Curriculum Committee Meeting

Thursday, February 6, 2014 4:30 PM
Curriculum Committee, L.P. Wilson Community Center, Room 17, 601 Matianuck Avenue, Windsor, CT 06095

1. **Call to Order, Pledge of Allegiance, Moment of Silence**
2. **Audience to Visitors**
3. **Advanced Mathematical Decision Making (AMDM)**
4. **Algebra 2, Part 1 and Part 2**
5. **Spanish 1, Middle and High School Level**
6. **Science Fiction and Fantasy Literature**
7. **African American Literature**
8. **Fashion and Clothing 1**
9. **Adjournment**

Windsor Public Schools
Curriculum Map
Advanced Mathematical Decision Making

Purpose of the Course: Advanced Mathematical Decisions Making is an engaging and rigorous course that prepares students to use a variety of mathematical tools and approaches to model a range of situation's and solve problems. The course emphasizes statistics and financial applications, and it prepares students to use algebra, geometry, trigonometry, and discrete mathematics to solve real world problems. The course also helps students develop college and career skills such as collaborating, conducting research, and making presentations.

Unit 1 Analyzing Numerical Data	Length of the unit: 14 blocks
Purpose of the Unit: The Analyzing Numerical Data unit builds upon student's prior knowledge of ratio and focusses on helping students learn how to make decisions in everyday situations after analyzing information. Using contextual situations, students develop skills that they can apply outside the classroom. Students begin the development of critical college and career readiness skills as they research and answer questions, present their solutions to the class, and provide feedback to others.	

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)

- **A-CED 4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law V = IR to highlight resistance R.**
- N-Q 1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
- **CC.9-12.G.SRT.8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.**
- **CC.9-12.G.C.2 Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.**
- **CC.9-12.G.GMD.3 Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.***
- N-Q 2. Define appropriate quantities for the purpose of descriptive modeling.
- N-Q 3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Big Ideas:	Essential Questions:

1. Simplifying assumptions about a real world situation are made to formulate and solve a hypothetical mathematical problem. 2. Proportions and the fundamental counting principle are essential to estimating large numbers.	1. What quantitative measures and numerical processes are needed to analyze real world numerical data? 2. When and how would weighted sums and average be applicable in the real world?
Students will know: 1. how numerical techniques are applied to organize large numbers to estimate and make predictions 2. properties of using ratios, rates, and percentages 3. strategies to create identification codes and detect errors and fraud through digit checking	Students will be able to: 1. use proportional reasoning to solve problems involving ratios 2. use simplifying assumptions about a real world situation to formulate and solve a hypothetical math problem 3. calculate and interpret weighted averages and weighted sums 4. use and calculate indices to understand and compare data 5. analyze errors in recording identification numbers 6. use averages and indices as a tool for rating real world situations

Significant task 1: Estimating Large Numbers

Students will begin this task by individually estimating the number of jelly beans in a jar that will be provided by the teacher. This allows students to use their own mathematical strategies to come to a conclusion that they will share with the rest of the class. After a class discussion students will begin to understand that there is not always one correct strategy in finding a solution. This activity will lead into a more in depth activity on estimating crowds using ratios as the main strategic tool. Students will work in small groups and use a small area to help compare a much larger one using spatial reasoning. Another task estimating how many tennis balls can fit in a classroom would follow the next day. Students will again work in small groups and have little assistance from the teacher. As a group they will use their own problem solving strategies, document their work, and present their results to the class. Other real world problems will be explored by the students involving license plates, social security numbers and telephone numbers allowing students to work with the fundamental counting principle.

After this task students will complete the Performance Assessment (found in common assessments) before starting significant task 2.

This task directly targets the following standards: N-Q 1., **CC.9-12.G.GMD.3** , N-Q 2., N-Q 3.

Timeline: 5 blocks

Key Vocabulary: fundamental counting principle, estimation, Fermi question, ratio, proportion, mathematical modeling

Resource Activities: AMDM student activity worksheets (estimating crowds, filling your classroom with tennis balls, not enough numbers), Mathematics assessment: Myths, models, good questions, and practical suggestions (National Council of Teachers of Mathematics), online network services at amdmsupport.org, How many Social Security Numbers are There (worksheet)

Significant task 2: Using Ratios

The main focus of this task will be using ratios, specifically aspect ratios, to solve real world problems involving television screens, odometer and speedometer readings according to tire size, and analyzing an airplane wing. To start the class will analyze the television in the room and determine its size. Students will learn that a television size is determined by its diagonal length. A class discussion on older models vs newer ones, black spots on televisions, and TV size will lead into an activity on ratios in the media. Students will work in small groups to determine the length and width of a television only given its aspect ratio and diagonal length and also discover the aspect ratio of several rectangular objects provided by the teacher.

The follow up activity to "ratios in media" focuses on tire size and its effect on a cars speedometer and odometer. Students will use their new knowledge of aspect ratios to determine a cars speed and mileage. Students will watch a short tutorial video (utdanacenter/amdm) on tire labeling. After the video an example of a tire label will be provided by the teacher and discussed as a class to ensure student understanding. Students will then work in small groups to determine if installing larger tires on your car has an effect on your speedometer and odometer. A full class discussion will conclude this lesson allowing students to share their answers and strategies.

This task directly targets standards: **A-CED 4., CC.9-12.G.SRT.8, CC.9-12.G.C.2**, N-Q 3.

Timeline: 5 blocks

Key vocabulary: aspect ratio, scale factor, letterbox, pillar box, Pythagorean theorem, standard definition, high definition, circumferences, dimensional analysis

Resources: AMDM student activity worksheets (ratios in media and changing tires), tire calculator: ww.dakota-truck.net/TIRECALC/tirecalc.html, online network services at amdmsupport.org,

Significant task 3: Indices Using Weighted Sums and Averages

In this task students will calculate and interpret weighted averages and sums. A full class discussion will be held on the similarities differences between weighted averages and taking an average. Students will take this understanding and apply it to one of three different activities (college grading, slugging averages, or quarterback ratings). Instead of having each student complete all 3 tasks they will focus on the one that strikes their interest the most and then present their findings in a type of gallery walk.

One class will be focused on each group solving and creating posters for their individual problems. A follow up class will allow students to walk around and analyze one another's visual aids with sticky notes

to make suggestions/comments. Once the gallery walk is completed, the groups will use the sticky notes to edit their own posters before finally officially presenting and teaching the class their activity.

Students will also have an opportunity to extend this task by looking into fan cost indices for a professional baseball, basketball, and football team.

This task directly targets standards: **A-CED 4.,** N-Q 1., N-Q 2., N-Q 3.

Timeline: 3 blocks

Key vocabulary: indices, paradox, weighted average, weighted sum, rational numbers, percent increase, rates, batting average, quarterback rating, slugging average, fan cost index

Resources: www.baseball-almanac.com (Babe Ruth stats), http://www.baseball-reference.com/players/p/pedrodu01.shtml (Dustin Pedroia stats), www.nfl.com/help/quarterbackratingformula (quarterback rating formula), http://www.rotoworld.com/player/nfl/3118/aaron-rodgers (Aaron Rodgers stats), www.teammarketing.com (2007 fan cost index), AMDM student activity worksheets (Final Grade Average, Slugging Average, Quarterback Ratings, Fan Cost Index)

Significant Task 4: Validating Identification Numbers

To start this task student's will be shown a UPC code from a Diet Coke can (also copied on the front of the board) and asked if they know the significance of the digits of the numbers. A class discussion on manufacturer number, product number and check digit will lead into our activities framing question: How can you recognize an invalid credit card number or an error in a UPC number? Students will then work in small groups and complete activities that focus on the key role weighted numbers play on universal product codes and credit card numbers. These real world activities will expose students to the importance of number sense and its role in everyday life.

This task directly targets the following standards: N-Q 1., N-Q 2., N-Q 3.

Timeline: 2 blocks

Key vocabulary: universal product codes, matrix multiplication, check digits, identification number, single digit error, transposition error

Resources: illuminations.nctm/org/LessonDetail.aspx?id=L693 (check that digit), AMDM activity worksheets (universal product codes and credit card numbers)

Common learning experiences:

- AMDM worksheets
- Warm ups focusing on introducing each activity
- Teacher materials for Unit I: Analyzing Numerical Data binder
- Additional Fermi questions - http://tinyurl.com/ybtn963
- Understanding Aspect Ratio - This site gives the history of aspect ratios in cinema

- Additional Module support - http://amdmsupport.org/

Common assessments including the end of unit summative assessment:

- **Performance Assessment Task: Fermi Question** (after significant task 1) Students will work in partners. Each partnership will choose one question from a list of Fermi questions provided by the teacher. No two groups will be allowed to research the same question. They will have a full class length in the library to research their topic, collaborate, and create visual aids to assist them in a presentation of their findings. Students will need multiple resources to defend their conclusions. The project will be completed on a poster board along or through a power point presentation. For this task the mathematics will be graded using a task specific rubric. Students will also be graded using the problem solving rubric (school wide).
- Unit 1 Test

Teacher notes:

- Process standards to highlight through instruction: reason abstractly and quantitatively, construct viable arguments and critique the reasoning of others, and model with mathematics.
- Some students will want to use random guessing as a strategy. Push students to move away from this to using estimation strategies.
- Students might forget how to convert from one metric unit of length to another. Some review of this idea would be helpful before the Changing Tires activity.

Windsor Public Schools
Curriculum Map
Advanced Mathematical Decision Making

Unit 2 Probability	Length of the unit: 12 blocks

Purpose of the Unit: This unit focuses on the analysis of information using probability to make decisions about everyday situations. Building on students understanding of theoretical and experimental situations, students will progress to represent functional relationships with less focus around probabilistic nature of decision making. Students will work with situations where not all outcomes are equally likely and learn tools to account for weighting different possible outcomes in such situations.

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)

- **S.CP.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or**

complements of other events ("or," "and," "not").

- **S.CP.3 Understand the conditional probability of A given B as P(A and 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.**
- **S.CP.6 Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.**
- S.CP.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.
- S.CP.4 Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.
- S.CP.5 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.
- S.CP.7 Apply the Addition Rule, P(A or B) = P(A) + P(B) - P(A and B), and interpret the answer in terms of the model.

Big Ideas:	Essential Questions:
1. Representations of events can be used to determine conditional probability 2. As you perform more trials, the experimental probability of a situation will converge with the theoretical probability 3. Probabilities can be used to make predictions	1. What role does probability play in making decisions about the risks involved in problem situations? 2. How can probability be used to determine the mathematical fairness of situations?
Students will know:	Students will be able to:
1. the characteristics of dependent and	1. construct and use Venn diagrams to

independent events 2. how analyzing representations of events can determine conditional probabilities 3. binomial probability can be used to calculate expected value in real world situations 4. expected values are used in analyzing mathematical fairness, payoff, and risk in a variety of situations	determine probabilities of compound events in order to make decisions about risk involved in the situation 2. analyze and construct area models to determine the probabilities of events and to analyze risk/situational risk 3. calculate expected values to analyze pay offs 4. use expected values to determine the mathematical fairness of situations

Significant task 1: Determining Probabilities

In this task students will use Venn diagrams, tree diagrams, and area models as ways to organize information in probability situations. As a class opener to this unit students will be asked to individually create a Venn diagram of their choice that must have a total of 100 numbers and only 2 circles. A few students will show and explain their classwork. This will lead to a class discussion on the characteristics of a Venn diagram and how probability value is written as fraction, decimal, or percent. Students will then work in small groups on a activity called "Using Venn Diagrams" where they will analyze given Venn diagrams on students course selections, answer probability questions, and model Venn Diagrams based on given data of male and females who play tennis.

Tree Diagrams and Area Models will be taught in a similar way that focus on real world situations involving creating a sandwich, a pumpkin patch maze, and a breakfast menu. Students will use the next couple of classes to work in small groups on these activities. This task will culminate with a quiz that will allow students to represent different data sets using one of three modeling techniques, answer probability questions, and express understanding of the following: compound events, independent, dependent, equally likely and not equally likely, and conditional probability.

A Performance Assessment will be introduced at the start of this unit called Carnival Games. Students will be given their instructions and rubrics on the first day and will gradually work on their projects while we progress through the unit.

This task directly targets the following standards: **S.CP.1, S.CP.3,** S.CP.2

Timeline: 5 blocks

Key Vocabulary: area model, complement of a set, compound event, conditional probability, dependent events, equally likely, independent events, probability, sample space, tree diagram, Venn diagram
Resource Activities: AMDM student activity worksheets (Using Venn Diagrams, Using Tree Diagrams, Using Area Models, All-American Breakfast), Navigating through probability in grades 9-12 (National Council of Teachers of Mathematics)

Significant task 2: Everyday Decisions Based on Probabilities

In this task students will be able to explore the use of probability in everyday situations such as video games or selecting classes as well as make decisions and justify their decisions based on the risk

involved. The task will begin with looking at a video game activity where students will have teacher guidance followed by a student directed situation that will be presented to the class.

To start, students will work in small groups on an activity called "Probability in Games". The first part of the activity will be done as a class. Each group will be asked to model the video game situation with a tree diagram, Venn diagram, or area model. The groups will then pick a representative to explain why their group chose their model. A class discussion on the advantages and disadvantages of choosing a model based on a set of data will follow. The class will then continue to explore this activity that focuses on conditional probability and questions that ask about union, intersection and complements of a situation with assistance from the teacher when needed.

Following this activity, students will use the next class to investigate a real world scenario involving probability. Students will work in small groups. Each group will either choose an activity involving risks in driving, risk in stocks, or scheduling classes. Similar to the gallery walk conducted in Unit 1, students will create visual aids of their situation and be given student feedback before presenting to the whole class.

This task directly targets standards: S.CP. 1, **S.CP.3 ,** S.CP.5, **S.CP.6**

Timeline: 4 blocks

Key vocabulary: compound events, conditional probability, equally likely, intersection, union, weighted, dependent events, tabular data, contingency tables

Resources: AMDM student activity worksheets (Probability in Games, Driving and Risk, Stocks and Risk, Choosing Classes), Navigating through probability in grades 9-12 (National Council of Teachers of Mathematics)

Significant task 3: Expected Values

This will be the last task the class will complete before they play their carnival games. Students will learn about expected value, theoretical probability verse experimental probability, and binomial probability. To start, the class will get into partners and play a game. Each group will be given a bag, 1 green cube, and 2 white cubes. Before they start each group will calculate theoretical probability through a series of teacher directed questions. The groups will then play the game 15 times and calculate their experimental probability. A class discussion on expected value will lead to binomial probability. The class will stay with their partners and complete two activities. One of the activities involves a game at a carnival hitting a baseball and the other pertains to a girl shooting free throws to determine her allowance. A Q and A will conclude the lesson to prepare them for the following class where they play their own carnival games.

The following two classes are dedicated to students playing one another's carnivals games. During that time students will record their experimental data and compare it to their theoretical data. The groups will then complete an expense report including cost, revenue and profit of their game based on the experimental probability.

This task directly targets standards: S.CP.1, S.CP.2, S.CP.6

Timeline: 3 blocks

Key vocabulary: binomial probability, expected value, conditional probability, revenue, profit, theoretical probability, experimental probability

Resources: AMDM student activity worksheets (Binomial Probability and Expected Value, Expected Allowance), Navigating through probability in grades 9-12 (National Council of Teachers of Mathematics)

Common learning experiences:

- AMDM worksheets
- Warm ups focusing on introducing each activity
- Teacher materials for Unit II: Probability binder
- Link to an interactive calculator applet for sets and Venn diagrams(http://web-ext.u-aizu.ac.jp/~niki/courses/sccp/venn/index.html)
- Application for conditional probability http://stattrek.com/Tools/ProbabilityCalculator.aspx
- Additional Module support - http://amdmsupport.org/
- Tree diagram pintable's (http://www.enchantedlearning.com/graphicorganizers/tree/)

Common assessments including the end of unit summative assessment:

- **Performance Assessment: Carnival Game** (presented after significant task 3) The purpose of this project is to create a playable carnival game that can be used to calculate experimental and theoretical probabilities of winning your game and to calculate the expected expenses, revenue, and profit of playing your game. Students will work in Small groups. Each group will choose one game from a list of carnival games provided by the teacher. No two groups will be allowed to construct the same game. They will be given the instructions and rubric to this project at the beginning of this unit but will not need to be completed until task 3 is finished. Check in dates will be given to the class so they keep to a strict timeline. This will allow for immediate teacher feedback along the way. The games will be played in class after Task 3 is completed. Their projects with final calculations will be due the following class. For this task the mathematics will be graded using a task specific rubric. Students will also be graded using the problem solving rubric (school wide).

- Unit 2 Test

Teacher notes:

- Process standards to highlight through instruction: reason abstractly and quantitatively, model with mathematics, and look for and express regularity in repeated reasoning.
- Students often get lost reading tree diagrams. Suggest students write down all possible outcomes for the event.
- Venn Diagrams, tree diagrams and area models understanding should be stressed for each because all situations cannot be modeled with all three models.
- Some students make mistakes with area models and list the dimensions of the side of an area model and use these dimensions as factor pairs for finding probability of an event. Help correct

these mistakes early and make sure students understand the scenario of the problem.

Windsor Public Schools
Curriculum Map
Advanced Mathematical Decision Making

Unit 3 Statistics	Length of the unit: 17 blocks
Purpose of the Unit: This unit focuses on developing background statistical knowledge through the use of existing case studies and introducing students to the basic components of the design and implementation of statistical studies. After collecting and displaying data, students explore introductory techniques of statistical analysis. Students build the skills and vocabulary necessary to analyze and critique reported statistical information, summaries, and graphical displays that they will prepare oral and written reports for. As a culmination of this unit, students will work toward implementing their own statistical study, organize and analyze data, and report their results.	

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)

- **CC.9-12.S.ID.4 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.**
- **CC.9-12.S.IC.1 Understand statistics as a process for making inferences about population parameters based on a random sample from that population.**
- **CC.9-12.S.IC.4 Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling**.
- **CC.9-12.S.IC.5 Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.**
- CC.9-12.S.IC.2 Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?
- CC.9-12.S.IC.3 Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.

- CC.9-12.S.IC.6 Evaluate reports based on data.

Big Ideas:	Essential Questions:
1. Research cycles aid in the process of planning and implementing statistical investigations 2. Experimental studies are used in many medical drug trials 3. When data represents the population and can be generalized you can make predictions about future or past events	1. What are the agreed upon methods for the analysis and critic of reported statistical information and statistical summaries? 2. How does one design and conduct a study to answer a question of interest? 3. What are the advantages and disadvantages of analyzing data by hand versus using technology? 4. When is it appropriate to generalize from a sample to a population?
Students will know:	Students will be able to:
1. the characteristics of the research cycle 2. the differences between categorical vs. quantitative data 3. the purpose of statistical investigations and when to implement an observational or experimental study 4. sampling methods and their biases 5. outliers can greatly skew summary statistics	1. determine whether statistical studies are observational or experimental 2. identify variables and populations of interest as well as data sources 3. interpret a variety of graphical displays of statistical data 4. prepare and present appropriate statistical reports 5. collect, compare, and contrast multiple data sets 6. explain the effect of statistical bias on generalize ability of results

Significant task 1: Statistical Investigations

The first task allows students to familiarize with the ins and outs of statistical study. Students will analyze case studies, compare experimental and observational studies, and be exposed to the National Commission for Protection of Human Subjects of Biomedical and Behavioral Research. A full class discussion will begin this task using framing questions about music and its ties to statistical studies. The research cycle will be introduced and as a class we will create research questions focused on music. After this, students will work in small groups on the activity “Overview of Purpose, Design, and Studies”. Students will encounter a lot of new vocabulary during this time and should be keeping a journal to have as a reference throughout this unit.

Following this activity student’s will look into the ethical use of human participants when conducting a study. To start, students will read aloud an article on the Tuskegee Study. A full class discussion will

follow about the unethical treatment of these human subjects and what change the US government has made over the years. Students will then work in small groups on the "Treatment of Subjects" activity. A question and answer session will be held at the end of the class where informed consent, ethical principles, and risk vs. benefits will be reviewed.

A Performance Assessment will be introduced at the start of this unit called Statistical Study. Students will be given their instructions and rubrics on the first day and will gradually work on their projects while we progress through the unit

This task directly targets the following standards: CC.9-12.S.IC.3, **CC.9-12.S.IC.4,** CC.9-12.S.IC.6,

Timeline: 6 blocks

Key Vocabulary: alternative hypothesis, control group, data collection, experimental study, null hypothesis, observational study, placebo effect, population, survey, research question, sample mean, statistical significance, treatment, ethics, informed consent, pilot study, secondary data, margin of error, census, cluster sampling, convenience sampling, inference, random sampling, sampling method, stratified sampling, systematic sampling, variable of interest

Resource Activities: AMDM student activity worksheets (Overview of Purpose Design Studies, Treatment of Subjects, Margin of Error, Sampling Design and Methods), http://www.cdc.gov/tuskegee/timeline.htm (Tuskegee Study), Real Knife, fake surgery (Time magazine article), Ethical principles and guidelines for the protection of human subjects of research (article from National Commission…Behavioral Research), "Recruiting study subjects" and "Payment to Research Subjects" and "Guide to informed consent" (U.S. Food and Drug Administration)

Significant task 2: Analyzing Data

This task focuses on the analysis of graphical displays of data such as histograms, box and whisker plots, dot plots, line graphs, and frequency tables. The class will start with Histograms. Students will be shown a sample of "Colleges' SAT Math Scores" from an NCTM website. Students will engage in a class discussion on their analysis of the histogram. The research cycle will be emphasized. From there students will work in small groups on an activity titled "histogram". They will examine different sets of data about SAT scores, students riding a bus, and students who drive to school displayed in histograms. They will investigate outliers, symmetric representation, univariate vs. bivariate data, and categorical vs. quantitative data. One real world problem students will analyze is titled "Equal Work Does Not mean Equal Pay". Students will read and interpret time plots and bar graphs comparing women's pay verse men's pay. They will use ratios and percent computations to justify their opinions and explanations of the social issues brought up in this scenario.

At the start of the following class, students will learn or better their understanding about dot plots, frequency tables, box-whisker (5-number summary), stem and leaf plots, and pie charts. Advantages and limitations of each will be discussed by the class and documented on large sticky note paper that will be placed around the room for the remainder of the unit. Next, the class will participate in its own data collecting and analysis on an arrangement of questions provided by the teacher. They will also be on large pieces of sticky note paper spread throughout the room. Each student will have small colored sticky note paper which they will use to answer each question on the wall. Small groups will then be created where each group is given one of the questions we collected data on. They will be required to represent their data in 3 separate ways, identify any outliers, and describe the distribution in front of the class. Many students will avoid box and whisker plots so the following class will be dedicated to

different real world examples. Students will learn how to represent this graphical display on their graphing calculator as well. UConn men and women's basketball stats, billboard's top 100, test scores, and sleep data will be used.

This task directly targets standards: **CC.9-12.S.ID.4, CC.9-12.S.IC.1,** CC.9-12.S.IC.6

Timeline: 6 blocks

Key vocabulary: frequency table, frequency, interval width, skewness, bivariate, univariate, box and whisker plot, box plot, categorical data, dot plot, five number summary, outlier, quartile, distribution, population mean, sample mean, sample statistic, standard deviation

Resources: AMDM student activity worksheets (Histograms, Analyzing Graphical Displays, Using Technology, Survey Design), illuminations.nctm.org/ActivityDetail.aspx?id=78 (NCTM histogram tool), Equal Work Does Not Mean Equal Pay

Significant task 3: Sources of Variability

Students will investigate statistical biases in the last task of this unit before their own statistical studies are presented. To start, the class will be asked to write their age on a piece of paper place it in a bag provided by the teacher. I will record the data on the board and ask a student to compute the mean using a calculator. I will then announce to the class that "Students at Windsor High school are an average of __ years old" and ask them if this is valid. Students should quickly discount this conclusion which will lead into a discussion of non-representative samples and biased data. Students will work in small groups on two activities focused on students understanding statistical biases through biased sampling methods or biased statistics. Students will provide their own personal examples of statistical biases as well as analyze biases in observational and experimental case studies on political polls, medical studies, television surveys, and consumer sales.

