

Subject Advanced Math 7

Grade Level 7

Teacher Pekala, Sphatt, Yuhaz

School Linwood

TIMELINE	CONTENT	SKILLS	ASSESSMENT	NJCCCS
27 Days September - October	Variables & Patterns <i>(Introducing Algebra)</i>	<ul style="list-style-type: none">• Identify quantitative variables in situations• Recognize situations where changes in variables are related in useful patterns• Describe patterns of change shown in words, tables and graphs of data• Construct tables and graphs to display relations among variables• Observe relationships between two quantitative variables as shown in a table, graph, or equation and describe how the relationship can be seen in each of the other forms of representation• Use algebraic symbols to write rules and equations relating variables• Use tables, graphs, and equations to solve problems• Use graphing calculators to construct tables and graphs of relations between variables and to answer questions about these relations	<ul style="list-style-type: none">• Lab Problems• ACE exercises• Mathematical reflections• Looking back & Looking ahead• Notebook check• Oral responses• Check-up Quizzes• Partner Quizzes• Unit Project• Unit Test	4.3.7.A.1 C.2 4.5.A.1-5 B.1-4 C.1-4,6 D.1-6 E.1-3 F.1,4

TIMELINE	CONTENT	SKILLS	ASSESSMENT	NJCCCS
<p>25 Days November - December</p>	<p>Stretching & Shrinking <i>(Understanding Similarity)</i></p>	<ul style="list-style-type: none"> • Identify quantitative variables in situations • Recognize situations where changes in variables are related in useful patterns • Describe patterns of change shown in words, tables and graphs of data • Construct tables and graphs to display relations among variables • Observe relationships between two quantitative variables as shown in a table, graph, or equation and describe how the relationship can be seen in each of the other forms of representation • Use algebraic symbols to write rules and equations relating variables • Use tables, graphs, and equations to solve problems • Use graphing calculators to construct tables and graphs of relations between variables and to answer questions about these relations 	<ul style="list-style-type: none"> • Lab Problems • ACE exercises • Mathematical reflections • Looking back & Looking ahead • Notebook check • Oral responses • Check-up Quizzes • Partner Quizzes • Unit Test 	<p>4.2.7.A.1-3 B.1,2 C.1,2 D.2 E.1 4.5.A.1-5 B.1-4 C.1-6 D.1-6 E.1-3 F.1,4</p>

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TIMELINE	CONTENT	SKILLS	ASSESS MENT	NJCCCS
20 Days January	Comparing & Scaling (<i>Ratio, Proportion, Percent</i>)	<ul style="list-style-type: none">Analyze comparison statements made about quantitative dataUse ratios, fractions, differences, and percents to form comparison statements in a given situationJudge whether comparison statements make sense and are usefulSee how forms of comparison statements are relatedMake judgments about which statements are most informative or best reflect a particular point of viewDecide when the most informative comparison is the difference between two quantities and when it is a ratio between pairs of quantitiesScale a ratio, rate, or fraction to make a larger or smaller object or population with the same relative characteristics as the originalRepresent related data in tablesLook for patterns in tables that will allow predictions to be made beyond the tablesWrite an equation to represent the pattern in a table of related variablesApply proportional reasoning to solve for the unknown part when one part of two equal ratios is unknownSet up and solve proportions that arise in applicationsRecognize that constant growth in a table is related to proportional situationsConnect a unit rate to the equation describing a situation	<ul style="list-style-type: none">Lab ProblemsACE exercisesMathematical reflectionsLooking back & Looking aheadNotebook checkOral responsesCheck-up QuizzesPartner QuizzesUnit ProjectUnit Test	4.1.7.A.1-6 C.1 4.2.7.A.2 D.3 4.5.A.1-5 B.1-4 C.1-4,6 D.1-6 E.1-3 F.1,4

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TIMELINE	CONTENT	SKILLS	ASSESSMENT	NJCCCS
23 Days February	What Do You Expect <i>(Probability and Expected Value)</i>	<ul style="list-style-type: none">• Interpret experimental and theoretical probabilities and the relationship between them• Distinguish between equally likely and non-equally likely outcomes• Review strategies for identifying possible outcomes and analyzing probability, such as using lists or tree diagrams• Determine if a game is fair or unfair• Analyze situations that involve two stages or two actions• Use area models to analyze situations that involve two stages• Determine the expected value of a probability situation• Analyze situations that involve binomial outcomes• Use probability and expected value to make a decision	<ul style="list-style-type: none">• Lab Problems• ACE exercises• Mathematical reflections• Looking back & Looking ahead• Notebook check• Oral responses• Check-up Quizzes• Partner Quizzes• Unit Project• Unit Test	4.4.7.B.1-4 C.3 4.5.A.1-5 B.1-4 C.1-4,6 D.1-6 E.1-3 F.1,4

