New Media In Education

Animation Design Project

By

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APPROVAL SHEET

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DECLARATION

I hereby declare that the work done for my graduation project and submitted as a written report to the Industrial Design Centre, IIT Bombay is a record of the original work done by me under the guidance of Prof. Phani Tetali.

I affirm that I have adhered to all principles of academic honesty and integrity and have not misrepresented or falsified any idea/data/fact/source to the best of my knowledge. I understand that any violation of the above will cause for disciplinary action by the Institute .

Signature:

Date:

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Animation
2014-2016
IDC, IIT Bombay

ACKNOWLEDGEMENT

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I thank my friends and family for their gracious involvement in seeing the project taking shape.

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INTRODUCTION

New Media is a definitely proving to be a significant technological revolution in e-generation and its entry into the education sector redesigning the knowledge economy. Video as a part of New Media is a fundamental agent and a powerful learning tool. Video facilitates collaboration, accomodates for different learning styles, increases engagement and excitements among students which help students in improving learning outcomes.

Hence, being an animation student I decided to design an animated explanatory video which will involve kids to serve themselves to become active rather than passive learner.

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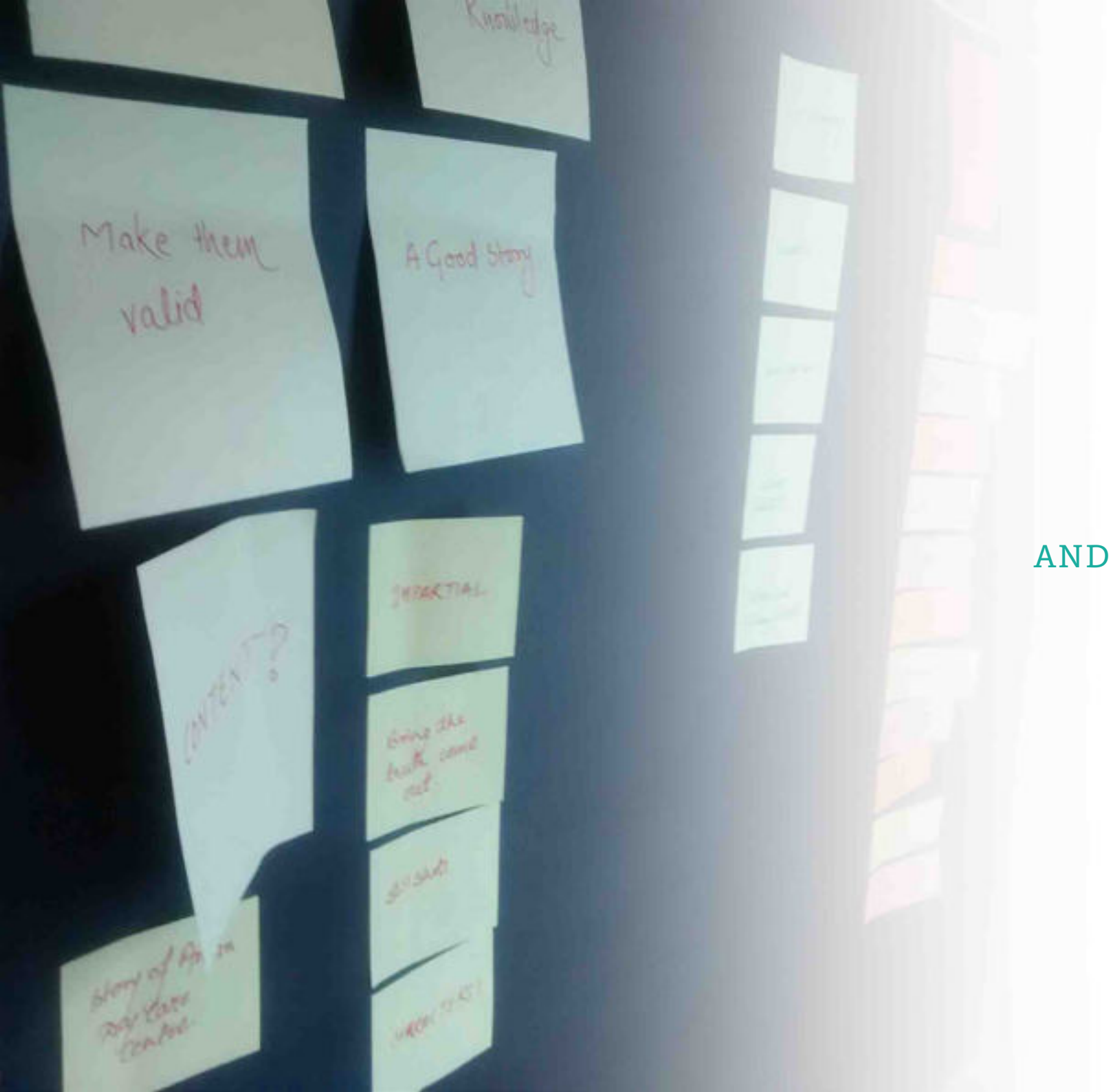


RESEARCH AND DEVELOPMENT

RESEARCH
AND DEVELOPMENT

I began research by reading journals, reports and listened to online talks given by many professionals such as scientists, educationists, professors and etc. Then I interviewed such professionals like Ms Nancy (Staff member of Prof. Kannan of Chemical Engineering Dept, IIT Bombay) working on similar projects to see the troubles faced by them and what are the possibilities of such project in the education sector. I interview school teachers and students regarding the present curriculum. According to the students the curriculum is rigid, content is boring, which results in low involvements and subsequently less learning.

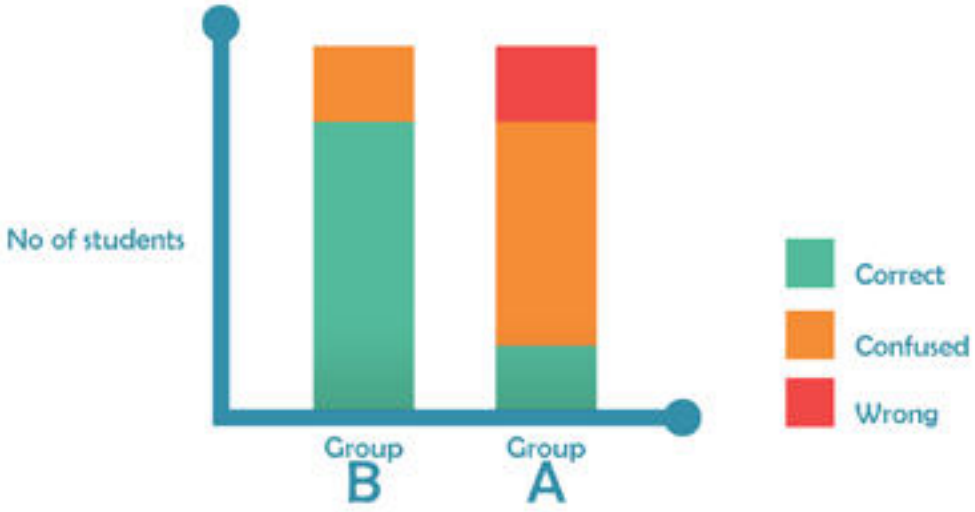
Regarding understanding the problem I had gone through numerous school books of different boards and standards. Being an animation student I find the visuals in the textbooks are less explanatory which doesnot go hand in hand with the content of the chapter. Now I wondered why we forget all the history we have studied in our social classes? But can easily remember a scene in some animated movie which we have watched long time ago. It's all in the way we got the information fed into our brain through multiple senses. Animations are interesting and are more fun to watch due to its visual appeal. There is no point in loosing concentration. They can be fun and informative at the same time. Animation today are not just confined to movies and video games; the areas of its application are boundless. And one of those areas is Education.

I conducted a survey in a school where I made 2 groups each consisting 5 students of class 5 and 6 under CBSE board and I asked Group A to read a chapter on water cycle. For Group B, I showed them an existing video from the youtube on the same. After they were done I asked them some few questions on the topic.

According to the survey I got the following figures:

Group B - Based on youtube video shown

Group A - Based on text book given.



Based on the results I came to a conclusion that explanatory video is more effective than text books and animation as a tool can play a vital role in designing a visually enriched educational content which can help to explain challenging and dynamic concepts more effectively that are difficult to represent on text and static images.

RESEARCH AND DEVELOPMENT

Earlier in my project 2, I also tried my hand in designing an educational video game because video games as a part of New Media is a powerful learning tool when combined with other exploratory, hands-on activities and ongoing instruction. The project involved designing a PC game based on Alternative topic i.e Modes of transportation /Water treatment Process.

Understanding regarding the subject of the game design, I read school books, observed charts, played board games and video games related to the topic.

After a primary research, I came up with a few concepts on both the topics which includes stories, game concept, level design, character design, concept art and a short animated trailer. But, later I decided to move on with making an animated explanatory video over the video game.

Earlier Concepts & Initial Development

Topic 1 - Modes of transportation (Video game)

Aims

- Create awareness of different types of vehicles.
- Create awareness of different modes of transport.
- Create familiarity with key words related to transportation.
- Create a strategy for teaching other subjects indirectly.

Game Story:

Jojo is travelling back to his home planet called Alpha, on his own spaceship. Along his way back, the spaceship comes in front of a meteor belt. Jojo endeavours to dodge as hard as possible to save his spaceship from getting hit by the meteors. But infelicitously, the spaceship collides with one of the meteors and crashes down on earth. Jojo and Willi both emerge from the spaceship unharmed. The spaceship is damaged and won't be able to take Jojo back to his home planet Alpha without a rehabilitation. Jojo and Willi find a repair shop and goes inside for help. The owner of the shop accedes to repair their spaceship. But the damaged components need to be repaired against a price. But he does not have any money. Jojo needs to have some money in order to repair his broken spaceship. Finally the shop owner decides to give him some monetary rewards against some tasks. Jojo needs to complete as many tasks to collect all the money required to repair his broken spaceship. After he completes the tasks, he need to go to the repair shop and pay the owner to fine-tune his spaceship. After the repair Jojo and Willi thank the owner and leave the earth happily.

Game concept:

This is a single player game comprising of Jojo, the alien boy. Jojo has to collect as many coins to repair his spaceship by completing the tasks which come his way. Every tasks involves use of vehicles. These tasks lead him into direct learning about different modes of transportation, types of vehicles, its uses and properties. He also learns about friendly and helping behaviour, waste management and to improve decision making.

RESEARCH AND DEVELOPMENT

Gameplay Story and Overview

Plot Points:

Late in the night far away from the Earth, we see a small spaceship travelling in space. The spaceship is heading towards home planet Alpha. Jojo and Willi both are excited. Along his way back, the spaceship comes in front of a meteor belt. Jojo ties to dodge those meteors to save the spaceship from getting hit, but, unfortunately the spaceship collides with one of the meteors and crashes down on earth. Jojo breaks through the door. They both come out of the spaceship unharmed. Jojo realizes that they are in middle of a jungle and also the spaceship is broken and won't be able to take him back home in this condition. Willi suggested to find a repair shop nearby. Along the way inside the jungle they find one repair shop. They rejoice on the success and run inside the shop for help.

Game play Introduction

As they reach inside the shop they find Mr. Aboo the owner of the shop. They interact with Mr Aboo to help them to repair the spaceship. Mr Aboo agrees to help but only if they can pay. But Jojo does not have money to pay. So the shop owner decides to give him some tasks through which Jojo can gather some money for repairing the damaged parts.

Chapter 1

Objective 1- Assemble vehicles in the assembly line

Jojo has to assemble different vehicles on a Conveyor belt, according to the picture shown on the screen. The player has to help Jojo by selecting the right parts to fit in the vehicle before it goes out from the screen. There will be 5 different vehicles the player has to assemble on time. The vehicles will
come at a time. Each successful assemble will give monetary rewards.

Objective 2- Collect and separate the waste

Jojo has to catch and collect all the waste from 3 different sewage pipes located on top of the dumping ground. Jojo will be given a bulldozer to finish this task. Willi will provide all the information on the vehicle before he starts the task. Each successful catch will give him monetary rewards. If he misses, the waste will fall on the ground and automatically some
amount will be deducted from the account. Jojo has to collect as much waste to gather maximum money from this task.
After he collects the waste, he has to separate and put the waste into two bins. One is for recycled waste and other is for non-recycled waste. Each correct separation will give monetary rewards. Wrong guess will deduct money from the account.

Chapter 2

Objective 3 - Transport all the recycled waste to the waste treatment plant.

Jojo will be given a dump truck to carry all the recycled waste to the nearby waste treatment plant. He has to carefully drive and balance the truck without losing any waste. Each loss will deduct money from the account. He has to reach the plant with as much waste he can to get maximum monetary reward.

Objective 4- Transport Mr Thomas

Mr Thomas is a very good customer of Mr Aboo. Mr Thomas got stuck in the bad weather and has an important client meeting to attain. Jojo

avoiding thunderstorms and mountain peaks. Beside this the plane has very limited fuel, so he has to drive it on economy mode by smoothing the control. Jojo can pick up extra fuel powers to double the speed. More than 3 thunderstorm is enough to crash the plane. After the completion Jojo will get monetary rewards.

Chapter 3

Objective 5 - Deliver Lady Tara some boxes across the the river.

Lady Tara is a very nice person. She loves to shop all the time. Help Lady Tara by delivering the boxes perfectly on other side of the river. Jojo will be given a diesel boat to perform the task. The boxes are of different sizes with respective weights i.e W1, W2, W3, W4 and W5.The boat has a weight limit. The player has to put the boxes strategically so that the boat doesn't get drown or runs out of fuel to deliver them. The boat can only cross 3 times with the boxes. Each Successful delivery will give him monetary rewards. Deliver all the boxes to make Lady Tara happy and get all the money.

Objective 6- Train-o-train

For this task, Jojo will be driving a train engine with 3 coaches attached. Some parts of the railway tracks are missing. The aim of the task is to transport passengers and goods to the
respected station by putting the right shaped track on the line avoiding any train crash. The player has to select the parts and put it on the right place.

Objective 7- Stop the city from burning.

Jojo as a fire man has to drive a fire truck in the heart of a city. He has to reach the target on time to extinguish the fire and save the city. Jojo has to choose the best and the shortest way avoiding all the traffic and obstacles to reach the target on time. Each target accomplishment will give him monetary rewards. Reach and complete all the targets to get the maximum amount of money.

Genre
Educational game

Target Audience
Our target audience primarily kids between the ranges of ages 3 – 7 years.

