

Teaching Youth Food Safety

Theme Park Kitchen
a Game-Based Learning Experience



NM
STATE
UNIVERSITY

Learning
Games
Lab.org

About us



**Matheus
Cezarotto**

He/him/his
Assistant Professor
Learning Games Lab
matheus@nmsu.edu
@macezarotto



**Amy
Smith Muisse**

She/her/hers
Instructional Designer
Learning Games Lab
smiamysmiamy@nmsu.edu
@amysmithmuise



**Ruth
Torres Castillo**

She/her/hers
Postdoctoral Researcher
Learning Games Lab
rutorres@nmsu.edu
@torresruthc



**Pamela
Martinez**

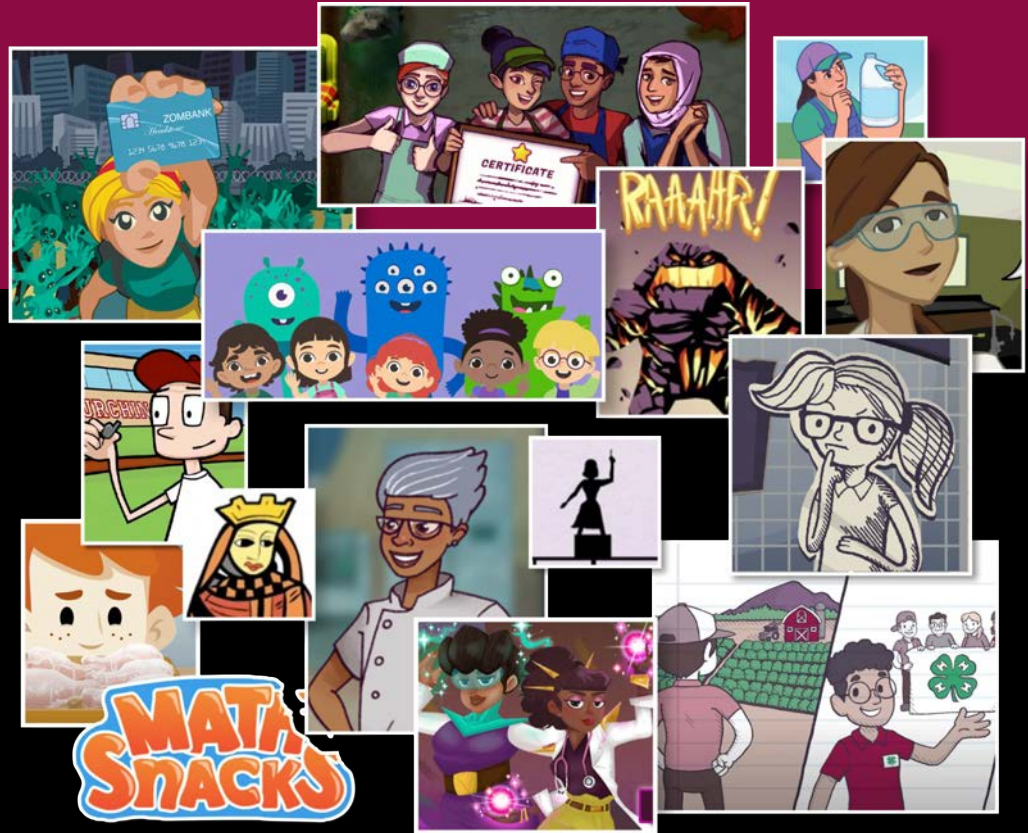
She/her/hers
Assistant Professor
Learning Games Lab
pamelmar@nmsu.edu
@pnmartinez

