The picture frame above the bed gives the instruction and provides a space for an answer. The sheep each have numbers on them, when they jump the player must remember the number and apply it to what the picture frame says. When the player has answered three questions correctly, the bear moves to the next bed.
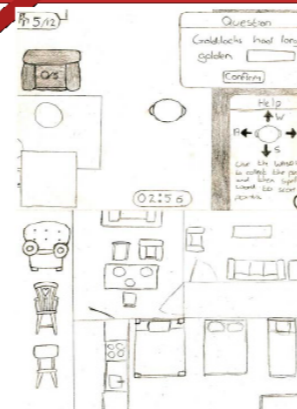
Response to Feedback

We were told to look at the style of our game and the suitability of the concept for our target audience.

We decided to change our art style to predominantly pixel art in order to keep consistent and because our initial idea of cell shading wasn't appropriate for a 2D game.

We also changed the premise of our game in order to make it more attractive and interesting for our target audience. We decided to add the porridge monster as a final boss and mix the original story up.

Style Sheet

We will be using a pixel art style with a standard and consistent size of 695 pixels by 450 pixels in the whole screen. Then we will be using a size of roughly 25 pixels in the ingame objects to be able to keep the game to a standard size. For example an object that is 2 feet tall in real life will be about 50 pixels tall in the game.

This style will be continued through the game. Lots of the colours will be brown and green colours as this will be set in a forest with a very natural and wooden house, the furniture will be some back to basics furniture as most of it will be like primative and have a log cabin esque look to it.

Level one

In this level the player is tasked with fixing the bears' chairs and will presented in a top-down view.

The player walks around collecting pieces of the chairs. When they retrieve a piece they must answer a literacy based question in order to carry on.

At the end of each level Goldilocks will befriend a bear allowing her to progress to the final level.

Questions

Maths:
What number is closest to 14; 9 or 18
2+2=?
16+7=20
2+3=?
1D-6=?
11+9=?
18-6=?
9+?=18
17-9=?
9-6=?
RNG questions
Count up to 10
Guess how many sheep are in the field

Literacy:
1. Goldilocks sat on the mat

Find the verb in this sentence.

2. Goldilocks saw a ____

Find the missing word using the list of words provided.

3. Goldilocks went on ____

Choose the correctly spelt word from a list or drag and drop the correct letters in the right order to spell.

Level 2

This level takes place in the kitchen/dining room. There are three sets of porridge in which the player will obtain after answering sets of questions. Gathering the porridge helps a bear to eat.

This level revolves around maths and the questions will be sums.

If you have any questions feel free to ask them.

Meeting Documentation

Week 4

We discussed about what were the main things that we wanted to have done in the next week, this mostly involved getting all of the InDesign work up to date and to have the backdrops to the level finished. We also wanted to have the Levels progress coming along well so we could start implementing the assets into it. We decided that we were going to work on the sprite sheets that week as well as the buttons and the pause menu design was going to be done.

Half Term

Going into the half term, we had 2 weeks off and we was not going to be able to have any team meetings over the holidays so we decided to have one the day we broke up. We went through and discussed what we could be working on over the holidays which mostly included getting all of the previous design work up to date as well as the Unity work. We decided to try and get all the mechanics for the game finished over the holidays and by the time that we came back we would then be able to finalise and finish off some of the other things on the game such as the assets.

Week 5

For the week 5 team meeting we didn't discuss what needs to be done but instead we talked about how we got on over the holidays and what we had managed to do. Most of the team had just got the UI to complete for the questions on their levels along with some other bits such as documenting. Jamie still had some left to do on his level and the sprite sheets were still to be completed so they could be put into everyone's levels. From here we decided to just work on what we had been over the holidays and get out levels finalised.

Week 6

In this team meeting we discussed both what we had done and what now needs doing. The levels were finished other than some of the assets that were still needed to be put in and the sprite sheets were yet to be made. Emily still needed to do the bear sprite sheets as well as Jamie still needed to do Goldilocks'. I had my level to fix slightly as I had made a change to how the collection works which I was going to work on over the week. Any spare time this week was spent going through and doing the InDesign documentation when the Unity was done.

Week 7

For this week we decided to take a break from the majority of the Unity work and catch up on all of the InDesign documentation that we have missed while doing the Unity. We also made sure that we had our levels finished blocking out and that most of the main mechanics worked, for most of us we then just needed to add in the assets and images.