Look and Feel
The format of the game is 2Dimensional.Mostly consist of single screen, scrollers(isometric) and side scrollers.The visual style is colourful and vibrant which is pleasing for younger audience.

Platform
Windows PCs/ Macintosh computers (Mac OS X)

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RESEARCH
AND DEVELOPMENT

SCREENPLAY (MAIN CUT SCENE)

FADE IN:

EXT. SPACE - DARK

A small spaceship is traveling in space.

CUT TO:

INT. SPACESHIP - DARK

The cockpit screen starts splashing "Danger! Low battery!".

CUT TO:

EXT. SPACESHIP

JOJO, THE ALIEN BOY COMES OUT FROM THE SHIP WITH A BAG ON HIS BACK.

He reaches the top of the spaceship to change the batteries.

CUT TO:

INT. SPACESHIP

The auto pilot dysfunctions and faces an approaching meteor.

CUT TO:

EXT. SPACESHIP

JOJO takes out the batteries to fix.

The spaceship collides with the meteor and sudden impact dis balance Jojo and the batteries slips from his hand into the space.

Jojo tries to catch the batteries but fails.

The batteries fly towards Earth.

Jojo gets scared and starts wondering how to get back home.

CUT TO:

INT. SPACESHIP

Jojo comes running into the cockpit.

JOJO
How to get back the batteries now?

WILLI, THE ROBOT
Don't worry JOJO, let track down the batteries.

WILLI pushes a red button to track down the lost batteries.

After a while the screen shows the locations of the batteries on Earth.

JOJO and WILLI both high-five each other with smiles on their face.

JOJO
Lets get back the batteries.

CUT TO:

EXT. SPACE

The spaceship approaches towards Earth.

CUT TO:

EXT. A DESERTED HILL - NIGHT

The spaceship lands on top of the hill.

The door of the spaceship opens.

JOJO walks out of the spaceship.

JOJO looks forward with determination.

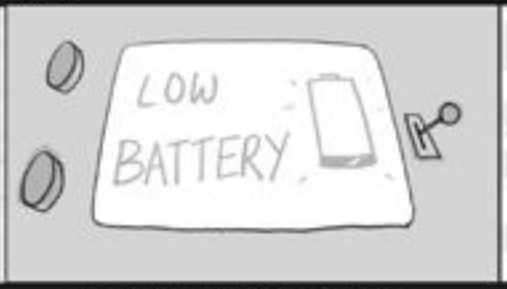
FADE OUT:

STORYBOARD (MAIN CUT SCENE)

Story Thumbnails

A spaceship traveling in space

Dodging big rocks



The display showing "Low Battery"

The window opens,
JOJO comes out from the spaceship

He reaches the top of the spaceship to change the batteries.

Pushes a button to unlock

Unlocks the power volt to change the batteries

A meteor approaches towards the spaceship

JOJO puts his hand back towards the bag

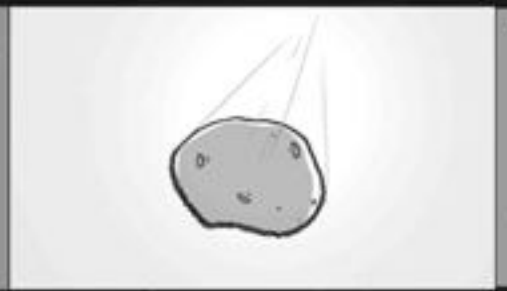
JOJO takes out the batteries to fix.

The auto pilot dysfunctions and blinks

The cockpit window shows
an "Incoming object"

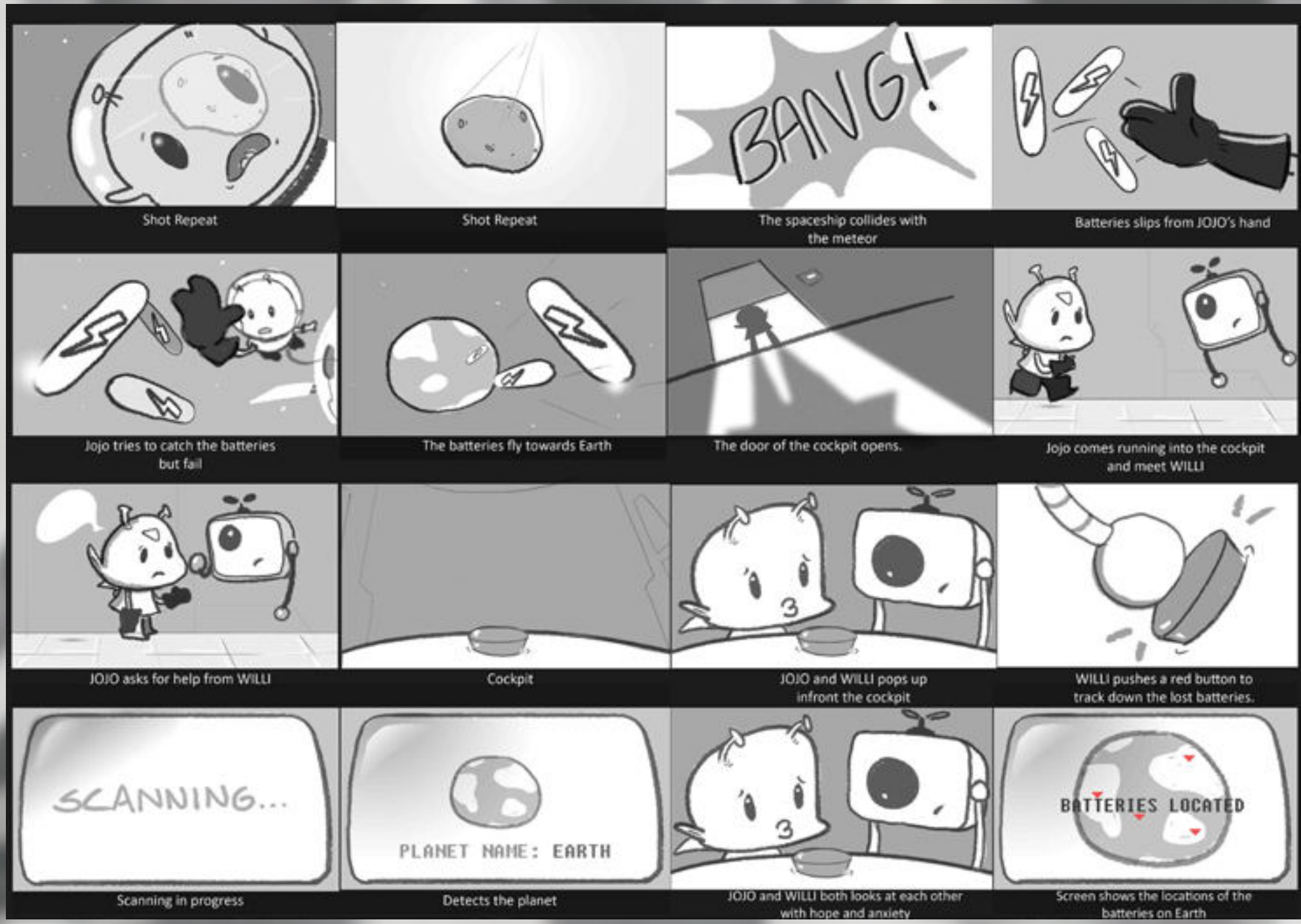
Siren

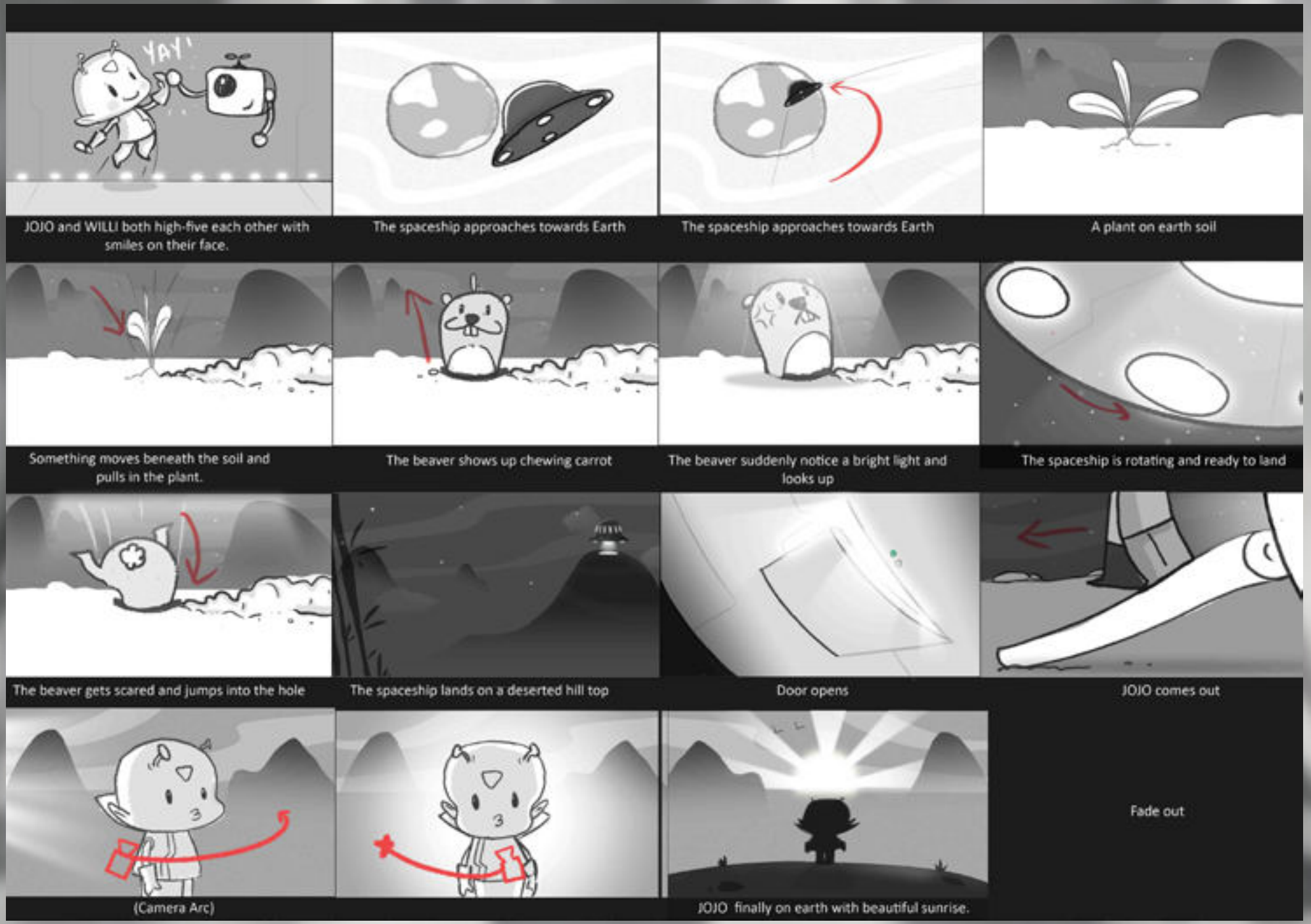
Pans and focus on JOJO



The meteor approches !

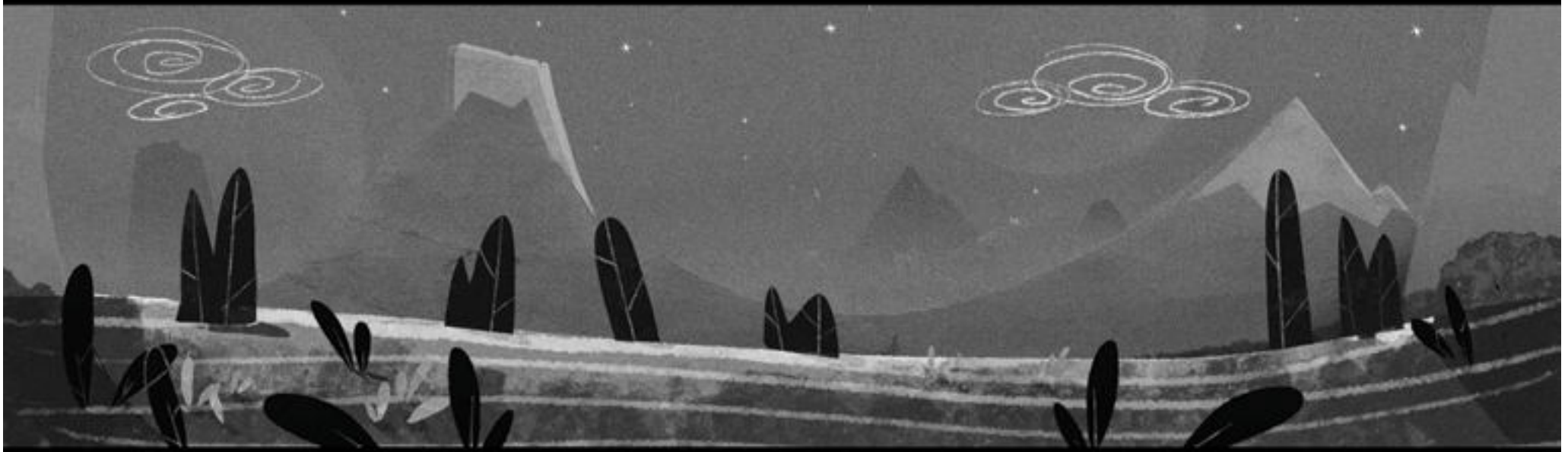
JOJO gets scared !


