The mission of the Chardon Local Schools is high achievement for all students where learning is our most important work.

Course of Study — MATH

Revised November 2021

PROBABILITY and STATISTICS

CHARDON
LOCAL SCHOOLS
#WeAreChardon

Course of Study — MATH — *Revised November 2021*

Probability and Statistics

Strand: Descriptive Statistics

Learning Standard:

- Find and interpret measures of central tendencies.
- Find and interpret measures of spread
- Find outliers by various methods.
- Construct and interpret: Box Plot, Dot Plot, Stem and leaf Plot, Histograms, Ogives, Frequency Distributions.
- Determine the shape of a distribution.

How Taught?

Teaching activities may include, but are not limited to:

- Direct Instruction
- Cooperative Groups
- Stations
- Data Driven Instruction
- Scaffolding

Materials:

- Texas Instrument Graphing Calculator
- Desmos Calculator
- Chromebook
- Quizlet
- Kahoot
- Quizizz

How Assessed?

Assessments may include, but are not limited to:

- Pre-Assessments (pre-tests, observation, anticipation guide, questioning, diagnostics)
- Formative Assessments (entry/exit slips, group work, reflections, discussions, writer's workshops, homework/classwork, self and peer evaluations, observations, conferences, rubrics)
- Summative Assessments (formal essays, using rubrics; tests/exams, projects, creative assignments, presentations)

How Re-Taught?

Re-teaching activities may include, but are not limited to:

- breaking down concept into smaller components
- presenting the information again in a different way

Probability and Statistics

	• Universal Design for Learning principles offering students opportunities to experience and engage material in new and different way • practice activities such as computer tutorials, games, hands-on activities • review sessions

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Probability and Statistics

Strand: Correlation

Learning Standard:

- Find and interpret correlation coefficient, coefficient of determination.
- Find and interpret the least squares regression line.
- Construct and interpret Residual Plots.

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Probability and Statistics

Strand: Discrete Probability Distributions

Learning Standard:	**How Taught?**
• Calculate permutations, combinations, distinguishable permutations and problems with fundamental counting principle. • Distinguish between independent and dependent events • Distinguish between mutually exclusive and non mutually exclusive events. • Calculate and/or probabilities. • Calculate probabilities utilizing various counting techniques. • Construct probability distributions • Determine if a distribution is binomial, geometric or poisson. • Find the mean, variance and standard deviation of binomial, geometric and poisson distributions. • Calculate binomial, geometric and poisson probabilities.	**Teaching activities may include, but are not limited to:** • Direct Instruction • Cooperative Groups • Stations • Data Driven Instruction • Scaffolding
Materials:	**How Assessed?**
• Online probability applets • Texas Instrument Graphing Calculator • Desmos Calculator • Chromebook • Quizlet • Kahoot • Quizizz	**Assessments may include, but are not limited to:** • Pre-Assessments (pre-tests, observation, anticipation guide, questioning, diagnostics) • Formative Assessments (entry/exit slips, group work, reflections, discussions, writer's workshops, homework/classwork, self and peer evaluations, observations, conferences, rubrics) • Summative Assessments (formal essays, using rubrics; tests/exams,

	projects, creative assignments, presentations)
	How Re-Taught? **Re-teaching activities may include, but are not limited to:** ● breaking down concept into smaller components ● presenting the information again in a different way ● Universal Design for Learning principles offering students opportunities to experience and engage material in new and different way ● practice activities such as computer tutorials, games, hands-on activities ● review sessions

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Probability and Statistics

Strand: Normal Distribution

Learning Standard:

- Find and interpret z-scores
- Find and interpret normal probabilities.
- Find x-values given normal probabilities
- Find probabilities of averages.
- Find the mean and sampling error of a sampling distribution.

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Teaching activities may include, but are not limited to:

- Direct Instruction
- Cooperative Groups
- Stations
- Data Driven Instruction
- Scaffolding

Materials:

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- Desmos Calculator
- Chromebook
- Quizlet
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Assessments may include, but are not limited to:

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Probability and Statistics

Strand: Confidence Intervals

Learning Standard:

- Construct and interpret confidence intervals for the population mean of large and small sample sizes.
- Construct and interpret confidence intervals for the population proportion.
- Construct and interpret confidence intervals for the population variance and standard deviation.

How Taught?

Teaching activities may include, but are not limited to:

- Direct Instruction
- Cooperative Groups
- Stations
- Data Driven Instruction
- Scaffolding

Materials:

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- Desmos Calculator
- Chromebook
- Quizlet
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How Assessed?

Assessments may include, but are not limited to:

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Probability and Statistics

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Probability and Statistics

Strand: Hypothesis Test (1 sample)

Learning Standard:

- Perform hypothesis test for the population mean of large and small sample sizes.
- Perform hypothesis tests for the population proportion.
- Perform hypothesis test for the population variance and standard deviation.
- Perform hypothesis test for the difference of population means.
- Perform hypothesis tests for the difference in population proportion.
- Perform hypothesis test for the difference of population variance and standard deviation.

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