TOWNSHIP OF UNION PUBLIC SCHOOLS

Grade 7 Mathematics
Curriculum Guide 2015-2016

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Curriculum Revisions
7th Grade Mathematics

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Mission Statement

The mission of the Township of Union Public Schools is to build on the foundations of honesty, excellence, integrity, strong family, and community partnerships. We promote a supportive learning environment where every student is challenged, inspired, empowered, and respected as diverse learners. Through cultivation of students' intellectual curiosity, skills and knowledge, our students can achieve academically and socially, and contribute as responsible and productive citizens of our global community.

Philosophy Statement

The Township of Union Public School District, as a societal agency, reflects democratic ideals and concepts through its educational practices. It is the belief of the Board of Education that a primary function of the Township of Union Public School System is to formulate a learning climate conducive to the needs of all students in general, providing therein for individual differences. The school operates as a partner with the home and community.

Statement of District Goals

- Develop reading, writing, speaking, listening, and mathematical skills.
- Develop a pride in work and a feeling of self-worth, self-reliance, and self discipline.
- Acquire and use the skills and habits involved in critical and constructive thinking.
- Develop a code of behavior based on moral and ethical principals.
- Work with others cooperatively.
- Acquire a knowledge and appreciation of the historical record of human achievement and failures and current societal issues.
- Acquire a knowledge and understanding of the physical and biological sciences.
- Participate effectively and efficiently in economic life and the development of skills to enter a specific field of work.
- Appreciate and understand literature, art, music, and other cultural activities.
- Develop an understanding of the historical and cultural heritage.
- Develop a concern for the proper use and/or preservation of natural resources.
- Develop basic skills in sports and other forms of recreation.

Course Description

This course is designed to cover all 7th grade common core standards The seventh grade math curriculum is currently aligned with the CCSS. All skills required for mastery are a part of the seventh grade proficiency list. All lessons are created to address differentiated learning styles to ensure each lesson's objective is obtained by each student. The seventh grade curriculum focuses on five critical areas: (1) connecting ratio and rate to solve problems; (2) completing understanding of operations of decimals and fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; (4) develop an understanding of statistical thinking along with understanding of theoretical and experimental probability; and (5) completing understanding of geometrical relationship including angle properties and area/volume.

Recommended Textbooks:

Holt McDougal Mathematics Grade 7
(Common Core edition)

Course Proficiencies

Students will be able to…

- **Apply and extend previous understanding of operations with fractions to add, subtract, multiply, and divide rational numbers.**
- **Analyze proportional relationships and use them to solve real-world and mathematical problems**
- **Use properties of operations to generate equivalent expressions**
- **Solve real-life and mathematical problems using numerical and algebraic expressions and equations.**
- **Use random sampling to draw interfences about a population.**
- **Draw informal comparative inferences about two populations.**
- **Investigate chance processes and develop, use, and evaluate probability models.**
- **Draw, construct, and describe geometrical figures and describe the relationships between them.**

Curriculum Units

Unit 1: **The Number System**

Unit 2: **Ratios and Proportional Relatioships**

Unit 3: **Expressions and Equations**

Unit 4: **Statistics and Probability**

Unit 5: **Geometry**

Pacing Guide
7h Grade

Content		Number of Days
Unit 1:	The Number System	48 days
Unit 2:	Ratios and Proportional Relationships	36 days
Unit 3:	Expressions and Equations	36 days
Unit 4:	Statistics and Probability	28 days
Unit 5:	Geometry	32 days
	TOTAL	180 DAYS

Chapter Order
1,2,3,11,4,5,6,7,10,8,9

Unit 1: The Number System

Essential Questions	Instructional Objectives/ Skills and Benchmarks(*CPIs*)	Activities and Examples **Real world applications (tiered to ability), stations, problems around the room, ecr, tic-tac-toe, and choice menus across all units**	Assessments
What are rational numbers? How do you add, subtract, multiply, and divide decimals and fractions? How do you add, subtract, multiply, and divide integers? How do you use algebraic properties to solve and understand operations of rational numbers? How can you represent rational numbers in real life and on a number line? How do you convert in between rational number?	**Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers** **(7.NS.1)** Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram	**For example,** 1) Selena picked ¾ quart of strawberries. She ate 1/12 quart, How much was left? 2) Suppose the pattern 1, 7/8, ¾, 5/8, ½,… continued forever. Make a conjecture about the rest of the numbers in the pattern. Draw a number line.	• Quizzes • Chapter Tests • District CEMPA Exams • Performance Assessments • Cross-curricular Projects • Spiral reviews/Dipstick Quiz • Teacher Observation • Extended Constructed

How can we use a number line to determine the placement of rational numbers after given operations? How can we apply rational numbers and operations to solve real world problems? How do operations affect numbers?	**(7.NS.1A)** Describe situations in which opposite quantities combine to make 0. **(7.NS.1B)** Understand p + q as the number located a distance $\|q\|$ from p, in the positive or negative direction depending on whether q is positive or negative. Interpret the sums of rational numbers by describing real-world contexts.	**For example,** 1) temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. 2) –(–3) = 3, and that 0 is its own opposite. **For example,** For an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.	Response • Find the Mistake Critical Thinking

	(7.NS.1C) Understand the subtraction of rational numbers as adding the additive inverse, p – q = p + (-q). Show that the distance between two rational numbers on the number line is the absolute value of their difference. **(7.NS.2)** Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. **(7.NS.2A)** Understand the multiplatication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property. **(7.NS.2B)** Understand that integers can be divided, provided that the divisor is not	**For example,** Recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars. **For example,** How many ¼ lb hamburger patties can be made from a 10¼ lb package and an 11½ package of meat? **For example,** Which expression is greater thatn 5 5/8? a) 8 x 9/16 b) -7/9 x (-8 2/7) c) 3 ½ x 5/7 d) -3/7 x 14/27 **For example,** As a front passed, the temperature changed steadily over 6 hours.	

	0, and every quotient of integers is a rational number. **(7.NS.2C)** Apply properties of operations as strategies to multiply and divide rational numbers. **(7.NS.2D)** Convert a rational number to a decimal using long division. **(7.NS.3)** Solve real-world and mathematical problems involving the four operations with rational numbers.	Altogether it changed -18 degrees. What was the change in temperature per hour for the 6 hours? **For example,** $(-1)^5 \times (9 + -3)$ **For example,** On a test, Caleb answered 73 out of 86 questions correctly. What portion of the test was correct? Write your answer as a decimal rounded to the nearest thousandth. **For example,** John left school with $2.38. He found a quarter on his way home and then stopped to buy a banana for $0.89. How much money did he have when he got home?	

		Interactive Activities **Human Number Line** (Students order themselves from least to greatest based on the integer they are holding, including absolute values) **Graphic Organizer** (students fill in graphic organizer giving explanations of properties with examples) **Integer War-** Red cards represent negative and black cards represent positives. Flip two cards and find their sum. The player with the greatest sum wins the cards. **Rational Numbers Operations BINGO** In groups, students will	

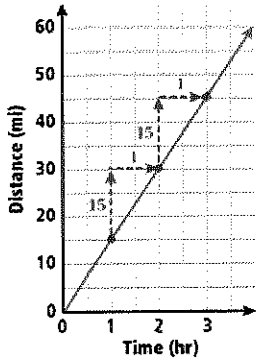
		solve either an integer, fraction, or decimal operation problems from a stack of bingo "calling cards". If the answer is on their individual game board, they get to place a chip on it. The first student to get five in a row will win. **Integer Operations Flipchart** Students will create a "how-to" booklet on the rules for solving addition, subtracting, multiplication, and division of integer problems. They must also demonstrate each rule by providing two examples. **Rational Number Conversion & Number Line** Students will be given either a fraction or decimal, they are to convert all fraction into all	

		decimals or all decimals into fractions. Then the students are plot the rational number on a number line to show order. **Fractions/Integers/ Decimals for Dummies** Students are to create a how to manual on their chosen type of rational number. **Teach ME** In groups, students are assigned an operation with rational numbers topic. Together they are to create a lesson, complete with PPT, handouts, and HW for all. They are to present to class.	

Unit 2: Ratios and Proportional Relationships

Essential Questions	Instructional Objective/ Skills and Benchmarks	Activities and Examples Real world applications (tiered to ability), stations, problems around the room, ecr, tic-tac-toe, and choice menus across all units	Assessments
What are ratios and how can they be used to solve real life problems? How do you calculate unit rate and how do you interpret it in context of a real-world scenario? How can you determine whether two quantities are in a proportional relationship? How do you use proportions to solve percent problems? How do you represent proportional relationships by using equations?	**Analyze proportional relationships and use them to solve real-world and mathematical problems.** **(7.RP.1)**Compute unit rates associated with ratios of fractions, including ratios of lengths, area, and other quantities measured in like or different units. **(7.RP.2)**. Recognize and represent proportional relationships between quantities.	**For example,** "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger." **For example,** if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?	• Quizzes • Chapter Tests • District CEMPA Exams • Performance Assessments • Cross-curricular Projects • Spiral reviews • Teacher Observation • Find the Mistake Critical Thinking

	(7.RP.2A) Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	**For example,** Use the data in the table to determine whether the ratios of oats to water are proportional for both servings of oatmeal? Servings: 8, 12 Oats: 2, 3 Water: 4, 6	• Extended Constructed Response
	(7. RP.2B) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	**For example,** The Lawsons stop at a roadside market. The market offers lemonade in three sizes. Which size lemonade has the lowest price per fl oz? Size: 12 fl oz, 18 fl oz, 24 fl oz Price: $0.89, $1.69, $2.09	
	(7.RP.2C) Represent proportional relationships by equations.	**For example,** Density is the ratio of a substance's mass to its volume. The density of ice is 0.92 g/mL. What is the of 3 mL of ice?	

	(7.RP.2D) Explain what a point (x,y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0,0) and (1,r) where r is the unit rate.	**For example,** Using the graph, Does the cyclist travel at a constant or variable speed. How fast was he going per hour?  	
	(7.RP.3) Use proportional relationships to solve multistep ratio and percent problems.	**For example,** The regular price of an MP3 player is $79.99. This week the MP3 player is on sale for 25% off. What is the sale price? Use a proportion to solve.	

		<u>Interactive Activities</u> **School Store** (Students shop in another classroom, finding discount, tax) **Shopping School Supplies** (Students use coupons from circulars to shop for school supplies and then find total with tax) **Biggest Loser** (Students watch a clip from the show "Biggest Loser", they record their starting and ending weights, and find their percent of change. Before they do calculations, they predict who will be voted off, discuss if the weight loss is a fair way to win the game, then introduce the percent of weight loss.)	

		Comparing Ratio and Rates around the room activities (Students will compete in different activities around the room such as hitting target, making a basketball shop, hula hooping, and jump roping. Based on different times they need to find each person's unit rate to find the winner of each competition.) **Decimal to Fraction to Percent Pair Up** (Students will be given cards with a decimal, fraction or percent and have to find their match) **Better deal?** Students are to look through supermarkets ads and find two similar items are compare unit rates to decide which deal was better?	