Meeting Documentation

Week 8

What we decided on this week was that all of the sprite sheets need to be complete and implemented into the game. We are also going to act on the criticism that will be given during the game testing period of the week where we will look at other peoples games and peer review them. The cut scenes will be started by the whole team for everyone's individual levels and then I will begin to create the main menu for the game. I will hopefully accomplish the blocking out of this in this week and Jamie will work on the assets for the main menu over this week.

Week 9

For week 9, with the project coming to an end we discussed what we still needed to do and how much was left. I had finished my Unity but i was very behind on my InDesign so i decided to spend the week doing that and also putting other peoples levels together with mine when they had finished. Jamie just needed to finish off the porridge monster so he was going to work on that and then Emily was going to finish her level by adding the questions in. As Isaac was not joining us for most of the team meeting we did not know what he needed to do and could not note this in the team meeting documentation.

Week 10

The last week we were just finishing off, we firstly looked at what we needed to finish off for the games . Me, Emily and Isaac had finished our levels and they are all put in together in one game. Jamie is just fixing some last bits of code and getting some parts to work. Me and Emily decided that we could finish our InDesign stuff early so we can work on the Power Point. This week Isaac refused to cooperate and join us at all in our team meeting so we do not know what he still has to do on his InDesign and therefore we had to conduct the meeting without him again. Jamie has nearly finished his InDesign and when he has completed the level he will put together the show reel showing off our game for the presentation. We are also going to work on some sound in our game this week as a final touch to make it more professional and better for the audience.

Self Evalutaion

- In this project i was asked to Produce a level for an educational game based off either a nursery rhyme or fairytale.
- The starting points for my research was looking at children's games and TV shows to understand what is appropriate for a children's game, and what art styles and colours would easily grasp a child's attention.
- When starting my work i needed to consider what colours and characters are appropriate for my level as well as the setting and what we are basing our games story off of.

- The artist inspiration we chose to imitate was "pixel jeff", our game is heavily based off of the story "goldilocks and three bears"
- When we started with coming up with ideas for our characters and level designs for our game we used traditional pencil and paper techniques, but once we started doing more developed sketches and images we started to use more digital methods in order to create our work, with out final designs being done only within Photoshop.
- My develop progressed with me starting out with very crude pencil drawn sketches of rough ideas, which slowly improved with them becoming more defined and the use of colour being added when I transferred to digital techniques.
- The parts of my development that worked best where the use of colours and also the digital aspects as well as some coding areas.
- The parts that I am most pleased with within my work is the code, which admittedly I had a lot of help with but in the end it worked really well which considering I wasn't very good at coding in the first place and for some reason it began to click in my head of how it works I am really pleased with how it turned out.

- The strengths of my work was the coding and some of the assets I created, however my weaknesses where my level desgin and my idea of how my level should work as it was very basic and boring.
- My work represents what my orignal idea was really well, the look of the level however doesnt due to my overall skill within drawing and designing things.
- My time management was kept really well due to the help from my teammates creating a detailed time plan
- If i where to work differently in my next project I would experiment with more ideas and designs as I feel they let me down when it came to the final look of the game when it had all of its levels compiled together.
- The most important thing I learned within this project is that if I keep at a certain aspect that I struggle with I.E; coding. Then at some point I will eventually get better at it, also to take more time with coming up with ideas for my designs and overall style on what I am doing.

Peer Evaluation

Group Members Names	Quality of work	Timeliness of work	Task support	Interaction	Attendance	Responsibility	Involvement	Leadership	Overall Performance
Jamie	5	3	3	4	4	4	3	4	4
Adam	5	4	3	3	5	4	3	3	4
Emily	5	4	2	4	5	3	3	2	4

List below the specific tasks you completed for the project:
For this project, the specific tasks I completed for this project where creating my level, and also creating the end credits for the game, I did create a few assets for my teammates too use but they ended up creating their own versions to match their level designs.

Whole Team Evaluation and comments:
The group was asked to create an educational game based upon a nursery rhyme or fairytale for children within a certain age group.
The starting points for the groups research was childrens games and TV shows.
The group needed to consider the age range of our target audience and what is appropriate for that audience.

The artist that influenced the look of our work was pixel Jeff for his highly detailed pixelated artwork.
In the creation of our work we have used a vast mixture of different techniques and media, ranging from pencil and paper rough sketches to using graphics tablets and pixel art development and final designs, we also incorporated a vast majority of real world textures for our levels even though we have had to make them very pixelated.

In the groups work i was most pleased with the work that the others put out as it was of a much higher quality than what i could achieve.

The strengths of our group was the level design and our time management, the weaknesses our coding and being able to help each other with certain problems within our code due to some members doing the code differently.

Each member of our group has worked to the best of their ability and has put out a high standard of work.