



# FINE FEATHERED FEAST

Game Design Document 06/30/17

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# HIGH LEVEL CONCEPT

## OVERVIEW

Based loosely around the humor and learning concepts of *Nature Cat's* "For the Birdies" episode, "Fine Feathered Feast" is a game where players help Nature Cat as he tries to help feed his many bird friends.

## THE SET UP

With winter coming on, Nature Cat wants to help his fine feathered friends find food when it is scarce. But it's harder than he thinks. Different types of birds like different types of food and some birds like to eat up in the trees while others like their food near the ground. If Nature Cat is going to be a successful bird caterer, he's going to need to plan things out.

## THE CHALLENGE

Nature Cat's backyard is filled with lots of birds. Some like nuts & berries, some like seeds and others like suet. Some like their bird feeders up high and some like them down near the ground. But the one thing they all have in common is that they like their bird feeders well stocked. Can Nature Cat keep the feeders full and his feathered friends fully fed?

## THE GOAL

Nature Cat's goal is to satisfy as many feathered friends as possible. And that means keeping them well fed and never letting supplies run out. The game can start out very easy when all you have to do is keep a few customers happy. But when you start adding more birds, arriving with more frequency, the challenge can get very difficult very quickly.

## GAME SCREEN

The following is a rough concept drawing of what the main screen would look like:



## Game Screen (Master layout)

Note: that feeders are shown in trees but designs may change to have them on poles, or platform feeders low to the ground.

## GAMEPLAY

The following is an early script of what gameplay is like. The game mechanic is roughly based on resource management games like "Diner Dash". The challenge and speed of the gameplay can be dialed up or down based on the abilities of the audience. A more in-depth look at the game mechanics and the levelling are discussed in a later chapter, but the basic are included here to help give a sense of the overall gameplay and progression.

INTRO (*NOTE: knowing that kids generally click through animations in games, the following scene may be shortened or eliminated altogether, in which case the game set up and instructions will be provided within the gameplay field- specifics to be determined in GDD. As discussed, the animation will play each time the player begins the game, but a Click Through/"Skip" button will also be provided.*)

The scene is Nature Cat's backyard. The trees are showing the last of their fall leaves and the first snowflakes of the season begin to fall. Nature Cat tells his friends that he'd like to help the birds by feeding them some food. How hard could that be? On her PDA, Daisy shows Nature Cat, that it's probably more complicated than he thinks. Different birds like different types of food types in different feeders. So, she suggests that if Nature Cat wants to run a bird diner, he might want to learn the rules.

## **LEVEL SELECT SCREEN**

Before playing the game itself, the player is presented with a Level Select screen. This will show the levels available to the player, as well as those levels that are unavailable to the player as locked. The first time a player plays the game, only Level 1 will be unlocked. Once, Level 1 is completed, Level 2 is unlocked, and so on.

As the game levels, the backgrounds will alter slightly to reflect the change in season. The backgrounds will go from late summer, into fall, and then early winter. The seasonal changes will be illustrated in the backgrounds through the changes of foliage color, and the amount of leaves on the ground. As winter comes on, small patches of snow will be added to background. *No changes in background design will affect placement or layout of main gameplay screen or impact gameplay or mechanics in any way*

## **LEVEL START POP UP**

At the beginning of every level there will be a pop up that introduces whatever is 'new' for that level. This may be used to introduce:

- New Type of Bird
- New Type of Feed/Feeder
- Additional Feeders
- Squirrels
- Less Time
- More Birds

*Note: Any extemporaneous 'information' about the bird, bird-feed, or squirrels will be handled in VO, not in text presented on the pop up : this include information about bird beaks, bird calls, eating habits, etc.*

## LEVEL ONE: TUTORIAL

- 1) The player is presented with bucket of bird feed (seeds) and one bird feeder hung in a tree that feeds 1 bird at a time. The goal of Level One is to successfully feed 3 birds within a period of time (exact number of birds and length of time TBD).



Note: Each bird has a 'bubble' that shows the type of feed requested. Each bird is handled in order (First in, First out) and will only fly to a feeder that has the feed they are requesting. In this level, where only 1 type of feed is available, all birds request this type of feed.

