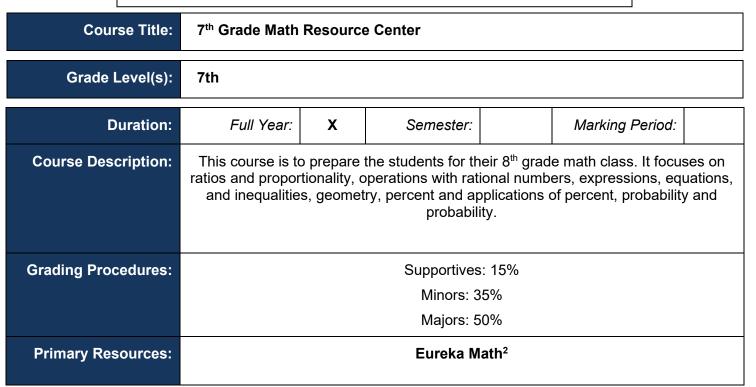


Washington Township School District

The mission of the Washington Township Public Schools is to provide a safe, positive, and progressive educational environment that provides opportunity for all students to attain the knowledge and skills specified in the NJ Learning Standards at all grade levels, so as to ensure their full participation in an ever-changing world as responsible, self-directed and civic-minded citizens.



Washington Township Principles for Effective Teaching and Learning

- Implementing a standards-based curriculum
- Facilitating a learner-centered environment
- Using academic target language and providing comprehensible instruction
- Adapting and using age-appropriate authentic materials
- Providing performance-based assessment experiences
- Infusing 21st century skills for College and Career Readiness in a global society

Designed by:	Jennifer Rauch
Under the Direction of:	Joanne Henry
Written:	
F	Revised:

BOE Approval: _____

Unit One: Ratios and Proportional Relationships

Unit Description: Students apply multiplicative relationships and ratio reasoning to understand proportional relationships and identify them in tables, graphs, equations, and written descriptions. They compare proportional relationships and determine when constant rates indicate proportional relationships. Students connect the constant of proportionality to scale factor, and they use proportionality to identify when figures are truly enlargements or reductions of original figures.

Unit Duration: 6 weeks

Desired Results

Standard(s): 7.RP.A.1 7.RP.A.3 7.G.A.1 7.RP.A.2.a 7.RP.A.2.b 7.RP.A.2.c 7.RP.A.2.d

Indicators:

Compute unit rates associated with ratios of fractions given within contexts.

Recognize proportional relationships.

Identify the constant of proportionality in proportional relationships.

Represent proportional relationships given in contexts with equations.

Interpret the meaning of any point (x, y) on the graph of a proportional relationship in terms of the situation, including the points (0, 0) and (1, r), where r is the unit rate.

Solve multi-step ratio problems by using proportional relationships (not expressed as percentages).

Reproduce a scale drawing at a different scale.

Solve problems involving scale drawings of geometric figures.

 Understandings: Students will understand that Sets of equivalent ratios represent proportional relationships. proportional relationships are represented in tables, graphs, equations, and written descriptions. When constant rates indicate proportional relationships. How to write equations to model constant rate situations and part-to-whole ratio relationships. Proportionality goes by another name, scale factor, when applied to scale drawings. The scale factor as the constant that produces an enlargement of a figure 	 Essential Questions: How can we determine whether a relationship between two quantities has a constant rate? What connections can we make between constant rate relationships and our knowledge of ratios? How can we distinguish a proportional relationship from a relationship that is not proportional by looking at their graphs? How can you determine the constant of proportionality from the graph of a proportional relationship? How does the steepness of a line relate to the unit rate triangle of a proportional relationship?
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 when it is greater than <i>1</i> and a reduction when it is between <i>0</i> and <i>1</i>. Using the scale factor and then compare the area of a figure to the area of its scale drawing. 	 When we substitute a number for a variable in a two-variable equation, how do we determine which variable to substitute for? What proportional relationships exist in a situation where there is a consistent ratio between two parts that form a whole? How are ratios, rates, and proportional relationships connected? How can we use proportional relationships to solve problems? Can we determine whether a scale drawing is an enlargement or a reduction using only the scale factor? Why or why not? How is a scale factor used to create a scale drawing? Are the areas of proportional figures also proportional? Explain why or why not. What is a scale, and why is it useful? How can we find the scale factor that relates an original figure to a second scale drawing? 	
Assessment Evidence		
Performance Tasks: Lesson 1 -> Learn Section-> Digital Activity Lesson 4-> Learn Section -> Digital Activity Lesson 5-> Learn Section-> Four Square Task Lesson 6-> Learn Section-> Create Your Own Lesson 7-> Learn Section-> Hand Stand Races Lesson 9-> Learn Section-> Digital Activity Lesson 10-> Learn Section-> Card Sort Activity Lesson 19-> Learn Section-> Creating a Billboard Benchmarks:	Other Evidence: Topic A Quiz-1-5 Topic B Quiz 7-13 Topic C Quiz 14-20	
Module 1 Assessment		
Learning Plan		

