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Month	IB Unit/Topic	Assessments and Activities	Approaches to Learning	Curriculum Standards and IB Criterion and Strands
September	**Unit 1: Integers**	**<u>Activities:</u>** Balanced Math ISN Integers Heroes Vs. Villains Zero Pairs algeblocks Flocabulary **<u>Glencoe Math Course 2:</u>** 3.1 Integers & Absolute Value 3.2 Add Integers 3.3 Subtract Integers 3.4 Multiply Integers 3.5 Divide Integers **<u>Formative:</u>** Quizzes exit tickets manipulatives student-student interactions class discussion formulate rules **<u>Summative:</u>** Unit 1 Test Integer Tic-Tac-Toe	ATL Category:Thinking Skill Cluster: Creative Make unexpected or unusual connections between objects and/or ideas ATL Category:Thinking Skill Cluster: Transfer Use effective learning strategies in subject groups and disciplines ATL Category:Self-Management Skill Cluster: Affective Mindfulness --Practise strategies to develop mental focus ATL Category:Thinking Skill Cluster:Critical Thinking Propose and evaluate a variety of solutions	***<u>Curriculum Objectives:</u>*** 7.NS.1a-d: 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. a. Describe situations in which opposite quantities combine to make 0. b. 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. c. Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q).d. Apply properties of operations as strategies to add and subtract rational numbers. 7.NS.2a-c: Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers then – (p/q) = (–p)/q = p/(–q). c. Apply properties of operations as strategies to multiply and divide rational numbers 7.NS.3:Solve real-world and mathematical problems involving the four operations with rational numbers.

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				IB Criterion/Strands: Criterion D: Applying mathematics in real-life contexts i. identify relevant elements of authentic real-life situations ii. select appropriate mathematical strategies when solving authentic real-life situations iii. apply the selected mathematical strategies successfully to reach a solution iv. explain the degree of accuracy of a solution v. describe whether a solution makes sense in the context of the authentic real-life situation.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
October	**Unit 2: Rational**	**Activities:** Balanced Math ISN	ATL Category: Self-Management Skill Cluster: Organization	***Curriculum Objectives:*** **7.NS.1a-d: Apply and extend previous understandings of addition and subtraction to add**

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	Numbers	Fraction Review Fraction Tiles Fraction Scavenger Hunt Number Lines Percent Diagrams Flocabulary **Glencoe Course 2:** 4.1 Terminating and Repeating Decimals 4.2 Compare and Order Rational Numbers 4.3 Add and Subtract Like Fractions 4.4 Add and Subtract Unlike Fractions 4.5 Add and Subtract Mixed Numbers 4.6 Multiply Fractions 4.7 Convert Between Systems 4.8 Divide Fractions 2.1 Percent of Number 2.2 Percent and Estimation 2.3 The Percent Proportion 2.4 The Percent Equation 2.5 Percent of Change 2.6 Sales Tax, Tips, and Markups 2.7 Discount **Formative:** Quizzes exit tickets student-student interactions class discussion formulate rules observation **Summative:** Unit 2 Test International Commerce Investigation/Poster	Keep an organized and logical system of information files/notebooks ATL Category: Thinking Skill Cluster: Transfer Apply skills and knowledge in unfamiliar situations ATL Category: Communication Skill Cluster: Communication Negotiate ideas and knowledge with peers and teacher ATL Category: Research Skill Cluster: Information Literacy Collect and analyse data to identify solutions and make informed decisions	**and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.** **a. Describe situations in which opposite quantities combine to make 0.** **b. 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. ts.** **c. Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q).d. Apply properties of operations as strategies to add and subtract rational numbers.** **7.NS.2a-c: Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.** **a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.** **b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real-world contexts.** **c. Apply properties of operations as strategies to multiply and divide rational numbers** **7.NS.3:Solve real-world and mathematical problems involving the four operations with rational numbers.** ***IB Criterion/Strands:***

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				Criterion C: Communicating i. use appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations ii. use different forms of mathematical representation to present information iiii. communicate complete and coherent mathematical lines of reasoning iv. organize information using a logical structure.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
November	**Unit 3: Expressions**	**Activities:** Balanced Math ISN Review unit 1 properties Ninja activity Expression Scavenger Hunt Reverse House Activity Flocabulary **Glencoe Math Course 2:** 5.1 Algebraic Expressions	ATL Category: Thinking Skill Cluster: Transfer Combine knowledge, understanding and skills to create products or solutions ATL Category: Thinking Skill Cluster: Transfer	***Curriculum Objectives:*** 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, a + 0.05a = 1.05a means that “increase

