

# Berrien Springs Partnership Syllabus and Instructor Qualifications

**CLASS TITLE:** Puzzles, Logic & Critical Thinking

**GRADE OR AGE LEVELS:** Grades 5th & up

**START DATE:** Contact instructor for dates

**END DATE:**

**# WEEKS TOTAL:** 17

**WEEKS OFF:** 3

**DAY/TIME REQUIRED:** Wednesday 1-2pm **ADD'L DAYS/WK AVAILABLE:**

**# HOURS (REQUIRED):** 17

**# HOURS (OPTIONAL):** 73 (approx.)

**TOTAL SEMESTER HOURS POSSIBLE:** 90

**LOCATION/ADDRESS:** STEAMWORKS: 606 Carrol St, Suite B, Buchanan MI 49107

**MAIN INSTRUCTOR:** Rob Kerr

**ADDITIONAL PRIMARY INSTRUCTORS (background checked):** Marty Klubeck

**CONTACT INFORMATION:** phone: 269-362-

5046 email: [rob@funlearningcompany.com](mailto:rob@funlearningcompany.com) website:

<https://FunLearningCompany.com/>

**ADDITIONAL REGISTRATION AT SITE REQUIRED?** NO

## **MAIN INSTRUCTOR QUALIFICATIONS:**

I am passionate about helping students to explore new things and express their creativity. I have been teaching myself for the last eight years. For the last six of those, I've been partnering with different schools through the Fun Learning Company to teach critical thinking and STEAM courses. I enjoy tinkering and making things myself, and seek to encourage the entrepreneurial spirit in others as well. I have published my own card game, as well as writing and producing an album. One of my favorite things is when I can combine multiple interests together, like when I wrote a ukulele song for my Drone Building students to help them remember yaw, pitch & roll. I love hearing about my students' interests and seeing how we can bring those into our classroom as well. I hope to continue learning from, and with, young people for years to come.

## **COURSE DESCRIPTION (complete overview shown on website):**

Learn strategy, logic, critical thinking, and problem-solving through games! We will use fun, educational, games to build critical thinking and tactics. This course will introduce a variety of topics in graph theory, logical deduction, pattern recognition, and theory of mind. Games vary from year to year (this course may be taken for two years in a row). Past games include Set, Clue, Bananagrams, Catan, Mastermind, Ticket to Ride, Election Night, and more. Along with each game, we will have further puzzles and

discussions, reflecting on which strategies work well and why, as well as bonus “puzzle of the week” (typically a riddle or brain teaser). We will analyze the games we cover -- including breaking down how the rules affect the optimal strategy, and how adding/removing rules affects game play. Students will then apply their skills to examine the strategy and rules of a game they choose; including choosing a new rule to add, predicting its effect, and recording their results playing with the new rule. In the second semester, we’ll cover more about how to create and publish your own game, learning from two instructors who have both published small games.

### SYLLABUS/OUTLINE: weekly breakdown of Project-Based Learning activities

#### Semester 1

Weeks 1-4: Truth tables & logic (Mastermind, letter guessing game)

Weeks 5-10: Pattern games (SET, Lattice Hawaii, Azul)

Weeks 11-13: Word games (Boggle, Worlde, Bananagrams)

Weeks 14-17: Choose your own games

#### Semester 2

Weeks 1-6: Probability in games (Election Night & Catan)

Weeks 7-11: Mystery games (Clue, Conclusion) & intro to creating games

Weeks 12-15: Caissa’s Revenge & more on publishing your own game

Weeks 16-17: Favorite games

### COURSE OBJECTIVES AND APPROXIMATE TARGET DATES:

1. Analyze effective strategies in various games, as well as identifying which strategies are in use in various situations.
2. Think critically and break down objectives into smaller steps.
3. Use logical deduction and process of elimination to improve game play.
4. Understand how probabilities affect both gameplay and rule creation in games.
5. Learn about various categories of games and how to play them.

Please note that specific games rotate by year (to allow students to take the course for consecutive years) but the types of games evaluated are consistent.

By the end of the semester, students should:

1. Understand several different categories of games (mystery games, pattern games, logical deduction and truth tables) and how to play them.

2. Be familiar with how to examine the rules of a game and understand how those rules impact the game play (ex, predict how adding/removing a rule would change the optimal strategy).
3. Be comfortable applying what they have learned to a new game of their choice.

In the second semester, students will learn about additional types of games and evaluate how cooperative games (and cooperative aspects of competitive games) impact strategy. They will also learn the basics of how to create a game and get a behind the scenes look at that process from instructors who have created and published their own games.

### STUDENT ASSESSMENT - what will be used to evaluate student progress and/or end of semester pass/fail status?

All classes abide by the following:

1. Student agrees to attend at least 80% of class sessions/lessons offered. Attendance is kept online and tracked by Partnership staff. Failure to meet 80% or be on track to meet 80% may result in program discontinuation.
2. The Partnership Student Assessment or Performance Form is filled out by the teacher and turned in to Partnership staff. The link to this form is found on the web page for this class. Failing marks for lack of participation, behavior issues, practice time, etc. may result in program discontinuation.

### Class-specific assessment:

Our instructor will evaluate each student using Berrien's evaluation form and passing criteria will be based solely on students attending and actively participating in the class sessions.

Additionally, students will take our course pre/post assessment in Moodle. (We can provide your teachers with non-editing accounts to see our virtual Moodle courses upon request).

### ADDITIONAL RESOURCES: (online, books, video, etc.):

Each student will have their own login with access to our virtual Moodle course in Drone Building.

### CLASS POLICIES: ATTENDANCE, BEHAVIOR, WEATHER, ETC.

**Attendance:** attendance is required, and students should notify the instructor in advance of any absence.

**Behavior:** any behavior issues will first be privately brought to the attention of the parent and, should the behavior persist, to the partnership staff.

**Weather:** the classes will be canceled on any days when Berrien Springs Public Schools are closed. We will also contact families to remind them of this in the event of a weather-related cancellation. We will make up any canceled class meetings at a later date.