Shot Repeat
Shot Repeat
BANG!
The spaceship collides with the meteor
Batteries slips from JOJO's hand
Jojo tries to catch the batteries but fail
The batteries fly towards Earth
The door of the cockpit opens.
Jojo comes running into the cockpit and meet WILLI
JOJO asks for help from WILLI
Cockpit
JOJO and WILLI pops up infront the cockpit
WILLI pushes a red button to track down the lost batteries.
SCANNING...
Scanning in progress
PLANET NAME: EARTH
Detects the planet
JOJO and WILLI both looks at each other with hope and anxiety
BATTERIES LOCATED
Screen shows the locations of the batteries on Earth

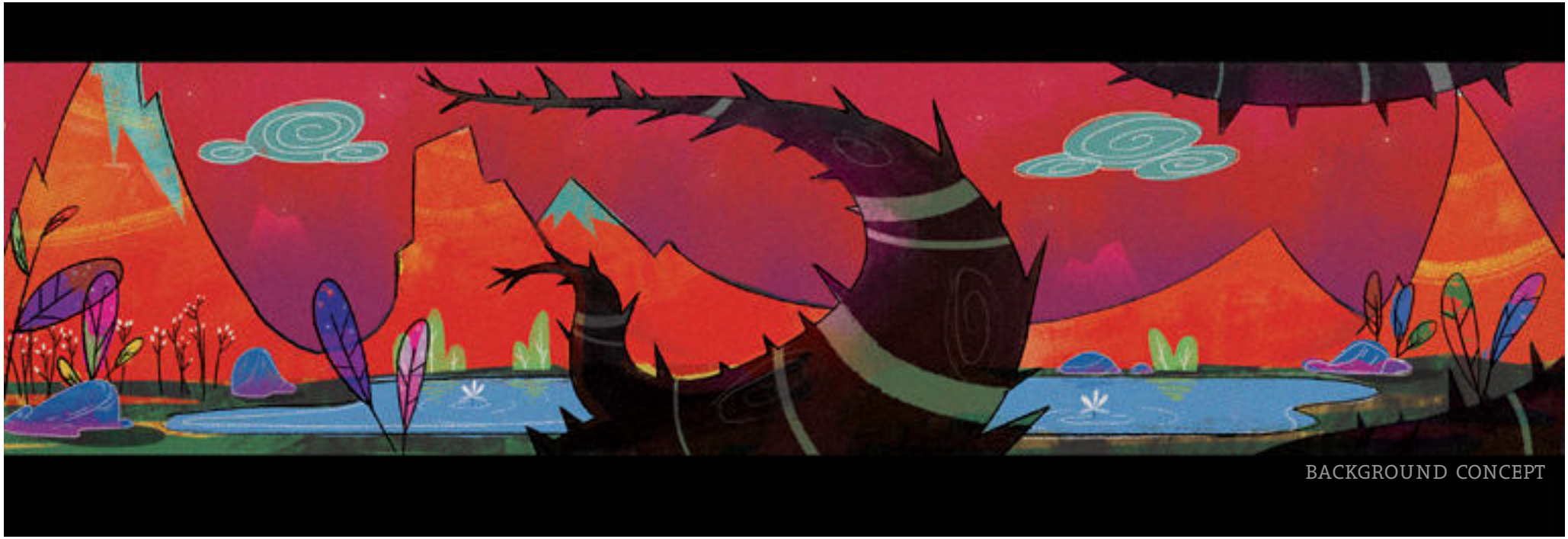

YAY!
JOJO and WILLI both high-five each other with smiles on their face.
The spaceship approaches towards Earth
The spaceship approaches towards Earth
A plant on earth soil
Something moves beneath the soil and pulls in the plant.
The beaver shows up chewing carrot
The beaver suddenly notice a bright light and looks up
The spaceship is rotating and ready to land
The beaver gets scared and jumps into the hole
The spaceship lands on a deserted hill top
Door opens
JOJO comes out
(Camera Arc)
JOJO finally on earth with beautiful sunrise.
Fade out

VISUALIZATION OF THE GAMEPLAY

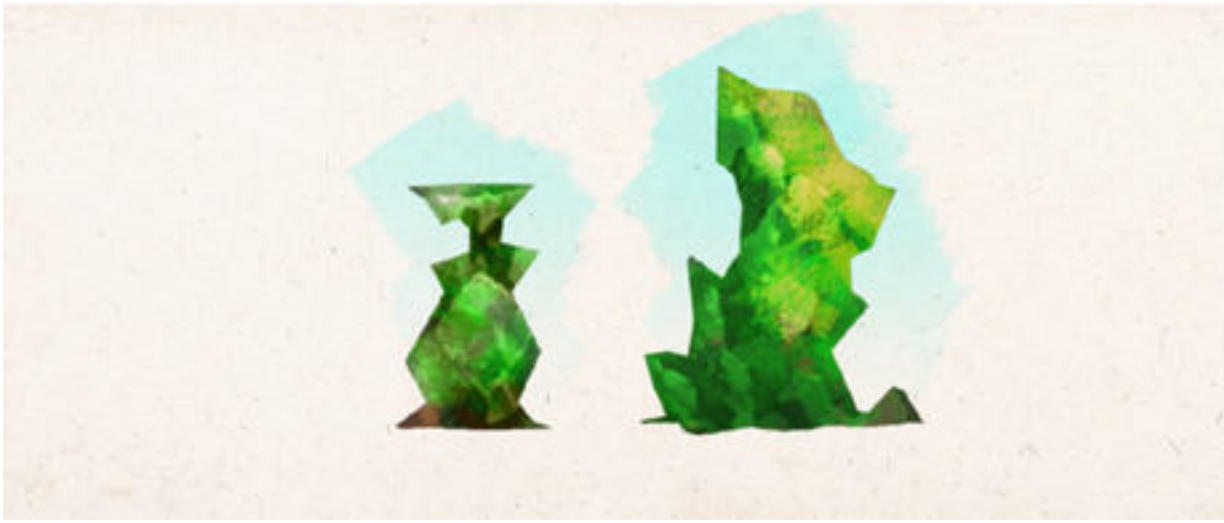
Shots from the trailer

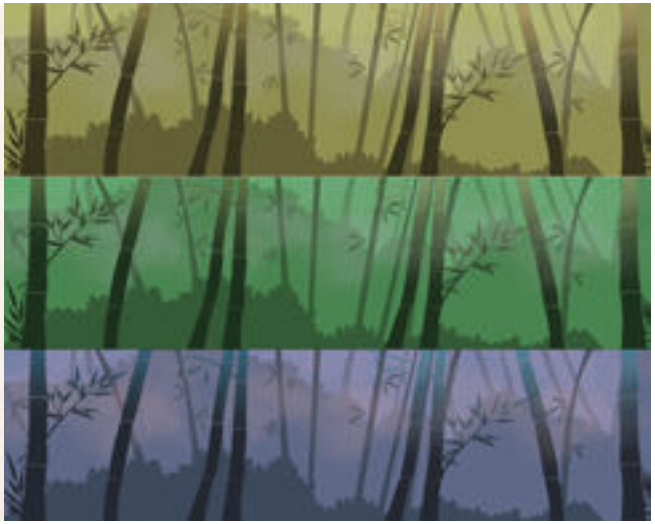


BACKGROUND CONCEPT

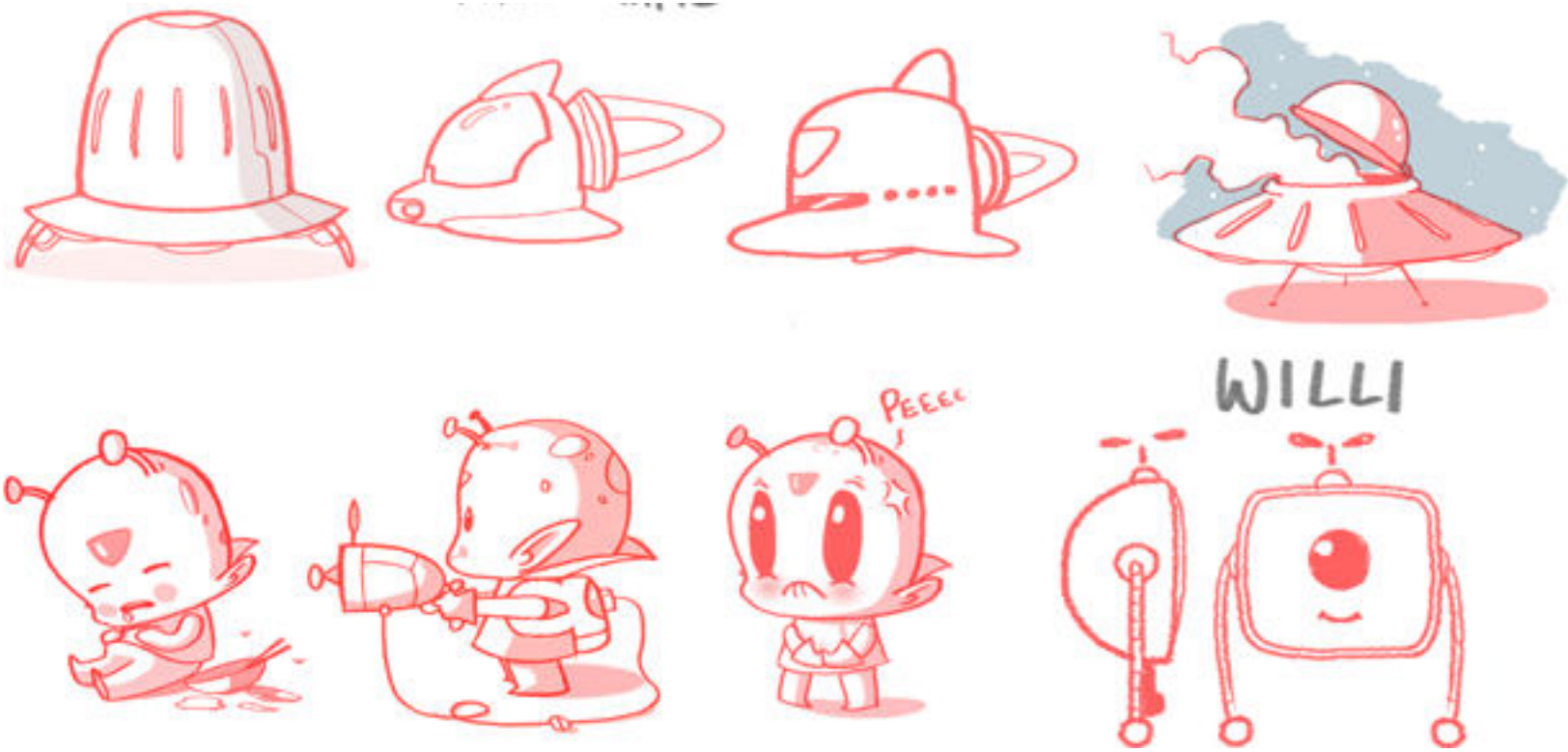


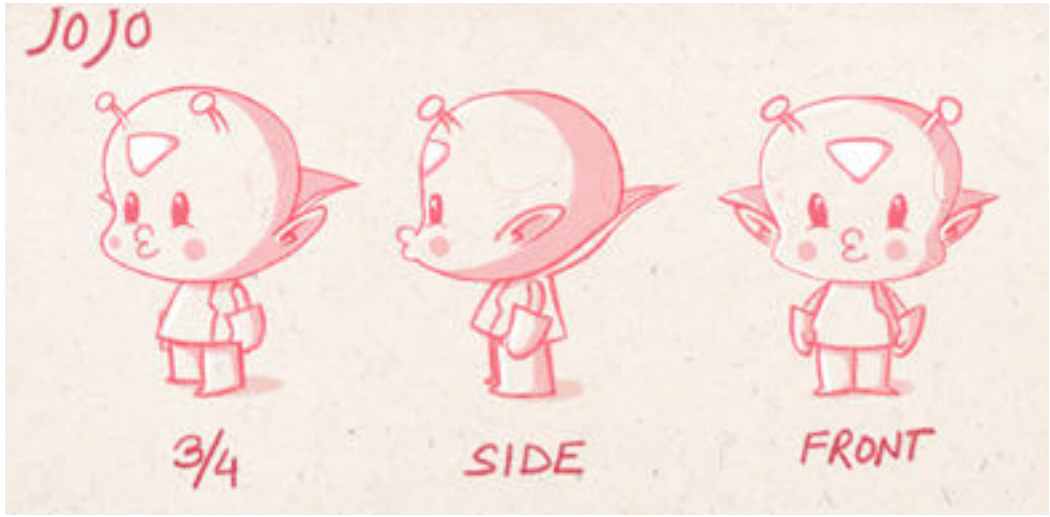
BACKGROUND CONCEPT





Environment Exploration





Character Design & Exploration

Character Design & Exploration

The Spaceship **3**D Turnaround

RESEARCH AND DEVELOPMENT

Topic 2 - Water treatment process. (Video Game)

Aim - The player will understand the whole process of Water treatment through this Explanatory video game.

Story:
One day Tobu came back home thirsty and decided to drink water. As he was going to drink the water, he was stopped by his scientist grandpa. His grandfather asked him whether the water is safe to drink or not which left tobu confused without any answer. His grandpa smiled and asked him to follow him to his lab to check the water. Tobu followed his granpa inside the lab. Grandpa asked Tobu to put the glass of water under the microscope and asked to see through it. Tobu found out small moving organisms in the water. Tobu got confused and asked his grandpa "who are they"?
Grandpa explained him that they are the bad guys(Disease causing bacteria and virus) which can causes different types of disease to him. (Tobus visualises the bacteria and other deadly pollutants in form of characters...Evil characters along with the diseses).
Tobu got scared and angry ,"How did they come in my water??
Grandpa explained him the reason behind the water pollution which made Tobu shocked.
Tobu asked grandpa "what can we do" ?
Grandpa smiled and asked to follow him. He showed him the Water treatment plant which is being used for Water purification.
Grandpa, "Now its all in your hand Tobu. Go and destroy the pollutants before it gets too late. Remember, Follow every step" (Coagulation, Sedimentation, Filtration and Disinfection)
Main cut-sc ends
End cut-sc starts
Finally Tobu grabbed his glass to drink. But again stopped by his grandpa.
Tobu: What else now??
Grandpa : Tobu, you forgot to clean your hand.
Tobu apologised, "oops! sorry grandpa" and rushed to the basin and cleaned his dirty hands.
He came back super fast and finally had the water. The safe and the clean water.

Overall Gameplay idea - Tobu has to eliminate all the diesese causing bad guys from the water and makes the water clean for drinking .

Level Difficulty : Each level will introduce a new sets of pollutants and diseases which are more intelligent and powerfull . It will get harder and harder to deal with the them as the level increases.

