CR Anderson Middle School

7th Grade Math

CONTACT INFO

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Course Description and Standards

This course advances **mathematical excellence** and deepens cultural understanding, aligning with Montana's dual commitment to academic standards and Indian Education for All.

According to Montana's Mathematics standards, students engage with four major domains, while applying the Standards for Mathematical Practice.

- **Proportional Relationships**
  - Deepen understanding of ratios, rates, and proportional reasoning.
  - Apply proportionality in complex problems including percent, discounts, taxes, interest, and tips.
- **Operations with Rational Numbers & Expressions**
  - Perform operations (add, subtract, multiply, divide) with rational numbers.
  - Work with numeric and algebraic expressions and solve equations.
- **Geometry: Scale Drawings, Surface Area, and Volume**
  - Solve problems involving area, surface area, and volume for various shapes (triangles, polygons, prisms).
  - Explore scale and similarity in two and three-dimensional contexts.
- **Statistics & Probability**
  - Analyze and compare data distributions.
  - Engage in sampling, informal inference, and probability modeling.

Standards for Mathematical Practice prompt students to:

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

Indian Education for All (IEFA)

Under Montana's Constitution (Article X § 1(2)) and the law MCA 20-1-501, IEFA mandates that all students engage with the distinct cultural heritage of American Indians, and that educators incorporate these perspectives across Montana's Essential Understandings guide this integration: recognizing tribal sovereignty, cultural diversity, oral traditions, and Indigenous worldviews.

In 7th Grade Math, we incorporate rich and engaging lessons for culturally grounded math experiences. Examples of IEFA activities:

- **Contexts & Applications**: Math problems that reference **Indigenous environments**, such as patterns in traditional beadwork, proportions in canoe design, scaling models of tipis, or data based on local tribal art.
- **Cultural Connections**: Exploration of **tribal mathematics**, such as counting systems, geometric design elements, or spatial reasoning in traditional crafts.
- **Collaborative Projects**: Partnering with our IEFA tutor or inviting guest speakers to share how mathematical understanding is embedded in Indigenous knowledge systems.

Required Materials & Textbooks

This year we are piloting **Illustrative Mathematics** (IM), a curricular recourse that is divided into 9 units. A detailed Scope, Sequence and Pacing Guide can be found on page three of this syllabi.

Unit 1: Scale Drawings
Unit 2: Introducing Proportional Relationships
Unit 3: Measuring Circles
Unit 4: Proportions
Unit 5: Rational Number Arithmetic
Unit 6: Expressions, Equations, and Inequalities
Unit 7: Angles, Triangles, and Prisms
Unit 8: Probability and Sampling
Unit 9: Putting it All Together

CR Anderson Middle School

7th Grade Math

Grading Policy

70%	**Assessments** (Weekly Quizzes and Unit Tests)
30%	**Independent Work** (Worksheets and Activities)

Students will be graded on assessments (weekly quizzes & end of the unit tests) and independent work (worksheets and class activities).

Grading Scale
A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = Below 60

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Learning Goals & Objectives

By the end of the 7th Grade Math, students will be able to:

- **Master proportional reasoning** and apply it across diverse real-world and culturally relevant scenarios.
- **Manipulate expressions, equations, and rational numbers** with fluency and precision.
- **Analyze geometric problems**, confidently calculate area, surface area, and volume, and understanding scale.
- **Interpret and model data**, employ probability models, and make informed inferences.
- Employ **mathematical practices** including making sense of problems, constructing arguments, modeling, reasoning quantitatively, using tools effectively, and seeking structure and patterns.
- **Articulate the connections** between mathematics and Indigenous culture—demonstrating respect for and understanding of tribal knowledge, sovereignty, and identity as expressed through mathematical concepts.
- **Collaborate respectfully and thoughtfully** with peers and tribal partners in constructing culturally responsive mathematical explorations.

Classroom Expectations, Communication and Parent Engagement

Students are expected to stay up to date with what is being covered in class. When absent, students are expected to complete the **Guided Practice (notes)** and **Independent Practice (worksheets)** as outlined on the monthly calendar that is posted on their math teacher's website.