Learning Activities: Each lesson consists of the following

Fluency Activities Launch Learn Exit Tickets

Resources:

• Eureka Math²- Module Overview (Explains in detail the different Fluency activities)

Unit Two: Operations with Rational Numbers

Unit Description:

Students extend their knowledge of rational numbers and use patterns and properties of operations to make sense of rational and negative number addition, subtraction, multiplication, and division. Students also use the properties of operations, as well as decomposition and order of operations, to evaluate numerical expressions containing rational numbers.

Unit Duration: 7 weeks

Desired Results

7.NS.A 7.NS.A.3 7.NS.A.1.a 7.NS.A.1.b 7.NS.A.1.c 7.NS.A.1.d 7.NS.A.2.a 7.NS.A.2.b 7.NS.A.2.c	
7.NS.A.1.a 7.NS.A.1.b 7.NS.A.1.c 7.NS.A.1.d 7.NS.A.2.a 7.NS.A.2.b 7.NS.A.2.c	
7.NS.A.1.b 7.NS.A.1.c 7.NS.A.1.d 7.NS.A.2.a 7.NS.A.2.b 7.NS.A.2.c	
7.NS.A.1.c 7.NS.A.1.d 7.NS.A.2.a 7.NS.A.2.b 7.NS.A.2.c	
7.NS.A.1.d 7.NS.A.2.a 7.NS.A.2.b 7.NS.A.2.c	
7.NS.A.2.a 7.NS.A.2.b 7.NS.A.2.c	
7.NS.A.2.b 7.NS.A.2.c	
7.NS.A.2.c	
7.NS.A.2.d	
7.EE.B.3	
Recognize the equivalence of $-(p/q)$, $(-p)/q$, and $p/(-q)$, whe Interpret products and quotients of rational numbers by desc Evaluate products and quotients of rational numbers. Write the fraction form of a rational number in its decimal for Identify that the decimal form of a rational number terminate Solve real-world and mathematical problems involving the for Describe situations in which opposite quantities combine to Model addition of two rational numbers on a number line usi Show that a number and its opposite have a sum of 0 (are a Interpret sums and differences of rational numbers by descr Apply the equivalence between subtracting a rational number Show on a number line that the distance between two ration difference. Evaluate sums and differences of rational numbers. Recognize that the signs of products are the result of the sign	cribing real-world contexts. rm using long division. es in 0's or eventually repeats. our operations with rational numbers. make 0. ing directed line segments. additive inverses). ribing real-world contexts. er and adding that number's additive inverse; p-q=p+ (-q). hal numbers is the same as the absolute value of their

 How to relate opposite numbers to additive inverses and use them to help ovaluate addition expressions. 	 What is the result of adding opposites? How can we use a number line to represent addition expressions?
evaluate addition expressions.	• How can we predict whether the sum of two
	integers is positive or negative?