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		5.2 Sequences 5.3 Properties of Operations 5.4 The Distributive Property 5.5 Simplify Algebraic Expressions 5.6 Add Linear Equations 5.7 Subtract Linear Equations 5.8 Factor Linear Expression **Formative:** Quizzes exit tickets manipulatives student-student interactions class discussion **Summative:** Unit 3 Test Jonas's Credit Card Statement	Use effective learning strategies in subject groups and disciplines ATL Category: Thinking Skill Cluster: Transfer Apply skills and knowledge in unfamiliar situations	by 5%" is the same as "multiply by 1.05." ***IB Criterion/Strands***: Criterion A: Knowing and understanding i. select appropriate mathematics when solving problems in both familiar and unfamiliar situations ii. apply the selected mathematics successfully when solving problems iii. solve problems correctly in a variety of contexts.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
December /January	**Unit 4: Equations & Inequalities**	**Activities:** Balanced Math ISN Balanced Investigation Expression Scavenger Hunt LIfe of Expressions Activity Bar Diagrams Flocabulary **Glencoe Math Course 2:** 6.1 Solve One-step Addition and Subtraction Equations 6.2 Multiplication and Division Equations 6.3 Solve Equations with	ATL Category:Thinking Skill Cluster: Creative Thinking Apply existing knowledge to generate new ideas, products or processes ATL Category: Thinking Skill Cluster: Critical Thinking Evaluate evidence and arguments ATL Category: Thinking Skill	***Curriculum Objectives:*** **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 as strategies 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 problem, and construct simple equations and inequalities to solve problems by

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		Rational Coefficients 6.4 Solve Two-Step Equations 6.5 More Two-Step Equations 6.6 Solve Inequalities by Addition and Subtraction 6.7 Solve Inequalities by Multiplication and Division 6.8 Solve Two-Step Inequalities **Formative:** Quizzes exit tickets manipulatives student-student interactions class discussion **Summative:** Unit 4 Test My "How to" solve equations guide	Cluster: Critical Thinking Draw reasonable conclusions and generalizations	reasoning about the quantities. **a.** Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. **b.** 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. ***B Criterion/Strands***: Criterion B: Investigating patterns i. **apply** mathematical problem-solving techniques to recognize patterns ii. **describe** patterns as relationships or general rules consistent with correct findings iii. **verify** whether the pattern works for other examples.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
February	Unit 5: Rates, Ratios, Proportions	**Activities:** Balanced Math ISN Unit Rates Lab Graph Proportional Relationships Lab Rate of Change Lab Flocabulary **Glencoe Math Course 2:** 1.1 Rates 1.2 Complex Fractions and Unit Rates 1.3 Convert Unit Rates 1.4 Proportional and Nonproportional Relationships 1.5 Graph Proportional	ATL Category: Self-Management Skill Cluster: Organization Keep an organized and logical system of information files/notebooks ATL Category: Thinking Skill Cluster: Transfer Apply skills and knowledge in unfamiliar situations ATL Category: Communication Skill Cluster: Communication Organize and depict information logically	***Curriculum Objectives:*** **7.RP.1** Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction (1/2)/(1/4) miles per hour, equivalently 2 miles per hour. **7.RP.2** Recognize and represent proportional relationships between quantities. **a.** 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.

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		Relationships 1.6 Solve Proportional Relationships 1.7 Constant Rate of Change 1.8 Slope 1.9 Direct Variation **Formative:** Quizzes exit tickets manipulatives student-student interactions class discussion **Summative:** Unit 5 Test Your Big Dinner Plans	ATL Category: Research Skill Cluster: Information Literacy Collect and analyse data to identify solutions and make informed decisions	**b.** Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. **c.** Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn. **d.** 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. **7.RP.3** Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error. ***IB Criterion/Strands:*** Criterion C: Communicating i. use appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations ii. use different forms of mathematical representation to present information iiii. communicate complete and coherent mathematical lines of reasoning iv. organize information using a logical structure.