At the conclusion of this task, students will present their own statistical studies they were conducting throughout the unit. Each group will present their research question, their sampling methods, represent their descriptive statistics, and explain their results.

This task directly targets standards: **CC.9-12.S.ID.4, CC.9-12.S.IC.1, CC.9-12.S.IC.4,** CC.9-12.S.IC.3, CC.9-12.S.IC.6

Timeline: 4 blocks

Key vocabulary: biased sampling method, biased statistics, induced variability, response bias, statistical bias, natural variability

Resources: AMDM student activity worksheets (Introduction to Statistical Bias and Variability, Statistical Bias in Research Studies and Polls)), Real Knife, fake surgery (Time magazine article), Are women really more talkative than men? (www.sciencemag.org/cgi/content/full/317/5834/82, The Power of Graphical Display (http://www.yale.edu/ynhti/curriculum/units/2008/6/08.06.06.x.html),

Common learning experiences:

- AMDM worksheets

- Warm ups focusing on introducing each activity
- Teacher materials for Unit III: Statistical Studies binder
- This site contains data tools, surveys and programs along tables and figures put out by the United States Dept. of Ed. http://nces.ed.gov/annuals/
- This is a great resource for finding a case study to begin discussion. You can search by what type of analysis is in the study. http://onlinestatbook.com/case_studies_rvls/index.html
- Additional Module support - http://amdmsupport.org/

Common assessments including the end of unit summative assessment:

- **Performance Assessment: Statistical Study** (presented after significant task 3 . The purpose of this project is to create a statistical study on a research question created by the student. Students will conduct either an observational or experimental study. They will choose their population, detail collecting data methods following ethical guidelines, describe sampling methods, represent their data using at least 2 graphical displays, describe their statistics, and express their conclusion of the study to the class. Students will work in small groups. Each group will choose one research question that must be approved by the teacher. No two groups will be allowed to use the same research question. They will be given the instructions and rubric to this project at the beginning of this unit but it will not need to be completed until task 3 is finished. Check in dates will be given to the class so they keep to a strict timeline. This will allow for immediate teacher feedback along the way. Their projects will be presented to the class through a power point presentation or through large poster boards. For this task the mathematics will be graded using a task specific rubric. Students will also be graded using the problem solving rubric (school wide).

- Unit 3 Test

Teacher notes:

- Process standards to highlight through instruction: make sense of problems and persevere in solving them and construct viable arguments and critique the reasoning of others.

- Be aware that some topics might be sensitive to students and stress the importance of respect for individual opinions in the class.

- Emphasize the importance of labeling graphs correctly. Have students discuss whether various graphs they and other students have created are correctly and completely represented.

Unit 4 Using Recursion in Models and Decision Making	Length of the unit: 13 blocks

Purpose of the Unit: This unit focuses on analyzing and modeling data. By looking at recursive models for bivariate data and relationships, students expand their set of tools for data analysis. This unit builds on knowledge of functions and focuses on recursive rules that model data exhibiting exponential and linear patterns. This unit reinforces student understanding of the concepts associated with linear and exponential functions while expanding a new way to think about modeling these types of data. Students will use mathematical models to represent, analyze, and solve real world problems involving change.

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)

- **F-BF 2. Write arithmetic and geometric sequences ... recursively and [arithmetic sequences] with an explicit formula, use them to model situations, and translate between the two forms.***
- **F-IF 2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.**
- **F-IF 4. 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. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative....***
- **A-CED 1. (part) Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear ... functions**
- **A-CED 2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales**
- **CC.9-12.F.IF.7 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.***
- **CC.9-12.F.BF.1 Write a function that describes a relationship between two quantities.***
- **CC.9-12.F.BF.1c (+) Compose functions. For example, if T(y) is the temperature in the atmosphere as a function of height, and h(t) is the height of a weather balloon as a function of time, then T(h(t)) is the temperature at the location of the weather balloon as a function of time.**
- CC.9-12.F.IF.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*
- F-IF 3. Recognize that sequences are functions, sometimes defined recursively, whose

domain is a subset of the integers...

- F-BF 1. Write a function that describes a relationship between two quantities.*
- a. Determine an explicit expression, a recursive process, or steps for calculation from a context.

Big Ideas:	Essential Questions:
1. Analyzing patterns and writing recursive and explicit algebraic rules provides a powerful way to extend patterns and make predictions. 2. Functions are a mathematical way to describe relationships between two quantities that vary.	1. What are the advantages and disadvantages of a recursive rule compared to an explicit rule? 2. How can we use linear and exponential functions to solve real world problems? 3. How can models and technology aid in the solving of linear and exponential functions? 4.
Students will know:	Students will be able to:
1. the similarities and differences between the recursive rule and the functional form of the linear rule 2. bivariate data represents two variables and is often displayed through scatterplots	1. analyze the form, direction, and strength of scatterplots 2. use recursively defined rules to make predictions about the situation being modeled 3. explore exponential growth and exponential decay problems and make connections between the two models 4. compare and contrast recursive and explicit function models for exponential decay 5. solve real world problems involving change using recursion and iteration 6. determine if a set of bivariate data represents a linear relationship or exponential by finding the correlation coefficient for the data.

Significant task 1: Relationship in Data

This task focuses on bivariate statistics through the exploration of two class activities. As an opener, students will be given a handout with a list of survey questions created by the teacher. Students will be asked to individually choose which questions they believe represent bivariate quantitative data. The teacher will frame questions to start a discussion on comparing and contrasting univariate data vs. bivariate data. Students will then get into small groups and work on the activity "Using Scatterplots in Reports" that focuses on analyzing graphical displays of bivariate data where they will distinguish between linear and nonlinear relationships as well as determine the direction and relative strength of

the data. A class discussion will end the class focusing on cause and effect relationships vs. association, data strength and direction, and linear vs. nonlinear patterns. This will allow students to have a solid understanding of bivariate data before applying recursive and explicit rules to data sets in the next activity.

Next students will work on the activity "Recursions and Linear Functions". A brief teacher lead refresher will start the class focusing on what the recursive rule and explicit rule are. Most students understand the process of these concepts but often forget the vocabulary. Students will then work in partners on the activity worksheet. Students will work on two real world problems involving magazine sales and international phone service. Students will create data tables based on the scenario, determine the recursive rule and explicit rule, and use their graphing calculators and sequence notation to create scatterplots.

This task directly targets the following standards: F-IF 2, F-IF 3, F-IF 5, F-BF 1, F-BF 2, A-CED 1, CC.9-12.1

Timeline: 3 blocks

Key Vocabulary: arithmetic sequence, bivariate data, cause and effect, explicit function rule, form/direction/relative strength, iterative process, linear function, recursion, recursive routine, recursive rule

Resource Activities: AMDM student activity worksheets (Using Scatterplots in Reports and Recursion and Linear Functions)

Significant task 2: Recursion in Exponential Growth and Decay

This task focuses on understanding exponential data sets. Students will begin by looking at an example of exponential decay. Students will get into small groups and perform an experiment on a tennis balls bounce and rebound percentage. Students will collect data in a table, create a scatterplot, and find the average rebound percentage of their ball. Once each group has collected and recorded their data they will present their findings to the class. A full class discussion will take place. Students will have recognized each of their data sets represents exponential decay and their rebound percentage determines the rate the balls height decreases. Students will then work in their small groups on the activity "Recursion and Exponential Functions" where they will take their data a step further and determine recursive rules and exponential functions.

Next students will work on a real world problem involving exponential growth using MRSA bacteria. They students will record their data table, scatter plot, recursive rule and exponential function on large sticky note paper and compare their results with the class.

This task directly targets standards: F-IF 3, F-IF 2, F-IF 4, A-CED 2, CC.9-12.F.IF.7, CC.9-12.F.BF.1, CC.9-12.F.BF.1c

Timeline: 3 blocks

Key vocabulary: common ratio, exponential growth and decay, exponential function, finite difference, function rule, geometric sequence, linear function, recursive rule,

Resources: AMDM student activity worksheets (Recursion and Exponential Functions and Comparing Models)

Significant task 3: Recursion Using Rate of Change

This task focuses on addressing the recursive and explicit formulas used to describe exponential decay using graphing calculators and other technology. To start the first class on this task, the teacher will bring in a hot cup of liquid and ask the class "would the temperature of this cup change at a constant rate?" This will lead into a small class discussion about rate of change and Newton's Law of Cooling.

Students will work in small groups and perform a lab over 2 days. Each group will be giving a CBL with temperature probe and a Styrofoam cup filled with hot water. They will collect data of the cooling liquid for 30 minutes using a graphic organizer provided by the teacher as well as record their findings in their graphing calculators to make a scatterplot. Once this is completed, students will determine if the data represents a linear or exponential relationship using the first difference test and then build recursive rule. Then they will use their successive ratio to help determine the exponential function that best models their data. Finally students will compare the recursive rule and the explicit rule and answer a variety of questions requiring them to reflect on their analysis.

This task directly targets standards: F-BF 1. **F-IF 4, A-CED 2, CC.9-12.F.IF.7, CC.9-12.F.BF.1,**

CC.9-12.F.BF.1c

Timeline: 4 blocks

Key vocabulary: ambient temperature, constant of proportionality, difference equation, domain, exponential growth and decay, logistic growth, Newton's Law of Cooling, radioactive decay, proportion, range, rate of change, temperature

Resources: AMDM student activity worksheets (Newton's Law of Cooling and Rates of Change in Exponential Models), real world application of logistic functions (www.nctm.org/resources/content.aspx?id=8496)

Common learning experiences:

- AMDM worksheets
- Warm ups focusing on introducing each activity
- Teacher materials for Unit IV: Using Recursion in Models and Decision Making binder
- Newton's Law of Cooling app http://mathforum.org/mathtools/tool/1124/
- real world application of logistic functions (www.nctm.org/resources/content.aspx?id=8496),
- Additional Module support - http://amdmsupport.org/

Common assessments including the end of unit summative assessment:

- Quiz on Task 1
- Quiz on Task 2
- Explicit and Recursion Unit Test

Teacher notes:

- Process standards to highlight through instruction: attend precision, look for and make use of structure, and construct viable arguments and critique the reasoning of others.
- Review prior learning regarding linear functions and arithmetic sequences. Make sure students have a firm understanding of linear functions and their constant rate of change before they try to write a recursive rule.
- Emphasize the importance of notation in writing recursive rules. It might help to have students use words prior to symbols to support this learning.
- Students might have forgotten how to use the first difference, second difference, and success ratio tests to determine functions from tables so a mini lesson before the start of task 3 would be helpful

Windsor Public Schools
Curriculum Map
Advanced Mathematical Decision Making

Unit 5 Using Functions in Models and Decision Making	Length of the unit: 11 blocks

Purpose of the Unit: This unit focuses on analyzing data and finding mathematical functions to model real world data and context with functions. Students expand their set of tools for data analysis, building on their previous work with continuous and piecewise-defined functions. Students will work with a variety of functions including linear, quadratic, exponential, rational, and step functions. Students will test these models against data and common sense to answer questions and solve complex problems in the world which we live. Students will also build on their work from Unit IV connecting recursive rules and explicit functions.

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)

- **F-BF 2. Write arithmetic and geometric sequences ... recursively and [arithmetic sequences] with an explicit formula, use them to model situations, and translate between the two forms.***
- **F-IF 2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.**
- **F-IF 4. 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. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative....***
- **CC.9-12.F.IF.7d (+) Graph rational functions, identifying zeros and asymptotes when**

suitable factorizations are available, and showing end behavior

- **CC.9-12.F.IF.7 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.***
- **CC.9-12.F.BF.1 Write a function that describes a relationship between two quantities.***
- **CC.9-12.F.BF.1c (+) Compose functions. For example, if T(y) is the temperature in the atmosphere as a function of height, and h(t) is the height of a weather balloon as a function of time, then T(h(t)) is the temperature at the location of the weather balloon as a function of time.**
- CC.9-12.F.IF.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*
- F-BF 1. Write a function that describes a relationship between two quantities.*
- a. Determine an explicit expression, a recursive process, or steps for calculation from a context.

Big Ideas:	Essential Questions:
1. Functions describe relationships between two quantities that vary. 2. Linear functions have a constant difference whereas exponential functions have a constant ratio. 3. Functions are useful for analyzing patterns of change.	1. What defines a function? 2. How do functions help us analyze real world situations and solve practical problems? 3. What are the limitations of exponential growth models? 4. How can one differentiate an exponential model from a linear model? 5.
Students will know:	Students will be able to:
1. how correlation coefficients are used in determining the direction and strength of a linear relationship between two quantities. 2. graphing calculators generate random numbers as well as represent recursive relationships 3. the properties of step functions and piecewise functions	1. compare and contrast recursive and explicit function models using regression 2. analyze data to develop a concept of a functional relationship where the rate of change demonstrates logistical growth 3. model real world data using step functions 4. justify the selection of a function that models a data set and use the model to make predictions

Significant task 1: Regression in Linear and Nonlinear Functions

This task focuses on utilizing correlation coefficients to determine function models that best fit a given set of data and regression analysis. Students begin this task by working on the activity "Analyzing Linear Regression Equations". It will begin with a full class discussion on direct proportionality and the correlation coefficient. Led through direct instruction, students will also get a quick review on how to utilize their graphing calculators to compute a regression analysis. Students will then work in small groups and analyze data sets. Students will make scatterplots, perform regression analyses, and compare and describe correlation coefficient values. One of these activities will be based on hunger and poverty in the United States. Students will be given real world data and asked to use regression equations to predict future poverty levels. A second activity called "Comparing Linear and Exponential Functions" will follow with less teacher assistance allowing students to solidify their understanding regression analysis.

To end the task, students will work on an activity centered on the H1N1 virus. This activity will take two full classes. It will be started by a full class discussion building off of the question "What mathematics is involved when epidemics or pandemics occur?" Students will then work in small groups on the activity "Growth Model." Students will use their graphing calculator's random number generator to simulate an outbreak. Students will record their data in graphic organizers provided by the teacher. Students will make scatterplots, determine the model to best fit their data, and use their regression equation to make predictions. Students will share their results with the rest of the class at the conclusion of day two.

This task directly targets the following standards: F-BF 1, F-BF 2, F-IF 2, CC.9-12.F.IF.7 , CC.9-12.F.IF.5,

CC.9-12.F.BF.1, CC.9-12.F.BF.1c

Timeline: 5 blocks

Key Vocabulary: difference equation, domain, exponential decay, exponential function, finite difference, function rule, geometric sequence, geometric series, linear function, logistic growth, range, rate of change, ratio

Resource Activities: AMDM student activity worksheets (Analyzing Linear Regression Equations, Comparing Linear and Exponential Functions, and Growth model), Hunger and Poverty in the United States

Significant task 2: Step and Piecewise Functions

This task focuses on the properties of step and piecewise functions based on real world data. To start, students will watch a video on natural disasters focusing on hurricanes and tornados. At the conclusion of the video the Fujita scale and Saffir-Simpson hurricane wind scale will be the focus of a full class discussion. Students will then work in partners on the activity "Introducing Step and Piecewise Functions." Through a serious of questions that require students to create and analyze scatterplots, students will start to build a foundation of Step Functions.

Following Step Functions, students will be introduced to piecewise functions. To start, students will individually sketch a scatterplot of data provided by the teacher and then describe a scenario that might represent the data and graph. Students will also describe the domain values and range values. Students will share their scenarios with the rest of the class. A full class discussion on slope, equation of lines, domain, and range will be done to review skills students will utilize in the next activity. Students will then begin to work in small groups on the activity "Another Piecewise Function." Students will

analyze a piecewise function on a person's commute home from work.

To end this task, students will individually complete a piecewise function project. This will take two classes to complete. One for work and one for presenting. Students will create their own problem that demonstrates the use of piecewise graphing. They will choose a situation that connects their learning to the real world.

This task directly targets standards: F-IF 2, F-IF 4, CC.9-12.F.IF.7, CC.9-12.F.IF.7d, CC.9-12.F.IF.5, CC.9-12.F.BF.1, CC.9-12.F.BF.1c

Timeline: 6 blocks

Key vocabulary: constant function, continuous, decreasing, dependency statement, domain, exponential function, increasing, linear function, piecewise function, range, rate of change, slope, step function

Resources: AMDM student activity worksheets (Introducing Step and Piecewise Functions, Another Piecewise Function, Concentrations of Medicine, Making Decisions from Step and Piecewise Models), The Fujita Scale (http://www.tornadoproject.com/fscale/fscale.htm), Saffir-Simpson Hurricane Wind Scale (http://www.nhc.noaa.gov/aboutsshws.php)

Common learning experiences:

- AMDM worksheets
- Warm ups focusing on introducing each activity
- Teacher materials for Unit V: Using Functions in Models and Decision Making binder
- Activity on exponential decay using M&Ms that models the half-life function for exponential decay (http://jbryniczka.weebly.com/uploads/4/0/9/1/4091055/mmactivity_10.pdf)
- National Hurricane Center (www.nhc.noaa.gov)
- Graphing Calculator Tutorials for Texas Instruments (http://math.escweb.net)
- You tube videos on Hurricane and Tornado strength scales
- Additional Module support - http://amdmsupport.org/

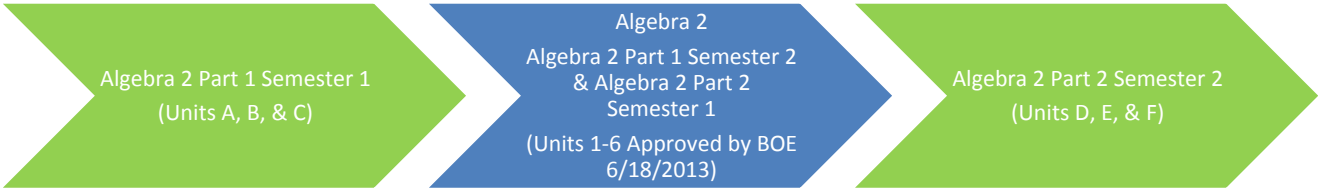
Common assessments including the end of unit summative assessment:

- Piecewise Function Project
- H1N1 Assessment

Teacher notes:

- Process standards to highlight through instruction: make sense of problems and preserver in solving them, construct viable arguments and critique the reasoning of others, and model with mathematics.
- Students will need assistance using their calculators as a random number generator. This should be demonstrated as a class and students should be provided with outlined directions.
- Direct proportional situations are represented in this unit. Students may need a review. Review this concept using a situation involving distance, rate and time.

Algebra 2 Part 1 & Part 2 Curriculum



Unit A Solving Equations and Inequalities in One Variable

Unit B Linear Equations and Inequalities in Two Variables

Unit C Systems of Linear Equations and Inequalities

Unit 1 Functions and Linear Programing

Unit 2 Quadratic Functions

Unit 3 Polynomials

Unit 4 Radical Functions

Unit 5 Exponential and Logarithmic Functions

Unit 6 Rational Functions

Unit D One Variable Data Distributions

Unit E Two Variable Data Distributions

Unit F Sample and Survey Design

Windsor Public Schools
Curriculum Map
Algebra 2 Part 1

Purpose of the Course: This course is a study of functions and their applications. Functions studied include linear, quadratic, polynomial, and radical. Additional topics include equations, inequalities, operations with functions, inverse functions, and systems of linear equations. This course strengthens and extends the concepts presented in Algebra 1 and covers the first half of the one year Algebra 2 course. The second half is covered in Algebra 2 Part 2.

Unit A – Solving Equations and Inequalities in One Variable	Length of the unit: 13 blocks
Purpose of the Unit: This unit is designed to review, deepen, and expand students' knowledge of solving one variable equations and inequalities. This unit reviews solving multi-step equations and inequalities including working with fractions and the Distributive Property. Students' knowledge is expanded to include solving and graphing compound inequalities on a number line. In addition, this unit introduces absolute value equations and inequalities.	

Common Core State Standards Addressed in the unit:

CC.9-12.F.BF.1 Write a function that describes a relationship between two quantities.*

CC.9-12.A.CED.1 Create equations and inequalities in one variable and use them to solve problems. ***Include equations arising from linear and quadratic functions, and simple rational and exponential functions.***

CC.9-12.F.IF.8 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

CC.9-12.A.CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

CC.9-12.A.SSE.1 Interpret expressions that represent a quantity in terms of its context.*

Big Ideas:	Essential Questions:
1. Properties of equality and inverse operations are used to solve equations.	1. What's happening in the equation and how do you "undo" that?

2. Relationships can be represented as tables, graphs, and equations. 3. Inequalities have more than one solution.	2. How can you represent a relationship in an algebraic rule? 3. Why do inequalities have more than one solution?
Students will know: 1. the definitions of equality, inequality, and their symbols 2. equations can have one solution, no solutions or many solutions 3. inequalities have more than one solution 4. properties of absolute value equations and inequalities	Students will be able to: 1. develop linear equations and inequalities that model real world situations 2. simplify and solve equations and inequalities to solve problems 3. solve and graph compound inequalities 4. solve absolute value equations 5. solve and graph absolute value inequalities

Significant task 1: Solving Equations in One Variable

In significant task 1, students will work in small groups to review the skills necessary to solve equations in one variable, through various concepts, such as saving money each week, the cost of gas per gallon, break even points, and finding parts of a whole. As a whole class, students will learn the technique of "fraction busting" to remove fractions from an equation to make it simpler to solve. A teacher led discussion will model for students, as a review, how to work with equations that contain variables on both sides of the equal sign.

In this task, students will:

- Combine like terms
- Use the distributive property
- "fraction bust"
- Solve multi-step equations
- Solve equations with variables on both sides

This significant task targets the following CCSS Standards: F.BF.1, A.CED.1

Timeline: 3-4 blocks
Key vocabulary: equation, variable, distributive property, "fraction bust", break-even point
Resources: Holt Section 1.6

Significant task 2: Solving and Graphing Inequalities in One Variable

Significant task 2 begins with a whole class discussion to compare the differences of equations and inequalities in the context of the cost of on-demand movie rentals. As a small group discovery, groups will start with different inequalities and list 4-5 solutions. They will then multiply both sides of the

inequality by (-2) and decide if the solutions they listed are still solutions. Since they will not be solutions, as a whole class we will discuss why we switch the inequality when we multiply/divide by a negative number. In their small groups, students will then solve inequalities using the skills learned from significant task 1 and determine how to graph their solutions on a number line.

As a teacher-led class, students will solve and graph compound inequalities. It is essential to have a class discussion about the meaning of the connecting words "and" and "or". For example, "I can be in my seat and in the classroom at the same time" leads students to understand that all conditions must be satisfied for an "and" compared to "or"; "I can be in the classroom or in the hallway" leads students to understand that only one condition must be satisfied for an "or." For the first few examples of solving compound inequalities, have students list 3-4 solutions that satisfy the "and" or "or" compound inequality and assess where they fall on the number line. This will lead students to concluding that "and" gets shaded in the middle (overlapping region) and "or" gets shaded in opposite directions. This will enhance the idea of the solution set of a compound inequality which will help students graph and solve other types of "and" and "or" inequalities.

In this task, students will:

- Solve inequalities
- Graph inequalities on a number line
- Solve and graph compound inequalities

This significant task targets the following CCSS Standards: A.CED.1
Timeline: 4-5 blocks
Key vocabulary: inequality, number line, compound inequality
Resources: Holt Section 1.7

Significant task 3: Solving Absolute Value Equations and Inequalities in One Variable

To introduce the concept of an absolute value equation, students will be presented with a bag of chips and scale to determine the actual weight of the bag of chips and will compare it to the advertised weight. This will lead into a discussion about tolerance in manufacturing where students will write and solve absolute value equations to find the maximum and minimum acceptable values. Students will review the concept of absolute value and apply the definition to solve absolute value equations. Through whole class instruction, students will solve and graph absolute value inequalities using the knowledge they gained from compound inequalities in significant task 2. Referring to the definition of absolute value along with a posted number line will help students understand absolute value inequalities.

