

THE MALL OF MAGIC

A WORLD OF PROBABILITIES!



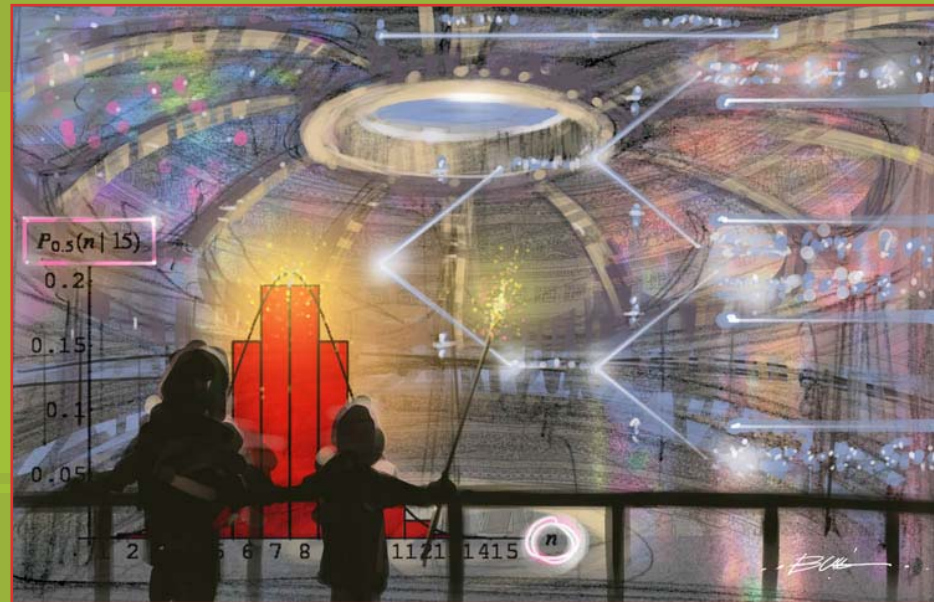
“As we play, we learn. And as we grow, our play gets more complicated. We add rules and goals. The result is something we call games.” – WIRED, April 2006

OBJECTIVE

A WORLD OF PROBABILITIES!

In today's Internet world, getting an answer to a math problem is usually a few key strokes away. What isn't there is how to recognize a problem, analyze data, and apply a solution. Similar to real life, the best solutions to problems don't always come on the first try.

- ❖ *The Mall of Magic* provides a fun game environment where creative thinking and iteration are rewarded.
- ❖ Who says learning math can't be fun? The language of math is blended with the environment through humorous and witty representations to help gamers learn their meanings and remember them.



SYNOPSIS

WORLD:

The Mall of Magic is a third person action game based in a zany fictional world of magic spells, out of control numbers, and half-off sales events. Inhabitants and things are inspired by one part *Alice in Wonderland* mixed with Victorian era gadgets set in a modern American shopping mall twisted with math and magic.

STORY:

In the Reciprocal Dimension, an unknown evil hatched a sinister plot and ruptured a wormhole to our world. Unsuspecting students from various classrooms have been portalled to the Crabbytree Emporium of Spells and Widgets and now must cooperate with each other using their understanding middle school math to return home.

This evil force emanates from the most seemingly harmless of characters whose lair of doom is none other than the Emporium bathroom. With the same style of humor found in games such as *Rayman Rabbid Rabbits*, players will find that its equally as fun to fail as it is to succeed.

SYNOPSIS

GENRE:

- ❖ 3rd person action/adventure mixed with puzzle elements

PLAYERS:

- ❖ Can be played either single player or cooperatively with up to 16 students

AUDIENCE:

Designed with the casual gamer in mind, the learning content and complexity can be tailored appropriately to a variety of age groups. The core audience is targeting:

- ❖ Boys and girls in the 6th, 7th, and 8th grades
- ❖ Localized into English and Spanish to maximize the potential audience

SYNOPSIS

UNIQUE FEATURES

- ❖ Choose one of six unique characters each with their own magical ability, personality, humor, and obsessions! Each character has a different starting ability which affects their strategies.
- ❖ These character traits translate into variations of game story and mechanics changing the play experience and strategies.
- ❖ A flexible framework allows the game world to be expanded with new content and math puzzles.