Unit 3: Expressions and Equations

Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities and Examples **Real world applications (tiered to ability), stations, problems around the room, ecr, tic-tac-toe, and choice menus across all units**	Assessments
How can you represent an unknown quantity in an expression or equation? How do you translate real life situations into expressions or equations? How do you use properties to generate equivalent expressions? How can evaluating expressions and solving equations be related to real world problems? How do you solve multi step equations including all rational numbers (integers, fractions, and decimals)?	**Use properties of operations to generate equivalent expressions.** **(7.EE.1)** Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. **(7.EE.2)** Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.	**For example,** Simplify the expression. 3(p + 9q – 2 + 9) **For example,** a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."	• Quizzes • Chapter Tests • District CEMPA Exams • Performance Assessments • Cross Curricular Projects • Spiral Review/Dipstick Quiz • Teacher Observation • Extended Constructed

How do you know if a number is a solution to the equation? What is an inequality and how do you solve it? How can we use equations and expression to represent real world problems? What is slope? Why is it relevant to an equation? How do you graph an equation?	**Solve real-life and mathematical problems using numerical and algebraic expressions and equations.** **(7.EE.3)** Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. **(7.EE.4)** Use variables to represent quantities in a real-world or mathematical	***For example,*** If a womanmaking $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation. **For example,** the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?	Responses • Find the Mistake Critical Thinking

	problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. **(7.EE.4A)** Solve word problems leading to equations of the form px + b = r and p(x +q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. **(7.EE.B.4b)** Solve word problems leading to inequalities of the form *px* + *q* > *r* or *px* + *q* < *r*, where *p*, *q*, and *r* are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	**For example,** A long distance phone company charges $1.01 for the first 25 minutes of the call, and then $0.09 for each additional minute. A call costs $9.56. How long did it last? **For example,** As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions. **Interactive Activities** **Taxi Equation Problems** Given a "newspaper	

		advertisement" students must create and solve two-step equations to find the taxi fare according to various distances traveled **Calling Africa?** Students are to write an equation given a scenario to solve how much time was the call to Africa for. Students are then to use that equation to create a table of how much the phone call would cost for x amount of minutes. **Simplifying Expressions TIC TAC TOE** Students will work in pairs to simplify expression involving a rational coefficient on a Tic Tac Toe Board. The first student to get three in a row will win. **Write your own word problems** (Based on an expression,	

		equation, and/or inequality write a corresponding word problem that would require you to write that expression, equation, or inequality as your solution. Solve and interpret what the solution means.) **"??Inequality??"** (Students match the written inequality statement with its equation, then solve and graph. Students display their answers on a poster)	

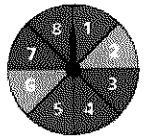
Unit 4: Statistics and Probability

Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities and Examples **Real world applications (tiered to ability), stations, problems around the room, ecr, tic-tac-toe, and choice menus across all units**	Assessments
What is data and what can it describe? How can we use random sampling to produce a representative sample? How can you describe the spread of a data distribution? What graphical representations can be formed from the data, and when is each appropriate? How do you summarize data in context of the problem given?	**Use random sampling to draw inferences about a population.** **(7.SP.A.1)** Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	**For example,** "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.	• Quizzes • Chapter Tests • District CEMPA Exams • Performance Assessments • Cross-curricular Projects • Spiral reviews/Dipstick Quiz • Teacher Observation • Extended Constructed

How can we examine the differences between experimental and theoretical probability? How can we use experimental probability to make predictions? What does the likeness of an event tell us? What inferences can be made? How can we use tree diagrams, organized lists, and the counting principle to find the total outcomes? How can we use these representations to find the probability of events? How do we find the probability of a compound event? How do we use simulations to generate frequencies for simple and compound events?	**(7.SP.A.2)** Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. **Draw informal comparative inferences about two populations.** **(7.SP.3)** Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.	**For example,** Estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be. **For example,** The mean height of players on the basketballteam is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is	Response • Find the Mistake Critical Thinking

	(7.SP.4) Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. **Investigate chance processes and develop, use, and evaluate probability models.** **(7.SP.5)** Understand that the probability of a chance event is a numberbetween 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2	noticeable. **For example,** Decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book. **For example,** Is the likelihood of the event impossible (0), unlikely, as likely as not, likely, or certain (1)…rolling a seven on a number cube.	

	indicates an event that is neither unlikely nor likely, and a probability near 1 indicates alikely event. **(7.SP. 6**) Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long run relative frequency, and prdict the approximate relative frequency given the probability. **(7.SP.7)** Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies **(7.SP.7A)** Develop a uniform	**For example,** If you roll a number cube 15 times, about how many times do you expect to roll a number less than 6? **For example,** Create a tree diagram to find all possible outcomes of flipping a coin 3 times. Then, flip a coin 3 times to find out the experimental probability. How does that compare to the theoretical and the mode? **For example,** Use the spinner to determine the probability of landing on yellow.	

	probability model by assigning equal probability to all outcomes and use model to determine probability of events. **(7.SP.7B)** Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance. **(7.SP.8)** Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.	 **For example,** In a bag, there are 3 marbles…2 red and 1 blue. Create a tree diagram to determine all outcomes and find the probability of pulling 2 red marbles. **For example,** Jan rolls two number cubes. What is the probability that the sum of the two number cubes will equal 5? Make a table of possible outcomes in the sample space and then determine which pairs have a sum of 5. **For example,** Chaz rolls two number cubes. What is the probability that thesum of the	

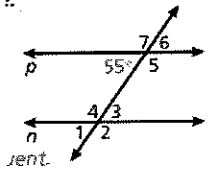
	(7.SP.8a) Understand that , just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. **(7.SP.8b)** Represent sample spaces for compound events using methods such as organized lists, tables, tree diagrams, For an event described in everyday language (e.g. "rolling double sixes"), identify the outcomes in the sample space which compose the event. **(7.SP.8c)** Design and use a simulation to generate frequencies for compound events.	two numbers will be 7? Write the probability as a fraction. **For example,** Baby Alyssa arranges blocks for the letters A, B, and T. What is the probability that her arrangement spells a three letter word. Create a table to find all possible outcomes in the sample space and then determine all 3 letter words. **For example,** Technology Lab: Simulations text pg 424-425 **<u>Interactive Activities</u>** **Horse Race** (Roll 2 dice, horses numbered 1-12 are racing, students choose the horse they want to win, see results; compare possible	

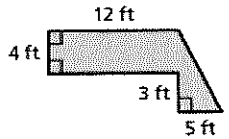
		outcomes and fairness of race) **Lets Take a Spin** (Students look at a spinner with pieces unevenly divided. They predict who they think will win a proposed game. Then students are asked to change the rules of the game – not the division of the spinner – to make the game fair.) **Pi Day Activity:** (Have students make a frequency table from the first 100 digits of pi, make a bar graph and analyze the percent of each digit that appears.) Then use chart to find various probabilities. **Get your own data** Students will roll a dice 50 times…record data and then use the experimental probability and compare it to its theoretical probability.	

Unit 5: Geometry

Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities and Examples **Real world applications (tiered to ability), stations, problems around the room, ecr, tic-tac-toe, and choice menus across all units**	Assessments
How do we use actual lengths and areas from a scale drawing to reproduce another scale drawing at a different scale? How do we use angle properties to classify and figure out missing angle measures? What is area and how do you calculate the area of different figures?	**Solve real-world and Draw, construct, and describe geometrical figures and describe the relationships between them.** **(7.G.A.1)** Solve problems involving scale drawings of geometric figures, including computing and reproducing a scale drawing at a different scale.	**For example,** On a map of Florida, the distance between Hialeah and Tampa is 10.5 cm. The map scale is 3 cm:128 km. What is the actual distance between the 2 cities?	• Quizzes • Chapter Tests • District CEMPA Exams • Performance Assessments • Cross-curricular Projects • Spiral reviews/Dipstick Quiz

How can we describe a 2 dimensional "slice" from a 3 dimensional figure? How can you calculate surface area and volume of three-dimensional figures? How can we connect geometry to real world problems?	**(7.G.A.2)** Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. **(7.G.A.3)** Describe the two-dimensional figures that result from slicing threedimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. **Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.** **(7.G.B.4)** Know the formulas for the area and circumference of a circle and use them to	**For example,** Divide a hexagon into triangles to find the sums of its angle measures. **For example,** Sketch and describe the cross section of a cone that is cut parallel to its base. **For example,** Find the circumference of a	• Teacher Observation • Extended Constructed Response • Find the Mistake Critical Thinking

	solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	circle that has a radius of 3.5 in.	
	(7.G.B.5) Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	**For example,** Line n is parallel to line p. Find the measure of each angle. Write and solve equations for each unknown angle measure.  *jent.*	
	(7.G.B.6) Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	**For example,** Chandra wants to carpet the floor of her closet. A floor plan of the closet is shown below. How much carpet does she need?	



Interactive Activities

How Am I Special?
Students create a "How Am I Special" poster, describing all different polygons and angles showing examples of each.

Create a Figure
Students use manipulative shapes to create complex figures, then find the total area of their figure.

Irregular Figure: ECR
Students are to find the area of an irregular find given model and all needed

		dimensions. Students will then use that information to find actual costs of material required in problem. **Solve for Surface Area and Volume of 3-D objects** Students will find the surface area and volume of 3-D objects such as a can, cereal box, tissue box, party hat, etc. **Find missing angles** Given two parallel lines that can be slide up and down a transversal, have students slide one parallel line onto another to see angle relationships. Given two intersecting lines, have students move the lines toward each other and away from each other to make conclusions about vertical angles. **Cross Section** Have students cut through a 3-D shape to explore cross sections.	

MATHEMATICS EXTENDED CONSTRUCTED RESPONSE RUBRIC

4

The response indicates application of a reasonable strategy that leads to a correct solution in the context of the problem. The Representations are correct. The explanation and/or justification is logically sound,clearly presented, fully developed, supports the solution, and does not contain significant mathematical errors. The response demonstrates a complete understanding and analysis of the problem.

3

The response indicates application of a reasonable strategy that may or may not lead to a correct solution. The representations are essentially correct. The explanation and/or justification is generally well developed, feasible, and supports the solution. The response demonstrates a clear understanding and analysis of the problem.

2

The response indicates an incomplete application of a reasonable strategy that may or may not lead to a correct solution. The representations are fundamentally correct. The explanation and/or justification supports the solution and is plausible, although it may not be well developed or complete. The response demonstrates a conceptual understanding and analysis of the problem.

1

The response indicates little or no application of a reasonable strategy. It may or may not have the correct answer. The representations are incomplete or missing. The explanation and/or justification reveals serious flaws in reasoning. The explanation and/or justification may be incomplete or missing. The response demonstrates a minimal understanding and analysis of the problem.

0

The response is completely incorrect or irrelevant. There may be no response, or the response may state, "I don't know."

TOWNSHIP OF UNION PUBLIC SCHOOLS

Grade 8 Pre Algebra
Curriculum Guide 2015-16

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TOWNSHIP OF UNION PUBLIC SCHOOLS

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Assistant Superintendent..... **Dr. Noreen Lishak**

Assistant Superintendent ..... **Ms. Annie Moses**

Board Attorney/Secretary..... **Mr. James Damato**

School Business Administrator..... **Mr. Manuel Vieira**

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Director of Special Projects ..... **Ms. Ann Hart**

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Special Services Pre-K - 8	Ms. Kristin Szawan
Special Services Pre-K - 8	Mr. Frank Santora
Special Services 9-12	Mr. Joseph Seugling
Pre-K English/Math/Science/SS	Ms. Maureen Corbett
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Mathematics 2-5/Science 2 -5	Ms. Theresa Matthews
English 6-12	Ms. Randi Moran
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Career Ed, World Language, ESL	Ms. Yvonne Lorenzo
Art, Music K -12	Mr. Ron Rago

Curriculum Committee
Grade 8/Pre Algebra

Robyn Furman

Lauren Whitford

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Mission Statement

The Township of Union Board of Education believes that every child is entitled to an education designed to meet his or her individual needs in an environment that is conducive to learning. State standards, federal and state mandates, and local goals and objectives, along with community input, must be reviewed and evaluated on a regular basis to ensure that an atmosphere of learning is both encouraged and implemented. Furthermore, any disruption to or interference with a healthy and safe educational environment must be addressed, corrected, or when necessary, removed in order for the district to maintain the appropriate educational setting.

Philosophy Statement

The Township of Union Public School District, as a societal agency, reflects democratic ideals and concepts through its educational practices. It is the belief of the Board of Education that a primary function of the Township of Union Public School System is to formulate a learning climate conducive to the needs of all students in general, providing therein for individual differences. The school operates as a partner with the home and community.

Statement of District Goals

- Develop reading, writing, speaking, listening, and mathematical skills.
- Develop a pride in work and a feeling of self-worth, self-reliance, and self discipline.
- Acquire and use the skills and habits involved in critical and constructive thinking.
- Develop a code of behavior based on moral and ethical principles.
- Work with others cooperatively.
- Acquire a knowledge and appreciation of the historical record of human achievement and failures and current societal issues.
- Acquire a knowledge and understanding of the physical and biological sciences.
- Participate effectively and efficiently in economic life and the development of skills to enter a specific field of work.
- Appreciate and understand literature, art, music, and other cultural activities.
- Develop an understanding of the historical and cultural heritage.
- Develop a concern for the proper use and/or preservation of natural resources.
- Develop basic skills in sports and other forms of recreation.

Course Description

The Grade 8 Pre-Algebra course provides the foundation in algebra, geometry, and problem solving that is needed for success in algebra with a strong focus on algebraic concepts and reasoning. The eight grade curriculum is currently aligned with the CCSS. All skills required for mastery are a part of the eighth grade proficiency list. All lessons are created to address differentiated learning styles to ensure each lesson's objective is obtained by each student.

In Grade 8, instructional time should focus on three critical areas:

(1) Formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations.