In this task, students will:

- Solve absolute value equations
- Solve and graph absolute value inequalities

This significant task targets the following CCSS Standards: F.IF.8
Timeline: 3-4 blocks
Key Vocabulary: absolute value, tolerance
Resources: Holt Section 1.8

Common learning experiences:

- Holt Sections: 1.6-1.8 for homework options

Common assessments including the end of unit summative assessment:

- Unit Test

Teacher notes:

- Process standards to highlight through instruction: construct viable arguments and critique the reasoning of others, attend to precision, and look for and make use of structure.
- Part of this unit is taken from Unit 1 in Algebra 2; it is not necessary to repeat the compound inequalities or absolute value equations/inequalities when you reach Unit 1. It was important to break some of the skills up for students to be more successful.
- It is important to remember that students are identified for this class due to weak algebra 1 skills. Students will have different gaps in their knowledge/skills and it is important to use pre-assessments to guide your small group instruction.
- At the beginning of this unit, when students are working in groups, take the time to assess where students skills fall and group students by skill deficits.
- Because this unit is skill based, small quizzes will be useful in assessing students' learning in each significant task.
- Students will have difficulties with "fraction busting." Some students have a fear of fractions. Emphasizing that "fraction busting" is a process that rids the equation of fractions, might ease the tension students have with fractions.
- When equations have more than one variable term on the same side of the equal sign, some students will try to "undue" the operation instead of combining the like terms.
- Various activities, group and individual, should be used for students to practice skills; such as "around the world", snake activity, whiteboard practice, jeopardy style and "MATHO" style competitions.
- Students will forget to switch the inequality sign when multiplying/dividing by a negative.
- During significant task 2, make sure students are using the correct type of point (open/closed) on the number line. It is also important to make sure students understand why they are using each type of point.
- Students tend to confuse when to use "and" or "or" with compound inequalities. Sometimes it

will help students to graph their solutions first, to see where the shaded regions appear on the number line, and then write the solution statement with the correct word.

- Students will be seeing absolute value equations for the first time. So, it will be important to take this concept a little slower in the beginning and be sure to explain why it is necessary to break into two parts.
- Some students will forget to find the second solution of an absolute value equation or inequality.
- With absolute value inequalities, some students will forget to switch the inequality sign when negating the second part of the inequality piece.
- Students rush to solve absolute value equations and inequalities, even if they have no solutions. In other words, when an absolute value equation is equal to or less than a negative number, students will just start to solve instead of stopping and thinking about what the statement means about absolute value.

Windsor Public Schools
Curriculum Map
Algebra 2 Part 1

Unit B – Linear Equations and Inequalities in Two Variables	Length of the unit: 11 blocks
Purpose of the Unit: This unit is designed to deepen the student's knowledge of linear equations and inequalities in two variables and the relationships within them. A line's slope and intercepts will be analyzed in context and domain and range will be introduced. In this unit, linear equations will be written given specific pieces of information.	

Common Core State Standards Addressed in the unit:

CC.9-12.F.IF.7 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.*

CC.9-12.F.BF.1 Write a function that describes a relationship between two quantities.*

CC.9-12.A.CED.1 Create equations and inequalities in one variable and use them to solve problems. ***Include equations arising from linear and quadratic functions, and simple rational and exponential functions.***

CC.9-12.F.IF.8 Write a function defined by an expression in different but equivalent forms to reveal

and explain different properties of the function.

CC.9-12.A.CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

CC.9-12.F.IF.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function*.*

CC.9-12.F.IF.4 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. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*

CC.9-12.A.SSE.1 Interpret expressions that represent a quantity in terms of its context.*

Big Ideas:	Essential Questions:
1. Linear equations have a constant rate of change. 2. Relationships can be represented as tables, graphs, and equations/inequalities. 3. Linear inequalities have a solution region.	1. What does a linear equation's slope and intercepts tell you? 2. How do linear equations and inequalities help us analyze real world situations and solve practical problems? 3. Why are there multiple solutions to a linear inequality?
Students will know:	Students will be able to:
1. linear relationships that result with positive/negative slopes and zero/undefined slopes 2. advantages and disadvantages of various forms of linear functions: standard form, slope-intercept form, and point-slope form 3. slope as a constant rate of change 4. representations of relationships including: verbal descriptions, tables, graphs, and equations or inequalities	1. interpret equations and inequalities that arise in applications in terms of the context 2. analyze linear equations and inequalities using different representations 3. create graphs of linear equations and inequalities representing real world situations and label with appropriate axes and scales 4. determine a linear equation from a graph or various pieces of information

Significant task 1: Graphing Linear Equations in Two Variables

In significant task 1, using the context of predicting a person's height from the length of a set of bones students will work in small groups to develop an equation that will determine a dead person's height from the length of a certain bone. (This context will come back repeatedly throughout the skill development.) As a whole class, the graph of this equation will be constructed and the parts, such as the x and y intercepts and the slope will be analyzed and described in context.

In pairs, students will graph lines given verbal descriptions such as, "slope of ½ and y-intercept of -3" or "x-intercept of -2 and y-intercept of 5" or "slope of $-\frac{2}{3}$ and point (-1, 4)". Then the students will be given the matching equations in the different forms; slope intercept, standard, and point-slope forms to show how the equation can be used to graph. Some groups may need to be shown how the intercepts and the standard form equation are related, as well as how to use the point-slope equation.

As a small group activity, students will practice graphing lines from each form of a linear equation, always pointing out where the x and y intercepts are and stating the slope of the line. This is a good time for groups to present to the class how to graph from each form of a linear equation. As a whole class, students should review how to transform equations specifically from standard to slope intercept form. This is important especially when one of the intercepts is a decimal that cannot be graphed accurately.

Once students can visually see the x and y intercepts, then individually, students will explore how to find the exact x and y intercepts algebraically from any form of a linear equation since the intercepts will not always cross the axes at an integer.

In this task, students will:

- Develop relationships between two variables
- Determine slope of a line and describe it in a context
- Graph linear equations from slope-intercept form, standard form, and point-slope form
- Change the form of an equation from one to another
- Determine x and y intercepts graphically and algebraically

This significant task targets the following CCSS Standards: F.IF.7
Timeline: 4-5 blocks
Key vocabulary: linear, intercept, slope, slope-intercept form, standard form, point-slope form,
Resources: Modeling with Mathematics: A Bridge to Algebra II (chapter 2) – for data and examples only, Holt Section 1.1-1.3

Significant task 2: Writing Linear Equations

In small groups, students will determine how to write the equation of a graphed line, both with and

without an identified y-intercept. In their groups, students will develop a method of finding the slope from a graph and review how to find the slope between two points. Slope will also be described in various contexts using different increasing or decreasing situations, for example distance vs. time, water loss vs. time, and gasoline use vs. distance traveled.

A whole class discussion will be used to review how parallel and perpendicular slopes are related. This will be followed by writing equations of lines given different pieces of information about the line, such as the slope and y-intercept, slope and a point, two points, or a parallel/perpendicular line and a point.

As a teacher led discussion, domain and range will be defined and an understanding will be developed through various contexts, such as the cost of removing snow from a roof, the weight gain of a puppy every month, and recycling efforts of a city.

In this task, students will:

- Find slopes from graphs and two points
- Describing slope in context
- Find slopes of parallel and perpendicular lines
- Write equations of lines given a graph or pieces of information
- Determine domain and range of a linear situation

This significant task targets the following CCSS Standards: F.BF.1, F.IF.8

Timeline: 3-4 blocks
Key vocabulary: parallel, perpendicular, domain, range
Resources: Holt Section 1.1-1.3

Significant task 3: Graphing Linear Inequalities in Two Variables

In significant task 3, students will analyze staying within a budget when buying a combination of two items to determine how many of those items they can buy. Through a whole class discussion, students will compare the differences between graphing a linear equality and linear inequality. In small groups, students will use the skills learned in significant task 1 and the previous unit to graph the linear inequality in two variables. Using the test point method, groups will determine which side of the boundary line to shade.

In this task, students will:

- Graph linear inequalities in two variables
- Identify possible solutions for a linear inequality

This significant task targets the following CCSS Standards: A.CED.1

Timeline: 2-3 blocks
Key vocabulary: feasible region, boundary line

Resources: Holt Section 3.3

Common learning experiences:

- Holt Sections 1.1-1.3 and 3.3 for homework options

Common assessments including the end of unit summative assessment:

- Unit Test
- **Performance Assessment – Barbie Bungee-** Students will work in a team to determine how much bungee rope will be needed for any given height. Students will use rubber bands as the bungee rope and "drop" Barbie using different amounts of rubber bands and gather data as to how far Barbie falls. The data will be graphed and the line of best fit will be determined both by hand and using the calculator. The equations and their parts will be compared by the individuals in the teams. Each individual of the team will need to prepare a written report that explains the process and conclusions determined. Each team will test their conclusions in the stairwell to determine if Barbie has a successful bungee jump with maximum thrills coming as close to the ground as possible. Gathering the data should take half of a block, the team should use the remaining time in the block to start graphing and coming up with equations. Students should then be given a few days out of class to work on their individual reports. The mathematics will be graded using a task specified rubric. The task will also be graded using the problem solving school wide rubric.

Teacher notes:

- Process standards to highlight through instruction: model with mathematics, look for and express regularity in repeated reasoning
- It is important to remember that students are identified for this class due to weak algebra 1 skills. Students will have different gaps in their knowledge/skills and it is important to use pre-assessments to guide your small group instruction.
- At the beginning of this unit, when students are working in groups, take the time to assess where students skills fall and group students by skill deficits.
- Quizzing throughout the significant tasks will be helpful in assessing student learning.
- Graphing seems to be very difficult for students in this class so practice is essential!
- When slope is negative students want to move down and to the left making both parts negative. It is important for students to assess their graphs to ensure that the line matches the sign of the slope.
- Students are not familiar with point-slope form, so a whole class discussion may need to take place before groups see this form of a linear equation.
- Some students forget to find the <u>negative</u> reciprocal of a perpendicular slope.
- In significant task 3, the teacher needs to make sure the groups are graphing the correct type of

boundary line (solid or dotted) depending on the inequality sign. It is important for students to understand why they are using each type of boundary line.

- Significant task 3 provides a good way to differentiate by challenging some students to graph an inequality not in slope-intercept form, where those students who struggled with graphing from the first significant task should only be asked to graph from slope-intercept form.

Windsor Public Schools
Curriculum Map
Algebra 2 Part 1

Unit C – Systems of Linear Equations and Inequalities	Length of the unit: 15 blocks
Purpose of the Unit: This unit is designed to deepen the student's knowledge of systems of linear equations and inequalities. Solutions will be found graphically and algebraically. Graphing calculators will be used consistently throughout the unit to find the solution to a system of linear equations.	

Common Core State Standards Addressed in the unit:

CC.9-12.F.BF.1 Write a function that describes a relationship between two quantities.*

CC.9-12.A.CED.1 Create equations and inequalities in one variable and use them to solve problems. ***Include equations arising from linear and quadratic functions, and simple rational and exponential functions.***

CC.9-12.F.IF.8 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

CC.9-12.A.CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

CC.9-12.F.IF.9 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).

CC.9-12.A.SSE.1 Interpret expressions that represent a quantity in terms of its context.*

CC.9-12.A.CED.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*

Big Ideas:	Essential Questions:
1. Relationships can be represented as tables, graphs, and equations. 2. Properties of equality and inverse operations are used to solve equations. 3. Problems involving more than one constant rate of change can be modeled with systems of linear equations or inequalities.	1. What are the advantages and disadvantages of different representations of relationships? 2. What's happening in the equation and how do you "undo" that? 3. How can you use systems of equations to compare two similar relationships? 4. Why does a system of inequalities have multiple solutions?
Students will know:	Students will be able to:
1. strategies to solve and analyze linear systems of equations 2. systems of equations have one solution, infinitely many solutions, or no solution 3. the most effective strategy (graphing, table, substitution, elimination) for solving a particular system of equations depending on how that system is presented 4. properties of systems of linear inequalities	1. solve systems of equations graphically and algebraically using all four strategies 2. model and solve problems using a system of linear equations and inequalities 3. determine the most effective strategy for solving a particular system of equations depending on how that system is presented 4. solve systems using a graphing calculator 5. use the linear programming process to determine maximum or minimum points

Significant task 1: Systems of Linear Equations

In this significant task, students will work in the same small groups throughout the task to assume the role of a business person starting a sporting goods company. To start, the groups will explore different models for employee pay by creating tables and graphs about two different employee pay scenarios. Students will use the tables and graphs to make an informed decision about what pay scenario to use for their company. An analysis about what happens before, at, and after the intersection point should be included in their decision. This activity will lead students to understand that the intersection point is the solution to a system of equations. Students will create tables and graphs by hand first, then the graphing calculator will be introduced.

As a whole group, through a teacher led lesson, students will learn the algebraic methods of solving systems using elimination and substitution. The jigsaw teaching strategy can be used to review the methods of solving systems of equations. Students are separated into three groups to master one of the

strategies. Students are then regrouped so that each group has experts on each strategy. The students then help each other to review the strategies they have mastered. In the second group, students should discuss when each method is the most efficient to use. The teacher will bring the entire class back together to have groups present their conclusions and have the class develop a generalized conclusion about when each method is the most effective.

As a whole class discussion, it will be important to go over the vocabulary and special cases of linear systems; consistent/inconsistent, independent/dependent. Students should start by graphing the special cases to have a visual understanding, and then move into what the solution would look like algebraically.

To review the different methods of solving systems, groups will be given scenarios where they need to solve systems using any method to make purchasing decisions for their company.

In this task, students will:

- Graph systems to find solutions both by hand and by graphing calculator
- Use substitution and elimination to find solutions

This significant task targets the following CCSS Standards: F.IF.8, F.BF.1

Timeline: 6-7 blocks
Key vocabulary: system, solution, substitution, elimination, consistent, inconsistent, independent, dependent
Resources: Modeling with Mathematics: A Bridge to Algebra II: Chapter 3 Sections 1-5; Holt Section 3.1 and 3.2

Significant task 2: Systems of Linear Inequalities

Continuing the context of a sporting goods business, this task examines a situation where there is not one unique solution but a range of possible solutions. Their sporting goods company has been invited to sell the merchandise at a local baseball stadium. Students will explore tables, graphs, and inequalities in small groups to determine how many shirts and hats they should bring for their booth at the stadium to sell.

As a teacher led discussion, students will formalize the parts of the graph of a system of linear inequalities (feasible region and vertices) and how to find the vertices graphically with a calculator and algebraically using the methods learned in significant task 1. A whole class discussion will be used to determine when the vertices are a part of the feasible region and when they are not. Systems of three and four inequalities will be introduced to graph and find the feasible region and vertices, first as a whole class, followed by small group practice.

In this task, students will:

- Graph systems of linear inequalities
- Find vertices using graphing calculator

- Find vertices algebraically
- Determine solutions in the feasible region

This significant task targets the following CCSS Standards: A.CED.1

Timeline: 3-4 blocks
Key vocabulary: feasible region, vertices
Resources: Modeling with Mathematics: A Bridge to Algebra II: Chapter 3 Sections 11-13; Holt Section 3.4

Significant task 3: Linear Programming

Continuing their sporting goods business, students will use the linear programming process to determine how many hats and t-shirts to sell to make the most profit. In their business groups, students will write constraints as inequalities and their objective as a profit equation. Various other business scenarios will be given to the groups to have them practice the linear programming process. Teachers could differentiate giving groups different problems with varying complexity and then have each group present their analysis to the class.

In this task, students will:

- graph systems of linear inequalities
- write constraints
- identify the feasible region
- identify the vertices (by hand and with graphing calculators)
- write objective functions
- use vertices to determine maxima and/or minima of the objective equation

This significant task targets the following CCSS Standards: A.CED.3

Timeline: 3-4 blocks
Key Vocabulary: minimum, maximum, objective function, constraints
Resources: Modeling with Mathematics: A Bridge to Algebra II: Chapter 3 Section 14; Holt Section 3.5

Common learning experiences:

- Holt Sections: 3.1, 3.2, 3.4, 3.5 for homework options

Common assessments including the end of unit summative assessment:

- Unit Test – includes linear programming concepts but not the entire linear programming process
- **Performance Assessment: Linear Programming** – Students will work in a team to determine which combination of products a small company should produce to earn the most profit.

Students will need to use the linear programming process they learned in significant task 3 to complete the task. Each individual on the team will need to produce a business portfolio that contains a detailed letter explaining the process used, a professional graph, and detailed mathematical work. The team will produce a presentation that will include a poster size graph, an oral presentation of their team's problem and solution, as well as a small advertisement that can be used to sell their company's products. The task should take 1-2 class days. Teachers may want to take the class to a computer lab to use EXCEL when making the graphs for the product. The mathematics will be graded using a task specified rubric. The task will also be graded using the problem solving school wide rubric.

Teacher notes:

- Process Standards to be highlighted through instruction: reason abstractly and quantitatively, construct viable arguments and critique the reasoning of others, model with mathematics.
- Part of this unit is taken from Unit 1 in Algebra 2; it is not necessary to repeat linear programming when you reach Unit 1. It was important to break some of the skills up for students to be more successful.
- Some students may struggle with using the graphing calculator. It may be appropriate to take some class time to introduce the students to the graphing calculator and its functions.
- Students will struggle using the substitution method. Using visual cues during the teaching process may be helpful.
- Some students struggle with the process of elimination. To streamline the process, it may be easier to show the students how to eliminate the "y" variable from the equations each time, instead of having them choose.
- If the jigsaw teaching strategy is used in class, be very mindful of how your students are grouped at first.
- Students have trouble finding the feasible region in a system of linear inequalities. The use of colored pencils will help students see the overlapping shaded areas.
- Students have difficulties determining which vertices are parts of the feasible region based on the type of lines that are intersecting. Having students label the intersections on a hand drawn graph showing the dotted and solid lines may help them visualize what type of intersection it is.

Purpose of the Course: This course is a study of functions and their applications. Functions studied include exponential, logarithmic, radical, and rational. This course will also take an introductory look at the theory and use of statistics with an emphasis on analyzing and displaying data and sample and survey design. This course strengthens and extends the concepts presented in Algebra 2 Part 1 and covers the second half of the one year Algebra 2 course, with a semester of statistics.

Unit D – One Variable Data Distributions	Length of the unit: 18 blocks

Purpose of the Unit: The purpose of this unit is to introduce students to the world of statistics and one variable data. The difference between categorical and quantitative variables is discussed. Distributions of categorical variables are compared with two-way tables. Visual displays of quantitative variables are analyzed by describing the shape, center, spread, and any unusual features. The normal curve will also be introduced and used to find percentiles.

Common Core State Standards Addressed in the unit:

S.IC.1 Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

S.ID.4 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.

S.IC.6 Evaluate reports based on data.

Big Ideas:	Essential Questions:
1. Data distributions are described using shape, center and spread. 2. Choosing the most appropriate data display including scale is important as to not mislead your audience. 3. Outliers can greatly affect each element of the description of a distribution. 4. Standard measures are needed in order to make comparisons.	1. How can the distribution be described? 2. What is the most appropriate display? 3. How does an outlier affect the elements of the distribution? 4. How can different distributions be compared?
Students will know:	Students will be able to:
1. definition of categorical and quantitative variables	1. find marginal and conditional distributions 2. make and analyze the appropriate data

2. strategies to construct contingency tables with marginal and conditional distributions 3. attributes of: histograms, stem and leaf, pie charts, dot plots, and box plots 4. definitions and formulas to describe: shape, center, spread, and outliers 5. properties of the Normal Curve	display with appropriate scales 3. describe the shape, center, and spread of any distribution using appropriate summary statistics 4. determine the existence of any outliers and their impact on the summary statistics 5. use the normal curve to find percentiles in order to make comparisons across distributions

Significant task 1: Categorical versus Quantitative Data

In this significant task, students are shown the nature of statistics. Most concepts will be done through group and class discussions. As a whole class, the idea of data and "context" is discussed, followed by a distinction between when a variable is considered quantitative or categorical. Numerous examples should be done where students read a summary or explanation of a study and analyze the context by describing the 5 W's (who, what, when, where, why, and how) and the variables.

In small groups, students will use data from the Titanic such as a person's survival status, age, gender, and ticket class to review the concepts of percentages. This data will be displayed in a variety of ways including frequency tables, bar charts, pie charts, and contingency tables. In their groups, students will compare and contrast the different ways to display data and conclude which type they prefer to use to answer the questions. The groups will then present some of their answers to the class.

The whole class will then look at the contingency table to discuss the concepts of marginal and conditional distributions. In addition, individual cells of the contingency table will be analyzed to find different percentages and discuss their different meanings. The ideas of association and independence will be defined and students will individually decide if surviving the Titanic disaster was dependent on your ticket class. The class will then break up into two groups to informally debate the topic based on the mathematics they have learned from the lesson.

Using a variety of contingency tables, students will then practice in groups to find marginal and conditional distributions, as well as determining if an association exists for that variable among each category.

In this task, students will:

- Analyze the context of a study
- Classify the variable as categorical or quantitative
- Find percentages of given data from different displays
- Use contingency tables to find marginal and conditional distributions

- Determine if an association exists between a variable and a category

This significant task targets the following CCSS Standards: S.IC.1, S.IC.6

Timeline: 4 – 5 blocks
Key vocabulary: context, data, population, sample, variable, categorical variable, quantitative variable, frequency table, distribution, bar chart, pie chart, contingency table, marginal distribution, conditional distribution, independence, association
Resources: STATS in Your World – chapters 1 – 3

Significant task 2: Displays and Analysis of Data

In this significant task, students will work in small groups to construct different displays of various sets of data. Some contexts include test scores, earthquake magnitudes, pulse rates, fast food nutritional data, smoking index numbers, and agility test scores. As a class, histograms, stem and leaf plots, pie charts and dot plots and their parts will first be introduced and discussed. Using graphing calculators and computers, students will construct histograms and pie charts. In addition to constructing the display, students will complete the same type of analysis as in significant task 1 and answer questions about the data and display.

In their groups, students will compare and contrast the types of displays they have used. It is important for the students to come up with an understanding of when certain types of displays are better to use than others depending on the data set.

In this task, students will:

- Construct and analyze histograms – using graphing calculator and computer
- Construct and analyze stem and leaf plots – by hand
- Construct and analyze dot plots – by hand
- Construct and analyze pie charts – using computer

This significant task targets the following CCSS Standards: S.IC.1, S.IC.6

Timeline: 2-3 blocks
Key vocabulary: histogram, stem and leaf plot, dot plot, pie chart
Resources: STATS in Your World – chapter 4

Significant task 3: Shape, Center, and Spread

In this significant task, students will be analyzing data distributions by describing the shape, center, and spread. Similar contexts of data will be used as in the previous significant tasks. In a whole class discussion, students will first be introduced to the vocabulary terms to describe shape using histograms to judge whether they are roughly symmetric or skewed.

As a whole class, the concepts of center and spread will be introduced and that the mean and the standard deviation are paired together and the median and interquartile range (IQR) are paired

together. The students will be shown how to find these statistics using the graphing calculator for large sets of data. A whole class discussion and activity around the importance of spread will be done by showing the class several histograms with the same center but very different spreads will get the point across that you cannot describe a variable by using only its center.

Next, in a small group activity, each group will be given a different set of data, some groups will have data that is symmetric and some groups will have data that is skewed. Each group will describe the shape of their data and find the mean, median, standard deviation, and IQR. In their groups, students will discuss which center and spread pair provides a better description for their set of data and why. Groups will share their conclusions with the class, and as a whole class we will come to the generalized conclusion that mean/standard deviation is used to describe unimodal and symmetric data and median/IQR is used to describe skewed data.

Lastly, in small groups, students will be given a picture of a box plot with the five number summary listed. In their groups, students will need to decide if the data is symmetric or skewed and how they can tell from the box plot. As a whole class, students will be given the instructions on how to make a box plot with their graphing calculators and discuss the "1.5" rule for determining when outliers exist within a set of data. Students will practice individually finding outliers for sets of data and continue practicing analyzing data by describing the 5 W's, and shape, center, and spread. In the students' analysis, we want them to start discussing if the outliers have any effect on the shape, center, or spread and if so, what is the effect.