- 2) In order to do that, the player is instructed (through voiceover) to move Nature Cat to bucket of seed, scoop up, seed and to fill bird feeder.



## Level 1: Tutorial: Getting Seeds

Nature Cat Scoops Seeds

- 3) A bird feeder that has 1 hole accommodates 1 bird at a time and needs just one scoop to fill.



Level 1: Tutorial: Fill Feeder

Tap to Fill Feeder



Level 1: Tutorial: Filling Feeder

Nature Cat Fills Feeder

- 4) Once a bird has eaten all the feed in the bird feeder, it flies away a “happy diner” and is logged on the “scoreboard”.

*Note about scoreboard:* The scoreboard has three tiers. The first being the minimum amount of birds fed to complete the level. The next two tiers are extra incentive to feed as many birds as you can in the time allotted. In the tutorial, the tiers could be 1: three birds fed, 2: five birds fed, 3: six birds fed (all numbers TBD).



Level 1: Tutorial: Bird Eats Feed

Feeder has feed, Bird flies over



Level 1: Tutorial: Feeding Complete, Next Bird

Bird Flys off happy! Feeder empty

- 5) The player needs to help Nature Cat successfully feed a minimum number of birds (e.g. 3) to earn at least one star/acorn to progress to the next level. (Note: star design TBD)
- 6) Upon winning the level, the player will see a pop-up displaying one of the other Nature Cat characters, congratulatory text and the number of stars/acorns the player received.
- 7) If the player does not successfully complete the level, all the birds fly away and the Level begins again.

## LEVEL 2

- 1) Having successfully completed Level 1, the player is now presented with a second feeder and the task of feeding a larger number of birds within the same time frame.
- 2) Both feeders require the same type of feed, but the player needs to spend more time juggling activity (parallel work) between two feeders and scooping feed.
- 3) If a player successfully meets her/his goal of feeding the required number of birds within given time, then the player moves to Level 3.
- 4) If the player does not successfully complete the level, all the birds fly away and the Level begins again.



## Level 2: Multiple Feeders

Introduces multiple feeders (parallel work)

## LEVEL 3

- 1) Having successfully completed Level 2, the player is now presented with a third feeder, but this time, the feeder holds a new type of food.
- 2) The feed bins and the feeders are color and design coded so that players visually understand which type of feed goes in which type of bird feeder (a VO will also explain their differences).



### Level 3: New Feed + Feeder

Introduces new feed type

- 3) The VO will also explain that if the player picks up feed accidentally and wants to put it back, they can do so by click/tapping on that feed bag.
- 4) The amount of birds to feed has once again increased. The two existing feeders will each feed one bird at a time. The player will want to take advantage of the new feeder providing 2 more spots in which to feed birds.
- 5) The player must learn how to use two different types of feed to take advantage of all 4 spots for feed.

## LEVEL 4

- 1) Having successfully completed Level 3, the player is now presented the same scene, but this time the goal is to feed more birds in less time.
- 2) The goal of this level is to reinforce the resource and time management principals presented in the previous level.



### Level 4: Challenge Level

Challenges user with more birds and/or less time

## LEVEL 5

- 1) Having successfully completed Level 4, the player is now presented with a new feeder.
- 2) This feeder is of the previous feed type (Seeds) and has only 1 spaces for feed.
- 3) The addition of this single feeder and more birds will increase the challenge of the game, as the player must go back and forth from feeder to feeder with the two different types of feed.



**Level 5: More Feeders & More Birds**

Becomes more challenging

## LEVEL 6

- 1) Now a player is presented with the challenge of keeping a pesky squirrel out of the feeders.
- 2) The squirrel will approach any feeder with feed in it, to steal the feed for itself.

