

# IBL & Active Learning with Math Puzzles at Lamar University

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# Safe and Secured

You're on the tail of the vicious supercriminal Insert Name Here!

At the entrance to his/her secret lair, you find a strange combination lock. Fortunately, Insert Name Here is pretty forgetful, so you also find a post-it note with this hint for the combination:

*correct combination uses exactly one of each symbol / letter / character per row and column.*

Can you crack the code and access Insert Name Here's hideaway?

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
























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 B %	 B @	 B \$	 B &	 B #
 C %	 C @	 C \$	 C &	 C #
 D %	 D @	 D \$	 D &	 D #
 E %	 E @	 E \$	 E &	 E #

A **puzzlehunt**, also known as a puzzle race, puzzle party, or mystery hunt, is a type of scavenger hunt where instead of a list of items to collect, players are presented with a number of puzzles to solve.

Since this is a hunt, usually the puzzles are hidden in a physical location within certain boundaries (campus, city, building), or the solutions send players to hidden locations to find some sort of token, or both!

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Famous puzzlehunts include the MIT Mystery Hunt and the Microsoft College Puzzle Challenge.

Some puzzlehunts are organized by communities of puzzle solvers, and others are sponsored by companies.

Increasingly, businesses are using puzzles as a way to determine if future employees are able to problem-solve (as opposed to assessing prior knowledge).

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Designing math problems and puzzles are very similar processes.

- What do we want to design our problem/puzzle about?
  - Integration
  - Morse code
- How should I present the problem so it isn't trivial?
  - Ask about area under a curve
  - Embed it as punctuation within a sentence
- How do I make sure the player/student doesn't get off-track?
  - Ask to prove that it equals 10
  - Hint system

Many players report added satisfaction with a puzzle if they feel like they learned something new along the way (without it feeling like an exam).

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Questions? Thanks for having me!