(2) Grasping the concept of a function and using functions to describe quantitative relationships.

(3) Analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem.

Recommended Textbooks

Holt McDougal
Larson
Pre-Algebra

Course Proficiencies

The Number System

- Know that there are numbers that are not rational, and approximate them by rational numbers.

Expressions and Equations

- Work with radicals and integer exponents.
- Understand the connections between proportional relationships, lines, and linear equations.
- Analyze and solve linear equations and pairs of simultaneous linear equations.

Functions

- Define, evaluate, and compare functions.
- Use functions to model relationships between quantities.

Geometry

- Understand congruence and similarity using physical models, transparencies, or geometry software.
- Understand and apply the Pythagorean Theorem.
- Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.

Statistics and Probability

- Investigate patterns of association in bivariate data.

Curriculum Units

Unit 1: The Number System

Unit 2: Expressions and Equations

Unit 3: Functions

Unit 4: Geometry

Unit 5: Statistics and Probability

Pacing Guide- Course

	Content	# of Days
Unit 1	The Number System	22
Unit 2	Expressions and Equations	40
Unit 3	Functions	40
Unit 4	Geometry	34
Unit 5	Statistics and Probability	26
PARCC TESTING		10
CEMPA'S		8

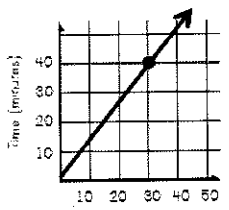
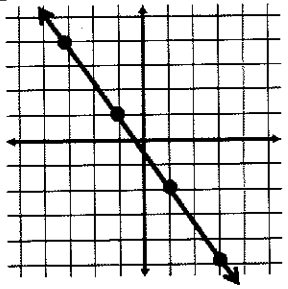
Unit 1: The Number System

CCSS	Student Learning Objectives	Activities/Examples/ Assessments
8.NS.A.1	**Know that there are numbers that are not rational, and approximate them by rational numbers.** • Know that numbers that are not rational are called irrational. • Understand informally that every number has a decimal expansion. • For rational numbers show that the decimal expansion repeats. • Convert a decimal expansion which repeats eventually into a rational number.	• Convert $\frac{25}{9}$ into a decimal. • Convert 0.4444… into a fraction.
8.NS.A.2	**Know that there are numbers that are not rational, and approximate them by rational numbers.** • Use rational approximations of irrational numbers to compare the size of irrational numbers • Locate rational approximates of irrational numbers on a number line • diagram. • Estimate the value of expressions (e.g., π^2).	• Approximate the value of $\sqrt{92}$. Explain how you arrived at your answer. • Make two statements comparing $\sqrt{8}$ and $\sqrt{10}$.

Unit 2: Expressions and Equations

CCSS	Student Learning Objectives	Activities/Examples/ Assessments
8.EE.A.1	**Expressions and Equations Work with radicals and integer exponents.** • Know and apply the properties of integer exponents to generate equivalent numerical expressions.	• Simplify: 3^2 × 3^– 5 = 3^–3 = 1/33 = 1/27 • Solve: $(8^{-3}) \cdot (4^4)$ • Solve: $\frac{(3^{-3})(3^2)}{4^{-4}}$
8.EE.A.2	**Expressions and Equations Work with radicals and integer exponents.** • Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. • Evaluate square roots of small perfect squares and cube roots of small perfect cubes. • Know that $\sqrt{2}$ is irrational.	• Evaluate square roots of small perfect squares and cube roots of small perfect cubes. • Is the $\sqrt{2}$ rational or irrational? • Solve for x: $\sqrt[3]{\frac{27}{512}}$ • Solve for x: $x^2 = \frac{1}{9}$

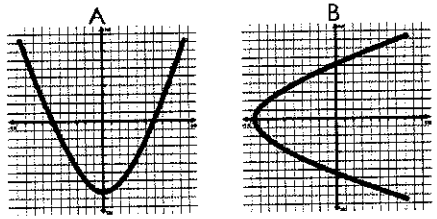
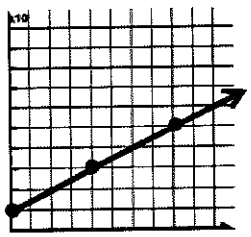
8.EE.A.3	**Expressions and Equations Work with radicals and integer exponents.** • Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.	• Estimate the population of the United States as 3 × 10^8 and the population of the world as 7 × 10^9, and determine that the world population is more than 20 times larger. • Write 3.804×10^{-6} in standard form. • The diameter of the sun is 1.391 million kilometers. Represent this number is scientific notation.
8.EE.A.4	**Expressions and Equations Work with radicals and integer exponents.** • Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are -used. • Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. • Interpret scientific notation that has been generated by technology	• The distance from Mercury to the Sun is 28.5 million miles. The distance from Neptune to the Sun is 2.8 billion miles. Express the distance between Mercury and Neptune in scientific notation. • Simplify. Write your answer in scientific notation. $(6 \times 10^6)(5.12 \times 10^2)$

8.EE.B.5	**Understand the connections between proportional relationships, lines, and linear equations.** • Graph proportional relationships, interpreting the unit rate as the slope of the graph. • Compare two different proportional relationships represented in different ways.	• Graph the given equation on the coordinate plane: $y = -\frac{2}{3}x + 4$ • Kara and Jen both drove at a constant rate. Kara graphed her data and Jen recorded hers in a table. Who was driving faster?  | Miles	Time (minutes) | |---|---| | 20 | 24 | | 40 | 48 | | 60 | 72 |
8.EE.B.6	**Understand the connections between proportional relationships, lines, and linear equations.** • Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane. • Derive the equation y = mx for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.	• Write an equation for the line below. 

8.EE.C.7	**Analyze and solve linear equations and pairs of simultaneous linear equations.** • Solve linear equations in one variable. • Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. • Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers). • Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	• Write an equation of a line that is parallel to the given line and passes through the given point. y=-9x+1: (2,4) • Identify whether the equation below has one solution, no solutions, or an infinite number of solutions. Explain your answer. $-8x + 4 = 2x - 9 - 10x$ • Solve. Show your work. $\frac{(18-6x)}{2} = 4(-2x - 6)$

8.EE.C.8	**Analyze and solve linear equations and pairs of simultaneous linear equations.** • Analyze and solve pairs of simultaneous linear equations. • Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. • Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. • Solve real-world and mathematical problems leading to two linear equations in two variables.	• Each table shows the costs of renting a truck based on the number of miles the truck is driven. Graph the data from both tables on a coordinate plane. • Using the same tables, determine when both truck rentals will cost the same. Explain. **M** / **Cost** 0 / 100 20 / 116 40 / 132 60 / 148 **M** / **Cost** 0 / 105 20 / 117 40 / 129 60 / 141

Unit 3: Functions

CCSS	Student Learning Objectives	Activities/Examples/ Assessments
8.F.A.1	**Define, evaluate, and compare functions.** • Understand that a function is a rule that assigns to each input exactly one output.	• Which set of ordered pairs represents a functional relationship? A: (-7, 6) (-4, 3) (-1, 0) (2, -3) (-4, -6) B: (-7, 6) (-4, 3) (-1, 0) (2, -3) (5, -6) Justify your answer. • Which graph represents a functional relationship? Justify your answer. 
8.F.A.2	**Define, evaluate, and compare functions.** • Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	• Which function has the greatest rate of change? Explain.  | x | y | |---|---| | 2 | 2 | | 3 | 4 | | 4 | 6 |

<table>
<tr>
<td>8.F.A.3</td>
<td>Define, evaluate, and compare functions.

• Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line.
• Give examples of functions that are not linear.</td>
<td>• Does the equation below represent a linear or non-linear relationship? Explain.
$y = \frac{1}{4}x^2 + 4$

• Indicate whether the relationship below is linear or non-linear. Explain.

<table><tr><th>x</th><th>y</th></tr><tr><td>2</td><td>4</td></tr><tr><td>4</td><td>16</td></tr><tr><td>6</td><td>36</td></tr><tr><td>8</td><td>64</td></tr></table></td>
</tr>
<tr>
<td>8.F.B.4</td>
<td>Use functions to model relationships between quantities.

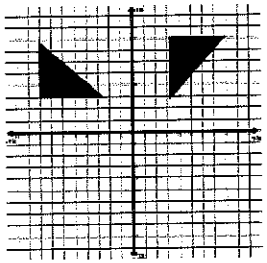
• Construct a function to model a linear relationship between two quantities.
• Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph.
• Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.</td>
<td>• The system of inequalities shown below
$y>2x$
$y<-x+2$

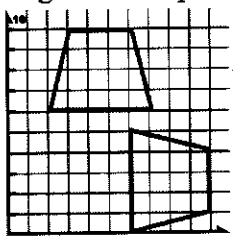
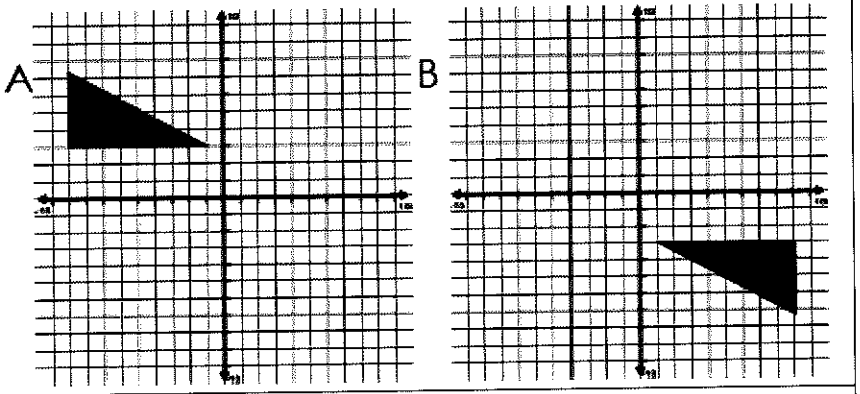
• A SCUBA instructor charges a $150 equipment fee, plus $65 per hour for classes. Write an expression to represent the total cost, c, of lessons as a function of the number of hours, h, of the lesson.

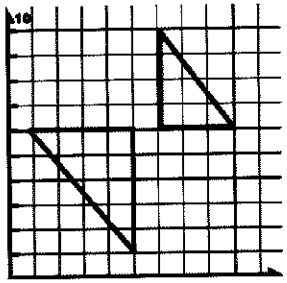
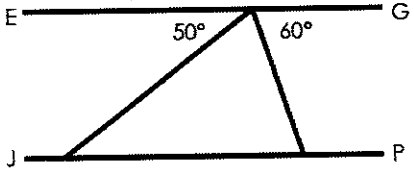
• A line passes through (-6, 1) and (3, 2). What is the equation of the line?</td>
</tr>
</table>

8.F.B.5	**Use functions to model relationships between quantities.** • Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). • Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	• Describe the graph. Be sure to use terms such as linear, non-linear, increasing, decreasing, constant, etc. • Describe a real world scenario that could be modeled by the graph below. Be sure to use terms such as constant, increasing, decreasing, and rate of change, and refer to specific points/intervals on the graph.

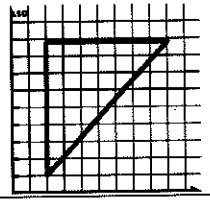
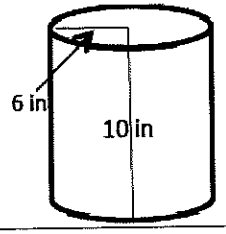
Unit 4: Geometry

CCSS	Student Learning Objectives	Activities/Examples/ Assessments
8.G.A.1	**Understand congruence and similarity using physical models, transparencies, or geometry software.** • Verify experimentally the properties of rotations, reflections, and translations. • Lines are taken to lines, and line segments to line segments of the same length. • Angles are taken to angles of the same measure. • Parallel lines are taken to parallel lines.	• Which single transformation occurred between figures S and T? Justify your answer. 

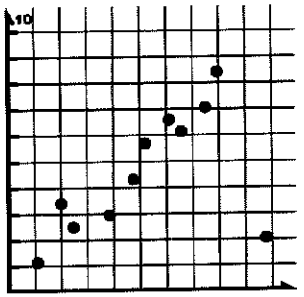
8.G.A.2	**Understand congruence and similarity using physical models, transparencies, or geometry software.** • Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	• Are the figures congruent? Explain.  • Describe a sequence of transformations that results in the transformation of figure A to figure B. 
8.G.A.3	**Understand congruence and similarity using physical models, transparencies, or geometry software.** • Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	• Trapezoid WXYZ is located at W(0, 5), X(3, 8), Y(7, 8), and Z(10, 5). After being translated 8 units left, what are the new coordinates of Point Y? • Triangle JLK is located at J(-8, -3), K(-8, -6), and L(-5, -6). A transformation occurred and now the triangle is located at J(8, -3), K(8, -6), and L(5, -6). What transformation occurred?