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March	Unit 6: Geometric Figures	**Activities:** Balanced Math ISN Create/Draw Triangles Lab Online Maps Lab Classroom Drawing Activity Flocabulary **Glencoe Math Course 2:** 7.1 Classify Angles 7.2 Complementary and Supplementary Angles 7.3 Triangles 7.4 Scale Drawings 7.5 Draw Three-Dimensional Figures 7.6 Cross Sections **Formative:** Quizzes exit tickets manipulatives student-student interactions class discussion	ATL Category: Self-Management Skill Cluster: Organization Keep an organized and logical system of information files/notebooks ATL Category: Communication Skill Cluster: Communication Make inferences and draw conclusions ATL Category: Thinking Skill Cluster: Transfer Combine knowledge, understanding and skills to create products or solutions	***Curriculum Objectives:*** **7.G.1** Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. **7.G.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.3** Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. **7.G.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.

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		Summative: Unit 6 Test Scaling the Wall Dream House		***IB Criterion/Strands:*** **Criterion B: Investigating patterns** i. **apply** mathematical problem-solving techniques to recognize patterns ii. **describe** patterns as relationships or general rules consistent with correct findings iii. **verify** whether the pattern works for other examples.
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
April	Unit 7: Volume and Surface Area	**Activities:** Balanced Math ISN Circumference Lab Area of Circles Lab Flocabulary Measurement Activity **Glencoe Math Course 2:** 8.1 Circumference 8.2 Area of Circles 8.3 Area of Composite Figures 8.4 Volume of Prisms 8.5 Volume of Pyramids 8.6 Surface Area of Prisms 8.7 Surface Area of Pyramids 8.8 Volume and Surface Area of Composite Figures **Formative:** Quizzes exit tickets manipulatives student-student interactions class discussion **Summative:**	ATL Category: Self-Management Skill Cluster:Organization Skills Keep an organized and logical system of information files/notebooks ATL Category:Communication Skill Cluster:Communication Organize and depict information logically ATL Category: Research Skill Cluster:Information literacy Collect and analyse data to identify solutions and make informed decisions	***Curriculum Objectives:*** 7.G.B.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. 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. ***IB Criterion/Strands:*** Criterion A: Knowing and understanding i. select appropriate mathematics when solving problems in both familiar and unfamiliar situations ii. apply the selected mathematics successfully when solving problems iii. solve problems correctly in a variety of contexts

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		Unit 7 Test Seriously Cereal		
Month	**IB Unit/Topic**	**Assessments and Activities**	**Approaches to Learning**	**Curriculum Standards and IB Criterion and Strands**
May/June	Unit 8: Probability & Statistics	**Activities:** Balanced Math ISN Flocabulary Fair and Unfair Games Multiple Samples of Data How to Collect Data **Glencoe Math Course 2:** 9.1 Probability of Simple Events 9.2 Theoretical and Experimental Probability 9.3 Probability of Compound Events 9.4 Simulations 9.5 Fundamental Counting Principle 9.6 Permutations 9.7 Independent and Dependent Events 10.1 Make Predictions 10.2 Unbiased and Biased Samples 10.3 Misleading Graphs and Statistics 10.4 Compare Populations 10.5 Select a Appropriate Display **Formative:** Quizzes exit tickets	ATL Category:Research Skill Cluster:Literacy Skills Collect, record and verify data ATL Category:Thinking Skill Cluster: Transfer Skills Transfer current knowledge to learning of new technologies ATL Category:Thinking Skill Cluster: Creative-thinking Apply existing knowledge to generate new ideas, products or processes ALT Category: Research Skill Cluster: Information literacy Process data and report results	***Curriculum Objectives:*** 7.SP.5 Understand that the probability of a chance event is a number between 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 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely 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 predict 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; if the agreement is not good, explain possible sources of the discrepancy 7.SP.7a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. 7.SP.7b Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. 7.SP.8 Find probabilities of compound events using

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		manipulatives student-student interactions class discussion **Summative:** Unit 8 Test Play It, Sing It Batting Order		organized lists, tables, tree diagrams, and simulation. 7.SP.8.a 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 and tree diagrams. 7.SP.8.c Design and use a simulation to generate frequencies for compound events. 7.SP.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. 7.SP..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. 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. 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. ***IB Criterion/Strands:*** Criterion D: Applying mathematics in real-life contexts

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				i. identify relevant elements of authentic real-life situations ii. select appropriate mathematical strategies when solving authentic real-life situations iii. apply the selected mathematical strategies successfully to reach a solution iv. explain the degree of accuracy of a solution v. describe whether a solution makes sense in the context of the authentic real-life situation.

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