Math Overview Seward MYP 2019-2020

Subject Mathematics

Teacher(s) Laura Sorce

MYP Year, Unit Title, Teacher	Key concept	Related Concept(s)	Global context & Exploration	Statement of inquiry	Subject specific objectives	ATL Skills	Content
MYP 1 Data Unit 1 Laura Sorce	Communication	Representation Model	Human Capability and Development	Communication occurs with models and representations showing the development of human capabilities.	Criterion A,C & D	**Thinking Skills:** interpret data **Communication Skills**: take effective notes in class & data binder **Self Management Skills:** keep and use a weekly planner for assignments, bring necessary supplies to class, keep an organized math notebook	**CCSS.MATH.CONTENT.6.SP.A.1** Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *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.* **CCSS.MATH.CONTENT.6.SP.A.2** *Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.*

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							CCSS.MATH.CONTENT.6.SP.A.3 *Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.* **CCSS.MATH.CONTENT.6.SP.B.4** *Display numerical data in plots on a number line, including dot plots, histograms, and box plots.* **CCSS.MATH.CONTENT.6.SP.B.5** *Summarize numerical data sets in relation to their context, such as by:* **CCSS.MATH.CONTENT.6.SP.B.5.A** *Reporting the number of observations.* **CCSS.MATH.CONTENT.6.SP.B.5.B** *Describing the nature of the attribute under*

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							investigation, including how it was measured and its units of measurement. **CCSS.MATH.CONTENT.6.SP.B.5.C** *Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.* **CCSS.MATH.CONTENT.6.SP.B.5.D** *Relating the choice of measures of center and variability to the shape of the data distribution and the context in*

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							which the data were gathered.
MYP 1 Math Curse Unit 2 Laura Sorce	Relationships	Equivalence Representation	Fairness and development;	Mathematical puzzles and problems show relationships of equivalence and have multiple representations.	Criterion A, C	**Critical Thinking Skills:** Draw reasonable conclusions and generalizations **Social Skills:** Give and receive meaningful feedback **Self Management SKills:** Demonstrate perseverance and persistence	**Common Core State Standards:** **6.NS.B.4** – Find the greatest common factor of 2 whole numbers less than or equal to 100 and the LCM of 2 whole numbers or equal to 12. Use the distributive property to express a sum of 2 whole numbers 1-100 with a common factor as a multiple of a sum of 2 whole numbers with no common factor. **6.NS.C.5** – Understand that positive and negative numbers are used together to describe quantities having opposite directions or values; use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. **6.NS.C.6** – Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with

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							negative number coordinates. **6.NS.C.7** – Understand ordering and absolute value of rational numbers.
MYP 1 Numbers and Operations Unit 3 Laura Sorce	Relationships	Model Quantity	Systems and products Scientific and technical innovation	Models are used to show relationships between quantities and products.	Criterion A Criterion C Criterion D	**Thinking Skills:** Evaluate evidence and arguments **Communication:** Understand and use mathematical notation	**Common Core State Standards:** **6.NS.A.1** – Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions. **6.NS.B.2** – Fluently divide multi-digit numbers using the standard algorithm. **6.NS.B.3** – Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. **6.NS.B.4** – Find the greatest common factor of 2 whole numbers less than or equal to 100 and the LCM of 2 whole numbers or equal to 12. Use the distributive property to express a sum of 2 whole numbers 1-100 with a common factor as a multiple of a sum of 2 whole numbers with no common factor. **6.NS.C.5** – Understand that positive and negative numbers are used together to describe

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							quantities having opposite directions or values; use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. **6.NS.C.6** – Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. 6.NS.C.7 – Understand ordering and absolute value of rational numbers.
MYP 1 Ratios & Rates Unit 4 Laura Sorce	Change	Measurement	Scientific and technical innovations; Systems, models, methods; products, processes and solutions	**Changes** in **measurements** can be **modeled** giving different **solutions**.	Criterion C Criterion D	**Thinking:** Combine knowledge, understanding and skills to create products or solutions **Communication** use appropriate forms of writing for different purposes and audiences	**6.RP.** Understand ratio concepts and use ratio reasoning to solve problems. **CCSS.MATH.CONTENT.6.RP.A.1** Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C

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							received nearly three votes." **CCSS.MATH.CONTENT.6.RP.A.2** Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. 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."1 **CCSS.MATH.CONTENT.6.RP.A.3** Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. **CCSS.MATH.CONTENT.6.RP.A.3.A** Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. **CCSS.MATH.CONTENT.6.RP.A.3.B**

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							Solve unit rate problems including those involving unit pricing and constant speed. 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? **CCSS.MATH.CONTENT.6.RP.A.3.C** Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. **CCSS.MATH.CONTENT.6.RP.A.3.D** Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
MYP 1 Expressions & Equations Unit 5 Laura Sorce	Form	Representation Change	Scientific and Technical Innovation Mathematical puzzles, principles and discoveries	Representations of change take many forms responding to discoveries.	**Criterion A:** Knowing and Understanding Select appropriate mathematics when solving problems in both familiar and unfamiliar situations · Apply the selected	**Critical Thinking** – Test Generalizations and Conclusions **Communication Skills** - Use/interpret a range of discipline-specific terms and symbols	**Expressions** 1. Write and evaluate numerical expressions involving whole-number exponents. 2. Write, read, and evaluate expressions in which letters stand for numbers a. Write expressions that record operations with numbers and with letters standing form numbers. b. Identify parts of an expression using

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					mathematics successfully when solving problems · **Criterion B**: Investigating patterns · Apply mathematical problem-solving techniques to recognize patterns. · Describe patterns as relationships or general rules consistent with correct findings · Verify whether the pattern works for other examples		mathematical terms (sum, term, product, factor quotient, coefficient); view one or more parts of an expression as a single entity. c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). 3. Apply the properties of operations to generate equivalent expressions. 4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).
MYP 1 Areas and Polygons Unit 6	Aesthetics	Space Representation	Identities and Relationships	The aesthetics of space can be represented in various forms with different identities and relationships.	Criterion B	**Critical Thinking** - Propose and evaluate a variety of s **Creative Thinking** – Use brainstorming and mind mapping	CCSS Area S.G.1 Geometry on the Coordinate Plane 6.NS.8, 6.G.3 Nets and Surface Area 6.G.4

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