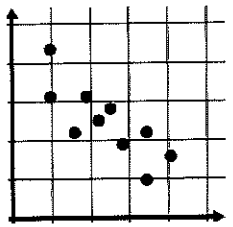
8.G.A.4	**Understand congruence and similarity using physical models, transparencies, or geometry software.** • Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations. • Given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	• What happens to an image when it is enlarged using scale factor between -1 and 1? • Are the figures similar? Explain. 
8.G.A.5	**Understand congruence and similarity using physical models, transparencies, or geometry software.** • Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.	• Lines EG and JP are parallel. The lines that make up the triangle are transversals of lines EG and JP. Show (mathematically) that the sum of the interior angle measurements of the triangle in between the lines is 180°.  • Construct triangle XYZ similar to triangle ABC below, give base XY a length of 4 cm.

8.G.B.6	**Understand and apply the Pythagorean Theorem.** • Explain a proof of the Pythagorean Theorem and its converse.	• Explain a proof of the Pythagorean Theorem and its converse. • In 432B.C. part of the Greek city of Olynthus was divided into rectangular city blocks measuring 120 feet by 300 feet. To the nearest foot, what is the diagonal distance across each city block? • The hypotenuse of a right triangle is 45 inches, with one of the sides being 18 inches. Find the missing side length. Round to the nearest hundredth if necessary. • Do the side lengths below belong on a right triangle? Show work to justify your answer. 25, 32, 60
8.G.B.7	**Understand and apply the Pythagorean Theorem.** • Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	• Apply the Pythagorean Theorem to determine unknown side lengths in a right triangle in real world and mathematical problems in 2 and three dimensions. • Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. • School is 6 miles east of your house. The park is ***b*** miles south of your house. When you are at the park, you are 8 miles from your school. How far is the park from your house? Show your work. Round to the nearest hundredth if necessary. • Find the length of H. Round to the nearest hundredth if necessary.

8.G.B.8	**Understand and apply the Pythagorean Theorem.** • Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	• Find the distance between (8, 6) and (-1, -4). Round to the nearest hundredth. • Determine the length of the hypotenuse. Round to the nearest hundredth. 
8.G.C.9	**Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.** • Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	• Know the formulas for the volumes of cones, spheres, cylinders and use them to solve real world problem. • The diameter of a cone cup is 8cm and the height is 10cm. the radius of another cone shaped paper cup is 3 cm and the height is 11cm. a. Predict which cup will hold more water. Explain your prediction. b. Find the volume of each paper cup to the nearest 10th cubic cm. Which cup holds more water? Compare your results. • Determine the volume of a sphere with a 16.5 inch diameter. Use 3.14 for π. Round to the nearest hundredth if necessary. • How much paint can go in the bucket? Use 3.14 for π. Round to the nearest hundredth if necessary. 

Unit 5: Statistics and Probability

CCSS	Student Learning Objectives	Activities/Examples/ Assessments
8.SP.A.1	**Investigate patterns of association in bivariate data.** • Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. • Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	• Describe the association between age and height in the table below. Age (years): 2, 4, 6, 8, 10 Height (inches): 35, 40, 45, 50, 55 • Make two observations about the graph. 

8.SP.A.2	**Investigate patterns of association in bivariate data.** • Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	• Draw a line of best fit through the data.  • Create a scatter plot with the data from the table. Draw a line of best fit. Time Running (minutes) / Distance (miles) 4 / 0.5 8 / 0.9 10 / 1.2 15 / 2.0 25 / 3.7 30 / 4.0 40 / 5.0

<table>
<tr>
<td>8.SP.A.3</td>
<td>Investigate patterns of association in bivariate data.

• Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.</td>
<td>• Write an equation for the line of best fit for the data in the table below.
<table><tr><th>Time Running (minutes)</th><th>Distance (miles)</th></tr><tr><td>4</td><td>0.5</td></tr><tr><td>8</td><td>0.9</td></tr><tr><td>10</td><td>1.2</td></tr><tr><td>15</td><td>2.0</td></tr><tr><td>25</td><td>3.7</td></tr><tr><td>30</td><td>4.0</td></tr><tr><td>40</td><td>5.0</td></tr></table>
• Write the equation for your line of best fit to predict how long it will take this person to run a marathon (26.2 miles). Use the table above.</td>
</tr>
<tr>
<td>8.SP.A.4</td>
<td>Investigate patterns of association in bivariate data.

• Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table.
• Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.
• Use relative frequencies calculated for rows or columns to describe possible association between the two variables.</td>
<td>• Fifty 8th grade students were surveyed to see if they went to the movies and/or visited a friend over the weekend. Create a table using the data below, showing the number of students that went to the movies only, the number of students that went to a friend's house only, and the number of students who did both.
- 14 students went to the movies
- 9 students went to the movies and a friend's house
- 26 students went to a friend's house
• Using the table you created, determine what percent of the students surveyed didn't go to a friend's house or a movie.</td>
</tr>
</table>

Selected Opportunities for Connection to Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

All of the content presented at this grade level has connections to the standards for mathematical practices.

MATHEMATICS EXTENDED CONSTRUCTED RESPONSE RUBRIC

4

The response indicates application of a reasonable strategy that leads to a correct solution in the context of the problem. The Representations are correct. The explanation and/or justification are logically sound, clearly presented, fully developed, support the solution, and do not contain significant mathematical errors. The response demonstrates a complete understanding and analysis of the problem.

3

The response indicates application of a reasonable strategy that may or may not lead to a correct solution. The representations are essentially correct. The explanation and/or justification is generally well developed, feasible, and supports the solution. The response demonstrates a clear understanding and analysis of the problem.

2

The response indicates an incomplete application of a reasonable strategy that may or may not lead to a correct solution. The representations are fundamentally correct. The explanation and/or justification support the solution and are plausible, although it may not be well developed or complete. The response demonstrates a conceptual understanding and analysis of the problem.

1

The response indicates little or no application of a reasonable strategy. It may or may not have the correct answer. The representations are incomplete or missing. The explanation and/or justification reveal serious flaws in reasoning. The explanation and/or justification may be incomplete or missing. The response demonstrates a minimal understanding and analysis of the problem.

0

The response is completely incorrect or irrelevant. There may be no response, or the response may state, "I don't know."

TOWNSHIP OF UNION PUBLIC SCHOOLS

Cosmetology I

Curriculum Guide

Curriculum Guide Approved June 2016

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Cosmetology I

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Mission Statement

The Township of Union Board of Education believes that every child is entitled to an education designed to meet his or her individual needs in an environment that is conducive to learning. State standards, federal and state

mandates, and local goals and objectives, along with community input, must be reviewed and evaluated on a regular basis to ensure that an atmosphere of learning is both encouraged and implemented. Furthermore, any disruption to or interference with a healthy and safe educational environment must be addressed, corrected, or when necessary, removed in order for the district to maintain the appropriate educational setting.

Philosophy Statement

The Township of Union Public School District, as a societal agency, reflects democratic ideals and concepts through its educational practices. It is the belief of the Board of Education that a primary function of the Township of Union Public School System is to formulate a learning climate conducive to the needs of all students in general, providing therein for individual differences. The school operates as a partner with the home and community.

Statement of District Goals

- **Develop reading, writing, speaking, listening, and mathematical skills.**

- Develop a pride in work and a feeling of self-worth, self-reliance, and self-discipline.
- Acquire and use the skills and habits involved in critical and constructive thinking.
- Develop a code of behavior based on moral and ethical principles.
- Work with others cooperatively.
- Acquire a knowledge and appreciation of the historical record of human achievement and failures and current societal issues.
- Acquire a knowledge and understanding of the physical and biological sciences.
- Participate effectively and efficiently in economic life and the development of skills to enter a specific field of work.
- Appreciate and understand literature, art, music, and other cultural activities.
- Develop an understanding of the historical and cultural heritage.
- Develop a concern for the proper use and/or preservation of natural resources.
- Develop basic skills in sports and other forms of recreation.

Course Description

Cosmetology is an art and a science involving studies of the skin, hair, scalp and nails. The Curriculum is designed to meet the examination requirements of the New Jersey State Board of Cosmetology.

The cosmetology course includes specialized classroom training provided by use of manikins, demonstrations, and live models in clinical service. Training consists of hair analysis, physical and chemical effects of shampoos, rinses, use of hair and scalp conditioning, treatments; the art of finger-waving, setting and styling of hair with sculpture curls, rollers, use of thermal irons and pressing combs. Selecting hairstyles to suit physical features of the patron or current styling trends adapted for the individual. Shaping hair with shears, razor, plus quick service styling using blow dryers and curling irons. Application of temporary hair color, semi-permanent color, permanent tint, plus lightening and toning of the hair, curling hair with chemicals (alkaline permanent waves and acid permanent waves). Chemically relaxed hair treatments, application of make-up for facial types, facials, skin disorders, removing unwanted hair, study if cells, anatomy and physiology, electricity and light therapy. Chemistry, manicuring, hand and arm massage, pedicuring, nail diseases and disorders, styling wigs and hairpieces, business management, and the art of barbering and shaving.

Future trends require cosmetologists to study chemistry related to products and their proper use to best serve the public. To keep pace with the ever-changing hairstyles and new products it is recommended that cosmetologists continually attend workshops and educational seminars.

Attitudes towards personal growth and development necessary for successful employment are also emphasized. These attitudes include pride in ones work, a sense of responsibility and development of self-confidence. The ability to transfer these acquired attitudes, knowledge and

skills from one job area to another will enhance the student's flexibility for employment. As the need become apparent, the program is flexible to service a full range of each student's abilities. Cosmetology is also a recession proof discipline where one can successfully obtain employment even in uncertain economic times.

This publication was developed to present the revised curriculum requirements for training barbers and cosmetologists in New Jersey. These New requirements comply with the standards set forth in the Cosmetology and Hairstyling Act of 1984. This act combined the licensing procedures and regulations for barbers and cosmetologists in the state and called for the creation of a common examination for both fields under the direction of the newly formed State Board of Cosmetology and Hairstyling.

Among the new requirements for the cosmetologists are razor shaving, beard and mustache trimming and male hairstyling. These are to be mastered in addition to the current skills expected of a licensed cosmetologist. The new requirements have been infused into the appropriate sections of this curriculum.

The curriculum is presented in a competency-based format consistent with the current national movement toward competency-based vocational education. This approach provides a more efficient and effective means of skill training. It also offers a skill profile for each student which improves communication of specific strengths and weaknesses to the learner as well as to potential employers.

The curriculum was prepared by a representative selection of writers and consultants from various cosmetology and barbering occupations in education and industry.

The curriculum is based upon a minimum of 1,000 hours of instruction and includes the identification and categorization of the skills necessary for entry into the cosmetology and hairstyling profession.

A task analysis of barbering and cosmetology occupations was conducted to derive those fundamental skills essential for licensing and entry into the cosmetology and hairstyling fields. These skills are expressed in a competency-based format, which identifies the following: competency clusters; a list of individual competencies; s statement of performance standard reinforced by a performance guide.

The competencies have been grouped into thirteen clusters of sections. Each section contains a list of the competencies to be achieved, followed by several pages providing a more detailed description of each competency. Each of these descriptive pages contains a statement of the performance standard required and a performance guide. The performance guide includes those requisite sub concepts and skills essential to achieving the performance standards. Particular attention was given to identifying the relevant reading, writing and mathematics skills, which appear in High School Proficiency Tests.

Although the competencies are grouped into clusters or sections, the teacher is free to rearrange any of these elements to fit his/her particular situation. It is important, however, to provide instruction in all of the competencies.

Recommended Textbooks

Milady's Standard Cosmetology
Cengage Learning

Course Proficiencies

Students will be able to…

A record of each individual's progress will be maintained on the following competencies. Upon completion of this program, an individual student transcript of achievement will be provided.

