

## Pacing Guide

### *Part 1: Project Progression*

#### **Week 1:**

- Monday 1 - Kickoff
- Tuesday 1 - Contracts due to teacher for approval
- Wednesday/Thursday 1 -
  - [Khan Academy](#) sections due:
    - Basic Theoretical Probability
    - Probability Using Sample Spaces
  - Workshops** (optional for students wanting more personalized instruction)
    - Venn diagrams and two way tables
    - And/Or probability
- Friday 1 –
  - Product design due to teacher for approval
  - Complete [Khan Academy](#) Section Addition Rule
  - Workshop**: Conditional Probability

#### **Week 2:**

- Monday 2 -
  - [Khan Academy](#) Section Due: Multiplication Rule for Independent Events
  - Workshop**: Independent vs dependent events
- Tuesday 2 -
  - [Khan Academy](#) Section Due: Multiplication Rule for Dependent Events
  - First draft of calculations for written report due to be checked by teacher
- Wednesday/Thursday 2 –
  - [Khan Academy](#) Section Due: Conditional Probability and Independence
  - Digital fabrication pieces should be completed by the end of Thursday
- Friday 2 – Station review of probability concepts (in preparation for Monday's assessment)

#### **Week 3:**

- Monday 3 – In-class Quiz on LT14
- Tuesday 3 – Finalize/test games and practice for the culminating event
- Tuesday 3 – Written report due
- Wednesday/Thursday 3 – Culminating event. Students will play each others games and take turns presenting their own games.

## *Part 2: Digital Fabrication Progression*

### **Description**

Your task is to create a game of chance that requires the use of some type of compound probability to calculate the chances of some of the outcomes. Your game should require at least one of the following types of probabilities:

- Addition rule for and/or probability
- Multiplication rule for a series of events
- Conditional Probability

You should be able to address whether the events are independent or dependent as well as whether the possible outcomes are mutually exclusive or not.

### **Stage # 1- Design**

- Students will design their product either using paper/pencil or digital design tools.
- Requirements for design.
  - An overview of each type of probability should be completed (either on Khan Academy or using the extra resources) before finishing the design.
  - Drawing of design (include dimensions and materials)
  - Description of how the game will work
  - List of possible outcomes for game (may be a partial list if a complete list is too long)
  - List types of probabilities required to calculate outcomes (actual calculations are not required at this stage)
- Teacher sign off for completion of this stage \_\_\_\_\_

### **Stage # 2- Build**

- Students must use at least one of the vinyl cutter, Carvy and laser cutter.
- Requirements:
  - At least one digital fabrication tool must be used to build the project.
  - Probabilities must be calculated in written report.