 Using number lines, decomposition, and patterns to evaluate addition expressions. Differences by plotting points on number lines and finding the distance between them. Representing subtraction expressions on a number line to identify that subtracting is the same as adding the opposite. Identifying patterns among multiplication expressions and their products. Relating exponential expressions containing positive or negative bases to repeated multiplication. Modeling division with number bonds and number lines and using unknown factor equations to make connections between multiplication and division. Exploring similarities and differences of terminating decimals and repeating decimals written in fraction form and decimal form. Using properties of operations, decomposition, and order of operations to evaluate numerical expressions containing rational numbers. 	 How can we add positive and negative values? What addends can we use to produce a specific sum? How is subtraction of integers related to addition of integers? How can a subtraction expression be written as an equivalent addition expression? What do we know about the product of a positive and a negative number? How is multiplying rational numbers the same as multiplying integers? What patterns do we notice when multiplying rational numbers? Given an exponential expression, how can we determine the sign of the expression's value without evaluating? How are division and multiplication of integers related? In what ways can we write a quotient of two given integers? How do we know they are all equivalent? When finding a sum or a difference, does the form of the numbers matter? Why or why not? How is a number line used to represent and compare numbers? 	
	When evaluating exponents, when is the negative sign part of the base? Q	
Assessme	nt Evidence	
Performance Tasks: Lesson 2->Learn Section->Digital Activity Lesson 4-> Learn Section->Kakooma Puzzle Lesson 12-> Learn Section-> Integer Game Lesson 15-> Learn Section-> Create their Own Problem Lesson 22-> Learn Section->Possible Quotients Task Lesson 26-> Learn Section-> Gallery Walk	Other Evidence: Topic A Quiz 1-6 Topic B Quiz 7-12 Topic C Quiz 13-16 Topic D Quiz 17-22 Topic E Quiz- 23-26	
Benchmarks:		
Benchmark 2 Assessment		
Learning Plan		

Learning Plan

Learning Activities:

Each lesson consists of the following

Fluency Activities Launch Learn Exit Tickets

Resources:

• Eureka Math²- Module Overview (Explains in detail the different Fluency activities)

Unit Three: Expression Equations, and Inequalities

Unit Description:

In module 3, students move from doing familiar work with numerical expressions to determining when algebraic expressions are equivalent. They apply properties of operations—namely the distributive property—as well as the use of tabular models to multiply and factor expressions with rational and negative numbers. Students explore unknown angle measurement contexts to solve equations and move to a new strategy for solving equations: if-then moves. Students use if-then moves or the structure of the equation to solve equations in the forms $p \mathbb{X}x + q = r$ and p(x+q) = r, where p, q, and r are specific rational numbers and the in the form xp = qr to foreshadow work with proportional reasoning in module 5. Students apply and extend the if-then moves to solving inequalities.

Unit Duration: 5 Weeks

Desired Results

Standard(s):
7.EE.A.1
7.EE.A.2
7.EE.B.3
7.EE.B.4
7.EE.B.4.a
7.EE.B.4.b
7.G.B.5
Indicators:
Add subtrast factor, and expand linear expressions with rational exertisions using properties of exercisions as

Add, subtract, factor, and expand linear expressions with rational coefficients, using properties of operations as strategies.

Graph solution sets of inequalities on number lines.

Interpret solution sets of inequalities in the contexts of word problems.

Write and solve equations to find unknown angle measures by using known facts about angle relationships.

Identify different, equivalent forms of expressions given in a problem context.

Solve multi-step, real-world and mathematical problems posed with positive and negative rational numbers in any form. Assess the reasonableness of answers to multi-step, real-world and mathematical problems posed with positive and negative rational numbers in any form. Write equations that represent real-world or mathematical situations.

Write inequalities that represent real-world or mathematical situations.

Solve word problems leading to equations of the forms px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers.

Compare algebraic solutions to arithmetic solutions of word problems.

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.

 Understandings: Students will understand that Numerical expressions to determine when algebraic expressions are equivalent. The application of properties of operations—namely the distributive property—as well as the use of the tabular model, students multiply and factor expressions with rational and negative numbers. New angle relationships and how to write and solve equations that help determine unknown angle measures. Using properties of operations and visual models to solve equations. Advantages and disadvantages of presenting problems rhetorically and symbolically. Solving equations is like solving inequalities. 	 Essential Questions: How can we use the distributive property to write equivalent expressions? Does combining like terms result in a simpler expression? Why? How can we factor expressions? What does it mean for two angles to be complementary? How does knowing about angle relationships help us find unknown angle measures? How can we use if-then moves to find How can we use angle relationships and equations to determine unknown angle measures? What are the similarities and differences between using an algebraic approach and using an arithmetic approach to solve a problem? When working with a boundary number, How can we use what we know about equations to solve inequalities? Can we solve inequalities by using if-then moves, the way we solve equations? Explain. How is solving inequalities different from solving equations? How is solving inequalities different from solving equations? Why are there restrictions to solution sets of inequalities? How can we change a situation so it can be represented with an inequality instead of an equation instead of an inequality?
Assessme	nt Evidence
Performance Tasks: Lesson 1 -> Learn Section -> Two Truths One Lie Lesson 2 -> Learn Section -> Digital Activities Lesson 6 -> Learn Section -> Stations Lesson 11-> Learn Section -> Domino Tower and Gallery Walk	Other Evidence: Topic A Quiz 1-6 Topic B Quiz 7-10 Topic C Quiz 11-17 Topic D Quiz 18-23