- a. If the feeder had feed but not bird currently feeding, the squirrel can run up and steal the feed.
  - b. If the feeder has feed and also has a bird currently feeding, the squirrel can run up, scare the birds away, and steal the feed. The birds will fly away and not count as "birds fed."
- 3) For that reason, the player needs to help Nature Cat stay on his toes and shoo away the squirrel before it gets to a feeder.
- 4) They do so by tapping on the squirrel when it appears, at which juncture Nature Cat does one of his aerobatic feats of daring, jumps up high, does a flip and shooes the squirrel out of the picture.



## Level 6: 1st Squirrel

Introduces squirrel (tap to jump/flip to squirrel to "shoo" away)

## LEVEL 7

- 1) Having successfully warded off the squirrel, the player is presented with one last bird feeder and a new type of feed bin from which it needs to be filled.
- 2) This bird feeder accommodates 4 spaces for feed, and provides an opportunity to feed many more birds, but it also opens you up to more chances of a squirrel raid.



### Level 7: Suet

Introduces new feed (more birds)

## LEVEL 8

- 1) This level provides the additional challenge of adding a second squirrel to the raiding party, making it even harder to keep the feeders filled.
- 2) If a player successfully meets her/his goal of feeding the minimum amount of birds within given time, then the player moves to Level 9.
- 3) If the player does not successfully complete the level, all the birds fly away and the Level begins again.



**Level 8: 2nd Squirrel**

Introduces 2nd squirrel (more birds)

## LEVEL 9

- 1) This level provides the additional challenge of adding a third squirrel to the raiding party, and the goal of feeding more birds - making it even harder to keep the feeders filled.
- 2) If a player successfully meets her/his goal of feeding the minimum amount of birds within given time, then the player moves to Level 10.
- 3) If the player does not successfully complete the level, all the birds fly away and the Level begins again.



### Level 9: 3rd Squirrel

Introduces 3rd squirrel (more birds)

## LEVEL 10

- 1) This level has the same challenges as Level 9, but with even less time on the clock to complete the challenge. Levels after 10 will have increased numbers of bird and squirrels, and less time.



## Level 10: Mastery

Less time shows mastery of all skills

# **MAIN LEARNING GOALS**

## **STANDARDS-BASED LEARNING OBJECTIVES**

Players will recognize that animals meet their needs in different ways.

More specifically to this game, they will recognize that:

- different types of birds eat different types of food;
- you can put up feeders to attract birds to your yard;
- different types of birds feed in different types of feeders;
- some types of birds like to feed near the ground, while others like to feed higher off the ground;
- bird feeders also attract squirrels that like to eat the same kinds of food that birds like.

## **LIFE SCIENCE**

### A. Characteristics of organisms

- animals: ... what they need to survive
- behavior

### C. Organisms and their environments

- different types of environments.

# GAME MECHANICS

## BASIC GAME MECHANIC

This is a time-based game that takes place in real time.

The user must help Nature Cat feed X number of Birds in T amount of time (w/X and T specified by level) to pass the level and receive 2 star. If the user helps Nature Cat to feed Y number of Birds in T amount of time, they will receive 2 stars. If the user helps Nature Cat to feed Z number of Birds in T amount of time, they will receive 3 stars.

## BIRD FEED PREFERENCE AND QUEUE

Although it does not impact any user interactions explained below, each bird requests a specific type of feed and will only feed when that feed is available in a feeder. If it is not available, it will wait until it is, effectively holding up the line until it can eat. This will follow a First in First out pipeline:

As displayed on the screen in mock-ups:

>> Bird 3 >> Bird 2 >> Bird 1

After Bird 1 is fed, Bird 2 will advance in line

>> Bird 4 >> Bird 3 >> Bird 2

And so on...

## **BASIC STEPS / INTERACTIONS FOR THE USER**

The user helps Nature Cat fill the feeders by directing him to fill feeders with feed in 2 steps

- 1) The user tap/clicks a type of feed near the bottom of the screen
  - a. NC fills scoop with 1 scoop of feed
- 2) The user tap/clicks a bird feeder
  - a. NC goes to the bird feeder and deposits 1 scoop of feed.

