

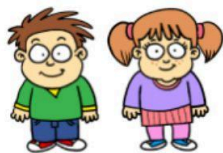
FINAL ASSIGNMENT PART 2- PROPOSAL

PREPARED BY

AMY LEE, JESSIE YOUNG, LAURA ORLOWSKI.
MICHELLE KIM, CLARISSE YEH, AISHA MIR

PREPARED FOR

DR SAM MCCREADY



EDUCATIONAL TECHNOLOGY, UNIVERSITY OF BRITISH COLUMBIA
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a) Name of game

- Math Heroes

b) Game creators (plus your roles, i.e. designer, story writer, programmer, sound, art, etc.)

- Aisha, Amy & Michelle - story writer & content creator (designer)
- Clarisse - Game instructions/level, math questions, math hints
- Jessie - programmer
- Laura - art
- Aisha - Morar.ai images elevator pitch: background, Level up sign, Item sign, Level/heart loss sign

c) Elevator pitch: One to two sentences summarizing your game. – add why we need this

Jump on a thrilling adventure gaming experience - where your child or your student's learning and practicing journey will come to life through sensation, fantasy, and discovery.

d) Overview of Game (what kind of game, what genre, and what software will you use)

- Mathematical problem-solving game
- Adventure
- Twine

e) Characters (you can skip if you don't have any if you do have some, introduce them here, who are they, what are their roles, etc.?)

- Two elementary school students - the player will choose one character to advance them into a math hero.
- Monsters - villains of the game players will be battling
 - The sizing of each monster gets bigger depending on the difficulty of the level

f) Story/events (what happens? – should be as brief as you can make it, as long as it also makes sense)

Fullerton (2019) claims that a story in the game can engage its players emotionally. It is essential to have an adequate length and amount of story in the game to hook and engage players, as it can motivate them to start or keep playing the game. Our story has a challenge players must resolve through the gameplay – math, problem-solving, and advancing levels to gain new skills. As we design this game, we need to have a

goal that is achievable yet challenging. Fullerton (2019) emphasizes the importance of the frustration level in the challenge as significant challenges may lead to frustration among players, while easier challenges would cause players to move on from the game too easily and quickly. We considered these aspects when creating our game story and other game elements.

In Math Quest, unbeatable monsters attack the Math Town. None of the weapons can beat these monsters, and they are only afraid of one thing - proficient math skills. To save the town, we need a hero with excellent mathematical skills. An ordinary elementary school student, the future math hero, goes around the town and fights monsters using their math skills. As the student fight the monsters with their math knowledge, they collect various math skills in their backpack. The player will advance their mathematical skills while their character will gain superhero items by advancing through the levels to become the math hero who will save the town from these unstoppable monsters.

GAME MECHANICS:

Rules and Defining Procedures

Fullerton (2019) asserts that game mechanics encompass the rules and procedures controlling a game's operation. Research further attests that these elements influence player engagement, game progression, and the structured levels in a game.

The focus is on advancing through **levels** to acquire superhero items. (p.105)

Levelling Up - Acquire Superhero Items

- Level 1: Mask/Hat
- Level 2: Shield
- Level 3: Cape

Player experience **goals are objectives** that the game designer establishes for the kind of experience players will undergo throughout the game (Fullerton, 2019, p.12).

- achievement to become a **Math Hero** by defeating monsters with three correct answers per monster and earning all superhero items to achieve the winning status.

Game Goal: Become a Math Hero

- Defeat monsters by correctly answering 3 questions per monster (3 monsters/level).
- Earn all superhero items to become the ultimate Math Hero.

Math Hints

- Utilize math hints to assist in problem-solving.

In-Game Avatars:

"Fullerton (2019) collected avatar data, analyzing agility or quantities alongside participants' fun ratings (p. 305). Math Hero's levelling structure includes acquiring superhero items: Level 1 - Mask/Hat, Level 2 - Shield, and Level 3 - Cape, showcasing users' learning processes similar to Fullerton's (2019 research."