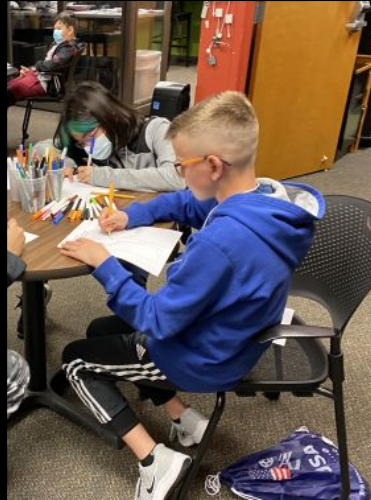
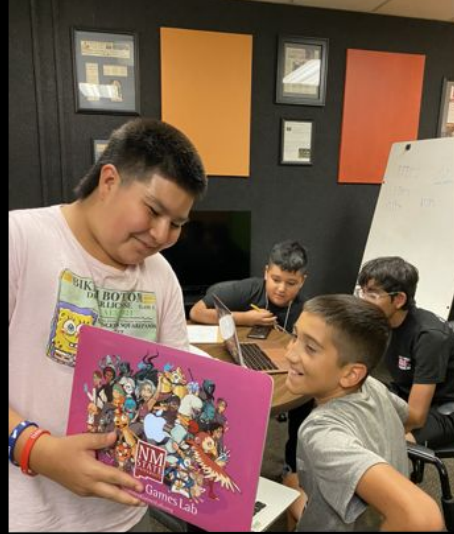


**Barbara
Chamberlin**

She/her/hers
Professor, Department Head
Learning Games Lab
bchamber@nmsu.edu
@bchamber

Innovative Media Research & Extension Learning Games Lab







1. **Gameplay**
2. **Our process**
3. **How to use**
4. **Q&A**

Padlet activity



A screenshot of a Padlet board with a dark purple background and scattered colorful geometric shapes (triangles, circles, squares). At the top left, the text reads "Matheus Cezarotto • 1m" and "What content do you think would benefit from a game?". On the right side, there is a vertical toolbar with icons for home, search, and other functions. A plus sign icon is visible in the bottom right corner of the board area.

<https://padlet.com/matheus28/what-learning-content-do-you-think-would-benefit-from-a-game-iisa4lm3v50qwiut>

Gameplay Video

<https://www.youtube.com/watch?v=OLTAtnR0zEs>

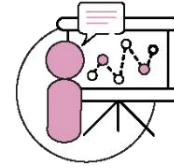


**Foodborne illness
is a serious issue
in the U.S.**

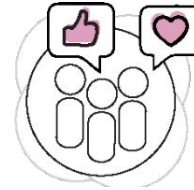
**Foodborne
Illness in
the US**

**48 million sick
3,000 deaths**

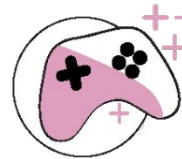
**Cost the
country
\$15.5 billions**



**Need
for Training**



**Youth
ages 11-13**



**Engaging
tool**

Support



Content Advisor

Carol Byrd-Bredbenner, PhD
(Rutgers University)

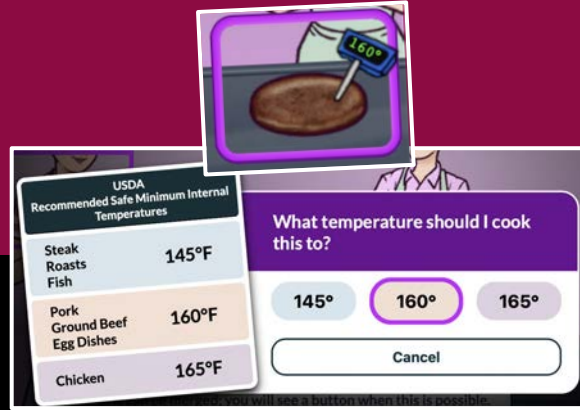


Extension Foundation USDA-NIFA
New Technology for Ag Extension
(NTAE) at the Expansion phase.

Main Learning Outcomes



Wash hands before preparing food



Cook food at the proper temperature



Avoid cross-contamination from raw meat and dirty produce to cooked or ready to eat foods

←

The Tricera-stop

DAY 1 🔒 🔒

Aquari-yum

🔒 🔒 🔒

Outer Space Eatin' Place

🔒 🔒 🔒

Med-Eat-Val

🔒 🔒 🔒

The Haunted Munchin'

🔒 🔒 🔒

Unlock all





**Normal
Level**



**Master
Level**

The Haunted Munchin'