Benchmarks:

Module 3 Assessment

Learning Plan

Learning Activities: Each lesson consists of the following

Fluency Activities Launch Learn Exit Tickets

Resources:

• Eureka Math²- Module Overview (Explains in detail the different Fluency activities)

Unit Four: Geometry

Unit Description:

Students construct geometric figures by sketching or by using tools and technology. They construct triangles given certain conditions and determine whether triangles are identical. They discover that at least three conditions are needed to guarantee a unique triangle, but that three angle measures alone do not guarantee a unique triangle. Students explore the proportional relationship between the circumference of a circle and its diameter and formally use pi to determine the circumference of a circle. They use circumference to aid in generalizing the formula for the area of a circle, and determine the area of circles, semicircles and guarter-circles. Students use strategies to find the area of composite figures and determine an efficient strategy to calculate the surface area of three-dimensional solids. They explore the cross sections of three-dimensional solids and use the information to understand how to compose or decompose a three-dimensional solid to calculate its volume more efficiently.

Unit Duration: 6 Weeks

Desired Results

Standard(s):
7.G.A.2
7.G.A.3
7.G.B.4
7.G.B.6
Indicators:
Construct geometric shapes (triangles, guadrilaterals, circles) with given conditions.

Recognize conditions that determine a unique triangle, more than one triangle, or no triangle.

Describe cross sections that result from slicing three-dimensional figures (right prisms and right pyramids).

Solve problems involving area and circumference of a circle.

Describe how the circumference and area of circles are related.

Solve real-world and mathematical problems involving area of two-dimensional objects composed of triangles, quadrilaterals, and polygons.

Solve problems involving volume and surface area of three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Understandings:

Students will understand that...

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- Triangles can be constructed given certain conditions and construct triangles to determine whether they are identical.
- When triangles are constructed with the same three side lengths, all the triangles are identical so a unique triangle is guaranteed. Quadrilaterals constructed with the same side lengths, students realize that a unique quadrilateral is not guaranteed.
- The sum of any two side lengths of a triangle must be greater than the third side length and that the sum of the measures of any two angles must be less than 180° in order to form a triangle.
- At least three conditions must be met to guarantee a unique triangle, but that three angle measures alone do not guarantee a unique triangle.
- When unique triangles are formed by considering two angle measures and one side length and by considering two side lengths and one angle measure.
- Proportional relationship between the circumference of a circle and its diameter, and they ultimately use pi to determine the circumference of a circle. By using circumference, students are able to determine the radius or diameter of a circle. They use circumference to aid in generalizing the formula for the area of a circle, *A*=π⊠r2, and then they use the formula to find the area of circles, semicircles, and quarter-circles.

Essential Questions:

- Can we make a triangle with any three side lengths?
- How are the three side lengths of a triangle related?
- Can we form a triangle with two angles of any measure?
- How can we check to see whether we have identical figures?
- What number of conditions and what types of conditions guarantee a unique triangle?
- Which sets of three conditions guarantee a unique triangle?
- What is the difference between finding the exact circumference of a circle and finding the approximate circumference of the circle?
- What makes a composite figure different from other figures for which we have found the perimeter and the area?
- How can we use what we know about area to assess the efficiency of our models?
- How can we use nets to understand how to find the surface area of a cylinder?
- Can a solid be cut with a plane that is neither parallel nor perpendicular to the base?
- What cross sections are formed when a plane cuts a solid at an angle?
- How is finding the volume of other right prisms similar to finding the volume of right rectangular prisms?