A. STATE LAWS AND REGULATIONS

1 Describe the composition and function of the State Board of Cosmetology and Hairstyling
2 Explain the requirements for the licensing of personnel.
3 Explain the requirements for licensing of shop or salon Facilities.
4 Describe the State Board Examination Procedure
5 Summarize the General Regulations of Cosmetology and Hairstyling

6 Pass with a 100 a general school safety test
7 Pass with a 100 a general Cosmetology safety test

B. SANITATION AND DECONTAMINATION

1 Review the state and local laws governing sanitation and decontamination.
2 Describe the types and characteristics of bacteria
3 Demonstrate a wet sanitizing procedure.
4 Demonstrate a dry sanitizing procedure.
5 Perform sanitizing using 70% alcohol.
6 Demonstrate sanitizing of service areas.
7 Solve mathematical problems related to ratios, percent's and proportions.

C. SHAMPOOING

1 Give a shampoo
2 Select a proper shampoo
3 Apply hair rinses

D. HAIR SHAPING

1 Explain the theory of hair shaping
2 Describe the relationship of anatomy to hair shaping
3 Apply geometric principles of hair cutting
4 Demonstrate the proper hair cutting procedures
5 Shape hair goods

E. HAIRSTYLING

1 Identify the hairstyling implements and equipment
2 Establish basic partings and subsections of the hair.
3 Form finger waves
4 Demonstrate pin curl techniques
5 Demonstrate roller-setting techniques
6 Style hair using heating and air drying techniques
7 Demonstrate comb-out techniques

8 Identify facial types and special considerations
9 Demonstrate the basic braiding techniques
10 Care for and style hairpieces

F. PERMANENT WAVING
1 Explain the history of permanent waving
2 Explain the chemical actions of permanent waving
3 Analyze the hair and scalp conditions for permanent waving
4 Demonstrate the sectioning and blocking techniques for permanent waving
5 Demonstrate the techniques for wrapping a permanent wave
6 Process and neutralize a permanent wave

G. CHEMICAL RELAXING AND CURL REFORMATION
1 Explain the implements and products used in relaxing and reforming techniques
2 Prepare for a chemical relaxing procedure
3 Demonstrate a chemical relaxing procedure
4 Demonstrate curl reformation using thermal pressing and curling procedures
5 Demonstrate curl reformation using chemical procedures

H. MANICURING AND PEDICURING
1 Explain the basic anatomy of the nail
2 Identify nail disease and disorders
3 Describe the bone anatomy of the arms, hands and feet
4 Demonstrate the techniques
5 Demonstrate the application of nail extensions and repair
6 Demonstrate the techniques for giving a pedicure
7 Perform leg and foot treatments

Students are required to successfully participate in class, complete all homework assignments and any class projects/assignments, maintain a notebook and pass teacher prepared tests and quizzes.

A grade of C or higher must be achieved in order to pass/continue in the program.

Curriculum Units

Unit 1: Orientation/State Board Laws/ Rules

Unit 2: General Sciences

Unit 3: Hair Care

Unit 4: Skin Care

Unit 5: Nail Care

Unit 6: Business Skills

Pacing Guide- Course

Content	Number of Hours
Unit 1: Orientation/ State Board/ Laws Rules	20
Unit 2: General Sciences	30
Unit 3: Hair Care	785
Unit 4: Skin Care	100
Unit 5: Nail Care	150
Unit 6: Business skills	10

Unit 1; Orientation/ State Board Laws/Rules

Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities	Assessments
	2. Students will describe the composition and responsibilities of the State Board of Cosmetology	**1. Identify the structure and membership of the board.** **2. Describe how members are appointed to the board.** **3. Identify length of term and requirements for board members** **4. List major duties of the board.** **5. Identify the department and division of the New Jersey State government which the state board falls under.** **6. Explain the state boards monthly meetings, policies and procedures.** **7. Describe the criteria used by the State board of Cosmetology and Hairstyling.**	• **Pass with a 100% safety test** • **Teacher Observation** • **Demonstrations** • **Projects** • **Rubrics** • **Tests/ Quizzes** • **Self-evaluations**
	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities	Assessments

Unit 2: General Sciences / Sanitation & Decontamination/ Anatomy & Physiology

Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities	Assessments
1. Students will summarize the key state and local regulations governing sanitation and decontamination. **2. Describe the types and characteristics of bacteria.** **3. Demonstrate a wet sanitizing procedure** **4. Demonstrate a dry sanitizing procedure.**	• Review the state and local laws governing sanitation ad decontamination. • Describe types and characteristics of bacteria. • Demonstrate a wet sanitizer. • Demonstrate a dry sanitizer procedure. • Perform sanitizing with 70% alcohol. • Demonstrate sanitation of service area. • Solve mathematical questions related to ratios, percent's and proportions. • Demonstrate understanding of infection and immunity. • Describe types and characteristics of Bacteria.	• Explain the importance of regulations governing sanitation and decontamination. • Define public health, hygiene and sanitation. • Determine degree of compliance of the shop or salon with state and local regulations. • Explain the importance of bacteriology. • Identify types and classifications of bacteria. • Explain stages of bacterial growth and reproduction. • List names of pathogenic bacteria and the diseases caused by each of them. • Explain how disease is spread by bacteria. • Clean and place all implements in a chemical wet sanitizer according to the manufacturer's directions. • Observe safety precautions when working with sanitizing and decontamination chemicals. • Store implements in a dry sanitizer or an ultraviolet ray	• **Pass with a 100% safety test** • **Teacher Observation** • **Demonstrations** • **Projects** • **Rubrics** • **Tests/ Quizzes** • **Self-evaluations**

		cabinet until ready for use. • Define terms relevant to sanitation. • Demonstrate physical and chemical methods of decontamination and sanitation. • List and identify chemicals and compounds used in sanitation. • Mix sanitizers for specified use. • Explain importance of good sanitation. • Identify and compare uses of antiseptics and disinfectants for sanitizing and decontaminating implements. • List rules and explain as stated in N.J. administrative code for Cosmetology Rules and Regulations. • **Prepare a fumigant for use in shop or salon.** • **Follow manufacturer's directions for use of ultraviolet ray for electrical sanitizer** • **Follow proper precautions.**	

Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities	Assessments
2.Anatomy & Physiology	Students will identify and explain the basic principles and systems	**1. Identify and define terms associated with**	• **Pass with a 100% safety test** • **Teacher Observation**

	of anatomy and physiology.	physiology. 2. Identify and define terms associated with anatomy. 3. Identify and define the terms associated with mycology (muscles). 4. Identify and define the terms associated with Osteology (bones). 5. Identify and define the terms associated with neurology (nerves). 6. Identify and explain the structure and functions of the endocrine, excretory, digestive, respiratory and reproductive systems. 7. Describe physiological cell and tissue structure. 8. List systems of the body that are affected by salon services.	• Demonstrations • Projects • Rubrics • Tests/ Quizzes • Self-evaluations
3. Explain the basic chemistry related to Cosmetology and Hairstyling	Students will identify and explain the basic concepts of chemistry related to Cosmetology and Hairstyling.	**1. Identify terms associated with product chemistry.** **2. List and identify symbols of various elements.** **3. Distinguish among acids, bases and salts.** **4. Discuss basic characteristics of the PH scale.** **5. Discuss the chemistry of water.** **6. Distinguish between organic and chemistry.**	• Pass with a 100% safety test • Teacher Observation • Demonstrations • Projects • Rubrics • Tests/ Quizzes • Self-evaluations

RELATED SCIENCES	**Students will identify and explain the mental concepts of electricity and light therapy relevant to cosmetology.**	**7. Distinguish between physical and chemical change.** **8. Distinguish between elements and compounds.** **9. Define terms associated with chemistry.** **10. Identify the products used by cosmetology by chemical composition.** **11. Summarize the key points of "right to know" Law.** **12. Understand a MSDS label.** **13. Understand OSHA as it relates to the workplace.** **1. Identify the electrical equipment used in barbering and beauty salons.** **2. Demonstrate knowledge of safety practices when using electrical devices.** **3. Describe how light rays are produced.** **4. Explain the benefits that can be derived from infrared lamps.** **5. Explain the meaning of light therapy.** **6. Distinguish between AC and DC currents.** **7. Explain the effects of electric current on the human body.** **8. Describe the importance of electricity in our daily lives.** **9. Identify the types of light rays used in salon services.** **10. Explain the effects of light rays on the human body.**	• **Pass with a 100% safety test** • **Teacher Observation** • **Demonstrations** • **Projects** • **Rubrics** • **Tests/ Quizzes** • **Self-evaluations**

Unit 3: Haircare

Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities	Assessments
Describe the Histology of the Hair 1. Application of corrective treatments to hair and scalp **2. Describe the Histology of the hair**	1. Students will apply corrective treatments to the hair and scalp, using the proper implements, procedures and products.	1. Describe the purpose and benefits of hair and scalp treatments. 2. Describe those disorders and diseases which can be treated by a cosmetologist. 3. Identify those basic disorders and diseases that are not treated by a cosmetologist. 4. Describe the basic procedure for performing a hair and scalp treatment. 5. Demonstrate the treatments performed to correct various hairs and scalp disorders. 6. Demonstrate the basic manual scalp	• **Pass with a 100% safety test** • **Teacher Observation** • **Demonstrations** • **Projects** • **Rubrics** • **Tests/ Quizzes** • **Self-evaluations**

		manipulations.	
	Students will describe the structure of hair and the follicle.	1. Describe the composition of the hair. 2. Identify the three divisions of the hair. 3. Explain the meaning of hair texture, porosity, density and elasticity. 4. Explain the structures within the hair root and follicle. 5. Describe how hair structures relate to the three general shapes of the hair follicle.	• **Pass with a 100% safety test** • **Teacher Observation** • **Demonstrations** • **Projects** • **Rubrics** • **Tests/ Quizzes** • **Self-evaluations**
3. Identify and analyze hair and scalp abnormalities, disorders and diseases.	Students will identify and analyze the common diseases and disorders of the scalp.	1. Recognize the role that the sebaceous glands play in various scalp abnormalities. 2. Identify and analyze the two principle types of dandruff. 3. Explain what is meant by contagious disorders. 5. Recognize and discus parasitic infections. 6. Recognize and discuss staphylococci infections. 7. Explain what is meant by noncontagious disorders and demonstrate the proper treatments. 8. Recognize and discuss common hair disorders.	• **Pass with a 100% safety test** • **Teacher Observation** • **Demonstrations** • **Projects** • **Rubrics** • **Tests/ Quizzes** • **Self-evaluations**

4. **Apply Corrective Treatments to hair and Scalp.**	Students will apply corrective treatments to the hair and scalp using proper implements, procedures and products.	1. Describe the purpose and benefits of hair and scalp treatments. 2. Describe those disorders and disease which can be treated by a cosmetologist or hairstylist. 3. Describe the basic procedure for performing a scalp treatment. 5.demonstrate the treatments Performed to correct various disorders. 6. Demonstrate basic scalp manipulations.	
5. Demonstrate the use of implements, equipment, and products related to Hair and Scalp treatment.	Demonstrate the use of implements, equipment and products related to hair and scalp treatment.	1. Demonstrate the use of infrared lamps. 2. Demonstrate the use of an electric heating cap. 3. Describe the use of high frequency electrodes. 4. Demonstrate the correct brushing techniques. 5. Demonstrate the correct sectioning techniques, including the use of combs and clips. 6. Select the appropriate products for hair and scalp treatments.	Pass with a 100% safety test. Teacher observation Demonstration Projects Rubrics Test/quizzes Self-evaluations.