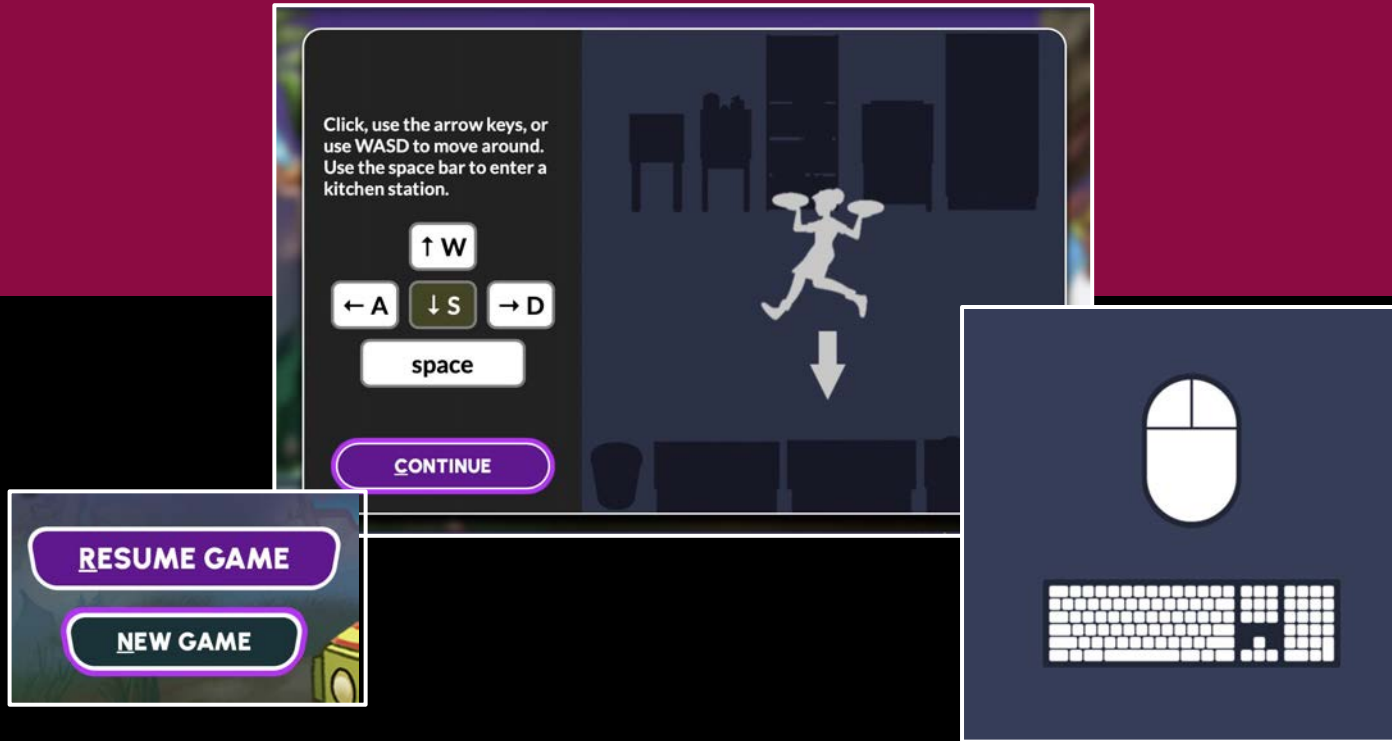
DAY 1

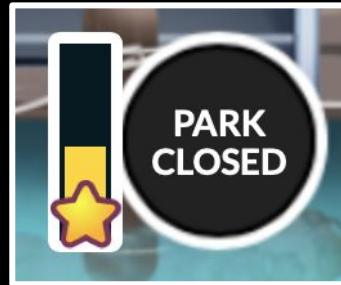
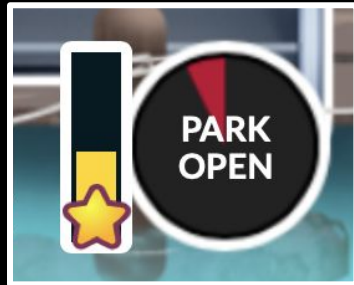
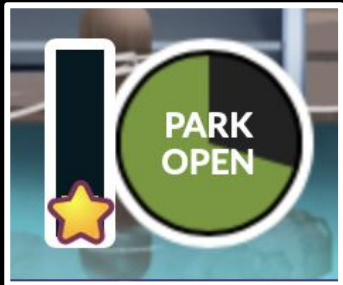
DAY 2