In this task, students will:

- Analyze data distributions
- Describe shape, center, spread
- Determine 5 number summary using graphing calculators
- Construct and analyze box plots using graphing calculators
- Determine and find outliers
- Describe the effect of outliers on the distribution

This significant task targets the following CCSS Standards: S.IC.1, S.IC.6

Timeline: 4 – 5 blocks
Key Vocabulary: shape, center, spread, unimodal, bimodal, multimodal, symmetric, skewed, tail, outliers, median, range, quartile, IQR, percentile, 5-number summary, mean, variance, standard deviation
Resources: STATS in Your World – chapter 4; Standard Deviation Worksheet (teacher resources from text book); More with Histograms worksheet (teacher resources from text book)

Significant task 4: The Normal Curve

To start this significant task, students will try to compare two different athletes in the Olympic women's heptathlon to determine who should receive the gold medal. Since the heptathlon has seven very

different events, the students need to struggle with the idea of how to compare each event to determine an overall winner. Using data from the 2004 Olympics, two women's scores in the shot put and long jump will be compared and the idea of a z-score will be introduced. In small groups, students will practice finding z-scores and explaining what they mean using contexts of class averages and cereal nutrition data. Individually students will then analyze a situation of curving test scores and dropping the lower test score based on z-scores to determine their opinion if this is a fair practice for teachers. The class will then be separated into two groups to informally debate the topic based on the mathematics learned.

In a teacher led class, the normal model and its components will be introduced. To start the discussion, the normal model will be used to determine when a standardized value may be extraordinary in a set of data. The 68-95-99.7 rule will be introduced and used to answer percentile questions about various sets of data, such as SAT scores, average heights of men, sports data, weights of angus steers and driving times. After ample practice with the normal model, students will then be introduced to the calculator functions that allow them to find normal percentiles and then work in reverse to use the percentiles to find the z-scores.

In this task, students will:

- Calculate z-scores to compare values of different units
- Be able to explain how extraordinary a standardized value may be
- Use the normal model to find percentages using a graphing calculator
- Use the graphing calculator to find z-scores given a percentage

This significant task targets the following CCSS Standards: S.ID.4

Timeline: 4 – 5 blocks
Key vocabulary: standardizing, normal model, z-score, normal percentile
Resources: STATS in Your World – chapter 6

Common learning experiences:

- STATS in Your World – Chapters 1 – 6 for homework;
- Use teacher's resource guide for worksheets and activities

Common assessments including the end of unit summative assessment:

- **Performance Assessment after Significant Task 3 – Motor Fuel Taxes –** Students will use the website www.api.org/statistics/fueltaxes to research each state's total motor fuel tax in cents per gallon. The students will need to organize their data in a chart and construct two different displays of the data. In a written report they will need to compare their visual displays and explain which display is more appropriate for this type of data. Students will need to calculate the mean and five number summary, and write a complete analysis, including the 5W's, shape, center, and spread of the data, find any outliers and explain why those states may be outliers.

The final product of the assessment will include two visual displays, a labeled numerical summary, and a typed written analysis. The performance assessment should be completed outside of class individually. Students should be given at most 3-4 days to complete. The mathematics will be graded using a task specified rubric. The task will also be graded using the problem solving school wide rubric.

- Quiz on Significant Task 4

Teacher notes:

- Process Standards to be highlighted throughout instruction: reason abstractly and quantitatively, construct viable arguments and critique the reasoning of others
- This part of the course is much different than other math courses. Students may have a hard time with the understanding that there is not one right answer to many of these topics and some of these topics are deliberately vague.
- The focus is on understanding and interpretation in the context of the data and the questions we asked of the data.
- Many of these students struggle with reading comprehension. It will be very important for the teacher to emphasize that students will need to do readings ahead of time and come to class prepared. If there are struggling readers in the class, a summary of the reading or vocabulary may be helpful to hand out before the discussion.
- It will be important to go through the textbook features with the students so students are familiar with them and feel comfortable using the textbook. The textbook should be used both in class and for homework.
- Students may need a refresher on percents and how to work with them.
- Students will need ample feedback with their analysis paragraphs. The teacher should let them know if they are missing any details and provide a lot of opportunities for practice.
- Some students have difficulty determining the direction of skewness of the distribution.
- Students will need ample practice with the graphing calculators. A graphic organizer with directions should be used to scaffold.
- Some students may struggle with the normal model. A lot of practice of finding z-scores needs to occur in the beginning, followed by ample opportunity to use the normal curve to model different distributions.

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Curriculum Map
Algebra 2 Part 2

Unit E - Two Variable Data Distributions	Length of the unit: 9 blocks

Purpose of the Unit: The purpose of this unit is to introduce students to two variable data. Scatterplots and residual plots will be graphed and analyzed. Linear regressions and exponential regressions will also be calculated and used to model and make predictions.

Common Core State Standards Addressed in the unit:

S.IC.1 Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

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

Big Ideas:	Essential Questions:
1. Bivariate data is displayed as a scatterplot. 2. Linear functions have a constant difference whereas exponential functions have a constant ratio. 3. When making predictions, one can be more confident when interpolating and should be cautious when extrapolating.	1. How do you determine what type of model is appropriate? 2. What is the most appropriate function to model a given set of data? 3. How strong is a prediction from a constructed model?
Students will know:	Students will be able to:
1. attributes of and strategies to construct scatterplots 2. properties of linear and exponential regressions (prior knowledge) 3. definition of a residual 4. attributes of and strategies to construct residual plots 5. definitions of interpolation and extrapolation and cautions to be considered	1. develop and analyze a scatterplot with technology 2. find and analyze a linear and exponential regression models 3. analyze slope and y-intercepts in context 4. develop and analyze a residual plot 5. analyze a distribution and determine the most appropriate function to model the data (limited to linear and exponential models) 6. make predictions and discuss the limitation of predictions using constructed models

Significant task 1: Scatterplots and Linear Regression Models

In this significant task, the class will start by looking at three different videos about why it might be important for the world to start paying attention to the rising ocean levels. After the students watch the videos, students will share in groups their thoughts and conclusions about the topic before sharing out to the class. After the class discussion, the students will work in groups to develop a scatterplot with their graphing calculators based on the given data that represents the years since 1888 and the amount of sea level change in cm since 1888. Groups will then run a linear regression to find the equation and analyze the slope and y-intercept. As a whole class, interpolation and extrapolation will be discussed and examples explained of each in the context of the ocean levels rising. In their groups, the students will then determine how close we are today to 50 cm above the 1888 level, which is when scientists predict catastrophic events will happen.

In a whole class discussion, direction, form, and strength of a scatterplot will be discussed using multiple example scatterplots. Correlation will be defined and in pairs students will complete a correlation coefficient activity where students match an *r* value to a scatterplot and then describe the direction and strength of the scatterplot based on the previous discussion. Through the partner activity students will see a connection with the correlation coefficient and the direction/strength of the scatterplot. The whole class will be brought back together to discuss that correlation does not mean causation using two examples, storks and firefighters. The teacher will walk through each example showing how the conclusion is not valid based on the arguments given and define lurking variable.

The last part of this task will allow students to practice the newly acquired skills. Students will be given three sets of data, horsepower vs. mpg, manatees killed vs. powerboat registrations, and fat vs. protein to practice making and analyzing scatterplots, finding regression equations and analyzing their slopes and y-intercepts, and answering questions to include interpolation and extrapolation of the data. One day in class should be taken in the computer lab for students to use EXCEL to develop scatterplots and find regression equations on the computer.

In this task, students will:

- Make and analyze scatterplots with a graphing calculator and computer
- Find regression equations with the graphing calculator and computer
- Analyze regression equations
- Interpolate and extrapolate with data

This significant task targets the following CCSS Standards: S.IC.1, F.BF.1

Timeline: 3-4 blocks
Key vocabulary: scatterplot, direction, form, strength, interpolation, extrapolation, regression, correlation, causation, lurking variable
Resources: STATS in Your World – chapters 7 – 8

Significant task 2: Residual Plots

In this significant task, the class will analyze the scatterplot of the grams of protein versus the grams of

fat for items on Burger King's menu. In small groups, students will use the regression equation to compare the predicted amount of fat in certain items to the actual amount of fat listed in the data table. The whole group will be brought together to define the term residual and analyze the residual plot of the data. The class will discuss the importance of residual plots. Using previous sets of data, in small groups students will re-graph the scatterplots and analyze the residual plots to make sure a linear regression was appropriate to find.

Continuing in small groups, students will analyze sets of data in the following contexts: comparing online to in-store text book prices, change in tuition rates over time, comparing the number of mishandled baggage to the percent of on-time arrivals, comparing domestic to international profits of popular movies, comparing maximum and minimum temperatures on the seven continents. Each group will have a different set of data and develop a scatterplot, residual plot, find the regression equation, and answer analysis questions about the data. In some situations, the data will contain outliers and students will be asked to eliminate the outliers to see if that has any effect on the residual plot or correlation coefficient. Each group will need to come up with a short 6-7 minute presentation to the class to show their plots and go over their equations and questions. In addition, groups should come back with an idea of why these topics might be of importance to be studied.

In this task, students will:

- Make and analyze residual plots

This significant task targets the following CCSS Standards: S.IC.1, F.BF.1

Timeline: 1 – 2 blocks
Key vocabulary: residual, predicted value
Resources: STATS in Your World – chapter 8

Significant task 3: Another Regression Model

In this significant task, students will explore an exponential model for data when the residual plot does not justify the use of a linear model. In the first context the data compares a penguin's heart rate during a dive. Students will check the residual plot to see that there is a bend in the residuals justifying that a linear model is not appropriate. Through this example, exponential models will be introduced and students will run and analyze an exponential regression. In small groups, students will develop a list of similarities and differences between linear and exponential models; noticing the similarity in the patterns of change (repeated addition/multiplication) and the y-intercept.

In small groups, students will continue to analyze sets of data, determine if a linear or exponential model is appropriate by checking the residuals, finding the appropriate regression equation, and answering questions using the regression equation. The following contexts will be used for the small groups: rising car prices over time, levels of medication in bloodstream over time, mpg versus the weight of the car, f/stop size versus shutter speed on a camera, length versus strength of the fishing line.

After each group has finished the data analysis, groups will switch data sets and check the other groups

work to determine if the correct type of regression was used and their answers are reasonable. The groups will need to provide feedback to the original group (positive and constructive) in order for the group to fix any mistakes.

In this task, students will:

- Analyze exponential models
- Find exponential regression equations
- Compare exponential and linear models

This significant task targets the following CCSS Standards: S.IC.1, F.BF.1

Timeline: 1 – 2 blocks
Key Vocabulary: exponential model, growth factor, decay
Resources: STATS in Your World – chapter 9

Common learning experiences:

- STATS in Your World – Chapters 7 – 9 for homework;

Common assessments including the end of unit summative assessment:

- **Performance Assessment after significant task 2: Hunger and Poverty in the United States** – Students will be given the data from 2000 to 2010 on the how many millions of people live in poverty in the United States. Each student will need to develop a scatterplot, residual plot, and regression equation in order to answer analysis questions, ultimately to predict the number of poor people in 2015(or the upcoming year). Students will need to complete an individual typed report on hunger and poverty in the United States, including all of the mathematics and analysis of the data they have completed. The students will need to research what is being done locally to help community hunger issues and describe how people can get involved in the community. One to two class days should be used for students to use the computer lab for making the scatterplot and residual plot using EXCEL for their reports and to start some internet research. Then, students should be given at most 7-8 days outside of class to do quality research in the community. The mathematics will be graded using a task specified rubric. The task will also be graded using the problem solving and critical thinking/analysis school wide rubrics.
- Unit Quiz

Teacher notes:

- Process Standards to be highlighted throughout instruction: model with mathematics, construct viable arguments and critique the reasoning of others, look for and make use of structure.

- Some students have difficulties determining the correct window to see the scatterplot. If students have a great deal of difficulty with this the teacher may give them the window to save time.
- Additional practice may be needed when describing slope and y-intercepts in context. Simple word problems may be used with equations already given for extra examples.
- Be sure to explain the dangers of extrapolation with data! We cannot predict the future even though it is tempting.
- Keep reminding the students that we are only finding "models" of the data – these are not "exact" truths.
- In significant task 1, it will be important to discuss that the line for predicting x from y is not the inverse of the line for predicting y from x. Students will need to know that they will need to run a different regression to analyze if they are predicting x from y.
- When discussing residual plots, have pre-made residuals to show bends and the "fanning" to discuss those features with the students.
- Making a residual plot on the calculator can be difficult for some students because it involves changing the stat plot feature. It will be important to have the steps written out for students to read and follow along. Be patient!
- Since the year started with exponential functions, students should be pushed to remember the parts (growth factor, multiplier) of an exponential function before the teacher explains them.

Windsor Public Schools
Curriculum Map
Algebra 2 Part 2

Unit F - Sample and Survey Design	Length of the unit: 8 blocks
Purpose of the Unit: The purpose of this unit is to discuss how data is collected and the kinds of bias that can occur that can make results meaningless. Sampling methods, observational studies, and experiments will be looked at and compared. Randomness will be looked at and used to generate a sample to analyze.	

Common Core State Standards Addressed in the unit:

S.IC.1 Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

CC.9-12.S.IC.3 Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.

S.IC.6 Evaluate reports based on data.

Big Ideas:	Essential Questions:
1. There are pros and cons to every sample and survey design that need to be considered depending on the feasibility of the study and the degree of confidence needed in the results. 2. There are steps that can and should be taken to reduce bias in both the way in which the data is collected and the context of how it is collected. 3. In order to generalize your findings to a population from a sample there must be random sampling to generate a representative sample minimizing any bias in the collection process.	1. What are the strengths and weaknesses of sampling techniques? 2. What steps can be taken to reduce bias in a study? 3. What does it mean to construct an ethical study? 4. How and when can you generalize from a sample to a defined population?
Students will know:	**Students will be able to:**
1. types of sampling and their pros and cons: simple random, stratified, multi stage, cluster, systematic, and convenience 2. types of bias present in sampling: voluntary response, leading questions, under representation 3. definitions of: population, sample, census, survey, observational study, retrospective study, prospective study, experiment 4. types and elements of experimental design including blocking, blinding, matching, confounding, and the placebo effect 5. to generalize findings there must be some element of randomization in the survey or experimental design	1. analyze surveys and experiments using all of the different types of sampling and experimental designs elements 2. utilize technology to aid in randomizing 3. form conclusions based on samples, surveys and experiments 4. evaluate samples, surveys and experimental designs for bias and the ability to generalize findings to defined populations

Significant task 1: Sampling Design

In this significant task, students will work in small groups to compare and contrast the different types of sampling methods; census, simple random sample, stratified sampling, cluster sample, multistage sample, and systematic sample; they will first read the definition of each type then match a scenario to each one. Groups will report to the whole class to come to the same conclusions. In a whole class discussion, an understanding of the vocabulary used in developing samples will occur. Next in small groups, students are given a situation where a college is trying to determine what freshmen think about the food served on campus. Each group will be given a different sampling method to use and describe their plan to the class.

As a whole class, how sampling can go wrong and different biases will be discussed with examples. Using a high school class presidential election, the class will discuss different methods of sampling that result in worthless data; voluntary response sample, convenience sampling, and undercoverage. The different forms of bias, nonresponse bias and response bias, will be defined and explained through the same context. Students will then be organized into small groups to develop a survey design that reduces the sampling problems and biases.

To convince students of the necessity of random selection, the rectangle activity will be used where students are given a sheet of 100 rectangles presented as squared grids. They will first look at the sheet for 5 seconds and then guess the mean area of the rectangles. In real time, the teacher will develop a histogram of the class' guesses using the TI software. The class will then describe the shape, center, and spread of the distribution. The activity will be replicated again where the students will choose 5 of their own rectangles and average the areas; complete a class histogram and analysis. Finally have the students use the random number generator on their calculators to pick 5 random rectangles to find the average area; complete a class histogram and analysis. The actual average of the rectangles' areas is 7.42 and the third random sample should show a mean between 7 or 8, showing random sampling can combat bias.

In this task, students will:

- Describe and compare sampling methods
- Describe sampling errors and biases
- Discuss how to fix sampling errors and biases

This significant task targets the following CCSS Standards: S.IC.3, S.IC.1
Timeline: 2 – 3 blocks
Key vocabulary: population, sample, sample survey, bias, randomization, sample size, census, population parameter, simple random sample, sampling frame, sampling variability, stratified random sample, cluster sample, multistage sample, systematic sample, voluntary response bias, convenience sample, undercoverage, nonresponse bias, response bias
Resources: STATS in Your World – Chapter 10
Materials: Random Rectangles Activity

Significant task 2: Observational Studies and Experiments

This significant task is packed with important ideas and new vocabulary. Students will spend a lot of time in groups going over vocabulary terms to develop a deep understanding of the similarities and differences between them. Students will also spend some time looking at some ethical issues around experimentation.

To start this task, students will work in small groups to discuss the opening issue of does learning to play an instrument also enhance a person's ability to succeed in school. Using this context, students will be introduced to the vocabulary that goes along with observational studies. Once the groups have a grasp on the difference between the two types of studies, they will develop an answer to the questions: Why is it not practical to use a prospective study for very rare illnesses? Can observational studies demonstrate a cause-and-effect relationship?

The second part of this task, students will continue to work in small groups using the context of the tomato plant experiment to develop an understanding of experiments and the vocabulary that comes with them: random assignment, factor, response variable, treatment, control, randomization, replication. Once the groups have an understanding of the vocabulary, they will discuss another experiment that tests whether new pet food is safe for dogs to eat; some dogs will eat the new food while others will eat food known to be safe, comparing their health after a period of time. Groups will be given some time to discuss the vocabulary of the experiment, and then the ethics behind the experiment. A class discussion will be held, maybe ending in a debate, about using animal testing in experimentation.

Special parts of an experiment will also be discussed as a whole class including: control treatments, blinding, placebos, blocking, confounding. In small groups, students will be given a short annotated article about an approved experiment for Parkinson's disease to read. The experiment was to drill placebo holes in patients' skulls so that they and their doctors won't know whether or not they received an experimental implantation of nerve cells as a possible treatment for the disease. In their groups, the students need to discuss what is meant by placebo hole and if they think it is an acceptable form of treatment.

Finally, the entire class will watch two videos about the Salk Polio Trials and be given some background information. In small groups, students will determine as a parent if they would give their child the vaccine.

In this task, students will:

- Compare retrospective and prospective observational studies
- Discuss experiments and their parts
- Discuss the ethics around experiments

This significant task targets the following CCSS Standards: S.IC.3, S.IC.1

Timeline: 2 – 3 blocks
Key vocabulary: observational study, retrospective study, prospective study, experiment, random assignment, factor, response, experimental units, level, treatment, control, randomize, replicate, statistically significant, control group, blinding, single blind, double blind, placebo, blocking, matching, confounding
Resources: Placebo Holes article: http://www.independent.co.uk/news/doctors-drill-into-patients-heads-in-placebo-surgery-1122972.html; Salk Polio Trials: http://wps.aw.com/wps/media/objects/14/15269/projects/ch12_salk/index.html; http://www.history.com/this-day-in-history/polio-vaccine-trials-begin; http://www.youtube.com/watch?v=1Y-1jRnXTDk

Significant task 3: Randomness

In this significant task, students take on the role of quality control person in a candy factory. Individually, students will come up with their own method to use to test random pieces of candy made in the factory. Students will then organize into small groups and share their methods and choose one to report out to the entire class. The class will compare and contrast each group's methods, and then vote individually on which group has the most random method. The teacher will then lead the class in how to use the random number generator on their calculators and a random number table to choose certain pieces of candy during certain times of the day to test in the factory. Various examples will follow for students to practice using the calculator and random number tables.

Next, students will be divided into 5 groups to develop a random sample in one of the following contexts: choosing 40 seniors from the senior class to take a survey about the senior prom, assign experiment participants to three different test groups, determine five numbers to play for the lotto, assigning groups of 4 students in a class to do a group project, choosing 10 customers to survey. Once the groups have fully developed their explanations on how they will use both the random number generator on the calculator and a given random number table, the groups will switch contexts to carry out and critique the design. The second group will determine if the design works and provide feedback to the first group.

In this task, students will:

- Use random number generator and random number tables to make a sample
- Design a random sampling method

This significant task targets the following CCSS Standards: S.IC.3, S.IC.1

Timeline: 1 – 2 blocks
Key vocabulary: random, random number table
Resources: Candy Factory Activity Worksheet

Common learning experiences:

- STATS in Your World – Chapters 10 – 12 for homework Use teacher's resource guide for worksheets and activities

Common assessments including the end of unit summative assessment:

- Unit Test

Teacher notes:

- Process Standards to be highlighted throughout instruction: reason abstractly and quantitatively, construct viable arguments and critique the reasoning of others, look for and make use of structure.
- Some students need help getting through the large amounts of vocabulary. Having daily vocabulary quizzes may push the students to learn the vocabulary. Notecards, word walls, graphic organizers, compare and contrast activities may help students learn the vocabulary and the differences between similar terms.
- When doing the rectangle activity, you will need to explain how to use the random number generator on the graphing calculator to the class.
- When discussing experiment vocabulary, have alternate examples for students to read through if necessary. Some of the experiments can be wordy and technical. If students have reading difficulties, it may be necessary to summarize the experiments into laymen terms and take out the technical terms.
- Use the discussion points in the teacher resource book to hold a discussion about the Salk Polio trials and if the students in the class agree and how they would feel at the time.
- Some students have trouble using a random number table. If this is the case, only have them use the random number generator on the graphing calculator.

Windsor Public Schools
Curriculum Map
Spanish 1

Purpose of the Course: Through world language study, students develop sensitivity to the cultural and linguistic heritage of other groups and their influence on our own, and are prepared to participate in society characterized by linguistic and cultural diversity.

The goal of the World Language program at WHS is to expose students to a different language and culture in order to make them knowledgeable and active members of a global society. Students will learn to use modern world languages for meaningful communication in both spoken and written form. This introductory level course emphasizes language as it is used in various real-life situations that students are most likely to encounter. As the world moves towards a global community, it is increasingly important to be able to communicate in languages other than English. It is important to understand the perspectives of a culture that generate its patterns of behavior, ways of life, world views and contributions.

Name of the Unit: Lección Preliminar	Length of the unit: 8-9 (86 minute blocks) Middle School 3-4 weeks
Purpose of the Unit: The purpose of the unit is to introduce the Spanish language in the context of where in the world Spanish is spoken and give students basic knowledge to universal communication skills. In this preliminary unit, students get an overview of the Spanish speaking countries; they learn basic greetings and conversations, the pronunciation of the alphabet, the numbers 1-10, how to say what nationality they are and basic classroom commands used most commonly in the classroom.	

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)

ACTFL Standards

- 1.1 Students engage in conversations, provide and obtain information, feelings and emotions and exchange opinions.
- 1.2 Students understand and interpret written and spoken language on a variety of topics
- 1.3 Students present information, concepts and ideas to an audience of listener or readers on a variety of topics
- 3.1 Students reinforce and further their knowledge of their disciplines through Spanish
- 4.1 Students demonstrate understanding of the nature of language through comparisons of the language studied and their own
- 4.2 Students demonstrate understanding of the concept of culture through comparisons of the culture studied and their own

Big Ideas:	Essential Questions:
• Language connects different cultures • Communication is a universal need • A culture demonstrates the beliefs and values of its people	• How do language and communication differ? • How does the geography of a country shape its culture? • What does culture mean?
Students will know:	Students will be able to:
• The geography and capitals of Spanish speaking countries, calendars, greetings, and basic commands. • Products from a Spanish speaking country • Basic introductory questions and appropriate responses	• Locate countries that speak Spanish on the world map • Discuss various products and geographical features • Introduce themselves and others in Spanish

Significant task 1

Students will work individually or in pairs to create a technology-based presentation using power point, prezi or animoto on a Spanish speaking country of their choice. In their presentation they will describe the geography, products, and practices of that country including weather, seasons, food and other products, clothing and sports.

This task directly targets the following standards: **1.3** and **4.2**

Timeline: 3-4 blocks
Key vocabulary: Spanish speaking countries and capitals, geography terms (mountains, rivers, coast, lakes) weather, seasons, sports, food, and clothing
Resources: Avancemos textbook Unit 1.1 and ancillary materials, dictionaries, computers and Smartboard, and library media resource center

Significant task 2: Speed Dating or ¿Quién eres?