• An efficient strategy to calculate the lateral surface area of a right prism is to multiply its height by the perimeter of one of its bases.	
Assessment Evidence	
Performance Tasks: Lesson 1-> Learn Section-> Sketch Mandala Lesson 2-> Learn Section ->Draw Geometric Shapes Lesson 8 -> Learn Section -> Digital Activity Lesson 11 -> Learn Section -> Digital Activity Lesson 19 -> Learn Section -> Cover the Can Lesson 22 -> Learn Section -> Cutting Butter Lesson 23-> Learn Section -> Scavenger Hunt Lesson 26-> Learn Section -> Building a Fish Tank	Other Evidence: Topic A Quiz 1-5 Topic B Quiz 6-8 Topic C Quiz 9-15 Topic D Quiz 16-21 Topic E Quiz 22-26

Benchmarks:

Module 4 Assessment

Learning Plan

Learning Activities:

Each lesson consists of the following

Fluency Activities Launch Learn Exit Tickets

Resources:

• Eureka Math²- Module Overview (Explains in detail the different Fluency activities)

Unit Five: Percent and Applications of Percent

Unit Description:

Connection to the learning from previous modules drives the need for students to use percents. Students realize the equation ab=cd represents proportional relationships and use proportions and rate language to examine percent as a rate per *100*. They identify part, whole, and percent and use proportional reasoning to solve percent problems in real-world contexts, understanding that the unknown could either be part of *100* or more or less than *100%*.

Unit Duration: 6 Weeks

Desired Results

Standard(s):

7.RP

7.RP.A.3

7.RP.A.2.c

7.EE.A.2

7.G.A.1

Indicators:

Write other representations of a rational number (fraction, decimal, percent) given one representation by using a unified understanding of numbers.

Write an equation in the form a/b = c/d to determine an unknown quantity.

Solve percent problems by using the relationships among the part, whole, and percent (including complex fractions and non–whole number percents).

Solve multi-step percent problems by using proportional relationships.

Identify equivalent forms of expressions given in a percent problem context.

Interpret the relationship between quantities in equivalent forms of an expression.

Solve problems involving percents and scale drawings of geometric figures.

Understandings:

Students will understand that ...

- Equations represent proportional relationships.
- The relationships among the part, whole, and percent and choose which equations to use to most efficiently solve percent problems.
- The part, whole, and percent to determine unknown values. To solve percent problems, students compare and use different solution strategies, including tape diagrams, double number line diagrams, mental math, equations in the form of y=kxx, and proportions.
- Percent increase and decrease in various contexts including conservation, discounts, and scale factors. In addition, students calculate multiple discounts and determine that discounts cannot be added to find the final discount price.
- Percent includes tips, taxes, markups, more discounts, and percent error. They extend their knowledge of proportionality to solve problems involving simple interest. Through solving problems for unknown values, they realize that an increase in principal, interest rate, or time results in more interest.

Essential Questions:

- What do we know about percents?
- How do percents relate to rates?
- How are percent problems related to proportional relationships?
- Why can we use *y*=*kx* to calculate commission?
- Does the constant of proportionality in a percent problem always need to be written as a fraction?
- How can you apply what you know about proportions or the equation *y*=*kx* to solve problems that involve taxes? Why?
- How are taxes similar to additional fees? How are they different?
- When is knowing the percent increase more helpful than knowing the amount of increase?
- How do scale factor and percents relate to each another?
- How does finding the total amount of a bill relate to percent increase?
- How do wholesale prices, markup amounts, retail prices, and discounted prices relate to each other?
- How do markups relate to percent increase? How do discounts relate to percent decrease?

use proportionality to generate c calculating simple interest? find unknown values of nual simple interest rate, or le interest situations? increase in principal, annual est rate, or time affect the terest earned or paid? Why? olute error and percent error penefit of calculating or using error? Q		
Performance Tasks:Other Evidence:Lesson 3 -> Learn Section -> Create Your Own Lesson 13 -> Learn Section -> Time to Order & Gallery Walk Lesson 14 -> Learn Section -> Digital Activity Lesson 15-> Learn Section -> Meal Selection Lesson 20 -> Learn Section -> Making Money Lesson 21 -> Learn Section -> Gallery Walk Lesson 22 -> Learn Section -> Making MixturesTopic E Quiz 10-14 Topic E Quiz 20-24Benchmarks: Module 5 AssessmentModule 5 Assessment		
Learning Plan		
Learning Activities: Each lesson consists of the following Fluency Activities Launch Learn Exit Tickets Resources: • Eureka Math ² - Module Overview (Explains in detail the different Fluency activities)		
c		

Unit Six: Probability and Populations

Unit Description:

Students bridge their understanding of proportional relationships to calculating and interpreting probabilities. They find empirical probabilities and compute theoretical probabilities. Students estimate probabilities and observe that the more trials they conduct, the closer an empirical probability should be to the theoretical probability. They further estimate when they learn the importance of random sampling and when they estimate a population proportion by using categorical data from a random sample. Students end the module by comparing populations with similar variability.