Protagonist/Hero : TobuAntagonist/Enemy : Gang of Pollutants, Disease causing bacteria and viruses

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RESEARCH
AND DEVELOPMENT

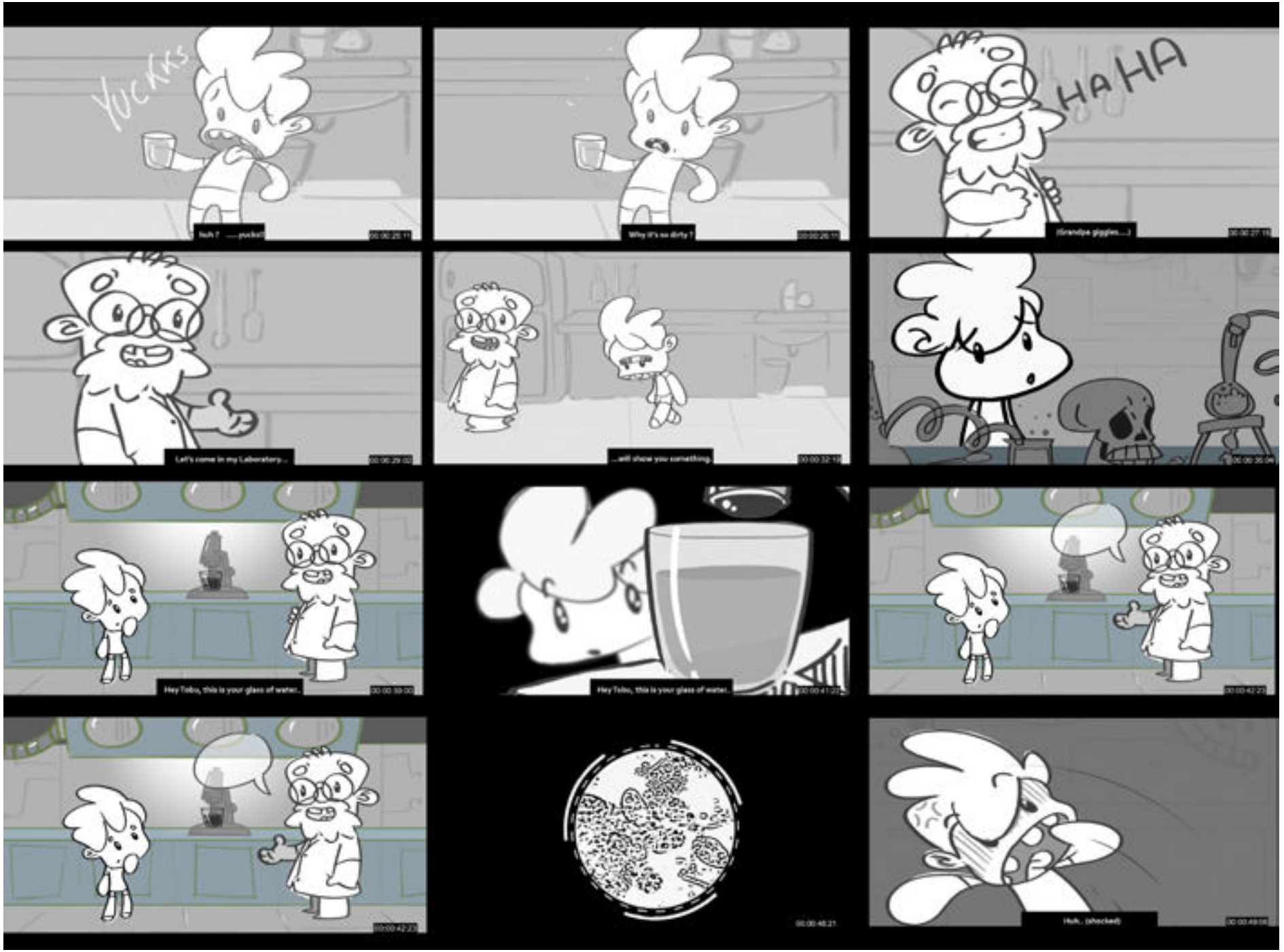
Tobu

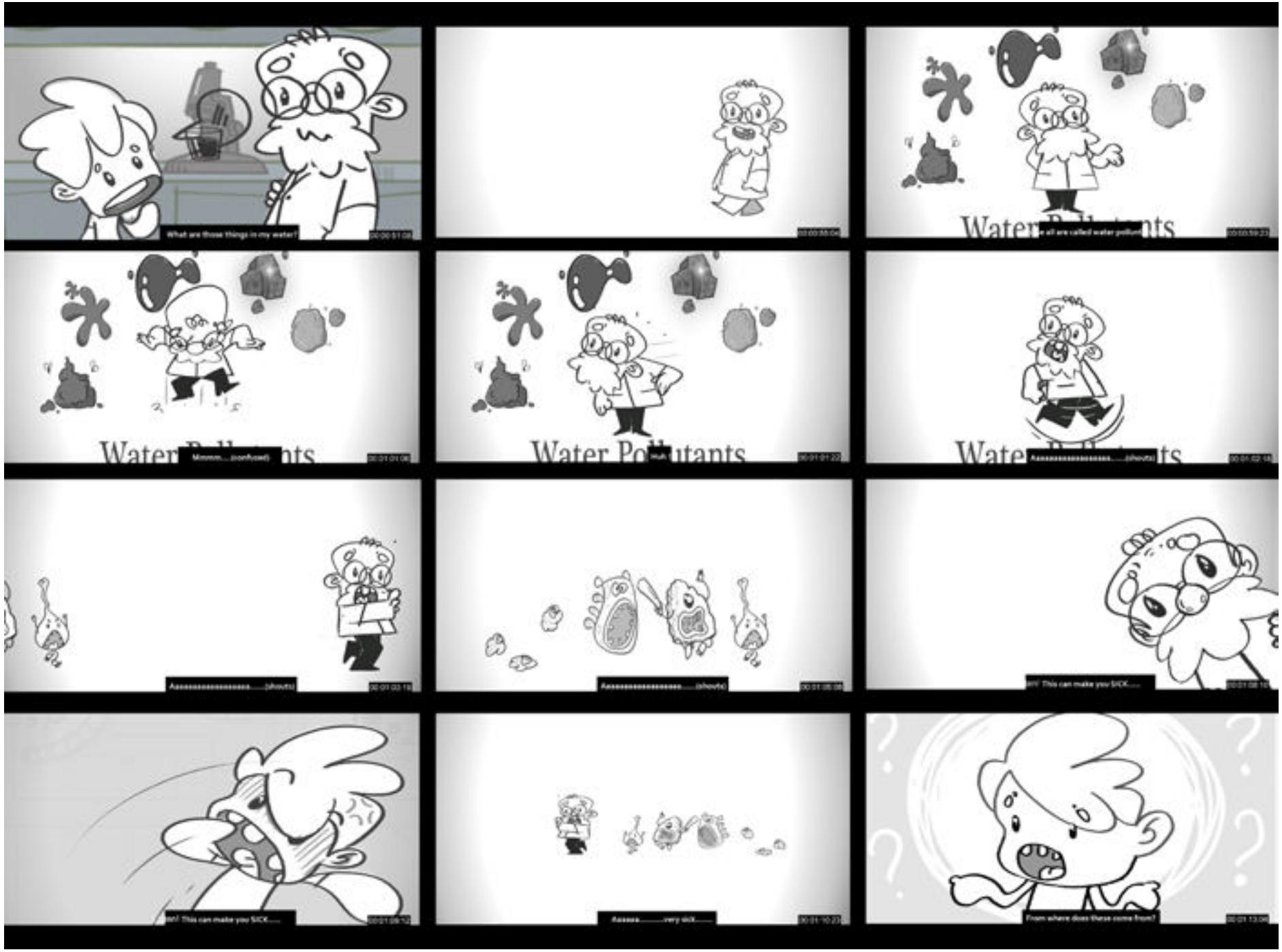
Grandpa

Character Design And Exploration

STORYBOARD (MAIN CUT SCENE)

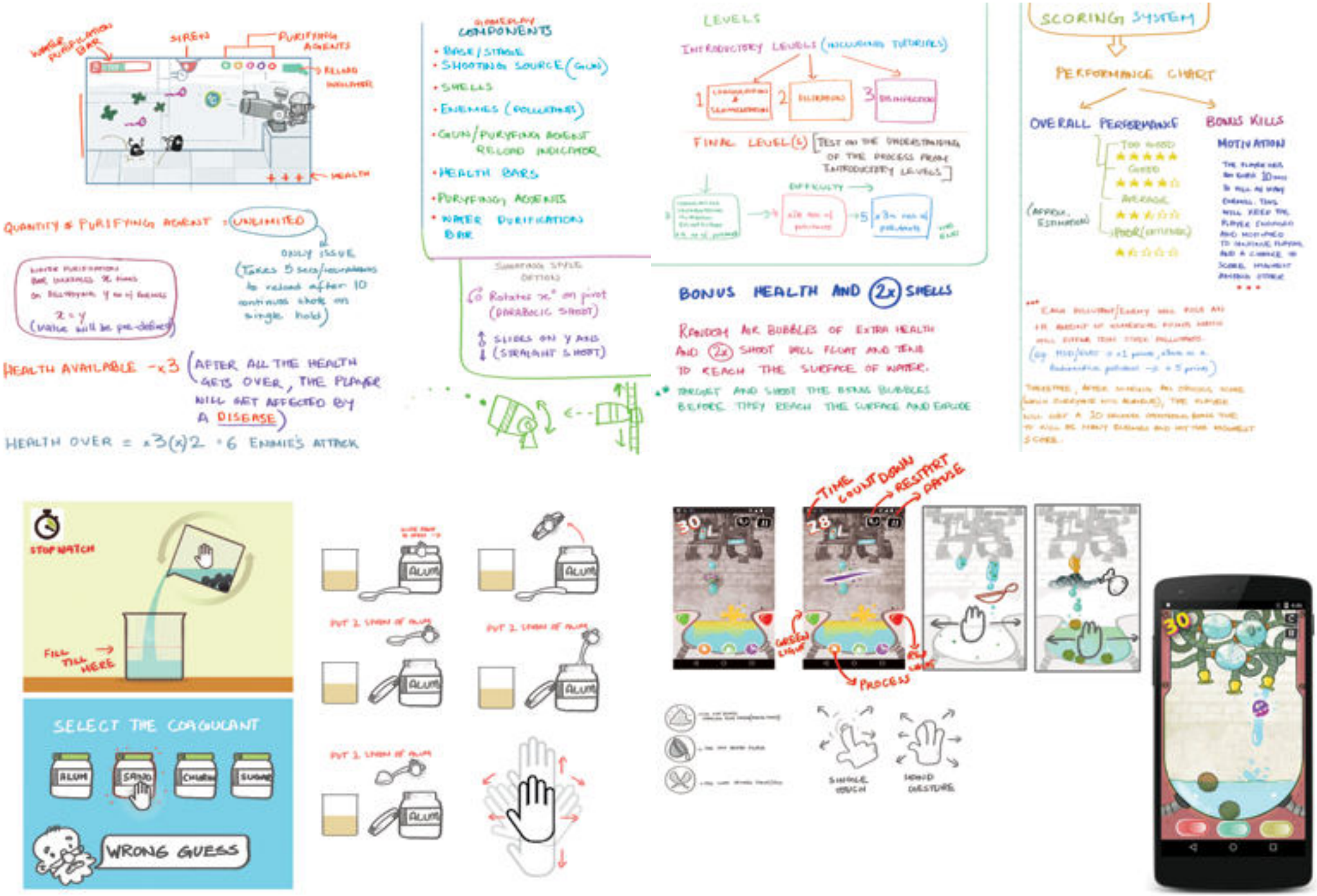
One day Tobu comes back from school
SCHOOL BUS
One day Tobu comes back from school
One day Tobu comes back from school
One day Tobu comes back from school
It's so hot today...
...feels so damn thirsty
Mmmmm.....
STOP!!
huh !!
Look at what you are having...
huh ?

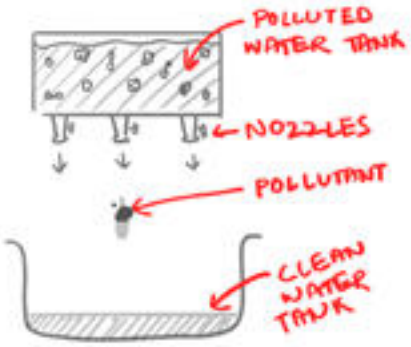

YUCKKS
Huh? ....puckst
Why it's so dirty?
HAHA
(Grandpa giggles....)
Let's come in my Laboratory...
...will show you something.
Hey Tobu, this is your glass of water.
Hey Tobu, this is your glass of water.
Huh.. (shocked)


What are those things in my water?
Water Pollutants
Mmmm.... (confused)
Water Pollutants
Aaaaaaaaaaaaaaaaa.....(shouts)
Aaaaaaaaaaaaaaaaa.....(shouts)
Aaaaaaaaaaaaaaaaa.....(shouts)
Ah! This can make you SICK.....
Ah! This can make you SICK.....
Aaaaaa.....very sick.....
From where does these come from?

SEWAGE
Sewer
GARBAGE DUMPING
Garbage Dumping
INDUSTRIAL WASTE-WATER
Industrial Waste.....and
INDUSTRIAL WASTE-WATER
Industrial Waste.....and
So, how should we clean these?
I am very Thirsty...
Follow me...
COAGULATION AND SEDIMENTATION
FILTRATION
DISINFECTION
This are the processes used to make water drinkable
WOW!
00:02:25:18
No Timing
00:02:28:10
No Timing

Brainstorming and Conceptualization for the Gameplay


WATER PURIFICATION BAR
SIREN
PURIFYING AGENTS
RELOAD INDICATOR
HEALTH
QUANTITY & PURIFYING AGENT = UNLIMITED
ONLY ISSUE
(Takes 5 secs/hour/seconds to reload after 10 continuous shots on single hold)
WATER PURIFICATION BAR INCREASES x HOURS ON DESTROYING y no of ENEMIES
x = y
(value will be pre-defined)
HEALTH AVAILABLE -x3 (AFTER ALL THE HEALTH GETS OVER, THE PLAYER WILL GET AFFECTED BY A DISEASE)
HEALTH OVER = x3(x)2 = 6 ENEMIE'S ATTACK
GAMEPLAY COMPONENTS
• BASE / STAGE
• SHOOTING SOURCE (GUN)
• SHELLS
• ENEMIES (POLLUTANTS)
• GUN/PURYFING AGENT RELOAD INDICATOR
• HEALTH BARS
• PURYFING AGENTS
• WATER PURIFICATION BAR
SHOOTING STYLE OPTION
Rotates x° on pivot (PARABOLIC SHOOT)
SLIDES ON Y AXIS (STRAIGHT SHOOT)
LEVELS
INTRODUCTORY LEVELS (INCLUDING TUTORIALS)
1 LOCALIZATION & SEGMENTATION
2 FILTRATION
3 DISINFECTION
FINAL LEVEL(S) [TEST ON THE UNDERSTANDING OF THE PROCESS FROM INTRODUCTORY LEVELS]
DIFFICULTY
BONUS HEALTH AND 2x SHELLS
RANDOM AIR BUBBLES OF EXTRA HEALTH AND 2x SHOOT WILL FLOAT AND TEND TO REACH THE SURFACE OF WATER.
TARGET AND SHOOT THE BONUS BUBBLES BEFORE THEY REACH THE SURFACE AND EXPLODE
SCORING SYSTEM
PERFORMANCE CHART
OVERALL PERFORMANCE
BONUS KILLS
MOTIVATION
TOO GOOD
GOOD
AVERAGE
POOR (OPTIONAL)
(APPROX. ESTIMATION)
STOPWATCH
FILL TILL HERE
SELECT THE COAGULANT
ALUM
SAND
CHLORINE
SUGAR
WRONG GUESS
PUT 2 SPOON OF ALUM
TIME COUNT DOWN
RESTART
PAUSE
GREEN LIGHT
RED LIGHT
PROCESS
SINGLE TOUCH
HAND GESTURE



HOW?

