

Lamar University Mathematical Puzzlehunt

Fall 2014 Project Proposal

Steven Clontz

2014 May 04

Dr. PJ Couch,

Thank you for contacting me about organizing a mathematical puzzlehunt for Lamar University. I'm excited for the opportunity to bring this unique kind of mathematics outreach and recruitment event to your campus.

I've attached a project proposal outlining the scope of the event, our respective responsibilities as we make preparations and run the competition, and the costs associated. Please let me know any changes that you would like made to this proposal, and I'll be happy to make adjustments to customize this event to fit the needs and goals of your department.

Yours,

Steven Clontz
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1 Outline of Event

1.1 Abstract

The Fall 2014 *Lamar University Mathematical Puzzlehunt* (title pending) is a team-based competition for 9th-12th grade students. Each team is composed of up to eight students, with at least six students per team suggested. A teacher chaperone is also required for each team, but the chaperone cannot assist the team in the competition.

Teams will be presented with six puzzles testing their deductive reasoning ability and introducing concepts from mathematical fields such as cryptography, game theory, or others. Solving puzzles will require the team to run out and interact with Lamar University's campus to collect solution tokens. Tokens will be shown to the organizer at Staff Headquarters to receive credit, and the team which solves the most puzzles the fastest wins the competition.

1.2 Schedule

Date of Event: Saturday, 2014 October 18

- 10:30am: Event setup
- 11:45pm: Registration
- 12:15pm: Orientation
- 12:30pm: Puzzlehunt begins
- 4:30pm: Deadline for turning in solutions
- 4:40pm: Wrap-up, Awards, Dismissal
- 5:00pm: Event tear-down

2 Responsibilities

2.1 Designer

The competition designer, Steven Clontz, is responsible for the creation and execution of the puzzlehunt. His responsibilities include:

- Creation of a teaser puzzle in PDF format for use in promotion of the event.
- Designing the competition, including rules for the game, one opening run-around challenge, and six mathematical puzzles.
- Production of PDFs for all printed materials, including rule handbooks, puzzle descriptions, and puzzle solutions
- Acquisition and/or creation of any required props for the puzzles.
- Setting up the event prior to registration with the assistance of the host staff
- Presenting a short orientation for teams prior to the competition
- Running the competition, including
 - Answering game-related questions from players and chaperones
 - Tallying team scores
 - Correcting any errata or ambiguity
- Presenting a short wrap-up of the game following the competition

2.2 Host

The event host, Lamar University, is responsible for the marketing of the event, as well as managing the necessary background logistics for the event. The responsibilities of the event host's representatives include:

- Marketing the event, including all contact with school representatives before the day of the event and any promotional materials or websites (aside from the promotional teaser puzzle).
- Recruiting teams to participate in the event
- Creation of a logo for use in materials related to the event.
- Printing, laminating, and binding materials from PDFs provided by the designer.

- Purchasing notepads and writing utensils for use by the players
- Acquiring awards/plaques/trophies etc. for participating/winning teams.
- Playtesting and otherwise providing timely feedback to the designer on puzzles, game rules, and other topics related to the event
- Transportation for the event designer to/from IAH and Lamar University the weekend of the event, and transportation while on campus
- Providing locations for the event, including
 - A large lecture hall or auditorium for Registration, Orientation, and Wrap-Up/Awards
 - Any required permissions for outdoor space to be used in an opening run-around challenge and storing solution tokens
 - Classrooms for each participating team to be used during the competition as team headquarters
 - A staff headquarters for the designer and staff to use during the competition
- Providing staff on the day of the event, to help with
 - Assisting the designer with event setup
 - Running registration for the event and distributing materials
 - Introducing Lamar and the designer at orientation
 - Answering non-game related questions from students and chaperones
 - Guiding teams around campus as needed
 - Presenting awards after the competition
- Providing any drinks or snacks for participants during the competition
- Surveying participants for assessment of event

3 Project Timeline

3.1 May/June 2014

Project proposal is finalized and accepted. Invoice for down-payment is sent and paid. Designer begins writing puzzles and designing the game.

3.2 July/August 2014

Rough draft of puzzles and game rules is sent from designer to Lamar for review. Feedback and revisions.

3.3 August/September 2014

Final draft of puzzles and game rules is sent from designer to Lamar for review. Playtesting by both designer and Lamar, with feedback. Final revisions and game is finalized by end of September.

3.4 October 2014

Event runs on October 18th. Invoice for payment balance is sent and paid. Lamar and designer reflect together on the event and review survey results from participants.

4 Compensation

Lamar University will pay the game designer Steven Clontz a total of \$2000 in exchange for contributing his time and expertise toward organizing this unique mathematics competition. This money will also cover lodging and travel expenses for the organizer to/from the event, as well as other miscellaneous expenses occurred in the preparation of the event.

The designer will send an invoice for \$750 upon the acceptance of the project proposal, and will begin work on the project upon receipt of this down payment. The designer will invoice the remaining \$1250 after the completion of the event.

5 Contact

Contact between Lamar and the designer will primarily be through email, but will also be available by phone as required.

5.1 Contact information

Designer:

Steven Clontz

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(256) 508-3864

Lamar University Representative:

Dr. PJ Couch

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