Unit Duration: 5 Weeks

Desired Results		
Standard(s):		
7.SP.A.1		
7.SP.A.2		
7.SP.B.3		
7.SP.B.4		
7.SP.C.5		
7.SP.C.6		
7.SP.C.7		
7.SP.C.7.a		
7.SP.C.7.b		
7.SP.C.8.a		
7.SP.C.8.b		
7.SP.C.8.c		
Indicators:		
Determine whether given samples of a population are repre- nonrepresentative samples.	esentative of the population and identify flaws in given	
Calculate probabilities for compound events.		
Use simulations to generate frequencies for compound events and identify errors in given simulations.		
Draw inferences about a population from random samples	of the population.	
Express the difference between the centers of two numerical data distributions with similar variabilities as a multiple of a measure of variability.		
Draw informal comparative inferences about two population sample of each population.	ns by using measures of center and variability from a random	
Judge the likelihood of a chance event.		
Solve problems involving the probability of chance events a	and their relative frequencies.	
Compare empirical probabilities of events to theoretical probabilities.		
Determine theoretical probabilities of events based on uniform probability models.		
Develop probability models based on observed frequencies	5.	
 Understandings: The probability of an event as the fraction of the time that the event will occur when a chance experiment is repeated many times. They learn to find empirical probabilities and to compute theoretical probabilities by using a variety of methods, including collecting data and using tree diagrams. That the more trials they conduct, the closer an empirical probability. Students 	 Essential Questions: How are data from a chance experiment used to calculate the empirical probability of an event? How do we describe the possible results of a chance experiment? What is theoretical probability? How do tree diagrams help us calculate theoretical probabilities? What types of situations can we analyze by calculating theoretical probabilities? What types of situations can we not analyze that 	
are introduced to simulations, and they	way?	

 How can we use empirical probabilities to create a probability model? When is a simulation useful for determining probability? How do we collect and use data about groups we cannot measure completely? What is a random sample? What is sampling variability? How can we determine whether two population means differ by using sample means? What method can we use to determine that a difference in sample means? 		
Assessment Evidence		
Other Evidence: Topic A Quiz 1-6 Topic B Quiz 7-10 Topic C Quiz 11-16		

Benchmarks:

Module 6 Benchmark

Learning Plan

Learning Activities: Each lesson consists of the following

Fluency Activities Launch Learn Exit Tickets

Resources:

• Eureka Math²- Module Overview (Explains in detail the different Fluency activities)

Unit Modifications for Special Population Students		
English Language Learners	Graphic Organizers	
Learners with an IEP	Each special education student has in Individualized Educational Plan (IEP) that details the specific accommodations, modifications, services, and support needed to	

	 level the playing field. This will enable that student to access the curriculum to the greatest extent possible in the least restrictive environment. These include: Variation of time: adapting the time allotted for learning, task completion, or testing
	 Variation of input: adapting the way instruction is delivered
	 Variation of output: adapting how a student can respond to instruction
	 Variation of size: adapting the number of items the student is expected to complete
	Modifying the content, process or product
	Additional resources are outlined to facilitate appropriate behavior and increase student engagement. The most frequently used modifications and accommodations can be viewed <u>here</u> .
	Teachers are encouraged to use the Understanding by Design Learning Guidelines (UDL). These guidelines offer a set of concrete suggestions that can be applied to any discipline to ensure that all learners can access and participate in learning
	opportunities. The framework can be viewed here www.udlguidelines.cast.org
Learners with a 504	Refer to page four in the Parent and Educator Guide to Section 504 to assist
	in the development of appropriate plans.

Interdisciplinary Connections

Indicators:

Health and Wellness: Handstand Races Art: Creating a Billboard

Integration of 21st Century Skills

Indicators:

Creativity- Lesson 6 Create your Own, Lesson 19 Creating a Billboard Collaboration- working in pairs and small groups Communication- discusses held during the lesson Social Skills- discussing different problems in pairs or small groups.