→ DISINFECT, COAGULATE AND FILTER ALL THE POLLUTANTS BEFORE THEY REACH AND INFECT THE CLEAN WATER.

GAME PLAY

→ PLAYER HAS TO KNOW THE EXACT PROCESS FOR RESPECTIVE POLLUTANTS.

→ IDENTIFY THE POLLUTANT QUICKLY AND HIT THE RIGHT BUTTON.

OBJECTIVE

KEEP THE WATER CLEAN AS MUCH AS POSSIBLE FROM THE POLLUTANTS.

→ DEDICATED BUTTONS FOR PARTICULAR ACTION / PROCESS. LIKE E.G.

DIFFICULTY LEVEL

→ WITHIN SINGLE STROKE

THE DIFFICULTY LEVEL WILL GRADUALLY INCREASE AS THE WATER LEVEL INCREASE AND THE REACTION TIME DECREASES.

→ MULTIPLE STROKES

THE FREQUENCY OF THE POLLUTANTS APPEARANCE WILL BE INCREASED.

OBJECTIVE TWO

THE PLAYER HAS TO FILL THE GLASS WITH PURE WATER BY COMPLETING DIFFERENT LEVELS.

DIFFICULTY

→ POLLUTANTS WILL COME OUT FROM DIFFERENT NOZZLES RANDOMLY.

→ SIMULTANEOUS COGNITIVE DISTRACTION THROUGH THE CONSTANT APPEARANCES OF THE POLLUTANTS ABOUT TO COME.

→ THE PLAYER HAS TO KILL THE RIGHT POLLUTANT WITH THE RIGHT BUTTON APPEARING IN THE SCREEN

THINGS TO BE DONE

→ SCORING AND GAME MECHANICS YET TO BE FINALIZED.

→ DISPLAY ORIENTATION

Topic - Water treatment process (Animation Film)

The student will understand the whole process of Water treatment through this animated film.

Story:

One fine morning Tobu wakes up and switched off the alarm. As his eyes were still in deep sleep, but suddenly grabbed on the calendar. " It's Sunday", he shouted jubilantly and made his way to the backward of his house. He played the whole day, accompanied by his pet dog. In the evening he got sick. His father got worried, but the doctor told him to relax as it's not that serious. According to the doctor Tobu will be fine within few days. After the doctor left, Tobu's father went inside the room and met Tobu. Tobu asked the cause behind his illness. His father went to the backward and examine everything that Tobu played with. Finally, after thorough examination his father got the clue behind Tobu's sickness. Next day in the morning he met Tobu and told him that the reason behind his sickness was the dirty water with which he took a bath. Tobu got confused and asked his father to explain. He took Tobu to the nearest water treatment plant where they met Mr Nair, the chief engineer of the plant. Tobu asked him from where does the clean water come from and how? Mr Nair took him deep down the works and thoroughly teaches all the handling processes which creates the water clear and safe for use. He explained that the process begins with collecting water from surface water or ground water source that are replenished by precipitation. With the help of water pumps the water fbws down to the reservoirs which holds enough liters of water to supply for many days. The water then fbws from the reservoirs through large pipes with the help of powerful pumps that move the water into the plant for treatment.

In the first step the water goes through coagulation process where alum is added as the water fbws into the plant. Alum, a coagulant causes the naturally occurring particles of organic material in the water to attract each other. The water enters into the fbcculation basin where a large mixer slowly stirs the water, causing the particles to collide and stick together creating large fbcks. afterwards the water fbws slowly to the next tank for the process called sedimentation. In this process, the fbcs created during the coagualtion and focculation stages are settled down at the bottom of the tank. After they settled down, the water is sent to the next tank for filtration. Here the water seeps through a filter of gravel, sand and carbon. The different layers of the filter works together to filter any remaining small particles. The water must now go through the disinfection stage to eliminate hazardous micro organisms. The most common process used is chlorination. Chlorine is added to destroy harmful bacteria and viruses. The chlorine is then left in contact with the water for a while for effective elimination result. from here, The treated water is then distrubuted to the homes which is ready to use.

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RESEARCH
AND DEVELOPMENT

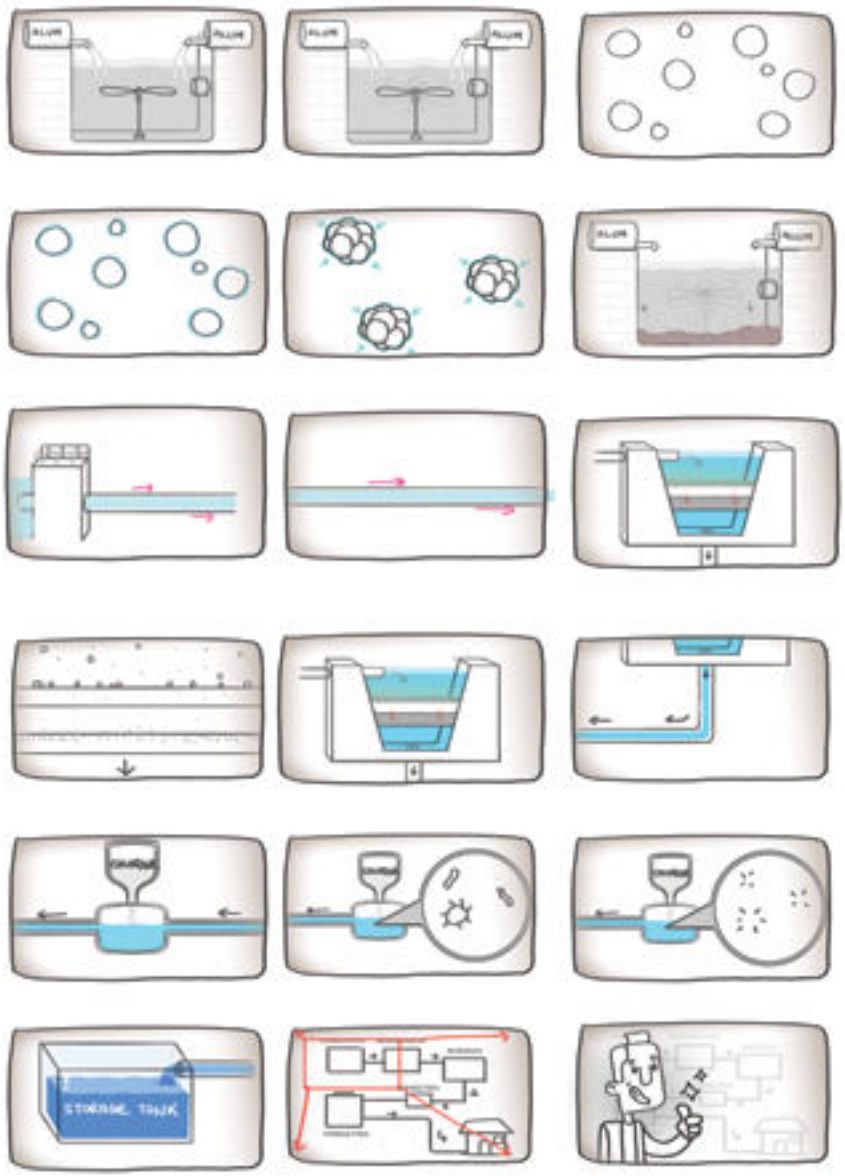
STORYBOARD

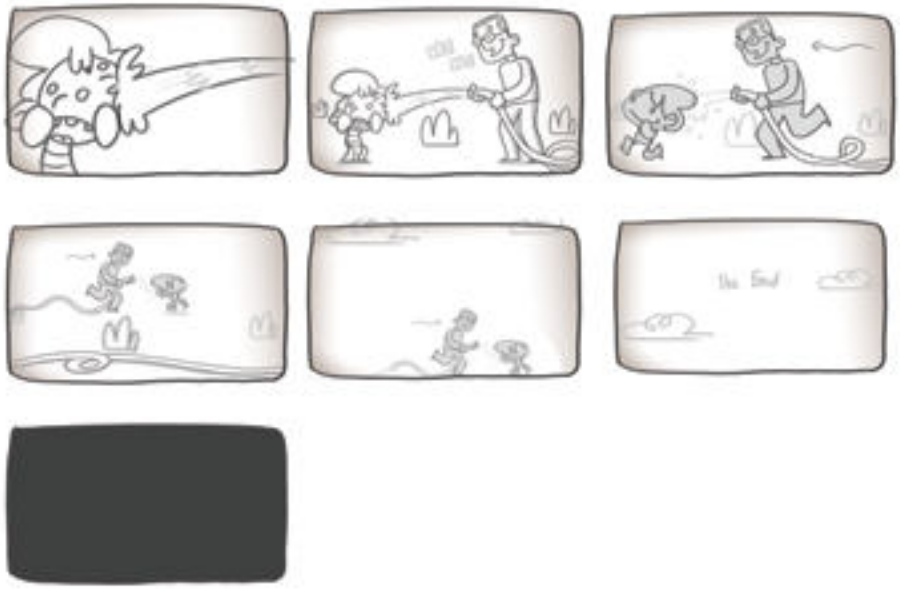
10:00
10:00
SUNDAY
3
ZOOM IN
CUT

CUT
(FADE OUT)
(FADE IN)

CAMERA PAN
(FADE OUT)
(FADE OUT)

(FADE OUT)
ALL FIXED
FADE OUT


STORAGE TANK



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Final Concept : **To make an Animated Explanatory Video on Water Treatment Process.**

Finally, I decided to make an animated explanatory video on the subject “Water Treatment Process” which will cater to the children of age group 10-12 years old. It will help then children to learn the subject through a fun and engaging way of learning. The student will understand the whole process of Water treatment through this short animated explanatory video. The biggest inspiration for this idea is “Dora, the explorer” which is one of my favorites. It is recognized for the outstanding efforts in making learning a pleasurable experience for pre-schoolers.

This Video explains all the processes of cleaning up the raw water collected from natural resorces used for daily household purposes. The process begins with collecting water from surface water or ground water source that are replenished by precipitation. With the help of water pumps the water fbws down to the reservoirs which holds enough liters of water to supply for many days. The water then fbws from the reservoirs through large pipes with the help of powerful pumps that move the water into the plant for treatment.
In the first step the water goes through coagulation process where alum is added as the water fbws into the plant. Alum, a coagulant causes the naturally occurring particles of organic material in the water to attract each other. The water enters into the fbcculation basin where a large mixer slowly stirs the water, causing the particles to collide and stick together creating large fbcks. afterwards the water fbws slowly to the next tank for the process called sedimentation. In this process, the fbcs created during the coagualtion and focculation stages are settled down at the bottom of the tank. After they settled down, the water is sent to the next tank for filtration. Here the water seeps through a filter of gravel, sand and carbon. The different layers of the filter works together to filter any remaining small particles. The water must now go through the disinfection stage to eliminate hazardous micro organisms. The most common process used is chlorination. Chlorine is added to destroy harmful bacteria and viruses. The chlorine is then left in contact with the water for a while for effective elimination result. from here, The treated water is then distrubuted to the homes which is ready to use.

Aim

- Make it simple and effective
- Design a short and crisp content
- Make it visually outstanding
- Explore new techniques
- Make cost effective

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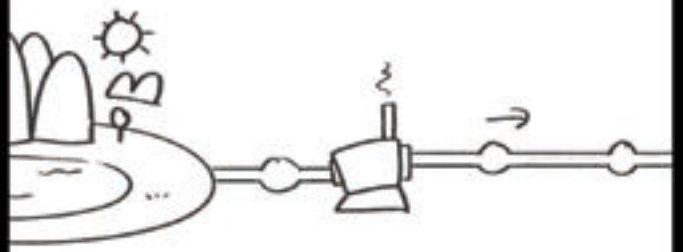
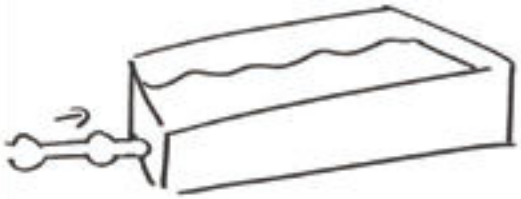
ROUGH THUMBNAILS

SOAP BUBBLE SOUND
CLICK ON THE TUB
Hey friends, dont you like taking a bath in clean water?
i know you do
But, have you ever wondered where the clean water comes from?
COME LET'S EXPLORE
CLICK TO EXPLORE
WAITING FOR YOU ! HURRY UP
GOOD

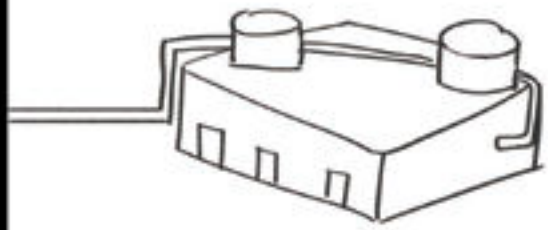
The process begins with collecting water from surface water source that are replenished by precipitation.



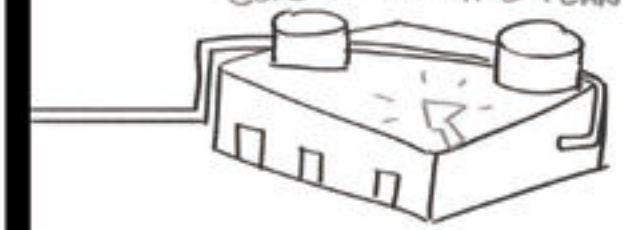
With the help of water pumps the water flows down to the



large reservoir which holds enough liters of water to supply for many days



The water then flows from the reservoirs through large pipes into the plant for treatment.