		7. Demonstrate the application procedures for hair and scalp treatment products.	
6. SHAMPOOING	1. Give a shampoo 2. Select the proper shampoo 3. Apply hair rinses. 4 .Demonstrate the test for proper water temperature. 5. Demonstrate the proper procedure for holding the spray nozzle during the rinse. 6. Explain and identify medicated shampoos. 7. Demonstrate the proper combing techniques for removing tangle.		Pass with a 100% safety test. Teacher observation Demonstrations. Projects Rubrics Test /Quizzes Self-evaluations.
7. GIVING A SHAMPOO	1. Students will give a basic shampoo, following the specified procedures.	1. Explain why it is necessary to perform a hair scalp analysis prior to shampooing. 2. List and explain the various shampoo products. 3. Demonstrate the draping procedure and the preparations necessary for giving a shampoo.	Pass safety test with 100% Teacher Observation Demonstrations Projects Rubrics Tests /Quizzes Self-evaluations

		4. Demonstrate the proper hair brushing techniques. 5. Explain and demonstrate basic shampooing. 6. Explain the basic safety and sanitary precautions to be observed. 7. Explain and demonstrate shampoo manipulations. 8. Demonstrate a liquid-dry shampoo.	
8.SELECT THE PROPER SHAMPOO	Students will identify and select the shampoo appropriate for a customer's hair.	1. Explain what is meant by a plain shampoo. 2. Explain the purpose of soap less oil shampoo. 3. Explain the purpose of a liquid creamy paste shampoo. 4. Explain the importance of acid balanced (ph) shampoos. 5. Explain the function of antidandruff shampoos. 6. Explain the purpose of a powder-dry shampoo. 7. Select the proper shampoo for each customer. 8. Explain the procedures for giving a special shampoo.	Pass a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test / Quizzes Self-evaluations

9. APPLY HAIR RINSES	Students will apply various hair rinses, following the correct procedures.	1. Explain when and why a hair rinse is used. 2. Demonstrate the application of a color rinse. 3. List and explain the various types of rinses. 4. Identify the basic components of hair rinses.	Pass safety test with 100% Teacher Observation Demonstrations Projects Rubrics Tests /Quizzes Self-evaluations
10. HAIR SHAPING	1. Explain the theory of hair shaping. 2. Describe the relationship of anatomy to hair shaping. 3. Apply geometric principles of haircutting. 4. Demonstrate the proper haircutting procedure. 5. Shape hair goods. 6. Identify the rules associated with hair thinning techniques. 7. Demonstrate hair thinning 8. Demonstrate undercutting using a razor		Pass with a 100% safety test.

	9. Demonstrate a classic bob. 10. Demonstrate a stack bob. 11. Demonstrate a long layer cut. 12. Demonstrate a short layer cut. 13. Demonstrate face framing. 14. Demonstrate texturizing 15. Demonstrate cutting bangs 16. Demonstrate a wedge cut. 17 Demonstrate a beard trim. 18. Demonstrate a mustache trim.		Teacher Observation Demonstrations Projects Rubrics Test/ Quizzes Self-evaluations
11. EXPLAIN THE THEORY OF HAIR SHAPING	Students will explain the necessary terms, implements, and shaping techniques used in hair shaping.	1. Identify the common haircutting implements and their parts. 2. Care for and clean the hair shaping implements. 3. Define the structures and texture of hair as related to haircutting. 4. Identify the various sectioning techniques. 5. Define the terms	

12. DESCRIBE THE RELATIONSHIP OF ANATOMY TO HAIR SHAPING	Students will identify the bones of the head and face and distinguish among the various facial contours and their effects on hair shaping. Students will demonstrate the use of geometric angles, elevations, and basic measurements during haircutting.	associated with hair shaping. 6 Determine the difference among men, women and children's cutting techniques. 7. Demonstrate the basic haircutting techniques used for different hairstyles. 1 .Locate and identify the bones of the head and face. 2. Describe the characteristics of the three basic head shapes. 3. Analyze the basic facial shapes and determine the suggested hair shapes for each. 1. Identify the geometric forms used in hair shaping. 2. Position and cut hair at different angles 3. Describe the differences among the following hair shaping elevations: high, medium, and low.	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ Quizzes. Pass safety test with 100%

13. APPLY GEOMETRIC PRINCIPLES TO HAIRCUTTING		4. Explain the relationship of angles and elevations to varying hair lengths. 5. Demonstrate the ability to relate angles and elevations to various hair lengths.	Teacher observation Demonstrations Projects Rubrics Test/ Quizzes Self-evaluations
14. DEMONSTRATE PROPER HAIRCUTTING PROCEDURE	Students will perform basic haircut, utilizing various hair shaping implements.	1. Select the correct implements according to the type of hair. 2. Analyze the head and facial characteristics to determine a style which is satisfactory tot eh client. 3. Section the hair and determine quide lines for a haircut. 4. Demonstrate a cutting procedure, using the correct angles and elevations. 5. Demonstrate the correct hand position for cutting the hair. 6. Demonstrate a basic man's haircut, using electric hair trimmer. 7. Perform a basic layered cut. 8. Demonstrate the scissor	Pass safety test with 100% Teacher Observation Demonstrations Projects Rubrics Tests /Quizzes Self-evaluations

		over comb technique for hair tapering. 9. Perform a basic blunt cut. 10. Trim unwanted hair from the nose and ears. 11. Recognize the metric measurements of hair length and size of implements.	Pass with 100% safety test Teacher Observation Demonstration Projects Rubrics Test / quizzes Self-Evaluations
15. **SHAPING HAIR GOODS**	1. Identify the implements used for shaping hair goods. 2. Determine the guidelines for shaping wigs, hairpieces and extensions, using the patrons head shape. 3. Clean and size a hairpiece and position it on a wig block. 4. Cut the hairpiece to the desired shape using previously established guidelines. Students will identify the implements and equipment used in hairstyling.	1. Identify the proper comb for removing tangles from shampooed hair. 2. Select the proper comb for parting hair. 3. Identify the types and sizes of curling irons. 4. Identify the comb to be	.

		used in finger waving. 5. Identify the correct securing implement for pin curls. 6. Identify the various types of air drying equipment.	
17. ESTABLISH BASIC PARTINGS AND SUBSECITON OF THE HAIR.	Students will demonstrate the proper location of partings and subsections according to the client's facial features and desired hairstyle.	1. Remove tangles from the hair. 2. Select the proper partings and subsections needed for the setting technique. 3. Adjust the part according to the patron's facial features. 4. Demonstrate the partings and subdivisions related to finger waving, pin curling, roller setting techniques.	Pass with 100% safety test. Teacher Observation Demonstrate to teacher Projects Rubrics Test / Quizzes Self-Evaluations.
	Students will demonstrate the ability to form finger waves.	1. Evaluate the appropriateness of the client's hair type for finger	

		waving. 2. Select the proper wave lotion for the type of hair. 3. Select the proper implements for finger waving 4. Demonstrate the proper procedures for forming basic finger waves. 5. Demonstrate alternate methods of finger waving.	Pass with 100% safety test Teacher Observation Demonstrations Projects Rubrics Test /Quizzes.
18. FORM FINGER WAVES	Students will demonstrate the ability to form forward, reverse and cascade sculptured curls.	1. Select the proper setting lotion for sculptured curls. 2. Select the proper implements to form pin curls. 3. Demonstrate forward, reverse and cascade pin curls patterns. 4. Style the hair according to the pin curl technique used. 5. Form ridge waves 6. Demonstrate skip waving techniques.	
		1. Determine the appropriate	Pass with 100% safety test.

19. Demonstrate Pin Curls Techniques	Students will select the size and type of roller to be used according to the characteristics and the desired style.	style for a patron. 2. Select the proper setting lotion for the hair type and style desired. 3. Demonstrate the correct use of implements used in setting the hair. 4. Select the size and type of rollers according to the patron's characteristics and style desired. 5. Set the patron's hair according to the selected style.	Teacher Observations Demonstrations Projects Rubrics Tests / quizzes Self-evaluations.
20. DEMONSTRATE ROLLER SETTING TECHNIQUES.	Students will demonstrate the ability to use heating and air-drying techniques for styling hair.	1. Determine the proper drying technique according to the selected style. 2. Select the proper air-drying preparations. 3. Create hair styles utilizing a blow dryer/diffuser. 4. Create styling utilizing a heat lamp. 5. List the safety precautions to be followed when air-drying hair. 6.Create a style utilizing a Curling iron.	Pass with a 100% safety test. Teacher Observation Demonstrations. Projects Rubrics Tests /Quizzes

21. STYLE HAIR USING HEATING AND AIR DRYING TECHNIQUES.	Students will demonstrate the ability to comb out a style from a finger-wave, sculptured curl, roller set or blow-dry pattern.	1.Comb out finger waves into a desired style 2. Comb out sculptured curls into a pre -planned style. 3. Comb out different roller sets into pre planned styles. Demonstrate back-combing (teasing, French lacing) techniques.	Pass with 100% safety test. Teacher Observation Demonstrations Projects Rubrics Self-Evaluations Test and quizzes
22 .DEMONSTRATE COMB-OUT TECHNIQUES.		1. Identify the seven basic	Pass with 100% safety test Teacher Observation Demonstrations Projects Rubrics Self-Evaluations Test/Quizzes

23. IDENTIFY FACIAL TYPES AND SPECIAL CONSIDERATIONS.	Students will identify seven facial types and the special considerations for each when selecting hairstyle.	facial types and profiles. 2. Identify facial irregularities. 3. Identify the basic head shape. 4. Identify the body size and shape of the patron. 5. Identify factors such as hair length, texture, density and growth when considering a style.	Pass with a 100% safety test Teacher Observation Demonstration Projects Rubrics Test /Quizzes Self-Evaluations.
24. DEMONSTRATE THE BASIC BRAIDING TECHNIQUES	Students will demonstrate the basic braiding techniques.	1. Describe methods of French braiding. 2 .Form visible French braids. 3. Form invisible French braids. 4. Demonstrate corn-rowing techniques.	Pass with a 100% safety test. Teacher Observations Demonstrations Projects Rubrics Test /quizzes

25. CARE FOR AND STYLE HAIRPIECES	Students will demonstrate the proper care and styling of wigs, toupees, extensions and other hairpieces.	1. Identify hairpieces by construction, type and quality 2. Identify the criteria for selecting wigs and hairpieces. 3. Demonstrate the proper measuring procedures for fitting wigs and toupees. 4. Demonstrate the proper cleaning and conditioning techniques for wigs and hairpieces. 5. Identify cleaning solvents and demonstrate their use on wigs, toupees, and hairpieces.	Pass with a 100% safety test. Teacher Observations Demonstrations Projects Rubrics Test /quizzes

New Jersey Core Curriculum Content Standards
Academic Area

PROFIENCIES	CROSS CONTENT	MATH	LANGUAGE ARTS	SCIENCE
1.0 State Laws & Regulations	1.1,1.7	3.1		
2.0 Sanitation & Decontamination	3.1, 3.13		4.1	5.1
3.0 Skin Care & Shaving	4.1, 4.6,	3.3, 3.4		5.1
4.0 Hair &Scalp Treatments	4.1, 4.8, 4.1	3.3, 3.4		
5.0 Shampooing	4.1, 5.7	3.3, 3.4		
6.0 Hair Shaping	4.1, 5.7	3.3, 3.4	4.2	5.3
7.0 Hairstyling	4.1, 5.7	3.3, 3.4	4.2	
8.0 Hair Coloring 4.2	4.1, 5.7	3.3, 3.4	4.2	
9.0 Permanent Waving	4.1, 4.8, 4.11, 4.2	3.2, 3.3, 3.4		5.1, 5.7
10.0 Chemical Relaxing /Soft Curl Permanent	4.2, 4.4	3.3, 3.4		5.1

	4.8, 4.11, 5.7		
11.0 Manicuring & Pedicuring	4.1, 4.8, 4.11,	3.3, 3.4	5.1
12.0 Related Sciences	1.6, 2.2, 3.1, 3.8, 4.2, 4.10, 5.1, 5.8	3.1, 3.2, 3.3 3.4, 3.5	5.1
13.0 Professional Ethics and Shop/Salon Management	1.1, 1.2, 1.12, 2.3, - 4.5 2.7, 2.8, 3.1, 3.3, 3.12, 3.14, 3.15, 4.2, 4.5, 4.6, 4.11, 5.1, 5.4, 5.6, 5.8, 5.9, 7.1, 7.2, 8.1.2.A.4	3.1, 3.2, 3.3 3.4, 3.5	5.3

CTE STANDARDS	**TECHNOLOGICAL LITERACY**	**CAREER EDUCATION COSMETOLOGY**
2.0 State Laws & Regulations	8.1, 8.2, ,9.4.12.J.63	9.1, 9.2, 9.4.12.J.1, 9.4.12.J.33, 9.4.12.J.34, 9.4.12.J.47, 9.4.12.J.48, 9.4.12.J.49, , 9.4.12.J.65, 9.4.12.J.(1).9, 9.4.12.J.(1)13, 9.4.12.J.(2).8
2.0 Sanitation & Decontamination	8.1, 8.2	9.1, 9.2 F, 9.4.12.J.15, 9.4.12.J.17, 9.4.12.J.18
3.0 Skin Care & Shaving	8.1, 8.1 B	9.1, .9.2 A, C, F
4.0 Hair &Scalp Treatments	8.1, 8.2 C	9.1, 9.2 C, F

