The following practice standards will be used throughout the 4.5 weeks:
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Ongoing Standards

Note to Teachers: The following ongoing standards will be practiced all year long and embedded into your instruction instead of being taught in isolation.

A2.A.REI.A.1 Explain each step in solving an equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

A2.F.BF.A.1 Write a function that describes a relationship between two quantities.★

A2.N.Q.A.1 Identify, interpret, and justify appropriate quantities for the purpose of descriptive modeling.

A2.F.IF.A.1 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. ★

A2.F.IF.A.2 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.★

A2.F.BF.B.3 Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology.

A2.F.BF.B.4 Find inverse functions.
a. Find the inverse of a function when the given function is one-to-one.

A2.F.IF.B.3 Graph functions expressed symbolically and show key features of the graph, by hand and using technology.★

**Unless otherwise noted, all resources are from HMH Algebra 2, 2015 Edition.**

<table>
<thead>
<tr>
<th>TN Academic Standards</th>
<th>Student Friendly &quot;I Can&quot; Statements</th>
<th>Prerequisite Knowledge</th>
<th>ACT Readiness</th>
<th>Instructional Time</th>
<th>TN Ready Questions/Resources</th>
<th>ACT Questions/Resources</th>
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<tr>
<td>S.IC.A.2 Use data from a sample survey to estimate a population mean or proportion; use a margin of error to solve a problem in context.</td>
<td>Given a margin of error, I can solve a problem in context I can use data from a survey to estimate a population mean or proportion.</td>
<td>Probability, Statistics, &amp; Data Analysis: Calculate the average of a list of numbers Manipulate data from tables and graphs Interpret and use information from figures, tables, and graphs</td>
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<tr>
<td>S.CP.A.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the sample space.</td>
<td>I can define a sample space and events within the sample space.</td>
<td>S.305 S.403 Probability, Statistics, &amp; Data Analysis: Compute straightforward probabilities for</td>
<td>1</td>
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</table>
| **outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").** | **I can identify subsets within a sample space.**  
**I can give examples of unions, intersections and complements of sets and events.** | common situations |  |
| --- | --- | --- | --- |
| **S.CP.A.2 Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.** | **I can identify two events as independent or not.**  
**I can predict if two events are independent, explain my reasoning, and verify my statement by calculating probabilities.** | **S.606**  
Probability, Statistics, & Data Analysis: Compute straightforward probabilities for common situations Exhibit knowledge of conditional and joint probability | 1 |
| **S.C.P.A.3 Know and understand the conditional probability of A given B as P(A and** | **I can calculate conditional probability.** | **S.503**  
**S.405**  
**S.603** | 2 |
<table>
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<th>B)/P(B), and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.</th>
<th>I can calculate simple conditional probability based on the data.</th>
<th>Probability, Statistics, &amp; Data Analysis: Exhibit knowledge of conditional and joint probability</th>
<th></th>
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<tr>
<td>S.C.P.A.4 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.</td>
<td>I can calculate the probability of an event.</td>
<td>Probability, Statistics, &amp; Data Analysis: Exhibit knowledge of conditional and joint probability</td>
<td>1</td>
</tr>
<tr>
<td>S.C.P.B.5 Find the conditional probability of A given B as the fraction of B’s outcomes that also belong to A.</td>
<td>I can interpret probability based on the context of the given problem.</td>
<td>Probability, Statistics, &amp; Data Analysis: Exhibit knowledge of conditional and joint probability</td>
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and interpret the answer in terms of the model.
For example, a teacher gave two exams. 75 percent passed the first quiz and 25 percent passed both. What percent who passed the first quiz also passed the second quiz?

S.CP.B.6 Know and apply the Addition Rule, \( P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B) \), and interpret the answer in terms of the model.
I can apply the addition rule to two events and interpret the results in terms of the context.
I can choose a probability model for a problem situation.

S.ID.A.1 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population
I can calculate the mean, standard deviation and variance for a set of data.

<p>| S.504 | Probability, Statistics, &amp; Data Analysis: Compute straightforward probabilities for common situations | 1 |
| S.201 | S.301 |
| S.302 | S.401 | S.501 | S.601 | S.701 | 3 |</p>
<table>
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<th><strong>percentages using the Empirical Rule.</strong></th>
<th><strong>I can apply the 68-95-99.7 rule for the normal distribution using calculators, spreadsheets, and tables to estimate areas.</strong></th>
<th><strong>Probability, Statistics, &amp; Data Analysis: Interpret and use information from figures, tables and graphs</strong></th>
<th><strong>S.703</strong></th>
</tr>
</thead>
</table>
| **S.ICA.1 Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.** | **I can identify situations as sample survey, experiment, or observational study and can discuss the importance of randomization in these processes.**  
**I can explain why randomization is used to draw a sample that represents a population well.** | **Probability, Statistics, & Data Analysis: Analyze and draw conclusions based on information from figures, tables and graphs** | **1/2** |