Lets go inside the plant

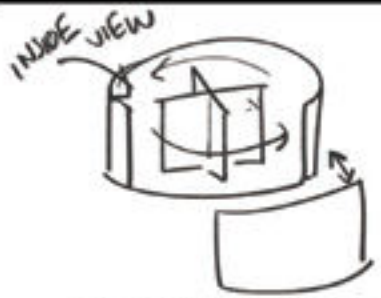
STEP 1

COAGULATION

In step 1 the water goes through coagulation process

where alum is added as the water flows into the plant. Alum, a co-agulant causes the naturally occurring particles of organic material in the water to attract each other

The water enters into the flocculation basin where a large mixer slowly stirs the water,



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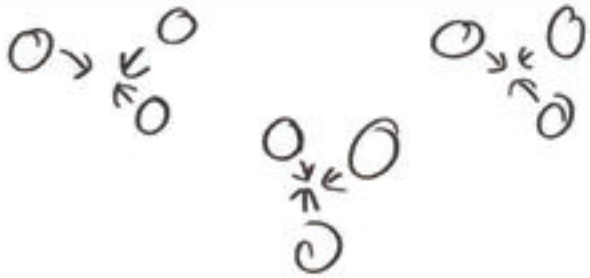

causing the particles to collide and stick together creating large flocs

causing the particles to collide and stick together creating large flocs

STEP 2

SEDIMENTATION

in step 2 the water goes through sedimentation process

In this process, the flocs created during the coagualtion and foccu-lation stages gets heavy and are settled down at the bottom of the tank.

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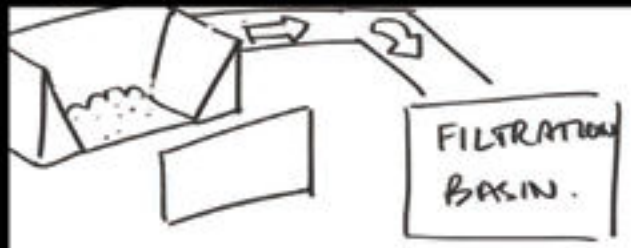
STEP 3

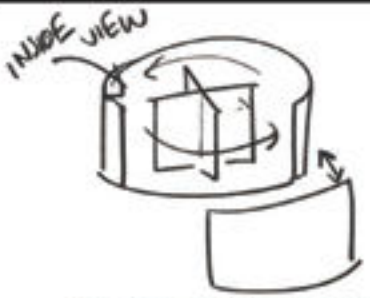
FILTRATION

in step 3 the water goes through filtration process

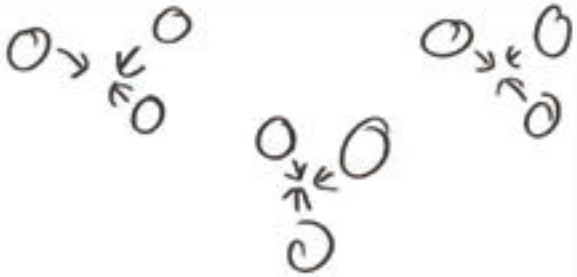


. After they settled down, the water is sent to the next filtration basin.

. Here the water seeps through a filter of sand and carbon. The dif-ferent layers of the filter works together to filter any remaining small particles



The water enters into the flocculation basin where a large mixer slowly stirs the water,



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STEP 3

FILTRATION

in step 3 the water goes through filtration process

. After they settled down, the water is sent to the next filtration basin.

. Here the water seeps through a filter of sand and carbon. The dif-ferent layers of the filter works together to filter any remaining small particles

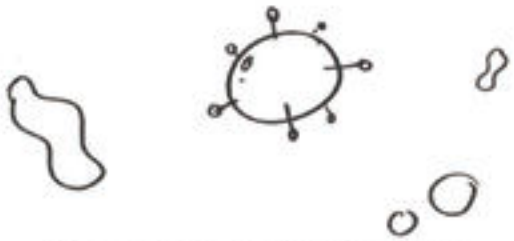
STEP 4

DISINFECTION

step 4
the water must go through the disinfection process

this disinfection stage is to eliminate hazardous micro organisms that causes dieseses.

Chlorine is added to destroy harmful bacteria and viruses.



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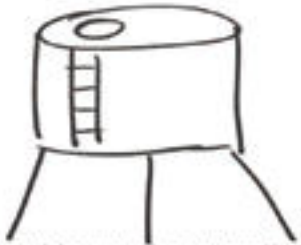
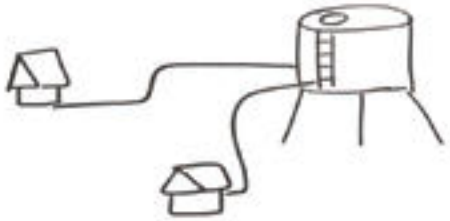


The treated clean water then get stored in the tank



. from here, The treated water is then distrubuted to the homes which is ready to use.

FINAL
LOOK AND FEEL

Screenshot 1

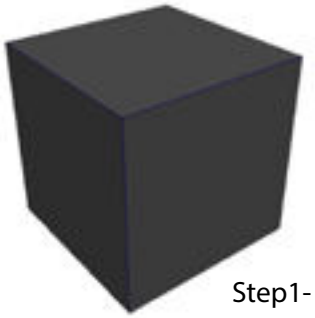
Screenshot 2

Screenshot 3

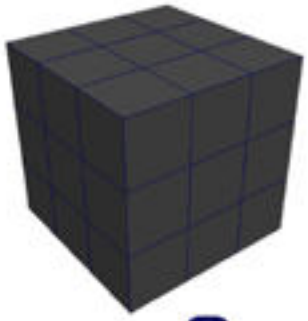
Screenshot 4

PROCESS

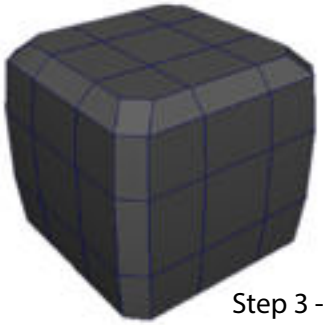
Behind The Scene



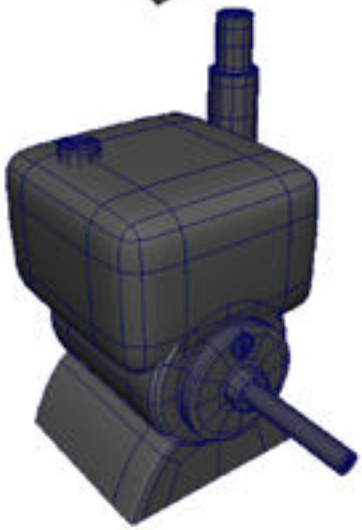
Step1- Created a poly cube



Step 2- Added segments

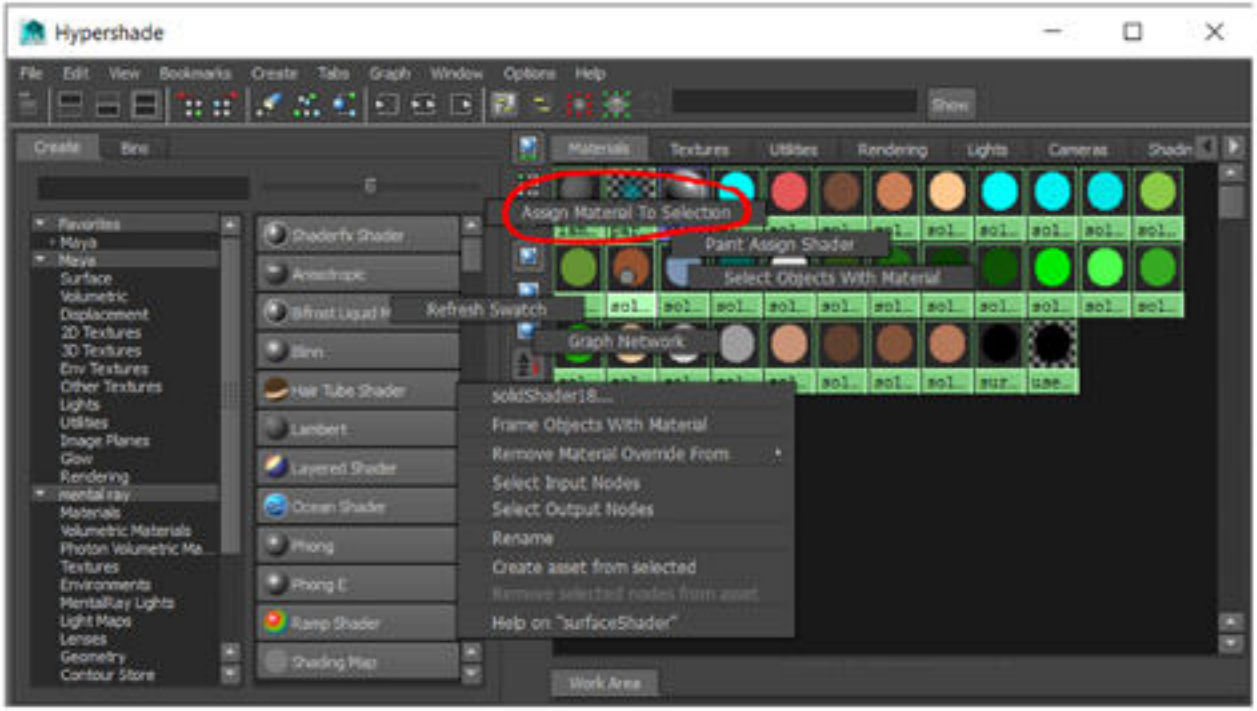


Step 3 - Started sculpting

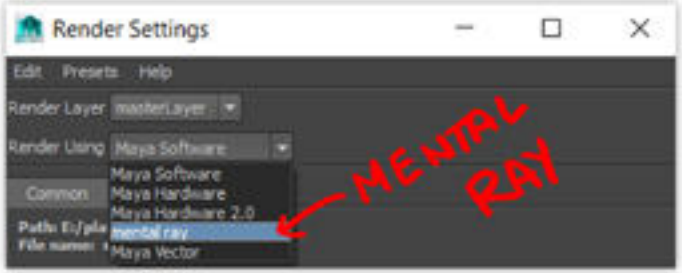


Step 5 - Assigned a flat toon shader

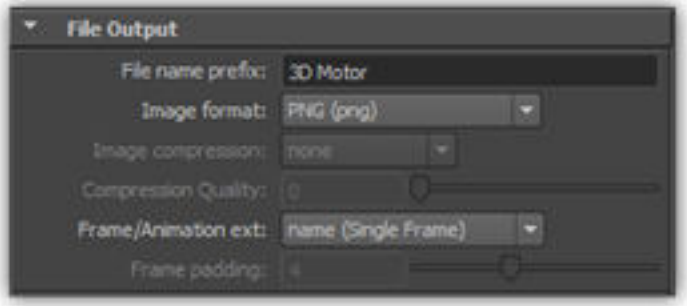
My approach towards this project is to design a video which should look visually very appealing maintaining a market standard but at the same time cost effective. The present educational videos availabe in the market are higher in prices, but the average in visuals. For better result, I used 3D platform to design and animate the content keeping the 2D look and feel. I also re-designed the elements to make it more interesting for kids.



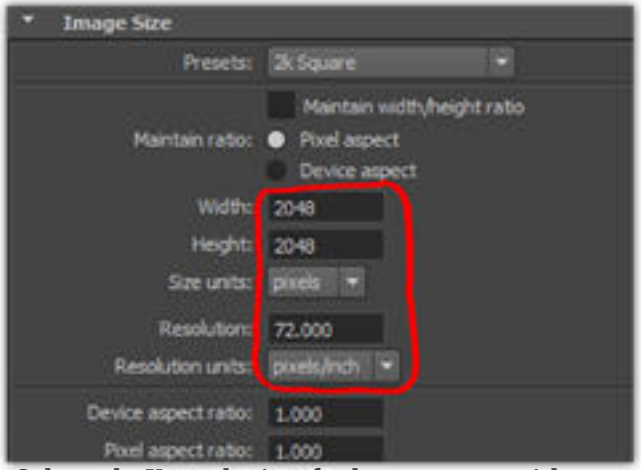
Selected the object and assigned material and color.



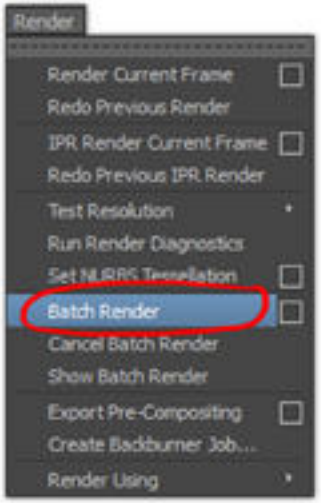
Selected Mental Ray as the render machine for better quality.



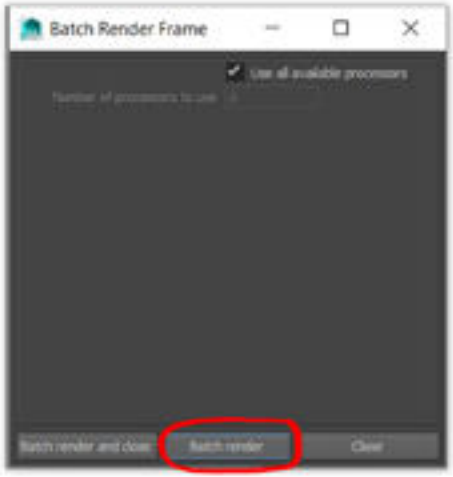
Selected PNG(sequence) as the image format.