5.0 Shampooing	8.1, 8.2 C	9.1, 9.2 C
6.0 Hair Shaping	8.1, 8.2 C	9.1, 9.2 C, F
7.0 Hairstyling	8.1, 8.2 C	9.1, 9.2 C
8.0 Hair Coloring	8.1, 8.2 C	9.1, 9.2 C, 9.4.12.J. (2).10,
9.0 Permanent Waving	8.1, 8.2C	9.1, 9.2 C, F
10.0 Chemical Relaxing /Soft Curl Permanents	8.1, 8.2 C	9.1, 9.2 C, F
11.0 Manicuring & Pedicuring	8.1, 8.2 C	9.1, 9.2C
12.0 Related Sciences	8.1, 8.2 C	9.1, 9.2A, C, F, 9.4.12.J. (2).6

13.0 Professional Ethics and Shop/Salon Management 9.1, 9.2C, D, E, 9.4.12.J.19, 9.4.12.J.25, 9.4.12.J.35, 9.4.12.J.39, 9.4.12.J.4142, 9.4.12.J44, 9.4.12.J.46, 9.4.12.J.50, 9.4.12.J.52, 9.4.12.J.53, 9.4.12.J.55, 9.4.12.J.56, 9.4.12.J.57, 9.4.12.J.58, 9.4.12.J.59 , 9.4.12.J.(1).1, 9.4.12.J.(1).6, 9.4.12.J.(1).7, 9.4.12.J.(2).2, 9.4.12.J.(2).3, 9.4.12.J.(2).7

New Jersey Scoring Rubric

CATEGORY	4	3	2	1	Score
Concept	Student has a clear picture of what they are trying to achieve. They can describe what they are trying to do and generally how his/her work will contribute to the final product.	Student has a fairly clear picture of what they are trying to achieve. Each member can describe what they are trying to do overall but has trouble describing how his/her work will contribute to the final product.	Student has brainstormed their concept, but no clear focus has emerged. Student may describe the goals/final product differently.	Student has spent little effort on brainstorming and refining a concept. Students are unclear on the goals and how their contributions will help them reach the goal.	
Equipment Preparation	All necessary equipment/supplies are setup fully and taken down completely. Tools are clearly labeled and put in its proper place.	All necessary equipment/supplies are not setup and/or taken down completely OR tools are not clearly labeled and/or put back in their proper place.	All necessary equipment/supplies are not setup and/or taken down completely AND tools are not clearly labeled and/or put back in their proper place.	All necessary equipment/supplies are not setup and/or taken down completely AND tools are not clearly labeled and/or put back in their proper place. Equipment hinders and/or delays final product.	
Teamwork (when placed in teams)	Students meet and discuss regularly. All students contribute to the discussion and all are listened to respectfully. All team members contribute a fair share of the work.	Students meet and discuss regularly. Most students contribute to the discussion and are listened to respectfully. All team members contribute a fair share of the work.	A couple of team meetings are held. Most students contribute to the discussion and are listened to respectfully. All team members contribute a fair share of the work.	Meetings are not held AND/OR some team members do not contribute a fair share of the work.	
	Procedure done correctly, in focus, steady.	Procedures are not followed with precision. Student grasps concepts but needs to continue to practice.	Procedures are not followed with precision. Student demonstrates some understanding but work is sloppy and needs practice.	Procedures are not followed. Student does not exhibit mastery of taught content. Work is sloppy and inconsistent.	
Conclusion	Final product is flawless. Final product is Salon worthy.	Final product has some rough cuts. Work is less than perfect.	Final product has many flaws. Final product is not professional.	Final product is poor. Final product does not meet standards necessary to use on a client and are not Salon worthy.	

TOWNSHIP OF UNION PUBLIC SCHOOLS

COSMETOLOGY II

Curriculum Guide

Curriculum Guide Approved June 2016

Board Members

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TOWNSHIP OF UNION PUBLIC SCHOOLS

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Assistant Superintendent .....**Dr. Noreen Lishak**

Assistant Superintendent.....**Ms. Ann Moses**

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Director of Athletics, Health, Physical Education and Nurses.....**Ms. Linda Ionta**

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Mission Statement

The Township of Union Board of Education believes that every child is entitled to an education designed to meet his or her individual needs in an environment that is conducive to learning. State standards, federal and state mandates, and local goals and objectives, along with community input, must be reviewed and evaluated on a regular basis to ensure that an atmosphere of learning is both encouraged and implemented. Furthermore, any disruption to or interference with a healthy and safe educational environment must be addressed, corrected, or when necessary, removed in order for the district to maintain the appropriate educational setting.

Philosophy Statement

The Township of Union Public School District, as a societal agency, reflects democratic ideals and concepts through its educational practices. It is the belief of the Board of Education that a primary function of the Township of Union Public School System is to formulate a learning climate conducive to the needs of all students in general, providing therein for individual differences. The school operates as a partner with the home and community.

Statement of District Goals

- Develop reading, writing, speaking, listening, and mathematical skills.
- Develop a pride in work and a feeling of self-worth, self-reliance, and self-discipline.
- Acquire and use the skills and habits involved in critical and constructive thinking.
- Develop a code of behavior based on moral and ethical principles.
- Work with others cooperatively.
- Acquire a knowledge and appreciation of the historical record of human achievement and failures and current societal issues.
- Acquire a knowledge and understanding of the physical and biological sciences.
- Participate effectively and efficiently in economic life and the development of skills to enter a specific field of work.
- Appreciate and understand literature, art, music, and other cultural activities.
- Develop an understanding of the historical and cultural heritage.
- Develop a concern for the proper use and/or preservation of natural resources.
- Develop basic skills in sports and other forms of recreation.

Course Description

Cosmetology is an art and a science involving studies of the skin, hair, scalp and nails. The Curriculum is designed to meet the examination requirements of the New Jersey State Board of Cosmetology.

The cosmetology course includes specialized classroom training provided by use of manikins, demonstrations, and live models in clinical service. Training consists of hair analysis, physical and chemical effects of shampoos, rinses, use of hair and scalp conditioning, treatments; the art of finger-waving, setting and styling of hair with sculpture curls, rollers, use of thermal irons and pressing combs. Selecting hairstyles to suit physical features of the patron or current styling trends adapted for the individual. Shaping hair with shears, razor, plus quick service styling using blow dryers and curling irons. Application of temporary hair color, semi-permanent color, permanent tint, plus lightening and toning of the hair, curling hair with chemicals (alkaline permanent waves and acid permanent waves). Chemically relaxed hair treatments, application of make-up for facial types, facials, skin disorders, removing unwanted hair, study if cells, anatomy and physiology, electricity and light therapy. Chemistry, manicuring, hand and arm massage, pedicuring, nail diseases and disorders, styling wigs and hairpieces, business management, and the art of barbering and shaving.

Future trends require cosmetologists to study chemistry related to products and their proper use to best serve the public. To keep pace with the ever-changing hairstyles and new products it is recommended that cosmetologists continually attend workshops and educational seminars.

Attitudes towards personal growth and development necessary for successful employment are also emphasized. These attitudes include pride in ones work, a sense of responsibility and development of self-confidence. The ability to transfer these acquired attitudes, knowledge and

skills from one job area to another will enhance the student's flexibility for employment. As the need become apparent, the program is flexible to service a full range of each student's abilities. Cosmetology is also a recession proof discipline where one can successfully obtain employment even in uncertain economic times.

This publication was developed to present the revised curriculum requirements for training barbers and cosmetologists in New Jersey. These New requirements comply with the standards set fourth in the Cosmetology and Hairstyling Act of 1984. This act combined the licensing procedures and regulations for barbers and cosmetologists in the state and called for the creation of a common examination for both fields under the direction of the newly formed State Board of Cosmetology and Hairstyling.

Among the new requirements for the cosmetologists are razor shaving, beard and mustache trimming and male hairstyling. These are to be mastered in addition to the current skills expected of a licensed cosmetologist. The new requirements have been infused into the appropriate sections of this curriculum.

The curriculum is presented in a competency-based format consistent with the current national movement toward competency-based vocational education. This approach provides a more efficient and effective means of skill training. It also offers a skill profile for each student which improves communication of specific strengths and weaknesses to the learner as well as to potential employers.

The curriculum was prepared by a representative selection of writers and consultants from various cosmetology and barbering occupations in education and industry.

The curriculum is based upon a minimum of 1,000 hours of instruction and includes the identification and categorization of the skills necessary for entry into the cosmetology and hairstyling profession.

A task analysis of barbering and cosmetology occupations was conducted to derive those fundamental skills essential for licensing and entry into the cosmetology and hairstyling fields. These skills are expressed in a competency-based format, which identifies the following: competency clusters; a list of individual competencies; s statement of performance standard reinforced by a performance guide.

The competencies have been grouped into thirteen clusters of sections. Each section contains a list of the competencies to be achieved, followed by several pages providing a more detailed description of each competency. Each of these descriptive pages contains a statement of the performance standard required and a performance guide. The performance guide includes those requisite sub concepts and skills essential to achieving the performance standards. Particular attention was given to identifying the relevant reading, writing and mathematics skills, which appear in High School Proficiency Tests.

Although the competencies are grouped into clusters or sections, the teacher is free to rearrange any of these elements to fit his/her particular situation. It is important, however, to provide instruction in all of the competencies.

Recommended Textbooks

Miladys Standard Cosmetology
Cengage Learning

Course Proficiencies

Students will be able to…

A record of each individual's progress will be maintained on the following competencies. Upon completion of this program, an individual student transcript of achievement will be provided.

A. STATE LAWS AND REGULATIONS

1 Describe the composition and function of the State Board of Cosmetology and Hairstyling
2 Explain the requirements for the licensing of personnel.
3 Explain the requirements for licensing of shop or salon Facilities.
4 Describe the State Board Examination Procedure
5 Summarize the General Regulations of Cosmetology and Hairstyling
6 Pass with a 100 a general school safety test
7 Pass with a 100 a general Cosmetology safety test

B. SANITATION AND DECONTAMINATION

1 Review the state and local laws governing sanitation and decontamination.
2 Describe the types and characteristics of bacteria
3 Demonstrate a wet sanitizing procedure.
4 Demonstrate a dry sanitizing procedure.
5 Perform sanitizing using 70% alcohol.
6 Demonstrate sanitizing of service areas.
7 Solve mathematical problems related to ratios, percents and proportions.

C. SHAMPOOING

1 Give a shampoo
2 Select a proper shampoo
3 Apply hair rinses

D. HAIR SHAPING

1 Explain the theory of hair shaping
2 Describe the relationship of anatomy to hair shaping
3 Apply geometric principles of hair cutting
4 Demonstrate the proper hair cutting procedures
5 Shape hair goods

E. HAIRSTYLING

1 Identify the hairstyling implements and equipment
2 Establish basic partings and subsections of the hair.
3 Form finger waves
4 Demonstrate pin curl techniques
5 Demonstrate roller-setting techniques
6 Style hair using heating and air drying techniques
7 Demonstrate comb-out techniques
8 Identify facial types and special considerations
9 Demonstrate the basic braiding techniques

10 Care for and style hairpieces

F. PERMANENT WAVING

1 Explain the history of permanent waving
2 Explain the chemical actions of permanent waving
3 Analyze the hair and scalp conditions for permanent waving
4 Demonstrate the sectioning and blocking techniques for permanent waving
5 Demonstrate the techniques for wrapping a permanent wave
6 Process and neutralize a permanent wave

G. CHEMICAL RELAXING AND CURL REFORMATION

1 Explain the implements and products used in relaxing and reforming techniques
2 Prepare for a chemical relaxing procedure
3 Demonstrate a chemical relaxing procedure
4 Demonstrate curl reformation using thermal pressing and curling procedures
5 Demonstrate curl reformation using chemical procedures

H. MANICURING AND PEDICURING

1 Explain the basic anatomy of the nail
2 Identify nail disease and disorders
3 Describe the bone anatomy of the arms, hands and feet
4 Demonstrate the techniques
5 Demonstrate the application of nail extensions and repair
6 Demonstrate the techniques for giving a pedicure
7 Perform leg and foot treatments

Students are required to successfully participate in class, complete all homework assignments and any class projects/assignments, maintain a notebook and pass teacher prepared tests and quizzes.

A grade of C or higher must be achieved in order to pass/continue in the program.

