

MAT157-EDU112

Problem-Based Learning Opportunities

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| **Area** | **Project** | **Description** |
| Measurement | 1. The Shortest Path
2. Lay It Down
 | 1. Students will find the most direct route between various pathways on the EMCC campus. Students will create their own directions for various route pathways common to Arizona. All measurements will be reported in both metric and US measurement scales. All directions will be accompanied by satellite maps.
2. Students will design a single story house and identify which rooms/hallways are to be carpeted and which rooms/hallways are to be tiled. The final product will be a detailed set of plans with dimensions. Students will also identify carpet and tile amounts and prepare the order through a carpet/tile retailer. All measurements will be reported in both metric and US measurement scales.
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| Geometry | 1. Let’s Play!
2. High-Rise Hoopla
 | 1. Students will design a playground appropriate for K-6 graders. The design will consist of the 10 most common appropriately identified geometric shapes. The final product is a scaled set of blueprints with front, side, and top views of the playground. All measurements will be reported in both metric and US measurement scales.
2. Students will identify the 10 tallest buildings in the world, and report on the various geometric shapes used in their construction. Relevant statistics will also be included and compared from building to building. All measurements will be reported in both metric and US measurement scales.
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| Probability | 1. Vegas, Baby!
2. A Day at the Races
 | 1. Students will plan a trip to a casino in Las Vegas. The plans will include “waging pathways” for blackjack, roulette, craps, and one other game of students’ choice. The pathways will include identifying various strategies and related probabilities of these strategies.
2. Students will create a “betting guide” for horse racing at Turf Paradise. A complete description of various odds and what they mean will be included.
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| Data Analysis | 1. Fantasy Baseball
2. Immigration Politics
3. Why Did I Get That Grade?
 | 1. Students will create a Fantasy Baseball League based upon Spring Training results and statistics. They will create at least two teams of 12 players each and include the data involved in the players’ selection. Finally, they will predict what will happen in a nine inning game between the two teams, and why it will happen.
2. Students will first imagine that they are strongly opposed to immigration and provide accurate and relevant statistics to support their cause. They will then argue the opposite stance and again provide the statistics relevant to their position. Opinions are not permitted; only the properly analyzed data will be included in their final report.
3. Students will pretend they are a teacher in MAT157-EDU112. They will create a list of false students with imagined grades in various assignments. Data such as mean, median, mode, and percentages will be used and justified in the assignment of final grades for their students.
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