After creating a questionnaire, students will participate in a whole-class activity of "speed dating" as they move from person to person introducing themselves, listening to their partner and writing their information in Spanish. Students will create and present a "Wordle" word cloud about one class member.

This task directly targets the following standards: **1.1, 3.1, 4.2**
Timeline: 2-3 blocks

Key vocabulary: : Introductions, numbers, calendar vocab (birthdays), Spanish speaking countries and capitals, geography terms (mountains, rivers, coast, lakes) weather, seasons, sports, food, and clothing

Resources: Avancemos textbook Unit 1.1 and ancillary materials, dictionaries, computers and Smartboard, Google maps, art supplies and poster board, http://www.wordle.net/

Common learning experiences:

- Students will label blank maps identifying countries, capitals and geographical features.
- Students will attend an instructional block in the library media center to learn animoto, prezi, museum box and PowerPoint.
- Students will use large-scale model (beach ball, floor map, etc.) of the Spanish speaking countries and capitals made in the classroom with masking tape to practice kinesthetic recall of countries and capitals.
- Online research and presentation of their designated country.
- Online listening comprehension practice activities http://www.laits.utexas.edu/spe/beg08.html
- Speed dating activity.
- Wordle presentation http://www.wordle.net/

Common assessments including the end of unit summative assessment:
(Provide link to assessments and rubrics.)

- Formative assessments include the kinesthetic activity using the large-scale model of Central and South America
- Summative assessments for the Spanish speaking countries identifying countries and capitals
- Performance assessments would include research and presentation of individual country and Wordle (Presentations scored with NEASC Rubric #3)

Teacher notes:

Room assignments may change kinesthetic activity choices
Re-write Wordle instruction sheet (from Spanish 2 lesson)

Windsor Public Schools
Curriculum Map
Spanish 1

Name of the Unit: ¿Qué te gusta hacer?	Length of the unit: 8-9 blocks (84 minute blocks) Middle school: 3-4 weeks
Purpose of the Unit: The purpose of the unit is for students to get a general idea of Hispanic culture in the United States. Students learn about Hispanics in Miami, Chicago, San Antonio, and New York. Students will learn to communicate in the target language about likes and dislikes. Students will also learn about Spanish speaking students and what they do in their spare time.	

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)
Students engage in conversation, provide and obtain information, express feelings and emotions and exchange opinions
Students understand and interpret written and spoken language on a variety of topics
1.3 Students present information concepts and ideas to an audience of listeners or readers on a variety of topics.
2.2 Students demonstrate an understanding of the relationship between the products and perspectives of the culture studied.
3.2 Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its culture.
4.2 Students demonstrate understanding of the concept of culture through comparisons of the culture studied and their own.

Big Ideas:	Essential Questions:
● Hispanics influence culture in the United States. ● Gaining knowledge about and empathizing with other people and cultures leads to a more tolerant society.	● How does acceptable and unacceptable behavior vary among cultures? ● How have Latino people affected popular culture in the United States? ● How and why do young peoples' activities differ throughout the Americas? ● Why do people celebrate history and culture?

Students will know: ● The differences in daily activities based on geographical area ● Vocabulary related to past times, daily activities, weather expressions and foods ● The conjugations of the verb ser and gustar with their subject pronouns	Students will be able to: ● Talk about activities that they like and don't like to do ● communicate in written and oral format where they are from and where others are from

Significant task 1: " Yo circle"

Students learned activities that they like and don't like to do. Students have also practiced asking other students what they like and don't like to do. Now students will have a speaking assessment where they are given a circle split in half. Students draw pictures representing 5 activities that they like and 4 activities that they don't like. Students present this activity in the target language to the class. After presenting, students are randomly placed in groups of 3 and will write 3 sentences about common likes and 3 sentences about common dislikes emphasizing the use of nos gusta and le gusta. (we like and he/she likes).

This task directly targets the following standards : **1.3** and **1.2**

Timeline: 2-3 blocks
Key vocabulary: activities, verb to like (gustar) with its indirect object pronoun
Resources: Avancemos textbook, white paper and dictionary, auxiliary materials

Common learning experiences:

- listening activities from the textbook, Spanish proficiency exercises http://www.laits.utexs.edu/spe/beg08.html
- grammar activities from the textbook
- writing activities from the textbook
- video activities from chapter 1.1. Videos include vocabulary, tele 1, tele 2 and tele 3
- online research and presentation of their designated U.S. city
- student created material; "yo circle" and "circle of friends"
- student created flashcards for multiple vocabulary activities
- classzone.com to reinforce listening, reading, writing, grammar and vocabulary, culture from the chapter
- partner interviews and significant task asking and responding to introductions and things that

students like and don't like to do
- teacher directed questions about likes and dislikes such as "what do you like to do after school? On the weekends, etc.?

Common assessments including the end of unit summative assessment:

- warm up activities from the textbook or teacher created ones for vocabulary and grammar concepts
- vocabulary and grammar quizzes
- summative assessments for vocabulary and grammar from Avancemos on-level assessment book
- performance assessments would include research and presentation of their city

Teacher notes:
Teachers should create a large circle divided in half to avoid loss of class time.

Windsor Public Schools
Curriculum Map
Spanish 1

Name of the Unit: Mis amigos y yo	Length of the unit: 8-9 (84 minute blocks) Middle school: 3-4 weeks

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)

Students engage in conversation provide and obtain information express feelings and emotions and exchange opinions
Students understand and interpret written and spoken language on a variety of topics
1.3 Students present information concepts and ideas to an audience of listeners or readers on a variety of topics.
2.1 Students demonstrate an understanding of the relationship between the practices and perspectives of the culture studied.
2.2 Students demonstrate an understanding of the relationship between the products and perspectives of the culture studied.
3.2 Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its culture.
4.1 Students demonstrate understanding of the concept of the language through comparisons of the language studied and their own.
4.2 Students demonstrate understanding of the concept of the culture through comparisons of the culture studied and their own.

Big Ideas:	Essential Questions:
● Nouns, adjectives and articles in Spanish are gender and number specific. ● Hispanics influence culture in the United States. ● People of any culture are unique.	● How do you describe objects and people in Spanish? ● What variables influence local cuisine? ● How can dishes be considered "traditional" and appear differently dependent on location?

Students will know:	Students will be able to:
● Vocabulary related to personal descriptions and to identify who people are. ● The conjugations of the verb ser. ● The uses of definite and indefinite articles. ● The uses of noun- adjective agreement.	● Describe themselves and others ● Communicate in written and oral format where they are from and where others are from ● Communicate about themselves and others in the target language ● Read and write short texts related to physical descriptions and likes and dislikes in the target language

Significant task 1:

In this unit students learn vocabulary related to personality and physical characteristics. They also learn how to conjugate the verb ser. Students have completed multiple exercises with the verb ser while they describe themselves and others. Now students will create a 3 slide presentation. Slides will be images representing themselves, a family member and a friend. Images will represent physical descriptions, personality, and likes and dislikes. Students will prepare an oral presentation with the slides to present to the class in the target language talking about themselves and their relatives and friends. As the students present their slides, other classmates are taking notes using a graphic organizer. When presentations are done, students will write a paragraph using the information from their graphic organizers in the target language. This significant task will have a speaking, listening and writing grade using department rubrics.

This task directly targets the following standards : **1.1** and **1.3**

Timeline: 3-4 blocks (not typically enough to be a task)
Key vocabulary: personality, appearance, and people
Resources: computer, Internet, Avancemos textbook, auxiliary materials,

Common learning experiences:

- listening activities from the textbook, Spanish proficiency exercises http://www.laits.utexs.edu/spe/beg08.html
- grammar activities from the textbook and ancillary materials
- writing activities from the textbook and workbook
- video activities from the textbook that include vocabulary, tele 1, tele 2 and tele 3
- create and present their presentations in the target language

- student created flashcards for multiple vocabulary activities (bingo, call out)
- teacher created materials for reinforcement of vocabulary and grammar
- classzone.com where students complete exercises for reinforcement of vocabulary, grammar , listening, reading and writing
- teacher directed questions about physical descriptions tied to likes and dislikes such as “como es ____” (what is ___ like and why)
- communicative activities with a partner in the target language talking about personality and likes and dislikes

Common assessments including the end of unit summative assessment:
(Provide link to assessments and rubrics.)

- warm up activities from the textbook or teacher created ones for vocabulary and grammar concepts
- vocabulary and grammar quizzes
- summative assessments for vocabulary and grammar from the Avancemos on-level assessment book
- performance assessments would include creation and presentation of their collage

Teacher notes:
Teacher must create a graphic organizer ahead of time so that students can complete it as they listen to their classmates’ presentations so that they can use that information to write their paragraphs in the target language.
Teacher might also want to create cloze activities for Spanish proficiency exercises from the Laits link.

Windsor Public Schools
Curriculum Map
Spanish 1

Name of the Unit: Somos estudiantes	Length of the unit: 9-10 (86minute blocks) Middle school: 4-5 weeks
Purpose of the Unit: Students will obtain a general idea of Mexican culture by reading culture inserts related to uniforms, classes in Mexican schools and Mexican muralist. Students will learn the numbers 11 to 100, ask and tell time, and discuss daily schedules. Students will learn to describe their school subjects and classroom activities. Students will use the present tense of "AR" verbs to say what they have and tell what they have to do. Students will use the expressions of frequency with the verb tener to say what they do and how often they do things in the target language.	

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)

Students engage in conversation provide and obtain information express feelings and emotions and exchange opinions. Students understand and interpret written and spoken language on a variety of topics.
1.3 Students present information concepts and ideas to an audience of listeners or readers on a variety of topics.
2.1 Students demonstrate an understanding of the relationship between the practices and perspectives of the culture studied.
2.2 Students demonstrate an understanding of the relationship between the products and perspectives of the culture studied.
3.2 Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its culture.
4.1 Students demonstrate understanding of the concept of the language through comparisons of the language studied and their own.
4.2 Students demonstrate understanding of the concept of the culture through comparisons of the culture studied and their own.

Big Ideas:	Essential Questions:
• Educational opportunities vary among cultures. • The concept of time varies from culture to culture. • Cultural values differ based on community and family traditions. • Languages are distinguished by their grammar and structure.	• How does the way students dress reflect a culture? • What accounts for the value placed upon education in different cultures? • How will my knowledge of English grammar help me understand Spanish grammar?
Students will know:	Students will be able to:
• Vocabulary related to education and time • The conjugation of present tense “AR” verbs • Expressions of frequency	• Describe and talk about their school schedules • Communicate in written and oral format in the target language what they do and how often they do it • Ask and tell time in the target language • Read and write short text related to school environment

Significant task 1:

Students create a booklet or a power point presentation of seven to ten different activities they do on a regular basis. Students must include a picture and a sentence with each slide/ page. Students present their booklet/presentation to the class.

This task directly targets the following standards : **1.1** and **1.3**

Timeline: 2-3 blocks
Key vocabulary: personality, appearance, and people
Resources: computer, Internet, Avancemos textbook, auxiliary materials, magazines, scissors, glue, poster board, and markers or color pencils

Common learning experiences:

- whole group instruction of vocabulary, grammar and activities in the textbook
- listening activities from the textbook and Spanish proficiency exercises http://www.laits.utexs.edu/spe/beg08.html
- grammar activities from the textbook and ancillary materials
- writing activities from the textbook and workbook
- video activities from the textbook that include vocabulary, tele 1, tele 2 and tele 3
- create and present their booklets/presentations in the target language
- student created flashcards for multiple vocabulary activities (bingo, call out, matching)
- teacher created materials for reinforcement of vocabulary and grammar
- classzone.com where students complete exercises for reinforcement of vocabulary, grammar , listening, reading and writing
- teacher directed questions about their school schedules , daily activities, things you have to do and how often you do them
- YouTube videos of El perro y el gato for vocabulary reinforcement with teacher created handouts http://www.youtube.com/watch?v=aTZbatgCIyY
- videos of Sr Jordan for grammar reinforcement with teacher created handout http://www.senorjordan.com/
- communicative activities with a partner related to time, school activities and daily activities

Common assessments including the end of unit summative assessment:
(Provide link to assessments and rubrics.)

- warm up and exit activities from the textbook or teacher created ones for vocabulary and grammar concepts
- vocabulary and grammar quizzes
- summative assessments for vocabulary and grammar from the Avancemos on-level assessment book
- performance assessment about booklet/presentation of activities for a written and oral grade

Teacher notes:

Check prior to lesson to make sure YouTube video is working.
Check that school filter does not block the classzone activities.
Teacher should supply a list of -ar ending verbs so that students can expand their knowledge and be able to create more complex sentences. Teacher has to review subject pronouns prior to verb conjugation of tener and -ar verbs.

Windsor Public Schools
Curriculum Map
Spanish 1

Name of the Unit: En la escuela	Length of the unit: 9-10 (86minute blocks) Middle school: 4-5 weeks
Purpose of the Unit: Students will continue learning about Mexican schools as they learn how to describe objects and classes. Students will learn how to express where things are located, how they are feeling and where they are going in the target language. Students will be able to write and communicate in complex sentences about their classes and supplies needed for their classes.	

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)

1.1 Students engage in conversation provide and obtain information express feelings and emotions and exchange opinions.
1.2 Students understand and interpret written and spoken language on a variety of topics.
1.3 Students present information concepts and ideas to an audience of listeners or readers on a variety of topics.
2.1 Students demonstrate an understanding of the relationship between the practices and perspectives of the culture studied.
2.2 Students demonstrate an understanding of the relationship between the products and perspectives of the culture studied.
3.2 Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its culture.
4.1 Students demonstrate understanding of the concept of the language through comparisons of the language studied and their own.
4.2 Students demonstrate understanding of the concept of the culture through comparisons of the culture studied and their own.

Big Ideas:	Essential Questions:
● Educational opportunities vary among cultures. ● The concept of time varies from culture to culture. ● Cultural values differ based on community and family traditions.	● How does the way students dress reflect a culture? ● What accounts for the value placed upon education in different cultures? • How will my knowledge of English grammar help me understand Spanish grammar?

• Languages are distinguished by their grammar and structure.	
Students will know: • Vocabulary related to education and time • The conjugation of present tense “AR” verbs • Expressions of frequency	Students will be able to: • Describe and talk about their school schedules • Communicate in written and oral format in the target language what they do and how often they do it • Ask and tell time in the target language • Read and write short text related to school environment

Significant task 1:

Students will be given a back pack template that they will decorate. Inside the backpack they will draw images of 5 school supplies needed for different classes in a school day. Using the backpack students will prepare an oral presentation based on the supplies in the backpack. Students will talk about each item, identify what class they need it for and include two sentences about the class they need that supply for.

This task directly targets the following standards : **1.2** and **1.3**

Timeline: 2-3 blocks (3-4 periods)
Key vocabulary: school supplies, classes, conjugations of tener and ser
Resources: computer, Internet, Avancemos textbook, auxiliary materials, scissors, glue, poster board, and markers or color pencils

Common learning experiences:

- whole group instruction of vocabulary, grammar and activities in the textbook
- listening activities from the textbook and Spanish proficiency exercises http://www.laits.utexs.edu/spe/beg08.html
- grammar activities from the textbook and ancillary materials
- writing activities from the textbook and workbook
- video activities from the textbook that include vocabulary, tele 1, tele 2 and tele 3
- create and present their backpacks in the target language
- student created flashcards for multiple vocabulary activities (bingo, call out, matching)

- teacher created materials for reinforcement of vocabulary and grammar
- classzone.com where students complete exercises for reinforcement of vocabulary, grammar, listening, reading and writing
- teacher directed questions about school schedules , classroom objects, places in the school, where things are located and how students feel
- YouTube song about classroom and location with a teacher created handout http://www.youtube.com/watch?v=QeMKDPJ6Mvk
- videos of Sr Jordan for grammar reinforcement with teacher created handout http://www.senorjordan.com/
- communicative activities with a partner related to places in the school, feelings and emotions, and where someone is going

Common assessments including the end of unit summative assessment:
(Provide link to assessments and rubrics.)

- warm up and exit activities from the textbook or teacher created ones for vocabulary and grammar concepts
- vocabulary and grammar quizzes
- summative assessments for vocabulary and grammar from the Avancemos on-level assessment book
- performance assessment about booklet/presentation of activities for a written and oral grade

Teacher notes:

Check prior to lesson to make sure YouTube video is working.
Check that school filter does not block the classzone activities.
Teacher should supply a list of -ar ending verbs so that students can expand their knowledge and be able to create more complex sentences. Teacher has to review subject pronouns prior to verb conjugation of tener and -ar verbs.

Windsor Public Schools
Curriculum Map for the Secondary Level
Science Fiction and Fantasy Literature

Purpose of the Course:

The course is an in-depth look at the genre of science fiction and fantasy as a legitimate genre of literature with a canon and a well-developed body of criticism. This course examines the ways in which science fiction and fantasy reflects the values and concerns of society today. Students will analyze the conventions of the genre and examine how the genre reflects humanity and human wants and needs.

Name of the Unit:	**Length of the unit**:
UNIT 1- Science Fiction and Fantasy Literature: An Alternative World	Approximately 15 Blocks

Purpose of the Unit:

Students will develop an understanding of the standard conventions in fantasy and science fiction literature. Additionally, students will understand how an author develops a "fantastical world" and how this world reveals what it means to be human.

Throughout the course of the unit, students will read *The Lion, The Witch and The Wardrobe* (C.S. Lewis) and *The Golden Compass* (Phillip Pullman). These core texts are the basis for studying and analyzing the unit concepts; these texts will also serve as the textual foundations for writing.

Common Core State Standards Addressed in the unit:

R.L. 11-12. 2
Determine two or more themes or central ideas of a text;

Analyze their development over the course of the text, including how they interact and build on one another produce a complex account.

W.11-12.2b
Write informative/explanatory texts to examine and convey complex ideas, concepts, and information;

Develop a topic thoroughly;

Select the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples.

Big Ideas:	**Essential Questions**:
- An alternate world reveals the hopes and fears we have about our own world. Both worlds reveal what it means to be a human. - Human beings have the courage to stand-up against great odds. - Human relationships and interactions in science fiction and fantasy accurately reflect those in the actual world.	- What does the alternate world or universe reveal about our own world? - What universal truths are revealed through these alternate worlds?
Students will know: - the characteristics of science fiction and fantasy as a genre; - what it means to be a human across differing worlds or realities; - the importance of human relationships and interactions and how those interactions determine our choices. Refer to the links below: Depth of Knowledge LA	**Students will be able to**: 1. Support analysis and claims with appropriate textual evidence. 2. Identify the characteristics of fantasy and science fiction: *Fantasy* - elements that are not realistic - personified animals - magical powers - set in a medieval universe - mythical beings *Science Fiction* - science and technology of the future - partially true laws or theories of science - in the future - in space - on a different world - in a different universe or dimension 3. Organize an oral argument and/or argument of a text. 4. Define the following terms: - allegory - satire - verisimilitude - fantasy - science fiction Refer to the links below: Depth of Knowledge LA

Significant task 1: *Preparing to Understand the Genre*

The teacher can choose from one or more of the following methods to introduce students to the genre of science fiction and fantasy literature.

PART ONE

1. Students will keep a Dialectical Journal, Key Line Journal, or any other Journaling Option while reading the required resources (below). The teacher will provide a model of these types of journals with a sample text before students begin reading. The teacher will also establish specific expectations for the number of required entries. The teacher can choose to use a limited amount of class time for reading and journaling, or this can be accomplished as a whole class.

   Ideally, this task should be accomplished independently. The journals should focus on the evaluation of the text as a fantasy or science fiction piece of literature. To do this, students should be working to identify the conventions of the genre- listed in the "Students Will Be Able To Do" section of the unit- while they read. They should also use the journaling to evaluate the stylistic choices of the author and how the author conveys the conventions to the reader.

OR

2. Students will read and annotate selected passages of the required texts (chosen by the teacher) to use as examples of the genre of science fiction and fantasy literature. An Annotation Guide should be distributed and explained, as an available resource. While reading, the students will identify the standard conventions that are evident in the texts- listed in the "Students Will Be Able To Do" section of the unit. After a whole class discussion of the findings, students will then create a Word Wall that defines each convention and provides an example of each from the selected passages. This Word Wall will be visible throughout the progression of the course and can serve as an ongoing reference for students.

PART TWO

Using the journals and/or Word Wall as resources, students will write a 1-2 page Compare-Contrast Response in which they analyze the author's idea of a fantasy world and compare it to their own reality. Textual support is required. The 5 Level Rubric and/or the 21st Century Rubrics will be used to grade this writing response. The teacher may conduct this as an independent writing assignment, or one that is completed in a timed setting, during class. As needed, the teacher can also assign multiple drafts.

In order to "build up" to the Compare and Contrast Response, in flexible grouping or small groups, students will take notes on a Venn Diagram graphic organizer. They will brainstorm the characteristics of their own realities and compare these traits with the ones found in the alternate realities of the required texts. Students should share their findings with the whole class, before starting the writing assignment.

Timeline: 5-8 Blocks

Key vocabulary:
- fantasy
- science fiction

Required Resources:
- *The Lion, the Witch and the Wardrobe* (C.S. Lewis)
- *The Golden Compass* (Philip Pullman)

Possible Resources:

- *The Nation (*Terry Prachett)
- *Hitchhiker's Guide to the Galaxy* (Douglass Adams)
- "The Veldt" (Ray Bradbury)
- *The Prentice Hall Anthology of Science Fiction*

Significant task 2: *Socratic Seminar*

Students will review the conventions of fantasy and science fiction literature generated from Significant Task 1. The teacher should then provide direct instruction using a New American Lecture or any other form of Interactive Lecture to explore allegory and satire within science fiction and fantasy, and examine an author's purpose based on the allegorical or satirical elements.

Students will then use the lecture to prepare for a Socratic Seminar by creating 3 or more questions relevant to the unit's essential questions, vocabulary, and allegorical and/or satirical elements. These questions will form the basis for the Socratic Seminar. Question Starters are available to facilitate the process. It is recommended that the teacher model the Socratic Seminar, so students understand how to conduct one. The Socratic Seminar should be student-directed. The students will be graded using a Discussion Rubric and/or they can be measured using the 21st Century Rubric for oral communication.

Timeline: ongoing

Key vocabulary:

- allegory
- satire
- fantasy
- science fiction

Resources:

- *The Lion, the Witch and the Wardrobe* (C.S. Lewis)
- *The Golden Compass* (Philip Pullman)

Possible Resources:

- *The Nation (*Terry Prachett)
- *Hitchhiker's Guide to the Galaxy* (Douglass Adams)
- "The Veldt" (Ray Bradbury)
- *The Prentice Hall Anthology of Science Fiction*

Significant task 3: *Synthesis of Multiple Sources*

Using models, practice, and direct instruction the teacher will review how to properly cite sources in MLA format. (This will provide a foundation for the upcoming post-unit assessment. Therefore, the teacher should review the assessment with students before beginning this task.)

Then, students will choose a Graphic Organizer or Outline to use to prepare for the post-unit assessment. On the organizer, they must include the following:

- a potential thesis statement or claim for their essay
- support for this statement from both required texts
- the proper use of MLA format

Students will then use the organizer to draft the opening paragraph. This paragraph must include a thesis statement and the projected organization of the support that the student will use in the subsequent portions of the essay. Students will peer-edit their paragraphs using the ATLAS Student Protocol and engage in the revision process before completing the post-unit assessment.

Timeline: 2-3 blocks

Key vocabulary:
- allegory
- satire
- fantasy
- science fiction

Resources:
- *The Lion, the Witch and the Wardrobe* (C.S. Lewis)
- *The Golden Compass* (Philip Pullman)

Possible Resources:
- *The Nation (*Terry Prachett)
- *Hitchhiker's Guide to the Galaxy* (Douglass Adams)
- "The Veldt" (Ray Bradbury)
- *The Prentice Hall Anthology of Science Fiction*

Common learning experiences:
- Independent Reading with Tracking
- Journaling
- Writing Workshops
- Use of The Warrior Writing Center
- Writing mini-lessons
- Reading of Literary Analysis Essays as models
- Film clips-*The Golden Compass*
- Film clips-*The Lion, The Witch and The Wardrobe*

Common assessments including the end of unit summative assessment:

Unit Post-Assessment(s):
Students will choose one assessment from the following options-

LENS AND ARTIFACT ESSAY

Students will write a Lens and Artifact Essay. Students will be introduced to Terry Brooks' definition of fantasy (this definition serves as their lens). Then, they will use this as the basis for comparing two authors, C.S. Lewis and Philip Pullman (these are the artifacts). The 5 Level Rubric will be used to grade this writing response. In the response students must:

- summarize the alternate world/universe within the texts;
- use the text to support the claim in the essay;
- analyze the alternate world/universe based on passages in the texts.

