

S3 Probability

Unit Blueprint: *Click here for a unit blueprint for this probability unit including linked lessons and project ideas. This blueprint is a work in progress.*

<u>Key Terms/ Overview</u>	<u>Possible Unit Flow:</u> This includes a table for how you could possibly outline your unit.
<u>Intro Lesson Ideas</u>	
<u>Concept Lessons</u>	<u>Actuarial Practice Exam: Probability</u> Here is the link to an acturaial exam practice questions. Depending on how much you link the work of actuaries to your project/unit, these could be interesting warm-ups or even larger problems driving the unit. Procedural Practice (From Kolina/Amy Callahan) <u>Determining & Organizing Outputs</u> <u>Conditional Probability, Unions, & Intersections</u>
<u>Common Assessment Problem</u> <u>Assessment Rubric</u>	
<u>Rich Math Problems</u>	<u>Return to Fred's Fun Factory:</u> The task is intended to address standards regarding sample space, independence, probability distributions and permutations/combinations. Students might be inclined to use skills discussed in 7.SD.8. <u>The Titanic 1:</u> This is the first task in the series of three, which ask related questions, but use different levels of scaffolding. Also, the third task uses a more detailed version of the data table. This task guides students by asking the series of specific questions and lets them explore the concepts of probability as a fraction of outcomes, and using two-way tables of data. The emphasis is on developing their understanding of conditional probability. <u>Cards and Independence:</u> This task lets students explore the concept of independence of events. There are two alternative ways of solving this problem. <u>The Titanic 2:</u> This is the second task in the series of three, which ask related questions, but use different levels of scaffolding. Also, the third task uses a more detailed version of the data table. This task lets students explore the concepts of

	probability as a fraction of outcomes, and using two-way tables of data. The special emphasis is on developing their understanding of conditional probability and independence. <u>The Titanic 3:</u> This is the last task in the series of three, which ask related questions, but use different levels of scaffolding. This task uses a more detailed version of the data table. This is a very open ended task. It poses the question, but the students have to formulate a plan to answer it, and use the two-way table of data to find all the necessary probabilities. The special emphasis is on developing their understanding of conditional probability and independence. <u>Rain and Lightning:</u> This task uses the same situation to explore different concepts of probability theory including independence and conditional probability. <u>Lucky Envelopes:</u> This task builds on students' prior knowledge and understanding of conditional probability, and introduces the concept of independence of events. <u>How do you get to school?:</u> This task is designed as an assessment item. It requires students to use information in a two-way table to calculate a probability and a conditional probability. Although the item is written in multiple choice format, the answer choices could be omitted to create a short-answer task. <u>But Mango is my favorite:</u> This task builds on students' previous work with probability in Grade 7—specifically with standards 7.SP.7 and 7.SP.8. This task can be used as an instructional task to develop students' understanding of independence and students' ability to calculate the probability of intersection events using the multiplication rule for independent events (S.CP.5 and S.CP.ClusterB). Students also use a computed probability to evaluate a claim (S.MD.7). This task can also be used to illustrate standard 3 of the mathematical practices. <u>Breakfast Before School:</u> The purpose of this task is to assess a student's ability to explain the meaning of independence in a simple context. <u>Coffee at Mom's Diner:</u> This task assesses a student's ability to use the addition rule to compute a probability and to interpret a probability in context.
<u>Projects</u>	<u>YOLO:</u> You Oughtta Look Out Lots of Teachers 105 Things To Do Before You Die (YOLO as well) Ally Flauta and Mele Sato <u>Casino Games</u> Amy Callahan

	Chipotle Challenge Bryan Meyer Students develop rules about combinatorics to decide whether chipotle's claim about 60,000 combinations is accurate. Card Shark Scott Stambach Students decide poker and black jack moves based on statistical likelihoods of outcomes.
<u>Online Resources</u>	
<u>Connected Math Curriculum</u>	