- Level Up avatars
- Item avatars
- Level/Heart Loss avatars

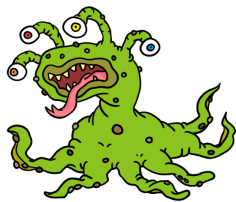
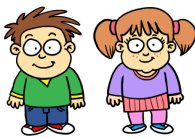
h) Game assets (art, sound, animation, sound descriptions)

Theme	Math Heroes is a challenge-based game where the player challenges monsters by tackling math problems
Characters	<p>Characters are designed to look like intermediate elementary school students</p> <ul style="list-style-type: none">• Casual student wear to engage elementary school target audience• Updated clothing design when levels are won with accessories/powers• Backpack: to acquire math skills and release math items/powers• Express various facial emotions: smiling (excited when new level approaches), thinking/frowning (given a time limit to defeat monster/math question), sad/worried (lose a heart/lost a level, cheering (moved onto next level, gained superhero power)

<p>Sound (CapCut): Encourage gamer engagement</p>	<ol style="list-style-type: none"> 1) Menu/select challenge - sounds to start the game 2) During character selection - each character has a distinct sound <ul style="list-style-type: none"> Character #1: Male student - matches superhero aesthetics Character #2: Female student - match superhero aesthetics 3) Level 1-3 - at the start of each level - distinct level sounds - as motivation to keep on playing to achieve level 3/finish the game 4) Lost a heart/health - “too bad” sound to remind player of health level 5) Gained a hint - “bing” sound to alert the player 6) Monster appears - “alerting” sound to alert player of math challenge to beat the level 7) Win level - “clapping” or celebratory sound to acknowledge the player’s efforts in completing the math question 8) Superhero item - “power up” sound for each item revealed once the monster is beaten
<p>Background</p>	<ul style="list-style-type: none"> • Set in a school setting with an adventure theme • Map-centered with fun backgrounds <ul style="list-style-type: none"> <input type="checkbox"/> Space <input type="checkbox"/> Jungle <input type="checkbox"/> Forest <input type="checkbox"/> elementary school setting (hallway/gym/classroom)
<p>Levels: Support and account for game progression</p>	<ul style="list-style-type: none"> • Each level is scaffolded for student playing, self-efficacy, and progression in mathematical processing • Each level is a break-down of a math theme chosen • Emerging level question (Level 1) • Developing level question (Level 2) • Proficient level question (Level 3) <p>Level 1: Mask/Hat</p> <ul style="list-style-type: none"> • Head accessory correlated to <u>neurological processing/chunking</u>: a math question based on mathematical procedures/organization (BEDMAS, fractions)

	<p>Level 2: Shield</p> <ul style="list-style-type: none"> Shield correlated to <u>math rule/trick:</u> a math question based on math rules/trick (even/odd numbers and divisibility, cross multiplication, math language/symbols) <p>Level 3: Cape</p> <ul style="list-style-type: none"> Cape Correlated to <u>show your work:</u> to finalize a math value, express math work and thinking (find the mistake in the example, what step is missing, etc.)
Dialogue/chat windows	<ul style="list-style-type: none"> Start of the game menu Character selection Level 1 question and hint Level 2 question and hint Level 3 question and hint
<ul style="list-style-type: none"> Quest: a mission in a game, structuring action for the player (p.44) Dynamics are the processes and events in a game that are generated by the relationships between rules Game World physics player input Etc (p.49) Aesthetics cover the favourable emotional responses evoked in the player as he or she interacts with the game. Hunicke, LeBlanc and Zubec list the elements that attract us to games <ul style="list-style-type: none"> Sensation - game as a sense of pleasure Fantasy - game as Make-Believe Narrative - game as drama Challenge - game as an obstacle course Fellowship - game as social framework Discovery - game as Uncharted Territory Expression - game as self-discovery Submission - game as a pastime 	

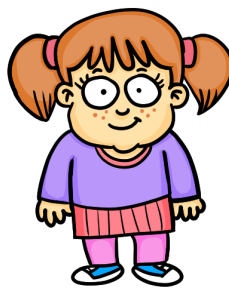
Characters



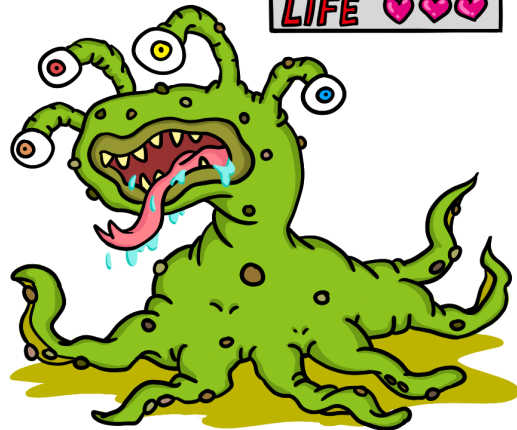
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References

Fullerton, T. (2019). Game Design Workshop: A Playcentric Approach to Creating Innovative Games, NY: Taylor & Francis (CRS Press)