OR

FANTASTICAL WORLD DEFINITION ESSAY

Students will write an Extended Definition Essay. Using both texts, students will write an essay that answers these questions:

- How would you define and describe the "fantastical world" that is created in the two texts?
- How do the authors create this world (what devices do they use)?

The 5 Level Rubric will be used to grade this writing response.

Prior to assigning the post-assessment, the teacher must decide how much (or how little) scaffolding must occur for the students to be successful with these writing assessments. Therefore, the teacher may choose to pre-teach certain aspects of writing and/or encourage multiple drafts.

Teacher notes:

Key vocabulary:

- allegory
- satire
- fantasy
- science fiction

Resources:

- *The Lion, the Witch and the Wardrobe* (C.S. Lewis)
- *The Golden Compass* (Philip Pullman)

Possible Resources:

- *The Nation (*Terry Prachett)
- *Hitchhiker's Guide to the Galaxy* (Douglass Adams)
- "The Veldt" (Ray Bradbury)
- *The Prentice Hall Anthology of Science Fiction*

Windsor Public Schools
Curriculum Map for the Secondary Level
Science Fiction and Fantasy Literature

Name of the Unit:	**Length of the unit**:
UNIT 2-A Hero's Journey	Approximately 10-12 Blocks
Purpose of the Unit: Students will develop an understanding of the hero in a fantasy and/or science fiction piece of literature and the challenges one must overcome to be a hero in this particular genre.	

Common Core State Standards Addressed in the unit:

RL.11-12.1/ RI.11-12.1
Cite strong and thorough textual evidence to support analysis of explicit and implicit understanding.

W.11-12.2b
Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly;

Develop the topic thoroughly;

Select the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples.

Big Ideas:	**Essential Questions**:
- Fictional heroes have a dual identity; they must operate in both a "real" *and* a "fantastical" world (consider: Clark Kent and Superman). - In order to achieve a balance, a hero must recognize and accept his or her dual identity. - A hero undergoes a spiritual as well as physical journey that tests their lives, values, morals, and self.	- How does a hero achieve balance between two different worlds- the "real" (inner) and the "fantastical" (outer)? - What causes a hero to achieve enlightenment?
Students will know: - a hero will endure difficult emotional and physical challenges before they will succeed;	**Students will be able to**: 1. Identify the stages of the hero's journey according to Joseph Campbell's model.

- a hero often struggles internally with their responsibilities. Refer to the links below: Depth of Knowledge LA	2. Create a claim and support the claim with relevant evidence. 3. Cite strong and thorough textual evidence. 4. Define key vocabulary: - hero - real world - fantastical world - atonement - recognition - enlightenment - initiation - separation - apostasies - temptation Refer to the links below: Depth of Knowledge LA

Significant task 1: *Literature Circles*

Students will choose a text to read (see "Possible Resources" below). While reading, they will engage in literature circles to discuss their respective books. The literature circles may be organized in the Traditional Literature Circle Format and the teacher can assign roles, at his or her discretion. (The teacher may decide only to incorporate *some* of the traditional roles or all of them.) The roles can change daily, weekly, or monthly; this depends on the frequency and duration of literature circle meetings.

In order for students to prepare for literature circles, the teacher may instruct students on one more of the following Literature Circle Tracking Strategies:

- Post-it notes
- Blank bookmarks
- Reading response logs
- Quote-Question-Response
- Literature circle role sheets
- Note-card responses
- Journaling

The students will use their tracking to engage in discussions on the following:

- Character development and the character's choices and the effects of these choices
- Character development as related to the hero's journey
- Stylistic choices of the author
- Essential Questions
- Big Ideas

To "sum up" their learning, students will complete a Reflection Journal after the conclusion of *each* literature circle. The journal will provide options for synthesizing the points made during the literature circle discussions. This journal will be graded using a Journal Rubric. Student performance in the Literature Circles can also be measured using the 21st Century Rubric for oral communication.

Timeline: On-going

Key vocabulary:
- hero
- real world
- fantastical world

Possible Resources:
- *Ender's Game* (Orson Scott Card)
- *Stanger in a Strange Land* (Robert Heinlein)
- *War of the Worlds* (Orson Wells)
- *Ready Player One* (Ernest Cline)
- *Star Wars* (George Lucas)
- *Rise of The Planets of the Apes* (Rupert Wyatt)
- *The Prentice Hall Anthology of Science Fiction*

Significant task 2: *Hero's Journey Scrapbook*

The teacher will distribute a Visual Guide to Joseph Campbell's theory about the hero's journey. It outlines the different stages a hero must endure, in order to be successful at the end of the journey. The teacher will review the stages with the students. The teacher can use a digital application like Prezi or Power Point for the review. A New American Lecture is also an option. (Typically, all heroes experience the stages outlined, but it is possible for a hero to skip a stage or two.)

The teacher will then lead a whole class reading of a short science fiction selection, such as "The Veldt" by Ray Bradbury or "The Immortal Creature" by Shelley. Students will use a Data Gathering Sheet while reading, on which they will identify the stages of the hero's journey and track a hero's journey in the text. After first discussing their findings in groups of 3-4, students will share their ideas with the whole class.

In small groups, or individually, students will lastly complete a Hero's Journey Scrapbook that traces the development of the character in their core resource (not the whole class read) and identifies how this character progresses through Campbell's stages. The teacher will provide the students with options for creating the scrapbook product. For examples, the project can be a virtual/digital scrapbook, an actual scrapbook, or a video scrapbook. The other options are: comic strip, storyboard, or photo-story. The Curriculum 21 Website provides excellent online resources for this task.

A Project Rubric will be used to grade this task.

Timeline: 2-3 blocks

Key vocabulary:
- atonement
- enlightenment
- recognition
- hero
- temptation
- apostasies
- initiation
- separation

Possible Resources:

- *Ender's Game* (Orson Scott Card)
- *Stanger in a Strange Land* (Robert Heinlein)
- *War of the Worlds* (Orson Wells)
- *Ready Player One* (Ernest Cline)
- *Star Wars* (George Lucas)
- *Rise of The Planets of the Apes* (Rupert Wyatt)
- *The Prentice Hall Anthology of Science Fiction*

Significant task 3: *Essential Question Discussions*

To prepare for any of the follow types of discussions, students should create 5 or more Support Cards, on which they have collected evidence from their respective texts that will assist them in answering the essential questions.

The teacher can then choose from many different options for encouraging discussion about the essential questions, including: Fishbowl Discussions, R-A-E-S, Numbered Heads, Jigsaw, or Socratic Seminar. During the discussion(s), students should take notes on classmates' responses to create a Resource Bank for use on the post-unit assessment. The teacher can also opt to "spot check" the students' note-taking, to ensure that they are using the discussion as a means of gathering the necessary information for the final assessment.

Since students may be reading different texts, chosen at the inception of the unit, the teacher can group students with common books together, or to use "mixed" groups.

After the conclusion of the discussion(s), students will create a Claim Template, in preparation for the assessment. The students must use the information they gathered to support or refute the idea that "a hero must achieve the balance between their real (inner) and fantastical (outer) worlds, in order to reach enlightenment."

Timeline: 2-4 blocks

Key vocabulary:

- claim
- atonement
- enlightenment
- recognition
- hero

Possible Resources:

- *Ender's Game* (Orson Scott Card)
- *Stanger in a Strange Land* (Robert Heinlein)
- *War of the Worlds* (Orson Wells)
- *Ready Player One* (Ernest Cline)
- *Star Wars* (George Lucas)
- *Rise of The Planets of the Apes* (Rupert Wyatt)
- *The Prentice Hall Anthology of Science Fiction*

Common learning experiences:

- Viewing of film clips (listed in "Possible Resources")

- Independent reading of self-selected texts from the WHS Media Center or WPL
- Mini-lessons on writing
- Co-taught lessons with the Art Department on creating scrapbooks
- Analysis of passages from Joseph Campbell's *The Hero with a Thousand Faces*

Common assessments including the end of unit summative assessment:

Unit Post-Assessment(s):
Students will choose one assessment from the following options-

BIG IDEA ESSAY:

Students will begin by using their Claim Template (Significant Task 3). Then, students will either refute or support the idea that "a hero must achieve the balance between their real (inner) and fantastical (outer) worlds, in order to reach enlightenment."

The 5-Level Rubric will be used to assess the writing task.

OR

PERSONAL SCRAPBOOK:

Students will create their own Personal Journey Scrapbooks, in which they define, describe, and analyze their own "inner" and "outer" worlds. A Project Rubric will be used to grade this task.

Teacher notes:

Key vocabulary:
- real world
- fantastical world
- atonement
- enlightenment
- recognition
- hero
- temptation
- apostasies
- initiation
- separation
- claim

Possible Resources:
- *Ender's Game* (Orson Scott Card)
- *Stanger in a Strange Land* (Robert Heinlein)
- *War of the Worlds* (Orson Wells)
- *Ready Player One* (Ernest Cline)

- *Star Wars* (George Lucas)
- *Rise of The Planets of the Apes* (Rupert Wyatt)
- *The Prentice Hall Anthology of Science Fiction*

Windsor Public Schools
Curriculum Map for the Secondary Level
Science Fiction and Fantasy

Name of the Unit:	**Length of the unit**:
UNIT 3-Technology and Its Ethical Use	Approximately 10-12 Blocks

Purpose of the Unit:

Students will understand the greater implications of technology on the world and demonstrate an understanding of those implications by conducting research.

Common Core State Standards Addressed in the unit:

W.11-12.7
Conduct research projects to answer a question or to solve a problem;

Narrow or broaden inquiry;

Synthesize multiple sources;

Demonstrate an understanding of the subject under investigation.

W.11-12.8
Gather relevant information from multiple authoritative print and digital sources;

Use advanced searches effectively;

Assess the strengths and limitations of each source;

Integrate information into the text selectively to maintain flow of ideas;

Avoid plagiarism or overreliance on one source;

Follow a standard format for citation.

Big Ideas:	**Essential Questions**:
- Technology can hinder our ability to form relationships with other people. - In modern society, we need laws or rules to govern the use of technology. - - Individuals have the responsibility to shape institutions (like that of technology), so	- In which aspects of our lives does technology become more of a burden than a benefit? - Who has ultimate responsibility over our technological world?

these institutions will benefit the good of the people.	
Students will know: - the responsibility one has over the use of technology and the implications of using such technology; - when a person has power they control the use of technology and often misuse their power for selfish reasons; - technology is not always a benefit. Refer to the links below: Depth of Knowledge LA	**Students will be able to**: 1. Synthesize multiple sources of information into a research paper. 2. Engage in a debate with supporting evidence for an argument. 3. Create a visual presentation. 4. Define key vocabulary: - technology - ethics - artificial intelligence - cloning - bio-technology - virtual reality - genetics Refer to the links below: Depth of Knowledge LA

Significant task 1: *Introductory Research on Technology and Ethics/ Dialectical Journaling*

THIS IS A MULTI-TIERED TASK

1. Students will research the use of technology in today's society to better understand how it has been used or misused. Prior to beginning the research, the teacher will create a Research Pathway or will work with the media specialist to do so. This will provide guidelines for research and will assist students in narrowing their focus to a specific technology topic: artificial intelligence, cloning, bio-technology, virtual reality, and genetics. Students may also select a topic, but it should be approved by the teacher. The teacher should use the 21st Century Rubric for research to measure student competency on this first step.

2. Students will find three or more credible articles about their topic and respond to them in a 10-Percent Summary of each. Part of the summary will require students to begin forming an opinion about their chosen technology and its ethical use. These summaries will serve as the basis for Significant Task 2 (below).

3. The research will serve as a basis for reading and tracking findings in a core text (listed below under "Possible Resources"). During the course of the unit, students should use a Dialectical Journal to select and record passages in which technology and its ethical arise in their text. Using this journaling form, students will then reflect on the essential questions, based on the text they selected: In which aspects of our lives does technology become more of a burden then a benefit? Who has ultimate responsibility over our technological world? The teacher will provide a Model Dialectical Journal to share with students before they begin.

Timeline: 2-4 Blocks (research); ongoing (dialectical journals)

Key vocabulary:
- technology
- ethics
- artificial intelligence
- cloning
- bio-technology
- virtual reality
- genetics

Resources:
- *Andromeda Strain* (Michael Crichton)
- *Ender's Game* (Orson Scott Card)
- *Never Let Me Go* (Kazuo Ishiguro)
- *The Adoration of Jenna Fox* (Mary E. Pearson)
- *Ready Player One* (Ernest Cline)
- *The Prentice Hall Anthology of Science Fiction*
- *I, Robot*
- *The Stepford Wives*

Significant task 2: *Technology Product Pitch*

Students will use their research and reading from Significant Task 1 to drive Significant Task 2. In a Technology Presentation, students will imagine that they are representatives from a corporation that creates a product related to their specific technology topic (artificial intelligence, cloning, bio-technology, virtual reality, or genetics). The students have to convince the audience- their peers- to purchase the product. In other words, students are "pitching" a product.

Example-
A student could promote a product that allows Olympic athletes to clone their hearts and lungs to sell them to the general public. The student could argue that these hearts and lung will help people "get into shape" and live longer. During the presentation, the student will name the product, describe its benefits, and argue its benefits to humankind. If possible, the student will create a visual model of the product.

The teacher will use a Presentation Rubric to grade the task. The student may choose to present their product as a commercial, an advertisement, or in any other form that is approved by the teacher. The teacher may also use the 21st Century Rubric for oral communication.

Timeline: 3-5 Blocks

Key vocabulary:
- technology
- ethics
- artificial intelligence
- cloning
- bio-technology
- virtual reality
- genetics

Resources:
- *Andromeda Strain* (Michael Crichton)

- *Ender's Game* (Orson Scott Card)
- *Never Let Me Go* (Kazuo Ishiguro)
- *The Adoration of Jenna Fox* (Mary E. Pearson)
- *Ready Player One* (Ernest Cline)
- *The Prentice Hall Anthology of Science Fiction*
- *I, Robot*
- *The Stepford Wives*

Significant task 3: *Annotated Bibliography*

In an annotated bibliography, students not only list their sources, but they also give a summary of each of them. In this task, students will continue researching their technology topic (see: Significant Task 1) to prepare for the post-assessment. To begin, the students will use the initial sources gathered in Significant Task 1 to begin creating an Annotated Bibliography. They will also add their core text to the document. The teacher will model this skill and show Samples of exemplary annotated bibliographies.

Then, they will return to researching their technology topic (in the media center or in class). They will search for 3-4 additional credible sources of informational texts. They will add these texts to the annotated bibliography.

To complete this task, students can use Noodletools, EasyBib and other library resources to conduct their resources. The teacher will meet with each student to review their findings before the student begins the final assessment. To measure student growth in researching, the appropriate 21st Century Rubric should be used.

Timeline:3-4 Blocks

Key vocabulary:
- technology
- ethics
- artificial intelligence
- cloning
- bio-technology
- virtual reality
- genetics

Resources:
- *Andromeda Strain* (Michael Crichton)
- *Ender's Game* (Orson Scott Card)
- *Never Let Me Go* (Kazuo Ishiguro)
- *The Adoration of Jenna Fox* (Mary E. Pearson)
- *Ready Player One* (Ernest Cline)
- *The Prentice Hall Anthology of Science Fiction*
- *I, Robot*
- *The Stepford Wives*

Common learning experiences:
- Online resources (like Purdue OWL, UCONN Writing Resource)
- Writing conferences
- Use of the Warrior Writing Center
- Peer review and peer editing

- Use of the Media Center
- In-class debate

Common assessments including the end of unit summative assessment:

Unit Post-Assessment

JIGSAW MINI-LESSONS

1. Student should be grouped by the type of technology they studied throughout the unit. For example, all students who researched bio-technology must be grouped together.

2. In these "expert groups," students will share their knowledge and research about their respective topics. They will then create a Mini-Lesson about their technology topic; this lesson will be delivered to the class. In the lesson, the students will give an overview of their topic, but also provide answers to the essential questions by explaining how this technology becomes more of a burden than a benefit. The mini-lesson will also address who should have responsibility for monitoring this technology.

3. At the end of the mini-lessons, students will assess each "expert group." Students will use grade the group member's ability to work collaboratively using the 21st Century Rubric. The teacher will also grade the students using a Presentation Rubric.

Teacher notes:

Key vocabulary:

- technology
- ethics
- artificial intelligence
- cloning
- bio-technology
- virtual reality
- genetics

Resources:

- *Andromeda Strain* (Michael Crichton)
- *Ender's Game* (Orson Scott Card)
- *Never Let Me Go* (Kazuo Ishiguro)
- *The Adoration of Jenna Fox* (Mary E. Pearson)
- *Ready Player One* (Ernest Cline)

- *The Prentice Hall Anthology of Science Fiction*
- *I, Robot*
- *The Stepford Wives*

Windsor Public Schools
Curriculum Map for the Secondary Level
Science Fiction and Fantasy

Name of the Unit:	**Length of the unit**:
UNIT 4- Human Motivation and Transformation	Approximately 15 Blocks
Purpose of the Unit: Students will continue to understand the moral and ethical implications of using advanced technology in a society. Additionally, students will study human motivation and choices, and how those choices are a catalyst for the change in society.	

Common Core State Standards Addressed in the unit:

RL.11-12.3
Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama.

W.11-12.1a
Write arguments to support claims, using valid reasoning and relevant and sufficient evidence;

Introduce claims;

Establish the significance of the claims.

Big Ideas:	**Essential Questions**:
- In the genre of science fiction and fantasy literature, a character's morals are a reflection of our own values and our beliefs about what is "right and wrong." - Without law and order, humans are innately evil and selfish. - When a person's life or values are threatened they are forced to act outside of their own moral compass.	- To what extent does the content of science fiction and fantasy comment on the way we form our everyday values and morals? - Under what conditions do our morals and values change?
Students will know:	**Students will be able to**:
- the stages of morality according to Kohlberg's theory;	1. Support an argument with evidence.

- the ethical and moral implications of using advanced technology. Refer to the links below: Depth of Knowledge LA	2. Analyze the impact of an author's choices regarding character development. 3. Cite strong, thorough textual evidence to support analysis of implicit and explicit understanding. 4. Define key vocabulary: - character development - morality - ethics - innate - peer review - peer review conference - revision - editing - proofreading - planning Refer to the links below: Depth of Knowledge LA

Significant task 1: *Post-It Note Annotations*

Students will track their reading, with a particular emphasis on character development, by using 1" X 1" Post-It Notes to annotate the text. Students will receive an Annotation Guide and the teacher will model proper annotating technique before students begin the task. Modeling on the Elmo digital projector or Epson Smart Projector are the best practices. (The teacher can use the Post-It Note Mini Lesson from Mini-Lessons for Literature Circles as a guide.) The teacher can also use the Annotation Chapter from The Language of Composition as another resource.

The teacher should assign a specific number of Post-It Note annotations each time this task is assigned. Students should be required to track their reading through annotations at least three times during the unit. These annotations will ultimately be used for the unit post-assessment, and therefore, the teacher should introduce and review the unit post-assessment before students begin annotating.

As a follow-up to annotating, the teacher should require one or more of the following mini-tasks to facilitate synthesis and reflection:

- Literature Circles
- Journaling Options
- Socractic Seminar
- Dialectic Journal

These should be graded using the procedures from previous units.

Timeline: ongoing

Key vocabulary:
- character development

- morality
- ethics
- innate

Resources:
- *Andromeda Strain* (Michael Crichton)
- *Ender's Game* (Orson Scott Card)
- *Never Let Me Go* (Kazuo Ishiguro)
- *The Adoration of Jenna Fox* (Mary E. Pearson)
- *Ready Player One* (Ernest Cline)

Resources for Modeling:
- *The Prentice Hall Anthology of Science Fiction*

Significant task 2: *Self-Reflection*

Teacher will show a Digital Presentation on Lawrence Kohlberg and his stages of morality. This should be delivered in an interactive format like the New American Lecture. Students will take notes as the teacher is conducting the lesson. The teacher can provide several options for Graphic Organizers to help facilitate note-taking.

In small groups (3-4) students will be given descriptions of different Moral Dilemmas. Students will discuss how they would react to these dilemmas. Then, using Kohlberg's scale for morality- introduced during the digital presentation- students will identify their own "levels" of morality and will justify their placement on the Kohlberg scale.

To reflect on the first two steps of the task, students will use their findings to respond to the following two questions:
- How are our morals and values "formed"?
- Under what conditions do our morals and values change?

This Morality Self-Reflection should be written in class and account for approximately 1-2 pages. It will be graded using the 5-Level Rubric. The teacher should emphasize the importance of supporting the reflection with direct references from the group work portion of the task.

Timeline: 2-3 blocks

Key vocabulary:
- character development
- morality
- ethics
- innate

Resources:
- *Andromeda Strain* (Michael Crichton)
- *Ender's Game* (Orson Scott Card)
- *Never Let Me Go* (Kazuo Ishiguro)
- *The Adoration of Jenna Fox* (Mary E. Pearson)
- *Ready Player One* (Ernest Cline)

Significant task 3: *Review of Written Work*

Before writing the final paper, all students will engage in a Peer Review of their written work from the entire semester. (The teacher should first model the peer review process using a student sample.) Then, in pairs, students should use the ATLAS Student Protocol or any protocol chosen by the teacher to engage in peer review. The most important component of the peer review is the peer review conference.

As a result of the peer review, each student should complete a Writing Action Plan for writing the unit post-assessment. As needed, the teacher can require individual student-teacher writing conferences for those students who need remediation or enrichment.

Timeline: 2-3 Blocks

Key vocabulary:
- peer review
- peer review conference
- revision
- editing
- proofreading
- planning

Resources:
- *Andromeda Strain* (Michael Crichton)
- *Ender's Game* (Orson Scott Card)
- *Never Let Me Go* (Kazuo Ishiguro)
- *The Adoration of Jenna Fox* (Mary E. Pearson)
- *Ready Player One* (Ernest Cline)

Common learning experiences:
- Use of the Warrior Writing Center
- Use of the Media Center
- Short Film Clips from *Minority Report* or *2001: Space Odyssey*

Common assessments including the end of unit summative assessment:

Unit Post-Assessment(s):

LENS AND ARTIFACT ESSAY- FINAL EXAM ESSAY

1. Students will write a Lens and Artifact Essay using Kohlberg's Stages of Morality (lens) to examine at the development of a character in the core text (artifact). This assessment should represent a synthesis of student learning from Significant Tasks 1-3.

2. This should be a multi-draft assignment that will begin with the creation of an opening paragraph that contains an appropriate thesis that is clear, detailed, and supportable. The teacher should monitor student progress on each step. The students can engage in Peer Review during any or all portions of the writing process.

3. Students should write at least two drafts of the essay over the course of 1-2 weeks and should submit a publishable final draft on the day of the final exam. On the day of the exam, students will be expected to present their papers. They will be graded using the 21st Century Rubric for oral communication.

4. Student writing will be assessed using the 5-Level Rubric.

Teacher notes:

Key vocabulary:

- character development
- morality
- ethics
- innate
- peer review
- peer review conference
- revision
- editing
- proofreading
- planning

Resources:

- *Andromeda Strain* (Michael Crichton)
- *Ender's Game* (Orson Scott Card)
- *Never Let Me Go* (Kazuo Ishiguro)
- *The Adoration of Jenna Fox* (Mary E. Pearson)
- *Ready Player One* (Ernest Cline)

Windsor Public Schools
Curriculum Map for the Secondary Level
African-American Literature

Purpose of the Course:

The purpose of this course is to introduce students to the thematic ideas upon which African-American literature rests: freedom, security, mobility, and identity. Of these four concepts, identity is most central concept to the course. Students will track the development of African-American thought as it is disseminated in African-American literature. As a result, students will be exposed to and will contend with some concepts normally considered to be under the purview of sociology.

