



Math Games 3-4 Syllabus

Course Goals

1 Mathematical Reasoning Skills

Students develop mental math and computational skills by playing a specially selected variety of games.

2 Spatial Reasoning Skills

Students develop spatial reasoning in a variety of games and puzzles.

3 Logical Reasoning Skills

Students develop strategies and critical thinking in a variety of games and puzzles.

4 Communication Skills

Students develop their interpersonal skills by practicing fair play and sportsmanship as well as public speaking and presentation skills through the final project.

Course Topics

1 Math Games

Students practice and utilize mental math in games such as equate, multiplication war, and challenge 24.

2 Spatial Reasoning Games

Students test their visual processing in games such as set and swish.

3 Logic Games

Students solve puzzles such as sudoku, kakuro, and nonograms that require logical processes.

4 Strategy Games

Students develop optimized strategies to win classic games such as checkers, battleship, and tic tac toe.

5 Game Rules

Students develop an understanding and appreciation for rules through each game and in their final project where they develop their own rule for one of the games from the course.

Course Schedule

Day 1

Introduction Activities

Students get to know each other and the instructor by playing various icebreakers. Students learn the rules and goals of the class.

Play 21 Cookies

Students are introduced to the Math Games class as well as strategy development by playing the 21 cookies game and developing a strategy to win every time.

Play Swish & Set

Students play the spatial reasoning games Swish and Set and then reflect on the patterns and strategies shown in the games.

Day 2

Play Equate

Students learn the rules of Equate and play Equate in groups of about four and complete the strategy reflections on Equate.

Play Connect 4

Students learn the rules of Connect 4 , play Connect 4, and reflect on the strategy questions for Connect 4.

Learn and Complete Sudokus

Students learn the rules of Sudoku and will complete some on their own.

Play Mastermind

Students will learn the rules of Mastermind (specifically how to play it with just pencil/paper), play Mastermind , and reflect on the strategy questions.

Day 3

Play Challenge 24

Students learn the rules of Challenge 24, play in groups, and reflect on the strategy questions for Challenge 24.

Play UNO

Students learn the rules of UNO, play UNO, and reflect on the strategy questions for UNO.

Play Checkers

Students learn the rules of Checkers, play Checkers, and reflect on the strategy questions for Checkers.

Play Tic Tac Toe

Students learn the rules of Tic Tac Toe, play Tic Tac Toe, and reflect on the strategy guide for Tic Tac Toe.

Day 4

Learn and Complete Kakuro

Students learn the rules of Kakuro and complete some on their own.

Play Skunk

Students learn the rules of Skunk and play Skunk together as a class. Discussions about the best strategy will occur as a class.

Play Multiplication or Addition War

Students learn the rules of Multiplication or Addition War and play with a partner.

Play Battleship

Students learn the rules of Battleship, play Battleship, and reflect on the strategy questions for Battleship.

Introduce Rule Change Project

Students learn about the project they will complete over the course of the second week.

Day 5

Play Math Dice

Students learn the rules of Math Dice and then play it.

Play Krypto

Students learn the rules of Krypto and play it.

Rule Change Project

Students work on their rule change project.

Test and Revise Game Play Strategies

Students continue to play and explore the games they have learned throughout the course.

Day 6**Play Speed**

Students learn the rules of Speed and play it.

Play President

Students learn the rules of President and play President as a class or two groups, depending on class size). Students complete the strategy questions for President.

Rule Change Project

Students work on their rule change project.

Test and Revise Game Play Strategies

Students continue to play and explore the games they have learned throughout the course.

Day 7**Solve Riddles**

Students solve riddles together or as class, or competitively as pairs or small groups.

Learn and Complete Nonograms

Students learn how to solve nonograms and then complete some individually.

Rule Change Project

Students work on their rule change project.

Test and Revise Game Play Strategies

Students continue to play and explore the games they have learned throughout the course.

Day 8**Test and Revise Game Play Strategies**

Students continue to play and explore the games they have learned throughout the course.

Rule Change Project

Students work on their rule change project.

Day 9**Test and Revise Game Play Strategies**

Students continue to play and explore the games they have learned throughout the course.

Rule Change Project

Students work on their rule change project.

Day 10

Rule Change Project Presentations

Students present the work they have done on the rule change project.

Play Games with New Rules

Students play games with the new rules they have created.

Test and Revise Game Play Strategies

Students continue to play and explore the games they have learned throughout the course.

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