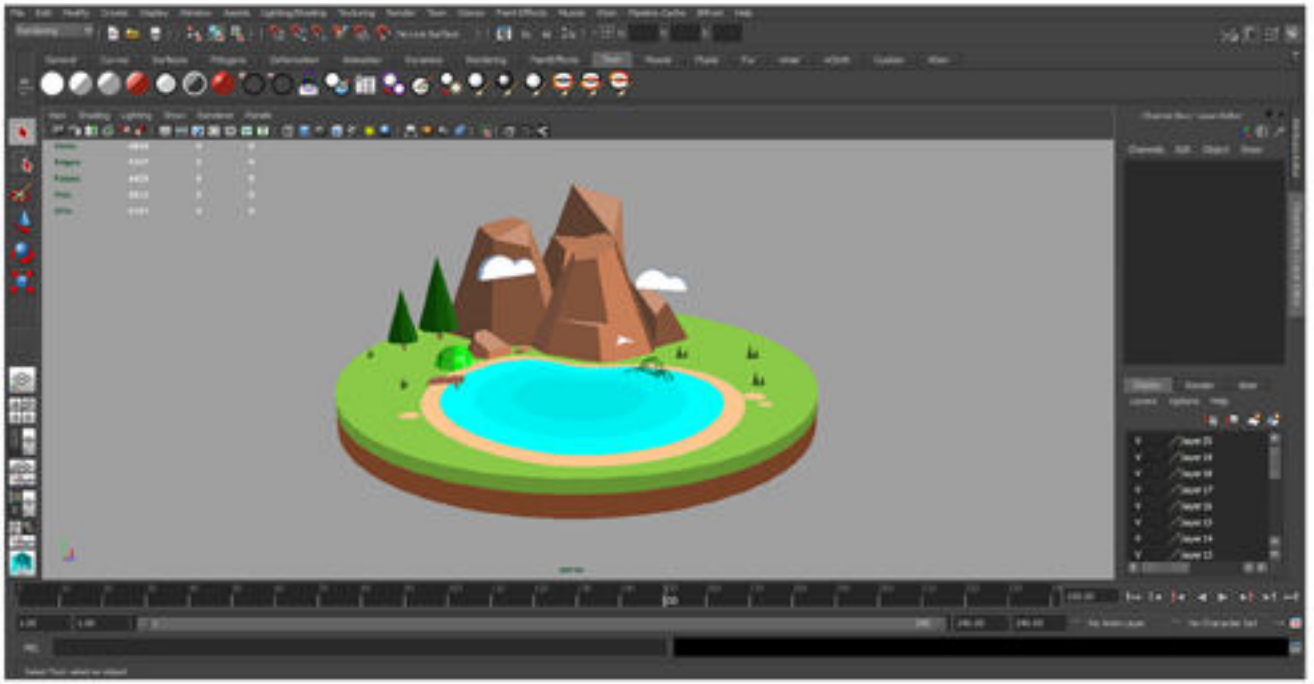


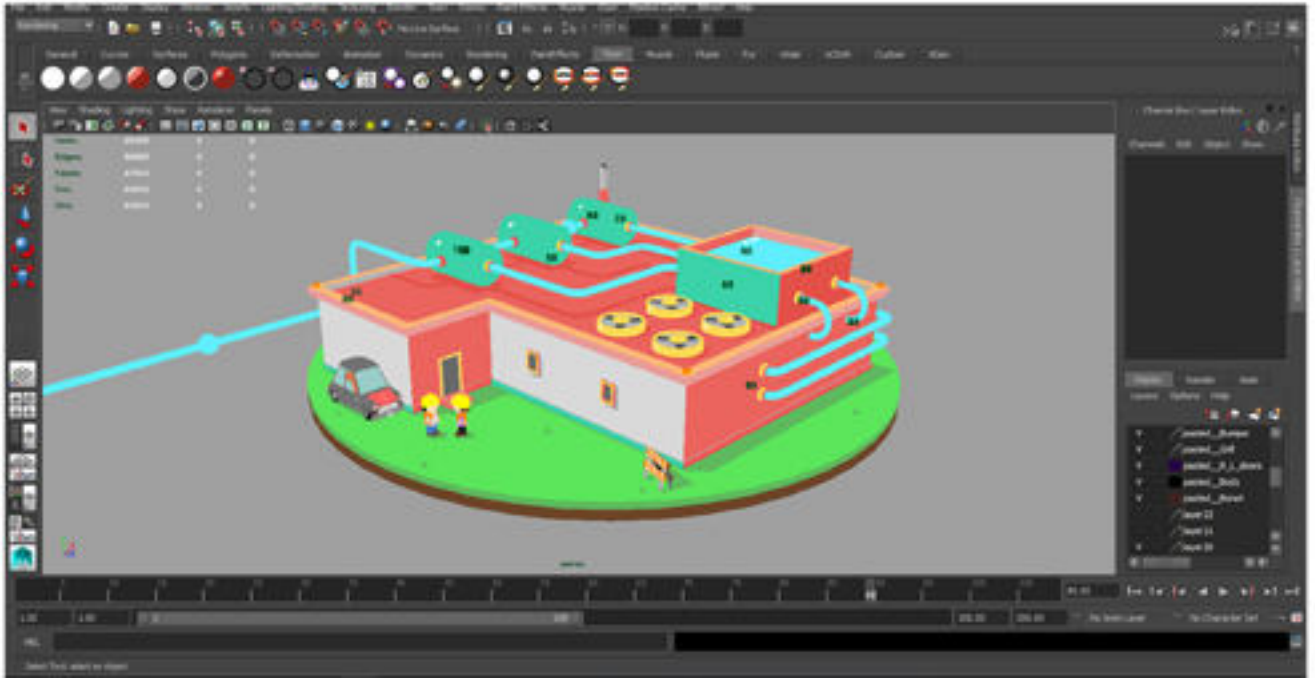
Selected 2K resolution for best output with 72 pixel/inch.



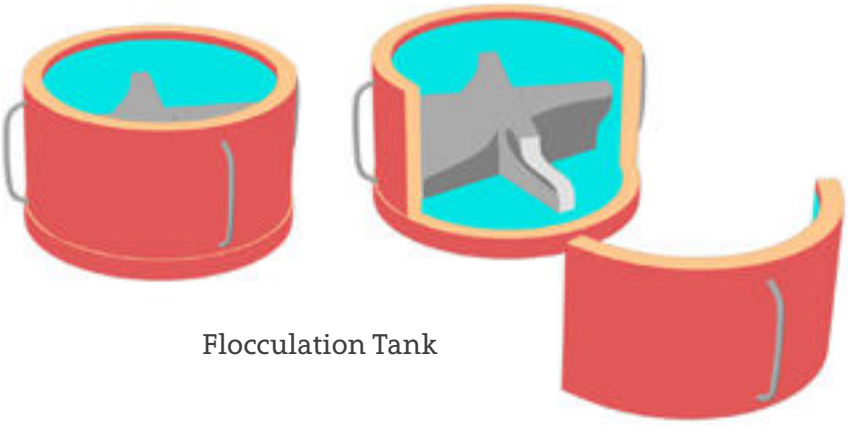
Selected Batch Render for final render





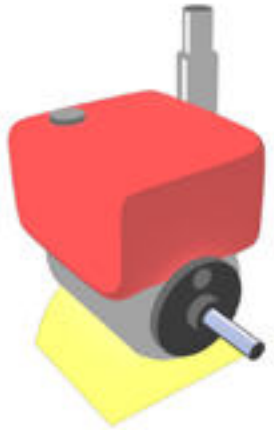


This is how it looks in Maya Workspace

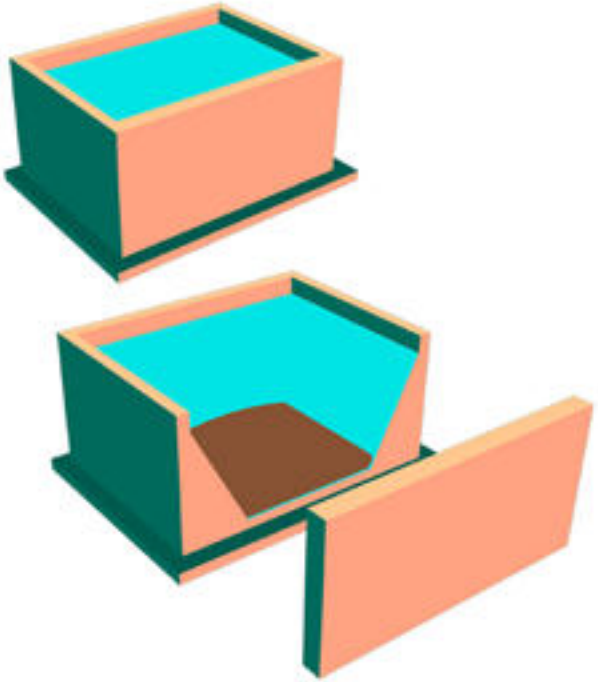


Flocculation Tank

Chlorine Dispenser

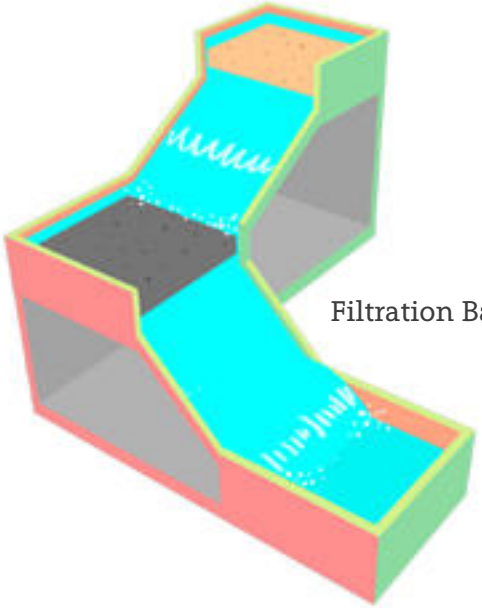


Water Pump



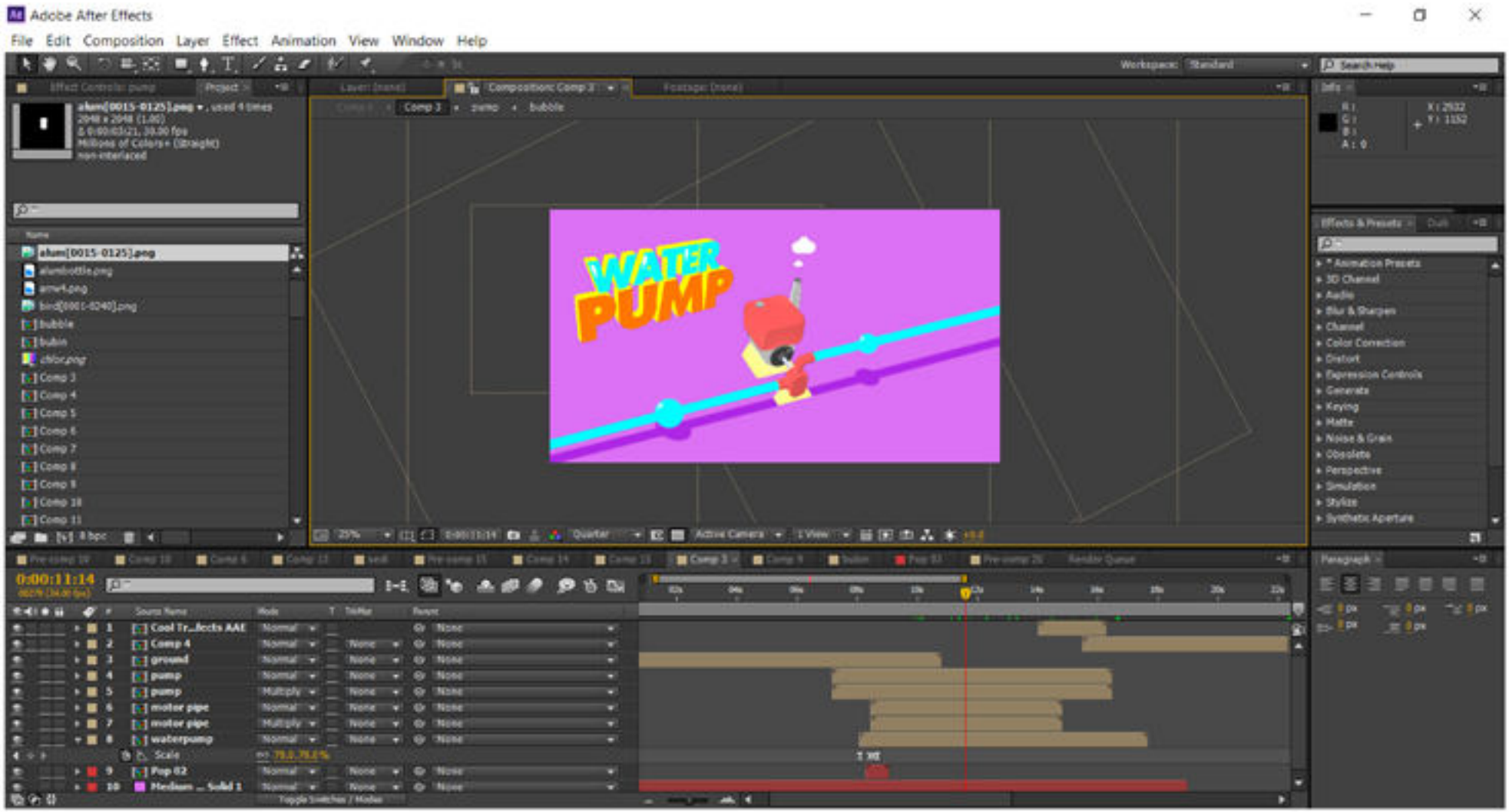
Sedimentation Tank

Alum Dispenser



Filtration Basin

Assests Design in 3D

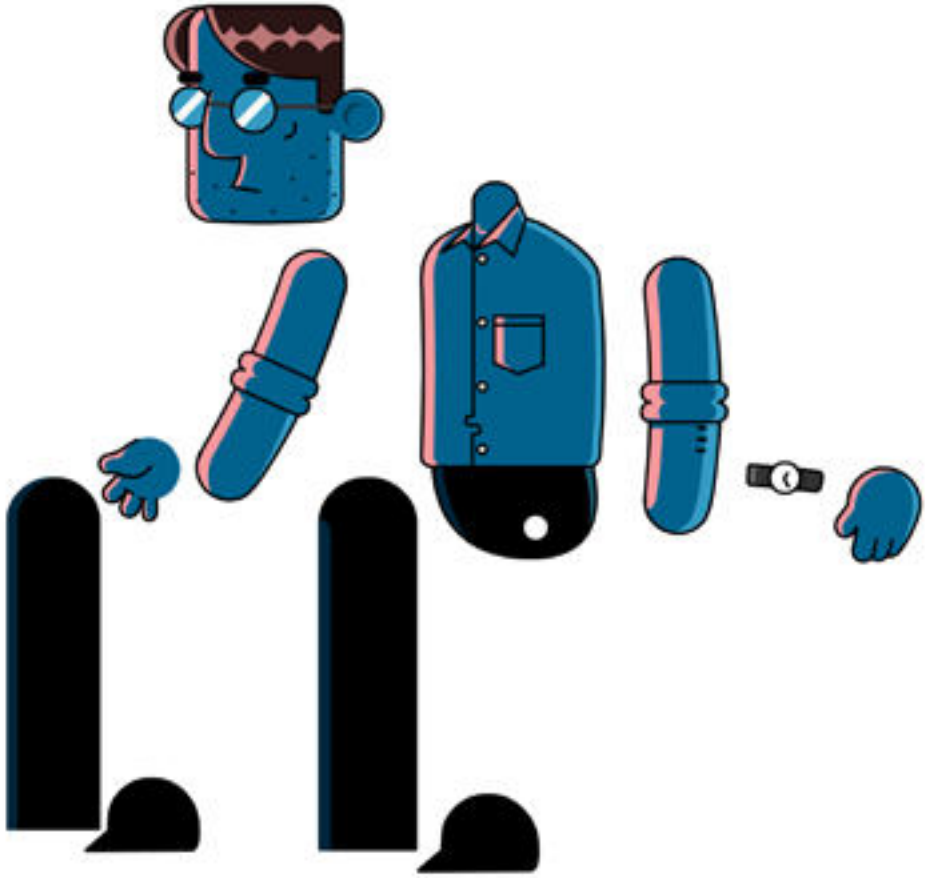


Composited in After Effects

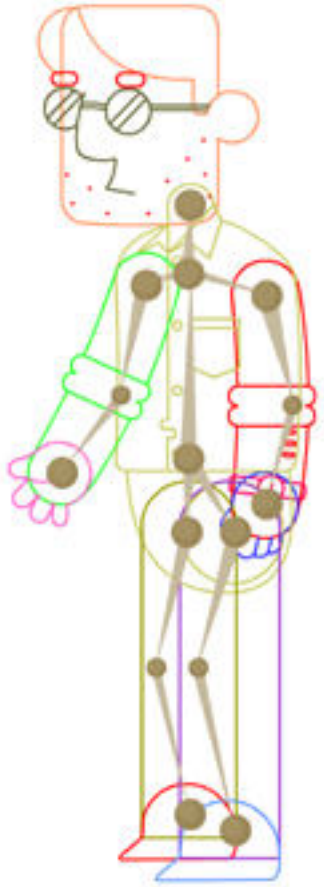
Character Animation Process

* This is not the final character.