The course will also aim to teach students skills that will train them in the common discourse of the humanities normally found in higher education. Students will learn very discerning close-reading procedures and other precise methods of interacting with text. Students will master the principles of effective debate and argumentation and will experience a university-style lecture.

Name of the Unit:	**Length of the unit**:
UNIT 1: A "Melting Pot" Or a Many-Cultured Society?	Approximately 13-15 Blocks

Purpose of the Unit:

The purpose of this unit is to familiarize students with "majority privilege." Students will grapple with the unseen, racially-imbalanced structures working in American society. This unit includes the study of texts written by authors helped by racial privilege as well as those hindered by the system of racial privilege.

Common Core State Standards Addressed in the unit:

RL.11-12.4
Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

RL.11-12.9
Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics.

W.11-12.1
Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

W.11-12.7
Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Big Ideas:	**Essential Questions**:
- In a many-cultured society/multi-cultural society, a majority culture can exert dominance in both obvious and hidden ways. - The "classic canon" is the collection of literature that is traditionally taught in the English literature classroom; it normally is exclusive to male, white authors.	- To what extent does the majority (Eurocentric) culture in America benefit from its position of power? - How do most people define the "classic canon" of literature? - Based on its characteristics, why do you think African-American literature should be included in the "classic canon," or separated from it?
Students will know: - the impact of "majority privilege;" - which structures in America are imbalanced because of racial politics and racial tensions; - some authors (and people) have been helped and/or hindered by the system of racial privilege. Refer to the links below: Depth of Knowledge LA	**Students will be able to**: 1. Differentiate between institutionalized racism and personal prejudice. 2. Differentiate between overt racism and institutional (structural) racism. 3. Identify the common characteristics of the "traditional canon." 4. Develop an opinion regarding the positive and negative aspects of the "traditional canon." 5. Define the following terms: - institutional racism - personal prejudice - Eurocentric - privilege - classic cannon - thesis statement - claim - argument Refer to the links below: Depth of Knowledge LA

Significant task 1: *Institutional Racism Presentation*

Students will first write up a Presentation Proposal to limit and focus their thinking and give the teacher an opportunity to conference with the students and help guide the research. Crucial to mastery of this task is for students to link institutional racism to the concept of a many-cultured/multi-cultured society. Therefore, the teacher must introduce "many-cultured" and "multi-cultured" through a class brainstorm, Critical Thinking Web, K-W-L Chart, or any other method of linking prior knowledge to these terms.

Then, students will create an Institutional Racism Presentation, in which they design a WebQuest, webpage, or informational blog to demonstrate an understanding of institutional racism and explain why it occurs in a many-cultured/multi-cultural society. Students must research and use credible sources to explore concepts around institutional racism. Proper citations must be used. The teacher should work with the media specialist to create a Research Pathway to guide students through the research process. The 21st Century Rubric for valid research will be used to assess this task.

Possible topics include (but are not limited to):

- the criminal justice system
- the military
- religious institutions
- academic institutions
- the field of medicine
- work/ occupations

Timeline: 3-5 Blocks

Key vocabulary:

- institutional racism
- personal prejudice
- Eurocentric
- Privilege

Possible Resources:

- WHS Library Media Center
- excerpts from *The Norton Anthology of African American Literature*
- A Teacher's Reflection on Institutional Racism from www.hcesc.org

Significant task 2: *Effective—More Effective—Most Effective Thesis Critique*

PART ONE

The teacher will begin by facilitating a class brainstorm on the qualities of the "classic canon." Students, with the teacher's guidance as a whole class, will read and analyze excerpted texts that are examples of "classic" literature and "non-classic" literature. (These possible texts are listed below.) In turn, the students (in small groups of 3-4) will create a Classic Canon Poster that demonstrates their reflection on these qualities. These documents will be posted and referred to in the class whenever needed over the semester. The teacher should use the 21st Century Rubric for collaboration and/or problem solving to grade this portion of the task.

The teacher will then use direct instruction and models to demonstrate the characteristics of an effective thesis statement. Models can include exemplars, student work, and/or a series of thesis statements that show a progression of effectiveness and thought.

PART TWO

Next, students will independently draft three separate (but probably related) thesis statements that answer this essential question: To what extent does the "classic canon" help the majority (Eurocentric) culture benefit from its position of power? These statements must show the student's ability to link the idea of the "classic canon" with the recently learned concepts related to institutional racism. (E.g.: "Keeping alive the traditional canon is just another form of white privilege because the traditional canon reinforces the idea that white/Western/Eurocentric culture is better than any other culture.") As a whole class, students will share their findings and discuss the quality of their states.

Students will now independently compose three different thesis statements about the "classic canon" by answering this essential question: Based on its characteristics, why do you think African-American literature should be included in the "classic canon," or separated from it?

Students will finally evaluate their peers' thesis statements for the three required qualities of a good thesis: clarity, detail, and supportability. Students will rate each other's thesis statements on a numerical scale and then defend/explain their stance by writing out an explanation of their rankings. The peer review will be guided by the Effective Thesis Rubric.

Timeline: 3 Blocks

Key vocabulary:

- institutional racism
- personal prejudice
- Eurocentric
- privilege
- classic cannon
- thesis statement
- claim
- argument

Possible Resources:

- excerpts from *The Norton Anthology of African American Literature*
- excerpts from Shakespeare
- excerpts of Biblical literature
- excerpts of Ancient Greek tragedy
- excerpts from Twain, Hemingway, and/or Steinbeck

Significant task 3: *Mini-Essay/Presentation of Argument*

The students will use their learning from Significant Tasks 1 and 2 to write a Mini Essay of Argument that includes:

- The first paragraph of an essay of argument that supports, refutes, or qualifies the idea that African American literature should be considered "classic."
- One body paragraph that supports the opening paragraph. It must include specific support from the excerpted texts studied in Significant Task 2.

This will begin as an in-class writing assignment. The teacher can opt to make this a multi-draft assignment that is reviewed, revised, and typed. The 5-Level Rubric (only the first two categories) will be used to grade this task.

Timeline: 3 Blocks

Key vocabulary:

- institutional racism
- personal prejudice
- Eurocentric
- privilege
- classic cannon
- thesis statement

- claim
- argument

Possible Resources:

- excerpts from *The Norton Anthology of African American Literature*
- excerpts from Shakespeare
- excerpts of Biblical literature
- excerpts of Ancient Greek tragedy
- excerpts from Twain, Hemingway, and/or Steinbeck

Common learning experiences:

- View Tim Wise's speech, "On White Privilege"
- Direct instruction regarding composing thesis statements
- Direct instruction regarding "the traditional canon," including looking at some representative examples
- Direct instruction/mini-lesson from Warrior Writing Center interns/teacher about composing thesis statements
- Review and analysis of excerpts from *White Like Me* (Tim Wise) and *The Heart of Whiteness* (Robert Jensen)

Common assessments including the end of unit summative assessment:

Unit Post-Assessment(s):

This summative post-assessment connects to Significant Task 2 and 3—it is simply the expansion of the mini-essay into a full essay. Below are two possible topics for this essay, but students may also simply use the topic and thesis they used in Significant Task 3.

Students will choose one Essay of Argument from the following options-

1. Students will support, refute, or qualify the idea that all American high school students must take at least one course in African-American literature or African-American history to graduate from high school.

2. Students will support, refute, or qualify the idea that African-American literature should be considered an integral part of the "classic canon" of American Literature.

The teacher will use the 5-Level Rubric to grade this assessment. (S)he has the option of conducting this final assessment as a multi-draft product. Students may have the option of engaging in Peer Review or teacher-student writing conferences. This is at the teacher's discretion.

Teacher notes:

Key vocabulary:

- institutional racism
- personal prejudice
- Eurocentric
- privilege

- classic cannon
- thesis statement
- claim
- argument

Possible Resources:

- excerpts from *The Norton Anthology of African American Literature*
- excerpts from Shakespeare
- excerpts of Biblical literature
- excerpts of Ancient Greek tragedy
- excerpts from Twain, Hemingway, and/or Steinbeck
- excerpts from *White Like Me* (Tim Wise)
- excerpts from *The Heart of Whiteness* (Robert Jensen)
- Tim Wise, various speeches

Windsor Public Schools
Curriculum Map for the Secondary Level
African-American Literature

Name of the Unit:	**Length of the unit**:
UNIT 2: Slavery, Freedom, and Reconstruction	Approximately 13-15 Blocks

Purpose of the Unit:

Students will learn about the outcomes of African-American bondage in America and discover African-American attempts at building an identity in America, during the Reconstruction Era. Students will determine how those attempts "set the stage" for continuing African-American identity-construction. They will focus their studies on two essential African American thinkers- W.E.B. Du Bois and Booker T. Washington- as a means of understanding varying viewpoints about the development of the modern African-American identity.

While students engage in the class work, they have the option of reading independently at home to use during discussions, tasks, and assessments.

Common Core State Standards Addressed in the unit:

RI.11-12.7
Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

RL.11-12.4
Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words

with multiple meanings or language that is particularly fresh, engaging, or beautiful. (Include Shakespeare as well as other authors.)

RL.11-12.5
Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact.

W.11-12.1
Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

Big Ideas:	**Essential Questions**:
- An oppressed group can take on many of the characteristics of their oppressors, but they work to assert a new, unique identity, as well. - "Accommodationism" tends to favor the majority oppressor because it incorporates capitulation and agitation. - W.E.B. Du Bois and Booker T. Washington account for the two most notable variations in viewpoints among African-Americans during The Reconstruction Era; one believed in accommodation and the other in agitation.	- To what extent does an oppressed group take on the characteristics of its oppressors? - How are capitulation, "accommodationism" and agitation related as concepts? - Whose stance do you agree with—Washington's or Du Bois's?
Students will know: - that African American people's history of bondage influenced the development of their personal identity; - how African Americans began to build a sense of identity in America during The Reconstruction Era; - the extent of the influence of two theorists- Du Bois and Washington- on the formation of the modern African American identity. Refer to the links below: Depth of Knowledge LA	**Students will be able to**: 1. Analyze the relationship between and among Washington's ideas and Du Bois's ideas. 2. Formulate and defend a stance about Washington's ideas and Du Bois's ideas. 3. Analyze how poetry is constructed and how its structure impacts the meaning of the poetic text (optional). 4. Define the following terms: - "accommodationism" - agitation - capitulation - counterargument - Reconstruction Era - scansion (optional) Refer to the links below: Depth of Knowledge LA

Significant task 1: *Close-Reading for Key Terms*

The teacher will first model a Close-Reading of an excerpt from one of the possible texts by Du Bois or Washington. Using the Four-Part Annotation Method- reading for paragraphs, highlighting ONLY the essential, using a one-sentence summary, and digging deeper- the teacher will guide students to understanding three of the key terms of the unit: "accommodationism," agitation, and capitulation. The teacher will demonstrate how the text reveals Du Bois' or Washington's perspective about these concepts.

Students will then choose a one- or two-page excerpt from another text connected to the unit and "tear it apart" themselves or in small groups. The groups must write Three Summary Statements (1-2 sentences each) about the text and should use a critical thinking template from *They Say, I Say* to do so. The following are examples:

- In his text, the author discusses "accommodationism" by saying _____, which is supported by his statement (directly from text) " _____. "
- The author's position about agitation is best described as _____, which is surprising because _____.
- According to the author, agitation and capitulation are related because _____, which he shows in the passage in which he writes (directly from text) " _____. "

Once student groups have completely annotated the text and finished the templates, they will project their completed annotation for the class to see. The Elmo digital projector is the best technology tool for this segment of the task. Students will explain their thinking. They will present their metacognitive processes, i.e., how they chose the text to annotate and how they agreed upon the completed templates, so that other students can discuss and critique the annotations. The instructor will model this process before students carry it out.

Timeline: 2-3 Blocks

Key vocabulary:

- "accommodationism": A philosophy of resistance characterized by an oppressed group accepting incremental, compromised gains, rather than the full desired outcome, from the group in power,
- agitation: A philosophy of resistance characterized by an oppressed group bringing attention, often through a coordinated campaign, to their struggle against the group in power.
- capitulation: The point at which an oppressed group that no longer wishes to fight against a group in power; this can occur "wholesale" or for individual injustices.

Suggested Resources:

- *They Say, I Say* (Graff, Birkstein, and Durst)
- various readings from *The Norton Anthology of African American Literature*

Significant task 2 (optional): *Metrical Scansion*

To further understand the key terms from Significant Task 1, students will scan a poem (choices are listed below) to connect the poet's use of poetic devices to the overall meaning of the poem. The first poem should be scanned as a whole class while the teacher uses direct instruction and models to teach students the key terms needed for scansion:

- rhyme
- meter
- rhythm

- foot types (iambs, troches, spondees, anapests, and dactyls)
- line length (pentameter and hexameter)

Next, students will choose another poem and scan it independently. After doing this, they will "group up" with students who chose the same poem to discuss their findings.

Finally, they will use their findings to complete a Metacognitive Reflection, in which they will (1) go back through the procedure of metrical analysis and explain their thinking and (2) explain how Wheatley's use of poetic devices result in her message about "accommodationism," agitation, and/or capitulation. Metacognitive Reflections (1-2 pages) are designed to take students back through the process they have just performed to be sure they understand the procedure and theory behind scansion. These reflections will also provide students with an additional opportunity to thoroughly understand the key terms and concepts of the unit.

Timeline: 2-3 Blocks

Key vocabulary:
- scan
- scansion
- rhyme
- meter
- rhythm
- foot types (iambs, troches, spondees, anapests, and dactyls)
- line length (pentameter and hexameter)
- "accommodationism"
- agitation
- capitulation

Possible resources:
- various poems from *The Norton Anthology of African American Literature*
    - Phillis Wheatley
    - Paul Laurence Dunbar
    - Claude McKay
    - Langston Hughes
    - Countee Cullen

Significant task 3: *Debate*

Drawing from their work on Significant Task 1 (and possibly Significant Task 2), students will continue to grapple with the philosophical conflict between Washington and Du Bois (accommodationism v. agitation). The teacher will also have the students prepare for the debate by reading, annotating, and reflecting on all or some of *Up from Slavery* and *The Souls of Black Folks*.

Before they debate, it is essential that students "dive into" the pros and cons of each. The teacher will provide a T-Chart or Quadrant Notes Sheet to help students prepare for the debate. In this phase of the task, students are evaluating both theorists' perspectives.

Then, the teacher will split the students into two groups: "supporters" of Washington and "supporters" of Du Bois. In these groups, students will then be asked to prepare for the debate by:

- considering the Reconstruction Era from the perspective of an African-American and justifying why Du Bois or Washington has the "better" philosophy;

- considering the modern African-American and justifying why (s)he should accept Du Bois' or Washington's theories;

- constructing a series of arguments in support of their side;

- constructing a series of counterarguments (arguments they anticipate the other side will make) along with rebuttals for those anticipated arguments.

The students will perform the debate and be evaluated using a Debate Rubric.

Timeline: 2 Blocks

Key vocabulary:
- "accommodationism"
- agitation
- capitulation
- counterargument
- Reconstruction Era

Resources:
- various readings from *The Norton Anthology of African American Literature*
- *Up From Slavery* (Booker T. Washington)
- *The Souls of Black Folk* (W.E.B. Du Bois)

Common learning experiences:
- Teacher-led workshops about scansion
- Teacher-led workshops about moving from a scanned poem to a composition
- Full-class reading of introduction to Wheatley's *Poems on Various Subjects*
- Book talks or literature circles to discuss core texts

Common assessments including the end of unit summative assessment:

BIG IDEA ESSAY
Students will begin by using a Claim Template to support or refute the following Big Idea: "An oppressed group can take on many of the characteristics of their oppressors, but they work to assert a new, unique identity, as well."

The teacher can assign a full or miniature Big Idea Essay in which students must use the various texts from the unit- including Du Bois, Washington, poems, and/or the core independent text- to support the claim. If the student is not interested in supporting or refuting this Big Idea, (s)he can write a Big Idea Proposal to submit to the teacher. Upon approval, the teacher may allow the student to create his/her own Big Idea from this unit, and create and defend a claim related to it.

The 5-Level Rubric will be used to grade this assessment.

Teacher notes:

Key vocabulary:

- scan
- scansion
- rhyme
- meter
- rhythm
- foot types (iambs, troches, spondees, anapests, and dactyls)
- line length (pentameter and hexameter)
- "accommodationism"
- agitation
- capitulation
- argument
- counterargument

Possible Resources:

- various poems from *The Norton Anthology of African American Literature*
    - Phillis Wheatley
    - Paul Laurence Dunbar
    - Claude McKay
    - Langston Hughes
    - Countee Cullen
- various readings from *The Norton Anthology of African American Literature*
- *Up From Slavery* (Booker T. Washington)
- *The Souls of Black Folk* (W.E.B. Du Bois)
- *They Say, I Say* (Graff, Birkstein, and Durst)

Windsor Public Schools
Curriculum Map for the Secondary Level
African-American Literature

Name of the Unit:	**Length of the unit**:
UNIT 3: The Struggle Toward Identity	Approximately 8 Blocks

Purpose of the Unit:

Students will track the emergence of the Civil Rights and Black Power Movements of the mid-20th century. They will explore the various reactions of African-Americans to the "hidden" power structures and institutions that were designed to maintain African-American disenfranchisement. Primarily, however, the students will discover how African-Americans fought against a corrupt and inhumane societal structure that remained in place.

Common Core State Standards Addressed in the unit:

RI.11-12.5
Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.

SL.11-12.4
Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

W.11-12.2
Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

Big Ideas:	**Essential Questions**:
- The conflict between Du Bois and Washington was reframed through Dr. Martin Luther King, Jr. and Malcolm X. - Many mid-century African-American authors had trouble developing a new literary style because their experiences and education were informed by their oppression.	- How did the battle between "accommodationism" and agitation continue into the 20th century in America? - How did mid-century authors go about creating a "new" African-American literature and what impact has this literature had on modern America? - How does a thinker balance her/his own creative individuality and her/his impulse to participate in larger cultural and political struggles?
Students will know:	**Students will be able to**:
- how the Civil Rights and Black Power Movements developed and evolved; - imbalanced political, cultural, and social structures continued to exist after the Reconstruction Era; - African-American theorists and leaders continued to argue the best course of action for African-American people: "accommodationism" or agitation; - African-American writers used their "voices" to protest the general acceptance of unequal	1. Reframe a conflict that changes over time. 2. Analyze the role of politics in art. 3. Connect identity-creation to art-creation. 4. Compare and contrast concepts in writing. 5. Prepare and deliver an effective presentation. 6. Define the following key terms: - fluency - pacing - rhythm - diction

American institutions. Refer to the links below: Depth of Knowledge LA	- timbre - purpose - audience - juxtaposition - re-framing - radicalization - compromise - protest art Refer to the links below: Depth of Knowledge LA

Significant task 1: *Oratory Analysis Presentation*

In this task, students will present an evaluation of a Civil Rights leader's oratorical skills. First, the class will listen to some speeches (any speech, not just Civil Rights Era speeches) and, as a small group, Design a Rubric by which to evaluate the effectiveness of oration/speeches. The students will then share their rubrics as a whole class; the class will reach consensus on an Oration Rubric that will be used throughout the rest of the task.

Students will independently choose from a list of leaders from this time period (suggestions: Dr. Martin Luther King, Jr., Malcolm X, Eldridge Cleaver, Bobby Seale, Huey Newton, Angela Davis). They will select and close-read at least two speeches by their chosen leader to get a sense of their oratorical style. This part of the task can be completed in the Media Center using a Research Pathway. Next they will apply their elements of the Oration Rubric to a speech by their chosen leader. The 21st Century Rubric for research can be used to measure the students' success during the research segment of the task.

Students will present their findings to the class. During the final oral presentation, students will be required to:

- Analyze whether their leader is an effective speaker/orator by answering: Did the oratorical techniques employed by the speakers effectively set forth his/her individual vision for participating in the struggle for Civil Rights? To what extent did the techniques help make this vision clear?

- Show knowledge of effective oration by picking out sections of the speech for the rest of the class to look at more closely. The presenter will use these excerpts to show specific strong or weak qualities of the oration.

- Give a final evaluation on the effectiveness of the speech as related to the speech's purpose and the author's intended message about Civil Rights.

Timeline: 4-5 Blocks

Key vocabulary:
- fluency
- pacing
- rhythm
- diction
- timbre

- purpose
- audience

Resources:

- various speeches from *The Norton Anthology of African American Literature*
    - Huey P. Newton
    - Angela Davis
    - Bobby Seale
    - Eldridge Cleaver
    - MLK Jr.
    - Malcolm X

Significant task 2: *Compare and Contrast Mini-Essay*

First, students will perform a close-reading of two speeches and/or essays, one by Dr. Martin Luther King and one by Malcolm X. It is recommended that the teacher can conduct this reading using Reading Stations. These stations will be established to accommodate independent readers (station 1), paired "reading buddies" (station 2), and teacher-guided readers (station 3). After completing the readings, the students will engage in a whole class discussion about the texts and should add marginal notes to help facilitate their understanding of them.

Next, students will write a 10-Percent Summary of each text (1-2 pages) that requires students to summarize the text and to reflect informally on how Dr. Martin Luther King, Jr. and Malcolm X continued the conflict that Washington and Du Bois began in years before. This segment of the task should be considered "pre-writing" and it can be completed in class.

Lastly, students will complete a Compare and Contrast Mini-Essay. They will analyze the differences between King's and X's viewpoints about how to engage in Civil Rights. They will use the composition to compare and contrast the two views. This mini-essay should be 1-2 pages and must demonstrate a well-argued and well-supported opinion about which of the two men had a more convincing stance. The teacher can support students by providing them with a Venn Diagram, Comparison Matrix, or other Graphic Organizers to use as additional pre-writing tools.

Timeline: 3-4 Blocks

Key vocabulary:

- accommodationism
- agitation
- purpose
- audience
- juxtaposition
- re-framing
- radicalization
- compromise
- protest art

Possible Resources:

- "Give Us the Ballot" (Dr. Martin Luther King, Jr.)
- "The Ballot or the Bullet" (Malcolm X)
- *The Autobiography of Malcolm X* (Alex Haley with Malcolm X)
- various speeches from *The Norton Anthology of African American Literature*
    - Malcolm X

- Martin Luther King Jr.

Common learning experiences:

- Direct instruction regarding compare-contrast essays, including the difference in forming an argument for a compare-contrast
- Writer's workshops
- Text talks and/or literature circles to discuss the material
- Listening to speeches by various Civil Rights leaders of this time period
- Deliver a speech about a theme connected to the unit
- Use of the Warrior Writing Center

Common assessments including the end of unit summative assessment:

Unit Post-Assessment(s):
Students will choose one assessment from the following options-

LITERARY ANALYSIS ESSAY
Students will pick a piece of literature in the unit, or a piece of literature by an approved author from the time period, and perform a Literary Analysis on that piece. Students will be evaluated using the 5-Level Writing Rubric.

In this composition, students will:

- Close-Read their chosen text (the annotated version will be submitted with the essay).

- Compose an essay of analysis that explicitly links something in the form or content of the text to a Big Idea or concept related to the unit. For example Students may write about Gwendolyn Brook's desire to build an "individual" poetic form or Amiri Baraka's fight to find the correct amount of resistance and politics to put in his art.

OR

COMPARE-CONTRAST 2nd DRAFT
Students will revise and add to their compare-contrast essay from Significant Task 3 to create a complete, publishable final draft of 4-5 pages. If students choose this assessment, they should use the Warrior Writing Center and/or meet with the teacher for writing conferences. Peer Review is also suggested. The 5-Level Rubric will be used to grade this draft.

Teacher notes:

Key vocabulary:

- accommodationism
- agitation
- purpose
- audience
- juxtaposition
- re-framing
- radicalization

- compromise
- protest art

Possible Resources:
- "Give Us the Ballot" (Dr. Martin Luther King, Jr.)
- "The Ballot or the Bullet" (Malcolm X)
- *The Autobiography of Malcolm X* (Alex Haley with Malcolm X)
- various speeches from *The Norton Anthology of African American Literature*
    - Malcolm X
    - Martin Luther King Jr.