Users can also return feed if they realize they don't want to use it (all feeders are full, etc)

- 3) The user tap/clicks a type of feed near the bottom
  - a. NC fills scoop with 1 scoop of feed
- 4) The user decides they cannot/do not want to use that feed
- 5) The user tap/clicks the same type of feed near the bottom
  - a. NC empties scoop of feed

Higher levels allow the user scare away squirrels. In those cases:

- 1) The user tap/clicks the recycling bin
  - a. NC goes to the recycling bin and dumps feed
- 2) The user tap/clicks the squirrel
  - a. NC jumps from wherever he is to the squirrel to scare him away

## **RULES THAT GOVERN GAMEPLAY AND INTERACT WITH THE MECHANICS**

1 scoop fills 1 available space in a bird feeder

- A 1-space feeder = 1 scoop = 1 bird at a time
- A 2-space feeder = 2 scoops = 2 birds at a time
- A 3-space feeder = 3 scoops = 3 birds at a time
- A 4-space feeder = 4 scoops = 4 birds at a time

When a feeder has feed in 1 of the spaces, it is considered ready for feeding birds.

Birds will fly over to feed only if a minimum of 1 feeder slots (1 scoop) is filled. This means that it will take NC 1 complete trip (2 taps: feed>feeder) to fill a 1-space feeder and 2 trips (4 taps) to fill a 2-space feeder and so on up to 4. Once one of the spaces is filled in the 1, 2, 3 & 4-space feeders, birds will fly over and feed.

A 4-space feeder holds no particular advantage over four 1-space feeders, it will simply allow 4 birds to be fed and take up less real estate on the screen. This means higher levels with (for example) two 1-space feeders and one 4-space feeder, can accommodate 6 birds at a time, allowing for a large amount of birds to be fed within the time frame.

## INTERACTION FEEDBACK

It is important to give the user feedback (both audio/visual) that their interactions are either correct or incorrect.

If NC has an empty scoop and the user:

- Correct: Tap/clicks a feed bag, NC will show his scoop as full, and an audio cue will emphasize
- Incorrect: Tap/clicks a bird feeder or recycling, the feeder (or area around the bird feeder) will flash red, and a negative audio cue will be given

If NC has a full scoop:

- Correct: Tap/clicks a bird feeder, NC will fill the feeder and bird feeder will fill and a positive audio cue will be given to emphasize
- Neither Incorrect or Correct: Tap/click feedbag, NC will dump feed in feed bag that he originally filled from and an audio cue will be given
- Incorrect: Tap/clicks an incorrect feed bag (not the one he filled from), the feed bag (or area around the bag) will flash red, and a negative audio cue will be given
- Incorrect: Tap/clicks a full feeder, the feeder (or area around the feeder) will flash red, and a negative audio cue will be given
- Incorrect: Tap/clicks a feeder of wrong feed type, the feeder (or area around the feeder) will flash red, and a negative audio cue will be given

## **WINNING/LOSING**

The user will ‘win’ a level if the minimum amount of birds have been fed before the timer runs out. If only this amount is fed within the time period, the player will receive 1 star (design TBD). If the player feeds more birds than the minimum, they will receive 2 or 3 stars, depending on the number of birds fed (to be determined later).

The user will ‘lose’ a level if the minimum amount of birds have not been fed before the timer runs out.