DAY 3

Accessibility

Keyboard control





Cezarotto, M., Martínez, P., & Chamberlin, B. (2022). Developing Inclusive Games: Design Frameworks for Accessibility and Diversity. In (Ed.), *Game Theory - From Idea to Practice*. IntechOpen. <https://doi.org/10.5772/intechopen.108456>



DEI
Representation



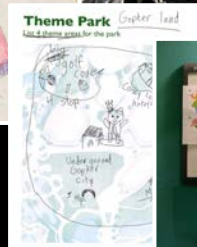
Process

Learning Games Lab

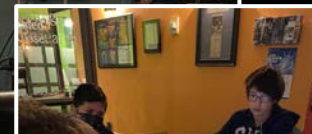
Activities to talk about diversity in games



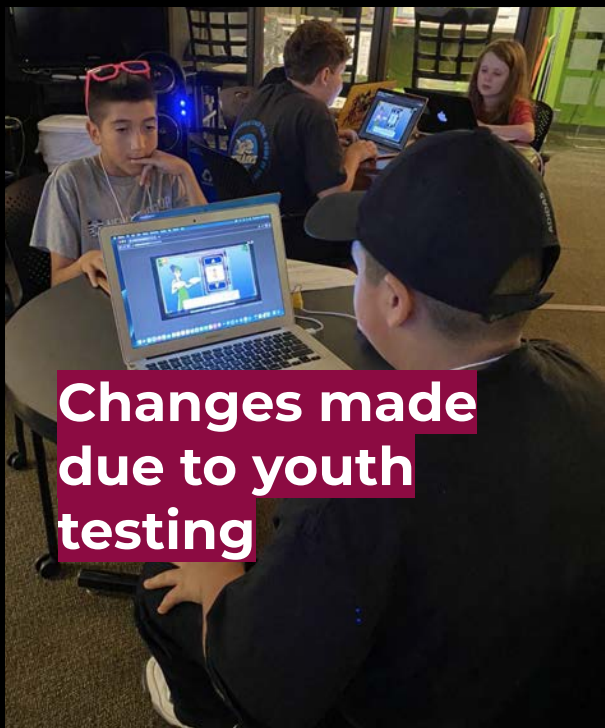
Character and theme design activities



Game Critical Review



User testing



Art changes

Calling attention to the timer and how it affects gameplay and earning “stars.”

Kids found some important bugs.



User testing

Funny comments from youth testers

"The green beans look like green takis."

After not washing plates, leading to cross-contamination raw→cooked:

"It's not chicken, it's... salmonella!"

- "I suggest you wash everything at least once."
"Do I have to wash the chicken?"

"This guy just wants corn! You are at a literal restaurant roller coaster, and you want corn?"

- "No! Don't wash the chicken!"

"And you!
You want an apple?"

"Dude, this is fun, though. I actually like this."

"The investors are here!
Ruh-roh"

User testing

- “In fact, the next day I’m not going to wash my hands”
- “What! He’s not going to wash his hands?”
- “That’s not okay.”

Conversations among youth testers

[Matheus: “What kind of ending are you expecting from the game?”]

Youth:

- “You get fired.”
- “Retired.”
- “Paycheck. After working for 10 years you get 10 bucks!”

Five **steps** for game-based learning



- 1 **Play** the game.
- 2 Reflect and discuss.
- 3 **Play** the game again.
- 4 Do a **supporting activity**.
- 5 **Play** the game some more.

Teaching guide!

Gameplay Introduction & Discussion Questions (20-30 minutes)

Allow students to play the game for 10 minutes, then ask them to silence their games and close their laptops.

Lead a discussion about gameplay for 10 minutes. You can scribe student responses if you would like.

1. What do you like about this game?
2. What are some things that make this game challenging?
3. Can anyone give their classmates hints about how to make the game easier?
4. Did you explore the Guide at the bottom of the screen? If so, how does it help you?
5. Did you explore the Achievement folder on the Field Guide? If so, how does it help you?
6. Did you explore the Number Changer button? If so, how does it help you?
7. What math do you see in this game so far?

Have a few students come up to the smart board and share one plant on the big screen. Click on the plant to see how the expression was made.
After the discussion, allow students to continue playing the game for an additional 10 minutes.

