Grade 7 Math Grade 7 Ma Start Date: March 18, 2013 End Date : May 24, 2013

Unit Overview	Content Elaborations	Unit Resources
Students will be able to:	k	Common Core Model Curriculum
		Holt Middle School Math Course 2: 1-1, 1-2,
use random samples to show that they produce		1-3, 1-4, 1-6, 1-8, 10-1, 10-2, 10-3, 10-4, 10-5,
representative samples and support valid		10-6,
inferences in statistics		Teacher-made activities for uniform and non-
		uniform probability models
use random sample results to draw inferences		Manipulatives
about a population		Smart Board Resources
		United Streaming Video
use mean absolute deviation and dot plots to		Study Island
informally assess the degree of visual overlap		Hands-On Standards
of two numerical data distributions with similar		Calculators
variabilities		Laptops
		Document Camera
when drawing informal comparative inferences		
about two populations, use measures of center		
and measures of variability		
understand that probability ranges from 0-1		
and causes events that are impossible, unlikely,		
neither unlikely nor likely, likely, certain		
when collecting data through an experiment,		
understand that the theoretical probability		
allows us to predict the spproximate relative		
requency; nowever, it will probably		
not match exactly		

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develop a uniform probability model by assigning equal probability to all outcomes		
develop a probability model which is not uniform		
find probabilities of compound events using organized lists, tables, tree diagrams, and simulation		
design and use a simulation to generate frequencies for compound events		
Unit Vocabulary	Enduring Understandings (Big Ideas)	Connections
Population, Sample, Random Sample, Mean,	Students will build on their previous work with	It is essential to use real-world word problems
Median, Mode, Range, Outlier, Measures of	single data distributions to compare two data	to develop understanding
Variability, Measures Of Center, Mean	distributions and address questions about	
Absolute Deviation, Dot Plots, Stem-and-Leaf	differences between populations. They begin	Use tree diagrams, tables, lists, and computer
Plot, Box-and-Whisker Plot, First Quartile,	informal work with random sampling to	simulations for concept development
Second Quartile, Third Quartile, Lower	generate data sets and learn about the	
Extreme, Upper Extreme, Experiment,	importance of representative samples for	Develop mental math strategies
Outcome, Event, Probability, Equally Likely	drawing inferences. They develop concepts of	
Outcomes, Impossible, Certain, Experimental	probability. They investigate relevant chance	Correlations to other subjects or project
Probability, Trial, Sample Space, Favorable	events and develop models to determine and	applications.
Outcomes, Theoretical Probability, Fair,	compare probabilities. They analyze the	
Independent Events, Dependent Events,	frequencies of the experimental results against	
Compound Events, Uniform Probability	their predictions justifying any discrepancies.	
Model, Non-Uniform Probability Model,	Students extend their investigations with	
Tables, Tree Diagrams, Simulation, Organized	compound events representing the possible	
Lists, Data Distributions, Inferences,	outcomes in tree diagrams, tables, lists, and	
Predictions, Estimates, Random Sample,	ultimately through designing and using	

Grade 7 Math Statistics and Probability

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Representative Sample	simulations.	
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Standards

CC_Common Core State Standards - Mathematics (2010) - Grade 7

Domain 7.SP Statistics and Probability

Cluster Use random sampling to draw inferences about a population.

Standard 7.SP.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.

Standard 7.SP.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.

Cluster Draw informal comparative inferences about two populations.

Standard 7.SP.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.

Standard 7.SP.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. Cluster Investigate chance processes and develop, use, and evaluate probability models.

Standard 7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

Standard 7.SP.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.

Standard 7.SP.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.

7.SP.7.a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.

7.SP.7.b Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.

Standard 7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

7.SP.8.a Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.

7.SP.8.b Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.

7.SP.8.c Design and use a simulation to generate frequencies for compound events.

Student Assessment	Unit Refection
Common Core Short Cycles	Teacher comments following instruction and
	assessment.
Benchmark Tests	
	This could provide a topic for discussion at
Formative Assessments (Teacher made)	department meetings.
Summative Tests correlated to CCSS	

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To a share Observation	
l Teacher Observation	

Content	Skills	Assessment
A. Use statistics to gain information about a population	A. Use statistics to gain information about a population	
B. Use random sample results to draw inferences about a	1. Use random samples	
population	2. Use representative samples	
C. Determine the measures of center and variability to make	3. Make generalizations	
inferences	4. Support valid inferences	
D. Use dot plots to informally assess the degree of overlap of	B. Use random sample results to draw inferences about a	
two numerical data distributions	population	
E. Draw informal comparative inferences about two	1. Generate multiple, same-size samples	
populations	2. Use simulated samples	
F. Express probabilities numerically on a scale from 0 to 1	3. Make inferences, estimates, and predictions	
G. Approximate the probability by conducting experiments,	C. Determine the measures of center and variability to make	
collecting data, and observing its long-run relative frequency	inferences	
H. Develop a probability models and use them to determine	1. Use mean, median, mode, and range	
probability of events	D. Use dot plots to informally assess the degree of overlap of	
I. Find probabilities of compound events	two numerical data distributions	
	1. Use mean absolute deviation	
	E. Draw informal comparative inferences about two	
	populations	
	1. Use measures of center	
	2. Use measures of variability	
	F. Express probabilities numerically on a scale from 0 to 1	
	1. Determine if an event is impossible, unlikely, neither	
	unlikely nor likely, likely, and certain	
	G. Approximate the probability by conducting experiments,	
	collecting data, and observing its long-run relative frequency	
	1. Define relative frequency	
	2. Define long-run relative frequency	
	3. Develop the notion that smaller numbers of trials	
	exhibit greater variation in the frequency of a particular event	
	4. Observe that when the number of trials is very large,	
	the value of the experimental probability (long-run relative	
	frequency) is often very close to the theoretical probability	
	H. Develop a probability models and use them to determine	
	probability of events	
	1. Develop a uniform probability model by assigning	

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equal probability to all outcomes	
2. Use chance to develop a probability model which may	
not be uniform	
I. Find probabilities of compound events	
1. Use organized lists, tables, tree diagrams and	
simulations	
2. Represents sample spaces with lists, tables and tree	
diagrams	
3. Design and use a simulation to generate frequences for	
compound events.	
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