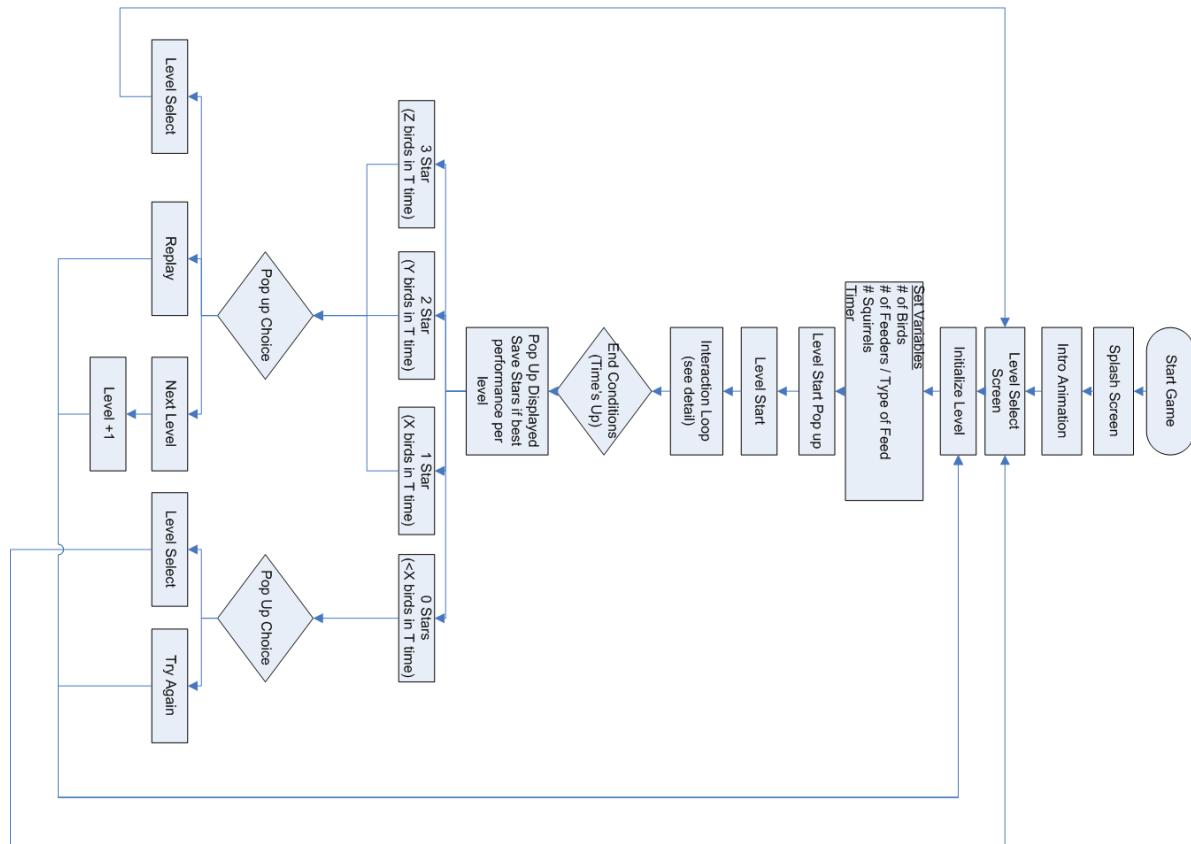
# LEVELING

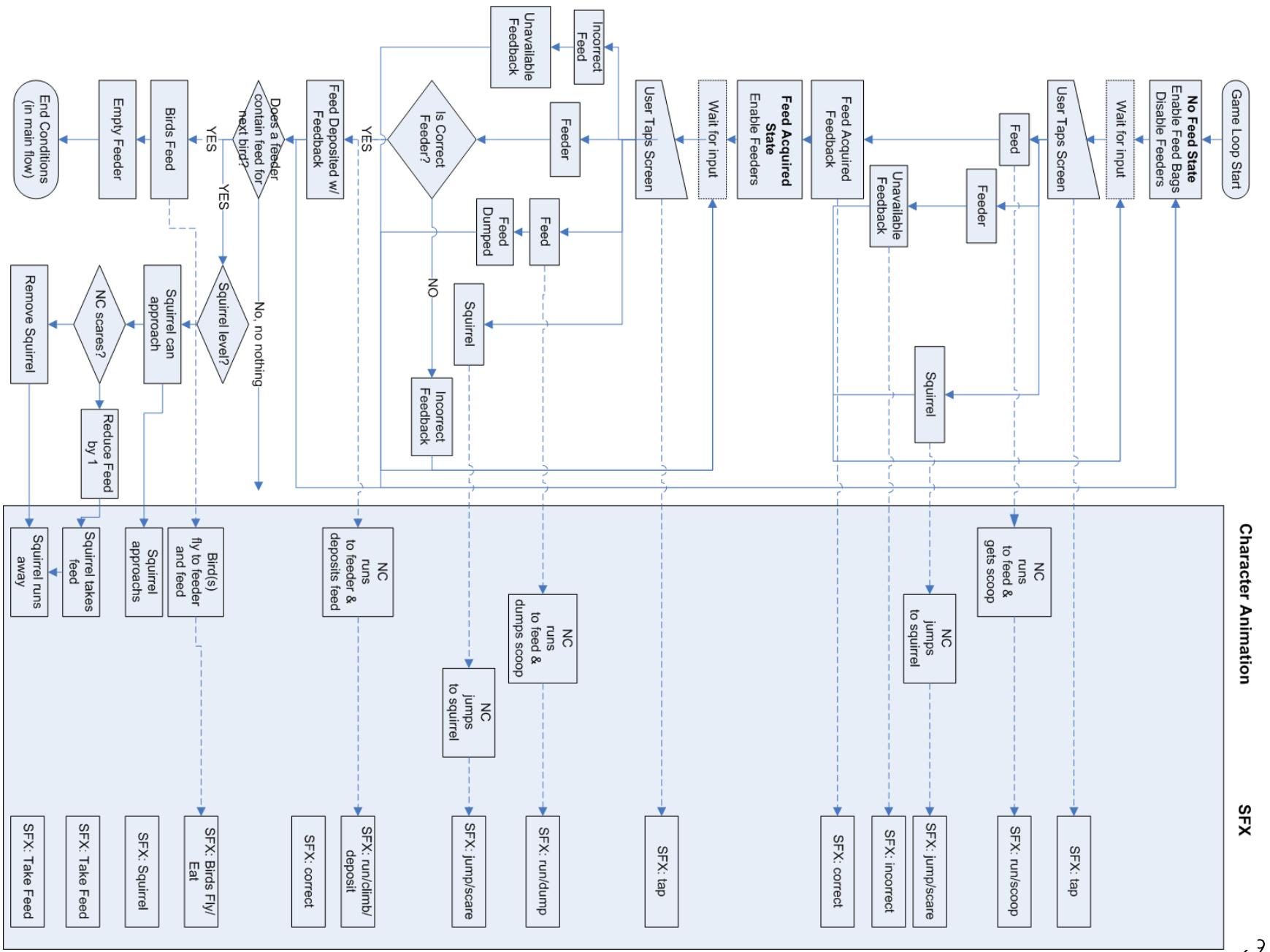
As a general rule, higher levels mean more birds to feed, more types of feed introduced, less time available (per bird) and number of squirrels introduced.

Level	Birds to Feed	Time (sec)	Feed Type			Feeders Available (spaces)				Squirrels
			Seeds	Dried Fruit	Suet	Seeds	Dried Fruit	Suet		
1	3	15	x			1				
2	6	29	x			1,1				
3	9	43	x	x		1,1				
4	12	57	x	x		1,1	3			
5	15	71	x	x		1,1,1	3			
6	18	85	x	x		1,1,1	3		1	
7	21	99	x	x	x	1,1,1	3	4	1	
8	24	113	x	x	x	1,1,1	3	4	2	
9	24	105	x	x	x	1,1,1	3	4	3	
10	24	100	x	x	x	1,1,1	3	4	3	
11+	30	less time	x	x	x	1,1,1	3	4	3	

All Birds and Time are TBD.

# BASIC GAME FLOW





# TECHNICAL SPECS

## FRAMEWORK & HIGH LEVEL SPECS

The game will be developed as an HTML5 game in the Springroll framework.

**Aspect ratio and Dimensions:** 16x9 (990x560)

**Max Game Size:** 50 MB

**Audio Format:** OGG & MP3

**JS libraries:** Pixi.js will be used as a rendering engine

## BROWSER / OS SUPPORT

The following specifications were taken from the PBD producer hub page, "Websites Technical Requirement and Supported Devices" on 6/2/2019 (page last updated 5/26/2017)

### Desktop Support

#### Windows

- Win 7+
  - IE 10+, Latest stable version of Chrome and Firefox.
- Win 8.1
  - IE 11, Edge13+, Latest stable version of Chrome and Firefox

- Win 10
  - IE 11, Latest stable version of Chrome and Firefox.