Curriculum Units

Unit 1: Orientation/ State Board Laws /Rules

Unit 2: General Science

Unit 3: Hair Care

Unit 4: Skin Care

Unit 5: Nail Care

Unit 6: Business skills

Pacing Guide- Course

Content	Number of Hours
Unit 1: Orientation State Board Laws / Rules	**20**
Unit 2: General Sciences	**30**
Unit 3: Hair Care	**785**
Unit 4: Skin Care	**100**

Unit 5: Nail Care 150

Unit 6: Business Skills 10

Unit 2; Hair coloring

Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities	Assessments
1. **Explain the Theory of color**	Students will explain the theory of color , using a prism and color wheel	• Explain how color is obtained from light. • Distinguish among primary, secondary and tertiary colors. • Explain the use of complimentary and contrasting hair colors	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes Self-evaluations

		in relationship with skin tone. • Explain the meaning of hair pigmentation (Melanin). • De4scribe the relationship of porosity of the hair to coloring. • Explain the color wheel in depth. • Mix primary, colors to create a secondary color. • Explain hue, value, tone. •	
Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities	Assessments
2. Test for Allergies	Students will conduct a patch test to determine possible allergic reactions to the client when working with an aniline derivative tint. Develop the ability tp recognize allergic reactions and symptoms. Students will identify the	• Demonstrate patch test. • Explain the importance of following the manufacturer's instructions on color products. • Conduct a hair and scalp analysis • Discuss the chemical composition of hair color	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes Self-evaluations

3. Classify Hair Colors	classificatio0ns of colors that are temporary, semi, demi and permanent hair color.	products. • Identify temporary hair coloring products • Explain the composition of semi- permanent hair color. • Identify semi-permanent coloring products. • Explain the composition of permanent hair color. • Identify permanent hair color products. • Explain meaning and function of metallic hair dyes. • Explain the function of bleach. • Explain the differences in cream, oil, powder hair bleaches. • Explain the action of peroxide as related to oxidation of hair coloring products. • Explain the function and use of 10, 20 ,30 and 40 volume peroxide • Explain the action of boosters (protinators and activators0 in relationship to oxidation of hair. • Coloring products	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes Self-evaluations

4. Consultation on Client with Color	Students will consult with the client to determine the hair color selection.	• Explain the action of drabber on hair coloring products. • Distinguish between warm and cool colors • Distinguish between shades and stages of hair coloring. • Distinguish between single and double color applications. • Read and interpret hair color charts • Explain drab and ash additives • Explain the relationship of skin tones in selecting a hair color. • Discuss color selection with client. • When selecting hair color from charts, discuss the relationship between natural melanin and artificial pigmentation (underlying pigment)	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes Self-evaluations
5. COLOR CHEMICALS	Students will name and explain the purpose of the chemicals that are used in haircoloring.	• Identify the chemical composition of tints, tones, metallic dyes and bleaches. • Explain oxidation as it relates to color	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes Self-evaluations

6.**Identify the Chemicals Associated with Hair Color**	Students will identify the important safety precautions to be followed when coloring hair.	development • Discuss the effects of hydrogen on the hair and identify the purpose of 10, 20 ,30 and 40 volume peroxide • Explain the chemical composition and purpose of color fillers. • Explain what is meant by aniline (cool tar) derivative products.. • Explain the process of metallic salts. • Explain the action of paraphenylene- diamine in tints and toners. Sanitize and organize the work area. • Review the client record card. • Conduct a hair and scalp analysis • Follow the manufacturers instructions for application. • Perform a hypersentivity (patch) test. • Explain the need for wearing protective clothing and rubber gloves.	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes Self-evaluations

6. Apply the Color	Students will apply hair color using the proper techniques and products.	• Review mixing chemical compounds, precautions and use of plastic bowls. • Demonstrate precautions to be followed to avoid scratching or stimulating the scalp. • List all safety precautions to observe during the hair coloring process. • Understand the importance of manufacturer's instructions that appear on hair coloring products. • Demonstrate proper patron draping procedures. • Apply single process hair color. • Apply double process hair color. • Demonstrate a retouch on new growth. • Explain and perform special effects hair coloring. • Analyze problems encountered during coloring process. • Apply temporary hair color • Apply semi- permanent hair color	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes Self-evaluations

7. Demonstrating Hair Lightening Techniques	Students will demonstrate hair lightening using the proper techniques and products.	• Apply permanent hair color. • Explain the theory of hair lightening. • Recognize the importance of following the manufacturer's instructions that appear on the product. • Complete a client record and release card. • Perform a hair and scalp analysis. • Select the proper hair lightening technique for services desired. • Explain how to measure ans mix lighteners. • Review terminology related to hair lightening. • Explain the chemical composition of hair lighteners. • Explain the difference between oil, cream and powder bleach. • Explain how to test hair for desired lightening results. • Explain the action od bleach on the hair. • Demonstrate how to perform a frosting, halo and foil frosting on the	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes Self-evaluations

		hair. • Teach a cap frosting. • Explain retouch process. • Explain basic bleach application. • Explain Balyage technique. • Explain Ombrye technique. • Explain placement and removal of foils.	
8.**PERMANENT WAVE TECHNIQUE** **Explain the History of Permanent Waving**	Students will demonstrate the basic techniques for using end papers to wrap a permanent. Students will identify and explain the important developments in the history of permanent waving.	• Demonstrate the use of endpapers for a double wrap and a bookend wrap. • Demonstrate a standard wrapping technique using single rods. • Demonstrate a piggyback wrapping technique double rods. • Describe the results of curls resting on base, half base and off base. • • Describe the permanent waving machine developed by Charles	Pass with a 100% safety test Teacher Observation

Demonstrating the sectioning and blocking techniques for permanent waving.		Nessler in 1905. • Describe spiral and croquignole wrapping techniques. • Explain the machineless method of perming hair introduced in 1931. • Expalin what is meant by " cold waving" and its introduction in 1940. • Describe the difference in the chemical compounds of cold waves, neutral,ester, and acid balanced waving products. • Explain th e chemical actions that occur when permanent waving the hair. • Explain the physical actions produced by permanent waving the hair. • Describe the effects of rod sizes and placement • Describe the differences in chemical actions of neutral, ester, and acid balanced waving. • Describe the basic chemicals used in permanent waving solutions. • Describe the chemicals in neutralizers.	Demonstrations Projects Rubrics Test/ quizzes Self-evaluations Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes

		• Students will understand the PH scale. • Explain what is meant by hair porosity and demonstrate the methods for testing hair porosity. • Explain what is meant by hair texture and examine various diameters. • Explain what is meant by hair elasticity and demonstrate methods for testing elasticity. • Explain the importance of hair density to rod selection, sectioning and blocking the hair. • Explain how hair length affects final results of a permanent wave. • Explain how hair and scalp conditions affect the selection of the type of permanent wave. • Select type of permanent to be performed based upon a hair and scalp analysis and desired results. • Demonstrate the application following the manufacturer's instruction.	Self-evaluations

Process and neutralize a permanent wave **Chemical Relaxing and Reformation**	Students will apply waving solutions and a neutralizer and process a permanent wave following the manufacturer's instructions listed on the product. Students will identify and explain	• Drape clients for receiving a permanent wave. • Identify commonly encountered problems. • Suggest preventative or corrective measures. • Follow Safety precautions. • Initiate or update a client service record. • Demonstrate various finishing techniques used to enhance the appearance of finished perm. • Explain timing and testing the hair for desired 'S' formation when processing a permanent wave. • Conduct a scalp and hair analysis. • Conduct a strand test to determine condition and ability to accept chemical relaxer. • Discuss the chemical reaction of hair relaxers on the hair and scalp. • Determine proper strength of product based upon condition of the hair. • Explain the need to apply a protective base before	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes Self-evaluations Pass with a 100% safety test Teacher Observation Demonstrations

	the implements and chemical products used in relaxing and reforming techniques.	relaxer is applied. • Explain the need for conditioning filler. • Explain the importance of release forms when a cosmetologist is performing chemical services.	Projects Rubrics Test/ quizzes Self-evaluations
Demonstrate Curl Reformation using a Thermal Pressing and Curling Procedures	Students will demonstrate using the thermal pressing comb and thermal curling iron.	• Determine the need for a preconditioning treatment. • Differentiate between two types of pressing combs. • Select proper implements and products. • Test Iron on a piece of white paper. • Perform a soft curl press. • Perform a hard curl press. • Produce thermal curls using a curling iron • P Produce thermal curls using an electric curling iron • Create croquinole and spiral curls. • Care and maintenance for	Pass with a 100% safety test Teacher Observation Demonstrations Projects Rubrics Test/ quizzes

		curling implements.	Self-evaluations

Unit 4: Nail Care

Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities	Assessments
Manicuring and Pedicuring 1. **Explain the Basic anatomy of the nails.**	Students will explain the basic anatomy and	• Describe the structure of the nail.	Pass with a 100% safety test Teacher Observation

Identify Nail diseases and Disorders	surrounding structure Students will describe nail disorders and diseases and explain treatments to correct them	• Describe the function of the nail. • Define terminology of nail structure • Describe the composition of the nail, blood supply, the nerve supply and nail growth patterns. • Identify five basic nail shapes. • List the common disorders and diseases of the nail. • Describe treatments recommended for these diseases and disorders. • List safety precautions needed for treating nail diseases and disorders	Demonstrations Projects Rubrics Test/ quizzes Self-evaluations

Essential Questions	Instructional Objectives/ Skills and Benchmarks *(CPIs)*	Activities	Assessments
Describe the Bone and Anatomy of the Arms, Hands and Feet	Students will name and describe the bones of the arms, hands and feet.	• Identify the bones of the arms, hands, and feet. • Describe the functions of the bones • Identify and label the main	

		nerves and arteries of the arms, hands and feet.	
Demonstrate the technique for giving a manicure	Students will give a plain and a oil manicure following proper techniques.	• Explain the purpose of a manicure • Assemble the implements and related material used to perform a manicure. • Prepare a manicuring table. • Follow safety and sanitation procedures • Perform hand and arm massage • Perform a plain manicure • Perform an oil manicure • Perform a manicure in a male client. • Perform a manicure using electric equipment.	
Demonstrate the Application of Nail Extensions and Repair	Students will describe the types of nail extensions and demonstrate the application of nail extensions and repairs	• Set up a manicuring table with implements and necessary equipment. • Perform a hand and nail analysis and determine the type of service needed. • Follow all safety and sanitation procedures. • Demonstrate a nail extension application.	

Perform Leg and Foot Treatment	Students will demonstrate basic cosmetics and manual treatments	• Demonstrate nail sculpturing. • Demonstrate Nail Art • Analyze legs and feet to determine treatment • Assemble implements for providing desired treatment. • Describe anatomy of the hands and feet • Follow the safety precautions described on manufacturer's instructions. • Perform Leg waxing • Perform massage on legs and feet.	

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Academic Area

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Concept	Student has a clear picture of what they are trying to achieve. They can describe what they are trying to do and generally how his/her work will contribute to the final product.	Student has a fairly clear picture of what they are trying to achieve. Each member can describe what they are trying to do overall but has trouble describing how his/her work will contribute to the final product.	Student has brainstormed their concept, but no clear focus has emerged. Student may describe the goals/final product differently.	Student has spent little effort on brainstorming and refining a concept. Students are unclear on the goals and how their contributions will help them reach the goal.	

Equipment Preparation	All necessary equipment/supplies are setup fully and taken down completely. Tools are clearly labeled and put in its proper place.	All necessary equipment/supplies are not setup and/or taken down completely OR tools are not clearly labeled and/or put back in their proper place.	All necessary equipment/supplies are not setup and/or taken down completely AND tools are not clearly labeled and/or put back in their proper place.	All necessary equipment/supplies are not setup and/or taken down completely AND tools are not clearly labeled and/or put back in their proper place. Equipment hinders and/or delays final product.	
Teamwork (when placed in teams)	Students meet and discuss regularly. All students contribute to the discussion and all are listened to respectfully. All team members contribute a fair share of the work.	Students meet and discuss regularly. Most students contribute to the discussion and are listened to respectfully. All team members contribute a fair share of the work.	A couple of team meetings are held. Most students contribute to the discussion and are listened to respectfully. All team members contribute a fair share of the work.	Meetings are not held AND/OR some team members do not contribute a fair share of the work.	
	Procedure done correctly, in focus, steady.	Procedures are not followed with precision. Student grasps concepts but needs to continue to practice.	Procedures are not followed with precision. Student demonstrates some understanding but work is sloppy and needs practice.	Procedures are not followed. Student does not exhibit mastery of taught content. Work is sloppy and inconsistent.	
Conclusion	Final product is flawless. Final product is Salon worthy.	Final product has some rough cuts. Work is less than perfect.	Final product has many flaws. Final product is not professional.	Final product is poor. Final product does not meet standards necessary to use on a client and are not Salon worthy.	