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TIMELINE	CONTENT	SKILLS	ASSESSMENT	NJCCCS
30 Days March – Early April	Moving Straight Ahead <i>(Linear Relationships)</i>	<ul style="list-style-type: none">• Recognize problem situations in which two or more variables have a linear relationship to each other• Construct tables, graphs, and symbolic equations that express linear relationships• Translate information about linear relations given in a table, graph, or an equation to one of the other forms• Understand the connections between linear equations and the patterns in the tables and graphs of those equations: rate of change, slope, and y-intercept• Solve linear equations• Solve problems and make decisions about linear relationships using information given in tables, graphs, and symbolic expressions• Use tables, graphs, and equations of linear relations to answer questions	<ul style="list-style-type: none">• Lab Problems• ACE exercises• Mathematical reflections• Looking back & Looking ahead• Notebook check• Oral responses• Check-up Quizzes• Partner Quizzes• Unit Project• Unit Test	4.3.7.A.1 B.1 C.1,2 D.2,4 4.5.A.1-5 B.1-4 C.1-4,6 D.1-6 E.1-3 F.1,3,4

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TIMELINE	CONTENT	SKILLS	ASSESSMENT	NJCCCS
29 Days Late April - May	Filling & Wrapping <i>(Three Dimensional Measurement)</i>	<ul style="list-style-type: none">• Understand volume as a measure of filling as object and surface area as a measure of wrapping an object• Design and use nets to visualize and calculate surface areas of prisms and cylinders• Explore patterns among the volumes of cylinders, cones, and spheres• Develop strategies for finding volumes of square pyramids, prisms, cylinders, cones, and spheres directly and by comparison with known volumes	<ul style="list-style-type: none">• Lab Problems• ACE exercises• Mathematical reflections• Looking back & Looking ahead• Notebook check• Oral responses• Check-up Quizzes• Partner Quizzes• Unit Project• Unit Test	4.2.7.A.2,3 D.1 E.2 4.5.A.1-5 B.1-4 C.1-4,6 D.1-6 E.1-3 F.1,4

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TIMELINE	CONTENT	SKILLS	ASSESSMENT	NJCCCS
13 Days June	Data Distributions <i>(Describing Variability and Comparing Groups)</i>	<ul style="list-style-type: none">• Apply the process of statistical investigation to pose questions, to identify ways data are collected, and to determine strategies for analyzing data in order to answer the questions posed• Recognize that variability occurs whenever data are collected• Describe the variability in the distribution of a given data set• Identify sources of variability, including natural variability and variability that results from errors in measurement• Determine whether to use the mean or median to describe a distribution• Use the shape of a distribution to estimate the location of the mean and the median• Use a variety of representations, including tables, bar graphs, and line plots, to display distributions• Understand and use counts or percents to report frequencies of occurrence of data• Compare the distributions of data sets using their centers (mean, median, and mode), variability (outliers and range), and shape (clusters and gaps)• Decide if a difference among data values or summary measures matters• Develop and use strategies to compare data sets to solve problems	<ul style="list-style-type: none">• Lab Problems• ACE exercises• Mathematical reflections• Looking back & Looking ahead• Notebook check• Oral responses• Check-up Quizzes• Partner Quizzes• Unit Test	4.4.7.A.1,2 4.5.A.1-5 B.1-4 C.1-4,6 D.1-6 E.1-3 F.1,2,4

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TIMELINE	CONTENT	SKILLS	ASSESSMENT	NJCCCS
8 Days	Data Analysis/ Discrete Mathematics (<i>Test Preparations</i>)	<ul style="list-style-type: none">• Apply the multiplication principle of counting (permutations vs. ordered situations without replacement)• Explore counting problems involving Venn diagrams with three attributes• Use vertex-edge graphs to represent and find solutions to practical problems (finding the shortest network, route, and circuit on maps with regard to specific sites)	<ul style="list-style-type: none">• Class activities• Monthly assessments• Quizzes• Oral responses	4.4.7.C.1, 2 4.4.7.D.1