## Mac

- Mac OS 10.10+
  - Safari 8+, Latest stable version of Chrome and Firefox

## Mobile / Tablet Support

### iOS

- Operating System: 9.0+
- Devices: iPad 2+, iPad mini (1st Gen) iPhone 5c+, No iPods
- Browsers: Mobile Safari (latest)

### Android

- Operating System: Android OS 4.4.2+
- Devices: Samsung SM-T113 Galaxy Tab 3, LG K7 (represents baseline for lower powered phones)
- Browsers: Chrome (Sudden assumes latest version)

## ASPECT RATIO & DIMENSIONS

The aspect ratio will be 16x9 at a resolution of 990x560.

This 990 number was determined by examining other PBS games. It should be noted that the previous Nature Cat games were created at a different aspect ratio and overall dimensions.

## MULTI-RESOLUTION ASSETS

In previous projects, Sudden has delivered multi-resolution experiences so that a game renders ‘as-good-as-can-be’ and various resolutions and devices. From PBSs producer’s hub:

- Device resolution is a pain, particularly if you care about how your game looks. A typical strategy for multi-platform web games is to include variously sized versions of each asset (e.g., “small”, “medium”, “large”, “large2X”, and “optimal”), then render based on either build configuration or device detection--we don’t advise this.
- Go with one set (if possible) of “optimal resolution” assets, then let the game scale accordingly. The most obvious reason is game size, since we don’t support multiple production builds.

This means that Sudden will create the game assets for the 990x560 above and all other sizes and dimensions will be scaled proportionally, creating the possibility of reduced quality on smaller devices where the heavily outlined art direction of the NC style may suffer.

## ORIENTATION

The orientation will be fixed as landscape following the 16x9 aspect ratio above. This means that the game will scale proportionally on devices in portrait so that the 16x9 is retained. It will not reorient or layout the game differently for portrait (9x16 or otherwise), it will simply be smaller.

# TECHNICAL APPROACH

We believe that what's going to make or break this game is a solid game mechanic that:

- Is easy to understand and interact with
- Is challenging in scope and time allocated
- Requires attention to decisions, allowing the user to improve with repeat play
- Is super fun to play

With that in mind, we think getting a basic core mechanic in place in test the underlying 'playability' is an important first step.

- 1) Create repos / build system / basic Springroll wrapper
  - a. Set up/access repos
  - b. Set up the necessary 'under-the-hood' build related scaffolding re: Springroll, Pixi, etc
  - c. Use approved Springroll template to set up basic game structure
  - d. Set up/review basic states
- 2) Create main game scene and build core mechanic with/from WFs
  - a. This is the first real step of getting a 'playable' version
  - b. No final graphics used, no animation
  - c. Shapes or WFs used as placeholders

d. Initial scene to include the flow for 10th level, to have multiple feeders and feed, but with ability to set testing for any level (example below is for level 1)

- i. 3 Birds
- ii. 1 timer
- iii. 1 feeder
- iv. 1 type of feed
- v. NC
- vi. Text-based tally of birds fed
- vii. Basically, anything this is required to play 1 level in the most rudimentary form

e. Config files to hold basic variables

- i. Level time
- ii. Level-based # of birds
- iii. Level-based # of feeders (though only 1 used for initial set up)
- iv. Level-based types of feed (though only 1 used for initial set up)
- v. Level-based # of squirrels (though 0 used in initial set up)
- vi. Bird eating time
- vii. Time to get feed / fill feeder

3) If the basic game-mechanics feel right and we are to continue development, we'll then:

- a. Continue to build all levels with
  - i. Scoring
  - ii. Win/lose states
  - iii. Correct / Incorrect feedback
  - iv. Tweaks to game variables as needed
- b. Intro / Start Screens
- c. Add graphics as available
  - i. Considering asset management / graphic size
- d. Add VOs / SFX
  - i. Considering asset management / graphic size
- e. Add animations / tweens as available
  - i. Considering asset management / graphic size