

Anoka-Hennepin Secondary Curriculum Unit Plan

Department:	Mathematics	Course:	Statistics and Probability	Unit 1 Title:	Counting Methods	Grade Level(s):	10-11
Assessed Trimester:	Trimester A	Pacing:	6-8 Days	Date Created:	1/29/2014	Last Revision Date:	1/29/2014

Course Understandings: <i>Student will understand that:</i> A. Selecting and applying counting procedures to determine the number of outcomes and calculating probabilities can be applied to real-world situations to make informed decisions. H. Technology can be used to assist with calculations, simulations, and data analysis.
--

DESIRED RESULTS (Stage 1) - WHAT WE WANT STUDENT TO KNOW AND BE ABLE TO DO?

Established Goals	
Minnesota State/Local/Technology Standard(s) addressed: <ul style="list-style-type: none">Standard (9.4.3.#): Calculate probabilities and apply probability concepts to solve real-world and mathematical problems. Benchmark: 9.4.3.1 Select and apply counting procedures, such as the multiplication and addition principles and tree diagrams, to determine the size of a sample space (the number of possible outcomes) and to calculate probabilities.	
Transfer	
Students will be able to independently use their learning to: (product, high order reasoning) <ul style="list-style-type: none">Make decisions in real-world situations using probability concepts (9.4.3.8)	
Meaning	
Unit Understanding(s): Students will understand that: <ul style="list-style-type: none">Permutations and combinations can be used to determine the composition of a committeeFundamental counting principle is used to find the number of different meal choices when at a restaurant.Combinations, permutations and fundamental counting principle are used to identify sample space.Tree diagrams and lists are a helpful tool to find a sample space or specific outcomes.	Essential Question(s): Students will keep considering: <ul style="list-style-type: none">What is the process for determining how many license plates are possible in a given state?What is the process for determining how many different ways a committee can be formed given particular constraints regarding the available population from which to choose?What do restaurants consider when they advertise how many different meals they offer?
Acquisition	
Knowledge - Students will: <ul style="list-style-type: none">Know combinations and permutationsUse different counting methodsKnow tree diagrams and tables to list out a sample space Reasoning - Students will: <ul style="list-style-type: none">Distinguish which principles and counting methods are appropriate to use for various situationsDistinguish the difference between the multiplication and addition principles	Skills - Students will: <ul style="list-style-type: none">Use appropriate rules to calculate size of sample spaceCreate Venn Diagrams

Common Misunderstandings <ul style="list-style-type: none">• Students cannot determine whether or not order matters.• Students cannot decide which method to use.• Students choose incorrect operations.• Students cannot draw and read a Venn diagram properly when the events are overlapping	Essential new vocabulary <ul style="list-style-type: none">• Combinations• Factorial• Fundamental counting principle• Permutations• Sample space• Tree Diagram
---	--