GAMEPLAY

Players begin in a mall where the floor plan, layout, and content are randomly generated. It is the player's task to find 3 special items somewhere in the mall before the boss's henchmen catch them. If confronted with the henchmen, the player must defeat them using math. Once all 3 items are found, the door to the boss becomes available.

While searching, players will run into various puzzle and action mini-games that require the player to use their knowledge of math. The reward for solving these mini-games comes in the form of spells and widgets design to help player with future encounters.



GAMEPLAY

MINI-GAMES

Unlike traditional learning, the player is not asked to come up with answers, instead they are required to come up with methods to solve probability and statistical related problems. Each storekeeper has a dilemma to be resolved. Players start with a gadget that offers a formula for a solution to one of the storekeepers' dilemmas. It is up to the player to find the problem that fits the formula.



EXAMPLES

- ❖ **The Finicky Shopkeeper** – Some shopkeepers just don't know when to quit rearranging their store shelves. The player must use their knowledge of permutations to help the storekeeper discover all of the possible ways they can arrange their shelves before the storekeeper will give you a reward.
- ❖ **Hall of Fitting Rooms** – Use knowledge of probability to tell the shopkeeper what your chances of picking an empty fitting room would be, or go through and choose for yourself with possible negative (yet humorous) consequences.

GAMEPLAY

RANDOM ENCOUNTERS & REWARDS

Players can obtain useful items from various types of chance encounters.

- ❖ **Magic Chest Puzzle** - Like *Alice in Wonderland*, the rules of the world are not always logical. Chests with locks don't require combinations or keys, rather they want to know how many combinations exist before they will open. Players can take the time to count all of the possible combinations while receiving witty badgering from the magic chest when you fail, or use their knowledge of probability to solve it quickly.
- ❖ **Defeating Henchmen** - At times, the evil boss' henchmen may ambush you into a random battle of the brain. Once defeated, the henchmen have a chance of dropping an item when running away.
- ❖ **Reciprocal Ray** - A mystical random number generator goes on the fritz and starts spitting out rogue fractions. The player must then run through the mall shooting at mischievous gremlin-like fractions with the proper ray settings to convert them into the more docile "one" and save the day.
- ❖ **Searching the Stores** – The meticulous players can spend their time going through each shelf for a chance to find spells and widgets.

WIDGETS

TRADE TOOLS

Widgets are the graphs, pie charts, formulas and calculators that supply data to help players make informed decisions.



CALCULATING WIDGET

- ❖ **Formula widgets** like a magic scroll provide helpful tips and clues. The widgets do not give information on the kind of problems they solve, only the formula for solving them. It is up to the player to figure out which encounters go with which widgets. An example of a formula widget would be:
 $\{a,b,c\} \rightarrow ABC \quad BCA \quad CAB \quad CBA \quad BAC \quad ACB \rightarrow 3!$
- ❖ **Data widgets** offer real-time information on current world data and the probabilities associated with it. For example, a player can find a data widget that shows what percent chance they have of finding the remaining items in relation to where they, and other players, have already searched.
- ❖ **Magic Book** - Every player starts off with a magic book that provides after-action reviews of their gameplay with graphs of the relationships between the player's successes and failures.

SPELLS

DEFINING CONCEPTS WITH MAGIC

Spells provide a more action-oriented means to test concepts on objects in the world and to learn from experimentation.

- ❖ **Mean Spell** - Change the heights of a set of characters in the world to be “average”. You can use this spell offensively to shrink down the height of henchmen by averaging them with small numbers. Players can even use it on themselves to help fit through a tiny door or walk over an enormous obstacle.
- ❖ **Factorial Spell** - Provide a numeric minion to appear when battling a rogue number. When faced with a rogue 3, calling upon the factorial spell generates a 6 which is bigger and stronger than the 3.
- ❖ **Inverse Relationships Spell** - Swap opposing characteristics between two characters, such as the ability to walk on ceilings.