Windsor Public Schools
Curriculum Map for the Secondary Level
African-American Literature

Name of the Unit:	**Length of the unit**:
UNIT 4: The Modern African-American Voice	13 Blocks

Purpose of the Unit:

The purpose of this unit is to examine and participate in the contemporary African-American identity. Students will use their personal experiences and concepts they have learned to explore how the history of African-American literature and scholarship informs the ideas of the modern day.

Common Core State Standards Addressed in the unit: (Provide the link to the specific standards.)

RL.11-12.2
Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

W.11-12.3
Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

Big Ideas:	**Essential Questions**:
- African-American identity creation is still an ongoing process, fraught with new challenges. - African-American art is informed by the thought, experiences, and art of the previous generations (both African-American and Eurocentric). - **Optional, based on time:** "Intersectionality" explores the interconnectedness among all forms of oppression that eventually creates an unjust society for many people.	- In what ways has African-American identity-creation changed in the modern day? - In what ways is modern and contemporary African-American literature a continuation of the work that came before? - **Optional, based on time:** How do experts define "intersectionality" and how does it apply to you?
Students will know: - how different minority groups interact with each other; - how cultural and political conflicts change over time; - that modern/contemporary African-American writers built on both the classic canon and earlier works of African-American art. Refer to the links below: Depth of Knowledge LA	**Students will be able to**: 1. Connect their cultural, social, and political experiences to those of the authors. 2. Interpret why political and cultural conflicts change. 3. Examine cultural and political conflicts over time. 4. Identify and expand upon the ways that African-American authors write by making use of influences from both prior African-American literature and the European tradition ("classic canon"). 5. Define the following key terms: - persona - spoken word poetry - rhetoric - contemporary - "intersectionality" - feminism - Critical Race Theory - sociology Refer to the links below: Depth of Knowledge LA

Significant task 1: *Persona Discussion*

Using the close-reading skills acquired from the first three units, students will critically and closely read Gil Scott-Heron's "The Revolution Will Not Be Televised." (A completed, annotated close-reading must be submitted with the final product of the task.) Within their close-reading, students must evaluate Scott-Heron's message.

Then, they will prepare for a Persona Discussion by completing a 3-Column Note Sheet on which they will compare Scott-Heron's central message to that of Dr. Martin Luther King, Jr. and Malcolm X. Students must use their notes to answer this question: Based on the readings by each artist/author, what is each saying about the modern African-American identity? The note-taking can be accomplished individually, or in groups. Within their notes, students should include textual references to support their ideas. Therefore, students will need access to their previous readings, by Dr. King and Malcolm X, to complete this step.

Then, in three groups, students will engage in persona discussions. These discussions will be graded using the 21st Century Rubrics for oral communication and/or collaboration. Each group will be assigned a writer/artist, i.e., one group will represent Scott-Heron, another will be Dr. King, and the final group will embody Malcolm X. The groups will have to answer the essential questions (below) *as if they are* that writer/artist. The groups therefore assume the persona of Scott-Heron, King, and Malcolm X.

Essential Questions:

- In what ways has African-American identity-creation changed in the modern day?
- In what ways is modern and contemporary African-American literature a continuation of the work that came before?

As a follow-up, students will write a 1-2 page Reflection Journal in which they use their knowledge from the previous units, the Persona Discussion, and their personal experience to answer the essential questions themselves. This Reflection Journal will be graded with a Journal Rubric.

Timeline: 4 Blocks

Key vocabulary:
- persona
- spoken word poetry
- rhetoric
- contemporary

Resources:
- "The Revolution Will Not Be Televised" (Gil Scott-Heron)
- previously read texts by Dr. Martin Luther King, Jr. and Malcolm X

Significant task 2: *Close-Reading Composition*

THIS IS A MULTI-TIERED TASK

Reading and Tracking

1. The students in the class will read one comprehensive, full-length work by a contemporary African-American author (see resources below). While reading, they should track their findings using any of the following methods:
    - a Dialectical Journal
    - multiple Post-In Note Annotations
    - other Journal Options

Book Talks

2. After completing the text, students will choose an "Anchor Passage" from it. To help refresh their

memory and to make explicit that this is simply an extension of the work they have already accomplished in the course, the instructor may deliver some direct instruction about how the principles of close-reading for a speech/non-fiction text are very much related the principles of close-reading longer works of fiction or drama. This Anchor Passage will serve as the starting point for Book Talks. The Book Talks will be used to prepare for the writing. During these discussions, students will create questions about African-American identity formation. Question Starters will be available. Students will use their tracking, Anchors, and questions to drive their talks. This portion of the task will be graded with the 21st Century Rubric for oral communication.

Writing

3. Students will use their tracking, book talks, and anchor as the foundation for the final Literary Analysis Essay. This essay will be graded using the 5-Level Rubric. This essay should be completed mostly at home, in drafts. Pre-writing and peer review can occur in class. In this analysis, students will use their text to support a claim about any one of the following Big Ideas:

    - African-American identity creation is still an ongoing process, fraught with new challenges.
    - African-American art is informed by the thought, experiences, and art of the previous generations (both African-American and Eurocentric).
    - "Intersectionality" explores the interconnectedness among all forms of oppression that eventually creates an unjust society for many people.

Timeline: 4 Blocks

Key vocabulary:

- persona
- rhetoric
- contemporary
- "intersectionality"

Possible Resources:

- Any August Wilson play from the second half of his Pittsburgh Cycle (*Fences, Two Trains Running,* or *Jitney* are recommended)
- *Wild Seed* (Octavia Butler)
- *If Beale Street Could Talk* (James Baldwin)
- *Go Tell it on the Mountain* (James Baldwin)

- "Strange Fruit," performed by Billie Holiday
- "Hurricane" (Bob Dylan)
- Various Songs, Kanye West
- Any popular song (any era), pending teacher approval

Significant task 3 (optional): *Direct Instruction—Intersectionality*

The teacher will deliver an introductory lecture or presentation about "intersectionality." To extend their learning, students will write a Personal Narrative that attempts to pinpoint a time in their life when they saw

"intersectionality" function (or they may compose a narrative that they think *could* happen in their world that shows "intersectionality"). Students must see several models first, since this assignment asks them to do the highest-order thinking they will do in the course.

The teacher has the option of using this task in place of the unit post-assessment.

Timeline: 1 block

Key vocabulary:

- "Intersectionality"
- feminism
- critical Race Theory
- sociology

Common learning experiences:

- Teacher-modeled close-read of "All of the Lights" by Kanye West
- Direct instruction regarding the form, history, and purpose of spoken word poetry
- Direct instruction regarding the uniform nature of close-reading across genres/types of text
- Listen to Billie Holiday's rendition of "Strange Fruit"
- Listen to Bob Dylan's "Hurricane"
- Full-class reading of "New York is Killing Me," profile of Gil Scott-Heron in the *New Yorker* (Alec Wilkinson)

Common assessments including the end of unit summative assessment:

FINAL ASSESSMENT

Spoken Word Performance
As the final assessment in the course, students will have creativity and flexibility to work within a form with which they are familiar- a Spoken Word Performance. This final assessment is a synthesis of all concepts, genres, and skills mastered during the course. The students are writing, finalizing, and performing their own spoken word performance.

The content of the spoken-word poetry can be related to *any* learning from the course (i.e., African-American identity creation, personal identity creation, accommodationism, agitation, a specific author or text, the experience of the course, etc.). In this assessment, the students will:

- Compose a rough draft of their spoken word text;
- Participate in a peer-editing protocol to improve that rough draft;
- Perform their piece in front of the class;
- Evaluate their classmates' spoken word texts.

Students will be graded with the 21st Century Rubric for oral communication and/or a Performance Rubric.

Teacher notes:

Key Vocabulary:

- persona
- spoken word poetry
- rhetoric
- contemporary
- "intersectionality"
- feminism
- Critical Race Theory
- sociology

Possible Resources:

- Any August Wilson play from the second half of his Pittsburgh Cycle (*Fences, Two Trains Running,* or *Jitney* are recommended)
- *Wild Seed* (Octavia Butler)
- *If Beale Street Could Talk* (James Baldwin)
- *Go Tell it on the Mountain* (James Baldwin)

- "Strange Fruit," performed by Billie Holiday
- "Hurricane" (Bob Dylan)
- Various Songs, Kanye West
- Any popular song (any era), pending teacher approval

Windsor Public Schools
Curriculum Map for the Secondary Level
Fashion & Clothing I

Purpose of the Course: Fashion & Clothing I will provide students with an introduction to the world of garment construction. Students will acquire and expand basic sewing skills through the use of commercial patterns. As part of this process students will learn about essential construction tools, how to safely set up and use a sewing machine; create a clothing construction portfolio, encompassing machine parts, textiles, sewing samples, sewing vocabulary, and use of commercial patterns. They will construct at least two garments, each progressively more difficult. Students will also research the history of a particular aspect of fashion. Throughout this course there will be ongoing focus on improving critical thinking and problem solving skills. Students will have the opportunity to engage in application of these skills as they participate in project based learning that is inherent in this course. In addition, 21st century learning skills: working collaboratively; problem solving; critical thinking; as well as reading, writing, research, and, presentation skills are applied in this course.

Name of the Unit: Tools of the Trade Unit 1	Length of the unit: 7 Blocks (86 min. blocks)
Purpose of the Unit: This unit introduces students to essential tools utilized in the clothing construction industry. A wide range of hand tools and the sewing machine will be introduced and explored. The purpose and function of sewing tools, sewing machine parts and the function/purpose of those parts will be studied. Students will also learn how to wind a bobbin and complete both the upper and lower thread paths. In addition, students will learn which parts must be checked on their machine each time before they sew in order to use the machine safely. Students will also be encouraged to use critical thinking skills and problem solving skills as part of the learning process. Students will use interactive construction portfolios throughout this unit.	

FACS Standards Addressed in this unit:
Explain the purpose of and use a variety of equipment, tools, and supplies for apparel and textiles construction, alteration, and repair D13.
Demonstrate skills needed to produce, alter, or repair textile products and apparel 11.13

Common Core State Standards Addressed in the unit:
Vocabulary Acquisition and Use 10.L.4: Determine or clarify the meaning of unknown and multiple meaning words and phrases based on reading and context.
Conventions of Standard English 10.L.1: Demonstrate command of the conventions of standard English and usage when writing or speaking.
Comprehension and Collaboration 10.SL.1: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on topics, texts and issues.

Big Ideas: • Knowing how to produce, alter, or repair textile products and apparel is a life skill. • Knowing how to utilize resources available for independent problem solving is a life skill.	Essential Questions: • How does knowledge of tools of the construction industry affect you personally? • Why is it vital to know how the sewing machine works? • In what ways does critical thinking and problem solving impact your learning?
Students will know: • The role of safety in use of tools and equipment • The role of hand tools in garment construction • How proper set up of a sewing machine impacts safe use of the machine • The process of elimination for machine jams	Students will be able to: • Identify basic hand tools of the trade and their function • Safely use a variety of tools • Identify machine parts and their function • Independently wind a bobbin • Independently complete both the upper and lower thread paths • Check their sewing machine for safe use • Problem solve any issues with the machine jamming • Complete the 'every time before you sew' safety assessment sheet

Significant task 1: The Sewing Machine- Parts and Use

In a whole group students will discuss why it is important for them to know how to properly set up a sewing machine. Guiding questions will be provided as needed to help students make the connection between proper use of a sewing machine and understanding identifying the parts and their function.

In pairs, students then will participate in collaborative hands- on sewing machine labs in which they explore the parts of a sewing machine. Students will be given guiding clues to locate and identify parts of the machine and their purpose: reverse lever, pattern selector dial, stitch length dial, bobbin winding spindle, spool cap, flip top lid, stitch guide, thread tension dial, pressure foot tension dial, bobbin plate cover, thread cutter, pressure foot, feed dogs, light, spool pin, pressure foot screw, carry handle, hand wheel, clutch knob, on/off switch, power socket, needle plate cover, needle clamp, pressure foot lifter, thread take up lever, throat plate, foot control, upper thread guides.

As parts are identified, students will add the name to a picture of the machine, which becomes part of their portfolio. Concurrently, students will highlight the machine parts that must be checked to safely utilize a sewing machine.

In a whole group students will be introduced to preparing a sewing machine for use; including how to wind a bobbin and how to complete the upper and lower thread paths. Demonstrations will be performed utilizing the document camera and a sewing machine. Pictures of machines with thread paths highlighted will be provided and added to construction portfolios. Students are encouraged to follow 21st century learning rubrics- critical thinking skills, problem solving skills and working collaboratively (previously reviewed). Students will work individually to prepare a machine for use, utilizing their portfolio as a guide when needed. Finally, each student will demonstrate safe machine operation in the sewing machine proficiency test.

Timeline: 5 blocks (86 min. blocks)

Key vocabulary: reverse lever, pattern selector dial, stitch length dial, bobbin winding spindle, spool cap, flip top lid, stitch guide, thread tension dial, pressure foot tension dial, bobbin plate cover, thread cutter, pressure foot, feed dogs, light, spool pin, pressure foot screw, carry handle, hand wheel, clutch knob, on/off switch, power socket, needle plate cover, needle clamp, pressure foot lifter, thread take up lever, throat plate, foot control, upper thread guides.

Timeline: 5 class periods (86 min. blocks)

Common learning experiences:

- Review of school-wide rubric goal #2- working collaboratively
- Review of school-wide rubric goal #4- critical thinking
- Review of school-wide rubric goal #5- problem solving
- Hand tool exploration -understanding hand tools - Key vocabulary to go into portfolio: tape measure, seam/seam gauge, yard stick, pin cushion, shears, pinking shears, seam ripper, rotary cutter, tracing wheel, tailor's chalk, fabric marking pen, clover markers, disappearing markers, thimble, needle threader, pointer, thread, fabric, ironing board, iron, pressing ham, sewing machine.
- Direct instruction/guiding questions to supplement student findings
- Tool hunt
- Sewing machine exploration
- "Every Time Before You Sew" checklist for safe use of sewing machine
- Learning how to wind a bobbin, and thread the machine
- Exit Slips-what did you learn today slips

Common assessments including the end of unit summative assessment:

- Pre-test – vocabulary
- Informal assessment of hand tool knowledge
- Portfolio check
- Tool quiz-vocabulary
- Machine parts pre-test
- Use of machine proficiency test

- Vocabulary post test

Common rubrics:

- School-wide rubric #2- working collaboratively
- School- wide rubric #4-critical thinking
- School- wide rubric #5- problem solving
- Garment construction rubric

Teacher notes:

Prior to unit I students will set up a construction portfolio. This portfolio will be utilized throughout the semester for a variety of purposes. The portfolio consists of the following categories: Course formation, Tools of the trade, Machine Parts/Machine Threading Instructions, 'Every Time Before You Sew' information sheet, Vocabulary, Patterns: envelopes & symbols, Body Measurements, Textiles, Assessing seams, Sewing samples, Questions/Reflections.

Prior to introduction to tools and the sewing machine, review school- wide rubric #2 working collaboratively, #4- critical thinking, and #5 problem solving.

Provide students with tool pages for their portfolio for the hand tool common learning experience

Regarding significant task 1- Provide students with pictures of the sewing machine to assist in learning the parts, the steps to wind a bobbin and thread the machine.

For the lesson on the sewing machine parts, provide guiding hints and tips on parts as needed; such as 'when you turn this the needle goes up and down', 'this helps hold the fabric down when you sew', etc.

Windsor Public Schools
Curriculum Map for the Secondary Level
Fashion & Clothing I

Name of the Unit: Construction Portfolio Unit 2	Length of the unit: 12 Blocks (86 min. blocks)
Purpose of the Unit: The purpose of this unit is to provide students with the opportunity to learn and practice sewing skills and techniques. Students will learn marking techniques, a variety of seam styles and top stitching methods. Students then will demonstrate their understanding of concepts through the creation of hand sewing samples. After completing their samples, students will learn how to accurately assess quality seams and construction skills through the use of self- assessment rubrics. There is significant focus on the 21st century learning skills in this unit: problem-solving, critical thinking, and working collaboratively.	

FACS Standards Addressed in this unit:
Explain the purpose of and use a variety of equipment, tools, and supplies for apparel and textiles construction, alteration, and repair D13.
Demonstrate skills needed to produce, alter, or repair textile products and apparel 11.13

Common Core State Standards Addressed in the unit:
Vocabulary Acquisition and Use 10.L.4: Determine or clarify the meaning of unknown and multiple meaning words and phrases based on reading and context**.**
Conventions of Standard English 10.L.1: Demonstrate command of the conventions of standard English and usage when writing or speaking.
Comprehension and Collaboration 10.SL.1: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on topics, texts and issues.

Big Ideas:	Essential Questions:
• Knowing how to produce, alter, or repair textile products and apparel is a life skill. • Proper preparation promotes success. • Problem-solving skills are useful beyond the classroom.	• How can creativity be demonstrated in garment construction? • Can garment construction be a form of art? • Why is it important to learn how to self-assess?
Students will know: • The best method of transferring pattern marking to the fabric based on fabric type • Types of seam finishes best suited for a variety of fabrics • The attributes of hand vs. machine sewing	Students will be able to: • Demonstrate three methods for transferring pattern markings to fabric: tailor's chalk, tracing paper and wheel, tailor tacks. • Demonstrate straight, curved, and 90° turns. • Use proper construction methods to sew: seams: standard 5/8" seam seam finishes: zig-zag, serged, stitched and pinked darts: single-pointed hem finishes: hand and machine elastic casing gathering closures: buttons, hook and eye

Significant task 1: Construction Portfolio- samples part 1-marking fabric
Students, in a whole group, will be presented information on a variety of marking techniques. The document camera will be utilized for demonstration purposes. Students will be invited to participate in the demonstration and encouraged to discover methods of marking. A whole group discussion will be utilized to determine which methods are best suited to different fabrics/applications.

Following the demonstration, students will be given the materials necessary to complete various marking techniques. As they work individually, students will be encouraged to utilize resources within the classroom: their sample construction portfolio, peer assistance, written information, class word wall, and course text. Upon completion of their samples, students will assess both their work and their demonstration of 21st century skills utilizing rubrics, and then add the samples into their construction portfolio.

In this and subsequent units, vocabulary will be presented as it arises from group and individual projects. Students will use nonlinguistic representation methods to gain mastery of the concepts, and then add their work to their portfolio. In addition, as vocabulary terms are reviewed, students will add the words to the class word wall.

Timeline: 2 blocks (86 min. blocks)

Key vocabulary: tailor's chalk, tracing paper, tracing wheel, tailor tacks, fabric markers

Resources: marking tools, fabric, sample portfolio, Clothing Construction book; McGraw-Hill, self-assessment rubrics

Common learning experiences:

- sewing techniques and their application to a variety of fabrics
- various aspects of sewing techniques and their application to a variety of garments
- vocabulary -non-linguistic representation
- word wall
- hand sewing techniques
- machine sewing techniques
- direct instruction to supplement student findings
- create construction portfolio
- exit slips

Common assessments including the end of unit summative assessment:

- self-assessment – marking rubric
- self-assessment – hand sewing samples rubric
- self-assessment – machine sewn samples rubric
- end if unit summative assessment – written format
- self-assessment – 21st century learning rubrics – problem solving skills, critical thinking, and working collaboratively

Teacher notes:

Prior to the start of the construction portfolio, students will have a short lesson on the topography of fabric; this should include lengthwise grain, cross grain, finished edge, raw edge, fold, straight of the grain. Although fabric topography is a short lesson it is an essential lesson prior to the start of the construction portfolio.

It is also recommended that students brainstorm and compile a list of reasons for completing a construction portfolio, including ways completion of the portfolio will aid in garment construction.

Students are strongly encouraged to practice problem-solving, critical thinking and collaborative work skills in this course. The 21st century learning rubrics – problem-solving skills, critical thinking, and working collaboratively should be reviewed prior to introducing the construction portfolio.

While there is a timeframe for this portfolio, students should be encouraged to work at their own pace. Students who excel should be provided with additional samples to complete to extend and deepen their learning.

Windsor Public Schools
Curriculum Map for the Secondary Level
Fashion & Clothing I

Name of the unit: Use of a commercial pattern for garment construction Unit 3	Length of the unit: 20 blocks (86 minutes blocks)
Purpose of the unit: The purpose of this unit is to give students the opportunity to explore the various aspects of a commercial pattern: pattern envelope, instruction sheets, and pattern symbols and then use a pattern to construct two garments. Significant emphasis is placed on 21st century learning skills: problem solving skills, working collaboratively and critical thinking skills.	

FACS Standards Addressed in this unit:
Explain the purpose of and use a variety of equipment, tools, and supplies for apparel and textiles construction, alteration, and repair D13.
Demonstrate skills needed to produce, alter, or repair textile products and apparel 11.13

Common Core State Standards Addressed in the unit:
Vocabulary Acquisition and Use 10.L.4: Determine or clarify the meaning of unknown and multiple meaning words and phrases based on reading and context
Conventions of Standard English 10.L.1: Demonstrate command of the conventions of standard English and usage when writing or speaking

Comprehension and Collaboration 10.SL.1: initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on topics, texts and issues.

Big Ideas: • Knowledge is a key to success in any endeavor. • Having the skills needed to produce, alter, or repair textile products and apparel is a life skill.	Essential Questions: • Why "do it yourself" if you can afford ready-made items? • How does proper fit affect the look of apparel? • Does tool quality matter?
Students will know: • The uses of a commercial pattern • The topography of fabric	Students will be able to: • Demonstrate an understanding of commercial pattern instructions, proper layout techniques, pattern markings, and symbols. • Utilize basic skills for constructing and altering textile products and apparel • Demonstrate 21st century learning skills as they apply to project-based learning.

Significant task 2: Garment Construction

Students will work in small groups of 2 to 3 to determine proper layout of their pattern pieces. After determining proper layout, students will cut out their fabric, mark their fabric as needed, and begin the construction process. Each student in the small group will carry out these tasks for their own garments. As students progress through the construction process, they will be encouraged to utilize 21st century learning skills; problem solving, cooperative work, and critical thinking. As students develop their construction skills, they will be encouraged to work as independently as possible and to utilize resources available to them with in the classroom: construction boards, construction portfolios, word wall, peer assistance, and teacher guidance.

Upon completion of their project, students will assess their garment and their mastery of the 21st century skills utilized in this task. After completing their assessment, each student will meet with the teacher to review their findings.

Timeline: 12 blocks (86 min. blocks)

Key vocabulary: all vocabulary is from prior units –to be applied during the project based learning

Resources: commercial patterns, project boards, construction portfolios, clothing book– McGraw-Hill

Common learning experiences:

- vocabulary; nonlinguistic representation
- practice taking body measurements and converting results to pattern sizes
- pattern envelope exploration
- practice of layouts, cutting out, and marking
- garment construction
- self-assessment of garments
- conferencing with teacher
- exit slips

Common assessments including the end of unit summative assessment:

- written assessment of new learning
- ongoing self-assessment utilizing project boards, construction portfolios, peer and teacher feedback
- self-assessment utilizing garment construction rubric
- self-assessment utilizing 21st-century learning rubrics
- teacher assessment of garment quality
- teacher assessment of 21st century learning skills development

Teacher notes:
Prior to the start of significant task one students will learn how to take accurate body measurements and learn how to apply them to proper selection of pattern size.

It has been helpful to provide students with project boards based on the garments they are constructing. These boards, which provide both visual and written step-by-step instruction, allow students to improve their problem-solving skills through comparing and contrasting their own work with the work on the project board.

It is typical to see a wide range of skill levels in garment construction. For this reason, differentiating both instruction and product are important. Additional learning experiences should be made available for students who excel as well as additional guidance for students who struggle.

If time permits near the end of the semester, students may be assigned an independent research project. Working in small groups of 3-5, students research the history and development of a specific aspect of fashion and clothing. Using presentation technology, each group creates a timeline of important dates, descriptive passages, and appropriate images to reflect the information they learned. An exemplar should be presented and available for reference. As part of the project, students submit both source and note-taking pages to support their research.
The project culminates with each group presenting their project to the class.