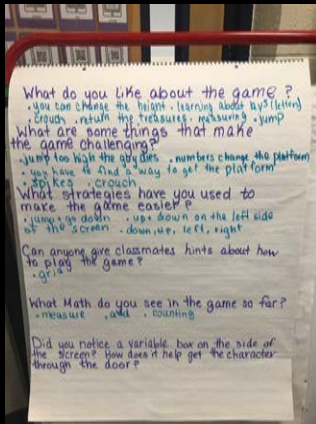
1 Play the game.

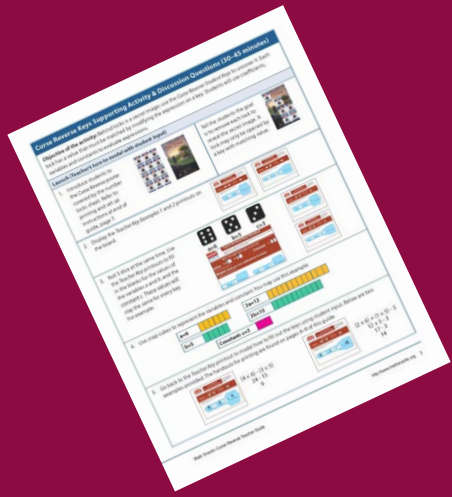
2 Reflect and Discuss
Talk about the gameplay.

- What do you like about the game?
- What makes this game challenging?

3 Play the Game Again

"If they talk about the game, they'll talk about the content"

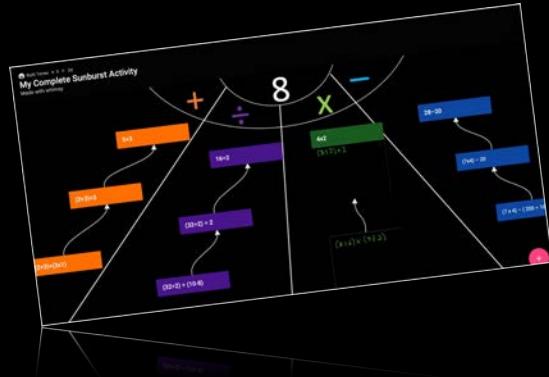




Teaching guide!

4 Supporting Activity

Apply the concepts.



Teaching guide!

Gameplay Enrichment & Discussion Questions (20-30 minutes)

Allow students to play the game for 10 minutes.

Lead a discussion about gameplay for 10 minutes. You can scribe student responses if you would like.

1. How does building the towers get more challenging from room to room?
2. How can you get the maximum number of moves required for a room to get a star? (By changing the variable and the platform is 2x, assist if a value of 3 in one step because 2x3 equals 6, instead of changing d values by +1, -1, +1.)
3. How did you use math to achieve the next level?
4. How did you use math to place the treasures?
5. How do letters represent in the game?
6. How are 2x and 3x different?
7. What is the difference between 2x and 3x?
8. What other terms and rooms did you explore?
9. How else can you represent $x + x + x / (2x + 3)$?
10. What happens when you turn off the grid? (You see only the height of the blocks.)
12. How does Goro Revival relate to the Keys activity?

Students continue to play for an additional 10 minutes.

5

Play the game some more.



Level Failed!

Oh no! You served contaminated food to a customer!
Next time, wash your hands and all produce before preparing meals. Be careful not to cross-contaminate!



First round of play

Second round of play

Previous version of the game: 4 million plays

Research study

903 middle schoolers

- **Engaged youth in fun gameplay**
- **Shifted their knowledge, attitudes and intentions around food safety.**

Would you like to partner with us in a research study?

Q&A!



www.ThemeParkKitchen.org

www.InnovativeMedia.nmsu.edu

Thank you :)

Matheus Cezarotto
matheus@nmsu.edu

Social media

@LearningGamesLab
@NMSUProductions
@macezarotto
@amysmithmuise

Innovative Media Research and Extension

As part of New Mexico's largest Land-Grant University, we serve the Cooperative Extension Service by producing educational media. Here, you'll find our hundreds of animations, videos, games, apps, interactive modules, and websites. Our faculty also conduct research on media development in our Learning Games Lab and support meaningful uses of technology in New Mexico Cooperative Extension. The Innovative Media Research and Extension main office is on the NMSU main campus in Gerard Thomas Hall, room 286, and the Learning Games Lab is in Gerard Thomas Hall, room 173.

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