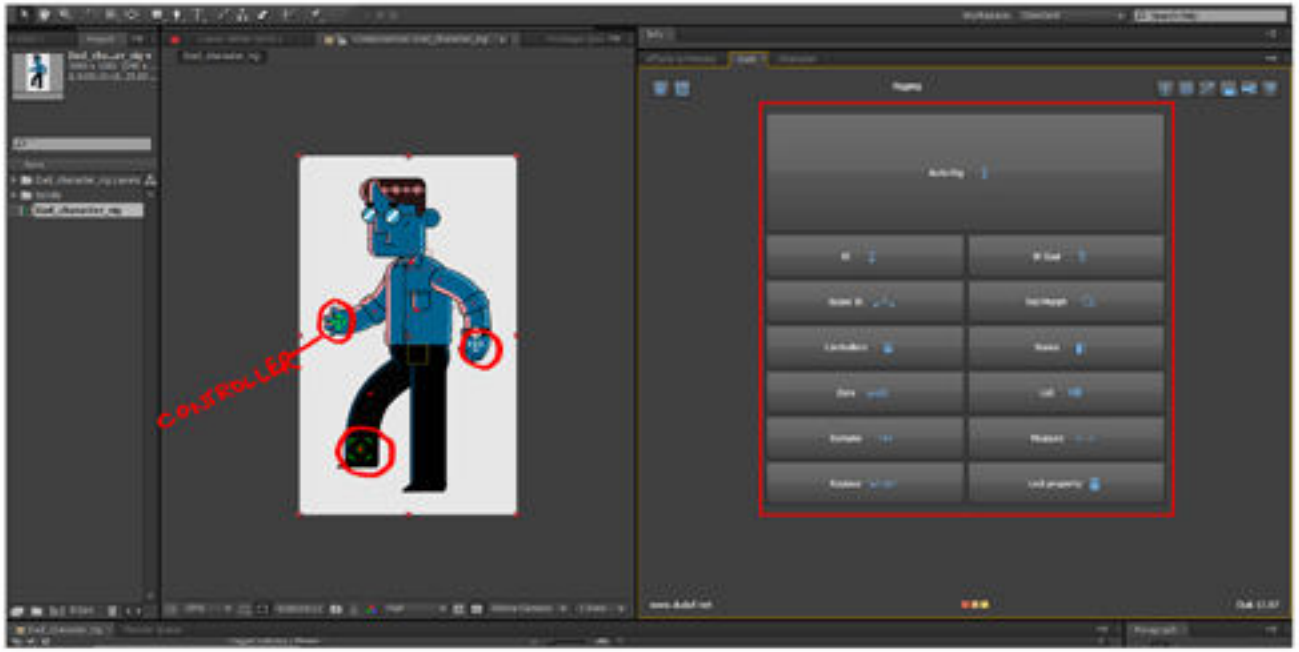
Designed in flash with Line Tool



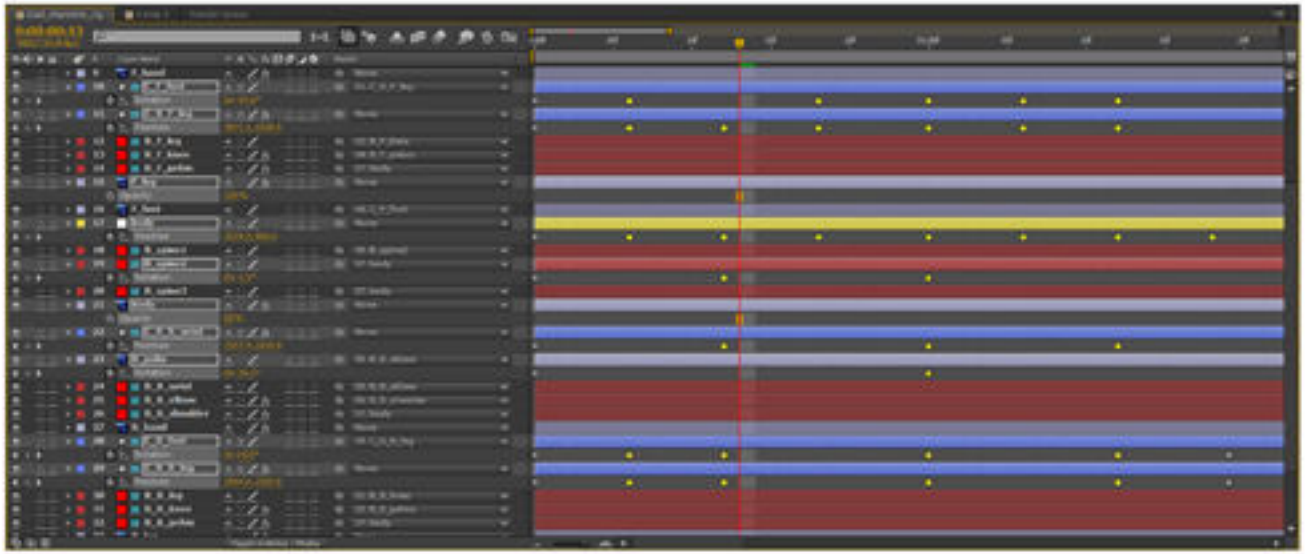
Every body parts are separated and put into layers.



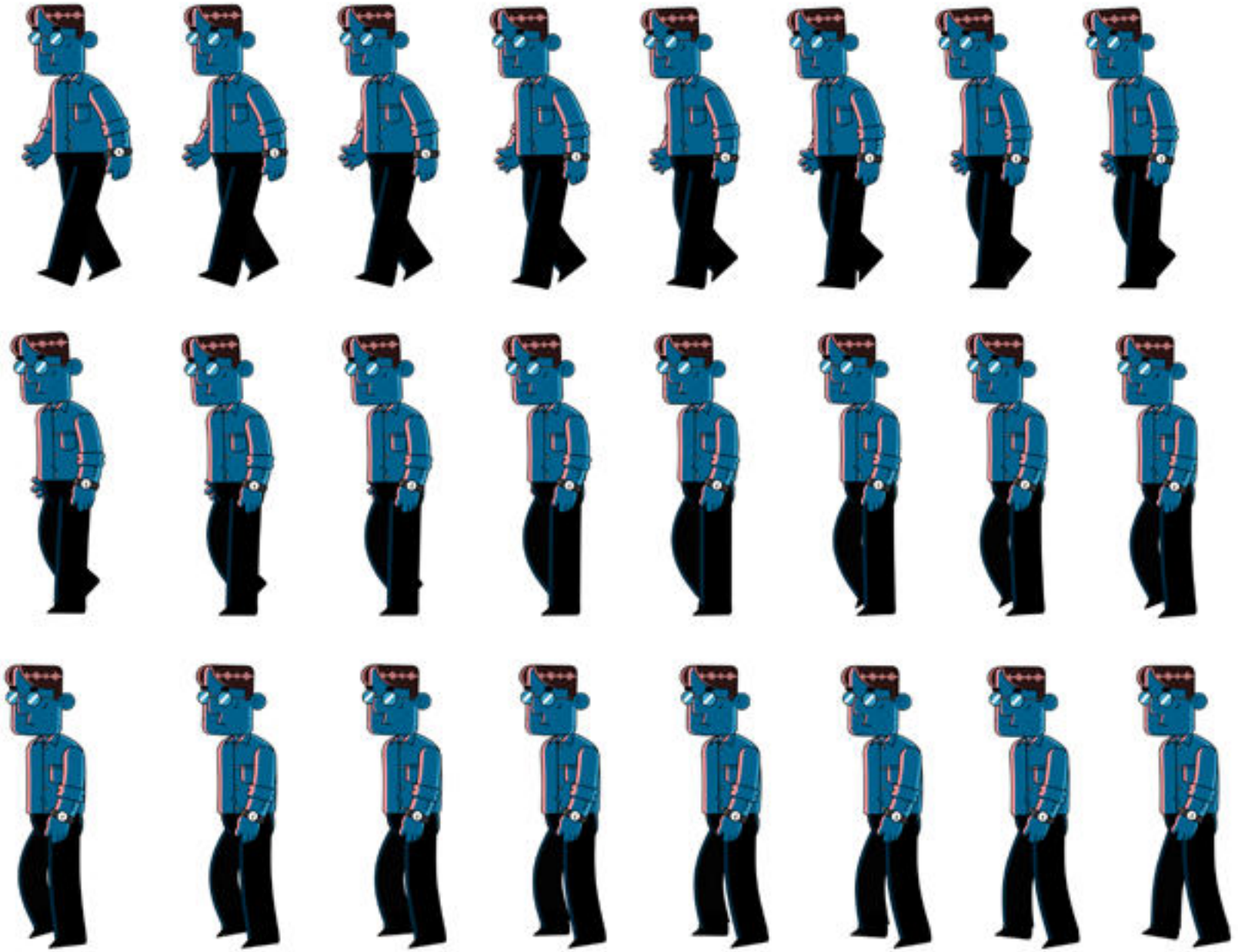
Rigged every parts with Duik Tool in After Effects



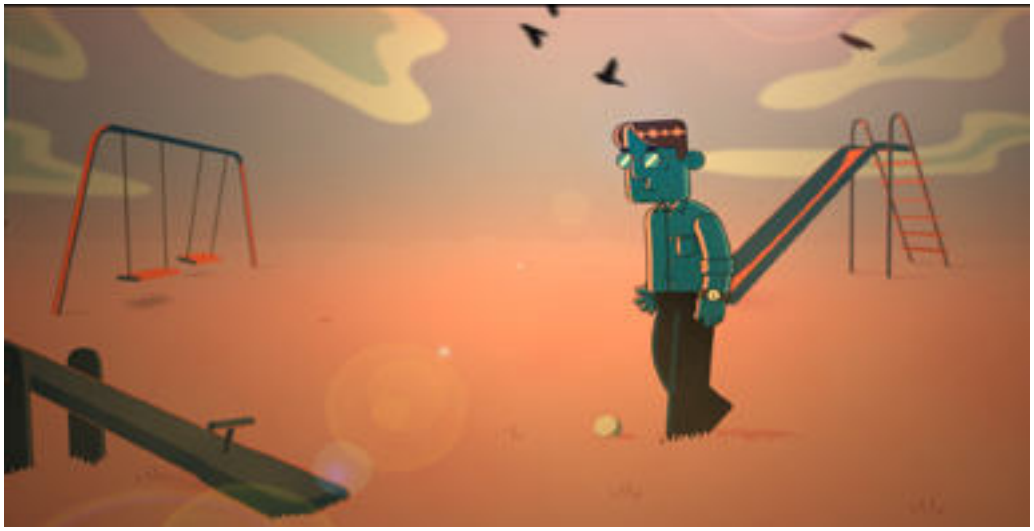
Duik Rigging Interface



Added keyframes for animation



Character Walkcycle Animation



Animation Test Render Screenshot #1

Animation Test Render Screenshot #2

CONCLUSION

The techniques I discovered during the production of this project immensely refined my knowledge which will assist me further in the future. The research gave me a vision for achieving the final output and understand the valuable process of brainstorming and conceptualization, no matter how much time and effort it consumed during the process. The feedbacks from my project 2 i.e the first phase of my degree project helped me a lot in understanding my flaws and strength which helped me during the final project. I don't regret what I've been through. I think everybody has ups and downs in their lives. We learn from the biggest disappointments, but you need to keep running right through them.

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REFERENCES

FORMAL, NON-FORMAL AND INFORMAL EDUCATION: CONCEPTS/ APPLICABILITY
Claudio Zaki Dib
Institute of Physics
University of São Paulo, Brazi
http://www.techne-dib.com.br/downloads/6.pdf

NEW MEDIA TECHNOLOGY IN EDUCATION -
A GENRE OF OUTREACH LEARNING
Shilpa.J
Research Scholar
DOS – Communication and Journalism
University of Mysore
Mysore, Karnataka.

New Media's Impact on Education Strategies
Woodie Flowers
https://net.educause.edu/ir/library/pdf/ffpiu016.pdf

New media and their role in education
Fons T. J. Vernooij, Thomas J. P. Thijssen, Remko H. Schermerhorn
http://www.fons-vernooij.nl/documenten/new-media-in-education.pdf

Pedagogic Approaches to Using Technology for Learning
Graham Attwell and Jenny Hughes (Pontydysgu) for Lifelong Learning UK

Pedagogic Approaches to Using Technology for Learning
Graham Attwell and Jenny Hughes (Pontydysgu) for Lifelong Learning UK
http://webarchive.nationalarchives.gov.uk/20110414152025/http:/www.lluk.org/wp-content/uploads/2011/01/Pedagogical-appraches-for-using-technology-literature-review-january-11-FINAL.pdf

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