



# ST Math<sup>®</sup>

## Summer Immersion

### Mini-Math Game Design Guide

The 4-Day Summer Immersion program includes a mini-math game design activity that teachers can do with students during the last module. This activity involves having students re-design a game they know (e.g., any card game, Candy Land, Uno, etc.) and add mathematical components to the game. Students will design and create their own math game in small groups using the design process approach. On the last day of the program, students will be presenting their math games at the [Learning Showcase and Celebration](#) to their classmates, parents, administrators, and the community.



The Mini-Math Game Design Booklet has been created to use during their brainstorming and execution process. We recommend using the [Design Process](#) as outlined below in actionable steps to help guide students through the design process. As the students finalize their games, they should get feedback on their game and make changes as needed. Make sure to let students know that they will be presenting their math game on the last day of ST Math Summer Immersion.

## THE DESIGN PROCESS: Designing a Math Game

Page 2 in Mini-Math Game Design Booklet



### STEP 1 - ASK

#### THINKING ABOUT THE PROJECT

Engineers ask questions about what they want to design. During ST Math Summer Immersion, you will be designing a math game. Questions to consider: What type of game do you want to design? Who are you designing for? What are the requirements of the game? What is your goal?

### STEP 2 - INVESTIGATE

#### EXPLORING WHAT YOU KNOW

Think about the different types of games you've played and who the games were designed for. What are some ways can you incorporate the different aspects of other games to create a unique game? What materials do you have to make the game?

### STEP 3 - IMAGINE

#### BRAINSTORMING MATH GAME IDEAS

As a team, work together to brainstorm ideas and develop a game idea you want to design. Every team member should have an opportunity to share ideas and build off of each other. Remain focused on the task. A good design is about working together. Think about the areas in math that you or others may have struggled in and could use more help.



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#### STEP 4 - PLAN

##### DISCUSSING WHAT YOU WANT TO DESIGN

Once everyone has shared, take all your ideas and combine them to make one big idea. Be sure to complete the Mini-Math Game design booklet as you design the game.

#### STEP 5 - CREATE

##### CONSTRUCTING WHAT YOU WANT TO SEE

Using your plans, build your game and make your ideas real! This is the time to be creative, use your imagination, and construct a math game.

#### STEP 6 - TEST

##### EVALUATING THE GAME

Once you have built your first model, you need to test it and see how it works. Get some feedback from other classmates using page 3 in the Mini-Game Design booklet. Use the information you learned from your classmates to decide what works and what needs to be changed.

#### STEP 7 - IMPROVE

##### REVIEWING THE FEEDBACK

Discuss how you could improve your design. Make the changes needed. Repeat steps 6 & 7 until you are happy with your design.

## THE DESIGN PROCESS: Student Presentations

On the last day of ST Math Summer Immersion, students will have an opportunity to show what they've learned and accomplished. Once they have completed their games, students should prepare their presentation of their math game for the **Learning Showcase and Celebration**. During the showcase, there will be a time where students will have an **Immersion Debriefing**, a session where the audience can ask questions about their math games and also their reflection posters. They can think about how they want to start their presentation and what they want to share about their process and working together as a team.