Websites:

Dr. Jilyn Chandler	Miss Bryana Curry	Ms. Jessicca Wischmeier
https://staff.helenaschools.org/staff_page/jchandler/	https://staff.helenaschools.org/staff_page/bcurry/	https://staff.helenaschools.org/staff_page/jwischmeier/

7th Grade Math: Scope Sequence and Pacing Guide

September - November

Unit 1: Scale Factor
Power Standards: 7.G.A, 7.G.B

- What are Scaled Copies
- Corresponding Parts and Scale Factors
- Making Scaled Copies
- Scaled Relationships
- The Size of the Scale Factor
- *Scaling and Area (Optional)*
- Scale Drawings
- *Scale Drawings and Maps (Optional)*
- Creating Scale Drawings
- Changing Scales in Scale Drawings
- Scales without Units
- Units in Scale Drawings
- *Draw it to Scale (Optional)*

Unit 2: Introducing Proportional Relationships
Power Standards: 7.RP.A, 7.G.A, 7.G.B

- One of These Things Is Not Like the Others
- Introducing Proportional Relationships with Tables
- More about Constant of Proportionality
- Proportional Relationships and Equations
- Two Equations for Each Relationship
- Writing Equations to Represent Relationships
- Comparing Relationships with Tables
- Comparing Relationships with Equations
- Solving Problems about Proportional Relationships
- Introducing Graphs of Proportional Relationships
- Interpreting Graphs of Proportional Relationships
- Using Graphs to Compare Relationships
- Two Graphs for Each Relationship
- Four Representations
- *Using Water Efficiently (Optional)*

Unit 3: Measuring Circles
Power Standards: 7.RP.A, 7.G.A, 7.G.B, 7.EE.B

- How Well Can You Measure?
- Exploring Circles
- Exploring Circumference
- Applying Circumference
- *Circumference and Wheels*
- Estimating Area
- Exploring the Area of a Circle
- Relating Area to Circumference
- Applying Area of Circles
- Distinguishing Circumference and Area
- *Stained-Glass Windows (Optional)*

Thanksgiving Break

December- March

Unit 4: Proportional Relationships & Percentages
Power Standards: 7.RP.A, 7.NS.A

- Lots of Flags
- Rations and Rates With Fractions
- Revisiting Proportional Relationships
- More than That, Less than That
- Say It with Decimals
- Increasing and Decreasing
- One Hundred Percent
- Percent Increase and Decrease with Equations
- Part of a Percent
- Tax and Tip
- Percentage Contexts
- Solving Multi-Step Percentage Problems
- Measurement Error
- Percent Error
- *Changes on the Earth (Optional)*
- Posing Percentage Problems

Unit 5: Rational Number Arithmetic
Power Standards: 7.NS.A, 7.RP.A, 7.EE.B

- Interpreting Negative Numbers
- Changing Temperatures
- Changing Elevation
- Money and Debts
- Representing Subtraction
- Finding Differences
- Adding and Subtracting to Solve Problems
- Multiplying Rational Numbers (Part 1)
- Multiplying Rational Numbers (Part 2)
- *Multiply! (Optional)*
- Dividing Rational Numbers
- Negative Rates
- Expressions with Rational Numbers
- Solving Problems with Rational Numbers
- Solving Equations with Rational Numbers
- Representing Contexts with Equations
- The Stock Market

Unit 6: Expressions, Equations, and Inequalities
Power Standards: 7.EE.A, 7.EE.B, 7.NS.A

- Relationships between Quantities
- Reasoning about Contexts and Tape Diagrams
- Reasoning about Equations with Tape Diagrams
- Reasoning about Equations with Tape Diagrams (Part 1)
- Reasoning about Equations with Tape Diagrams (Part 2)
- Distinguishing between Two Types of Situations
- Reasoning about Solving Equations (Part 1)
- Reasoning about Solving Equations (Part 2)
- Dealing with Negative Numbers
- Different Options for Solving an Equation
- Using Equations to Solve Problems
- Solving Problems about Percent Increase or Decrease

Spring Break

April - June

Unit 6: Continued
7.EE.A, 7.EE.B, 7.NS.A

- Reintroducing Inequalities
- Finding Solutions to Inequalities in Context
- Efficiently Solving Inequalities
- Interpreting Inequalities
- Modeling with Inequalities
- Subtraction in Equivalent Expressions
- Expanding and Factoring
- Combining Like Terms (Part 1)
- Combining Like Terms (Part 2)
- Applications of Expressions

Unit 7: Angles, Triangles, and Prisms
Power Standards: 7.G.A, 7.G.B., 7.EE.A

- Relationships of Angles
- Adjacent Angles
- Nonadjacent Angles
- Solving for Unknown Angles
- Using Equations to Solve for Unknown Angles
- Building Polygons (Part 1)
- Building Polygons (Part 2)
- Triangles with 3 Common Measures
- Drawing Triangles (Part 1)
- Drawing Triangles (Part 2)
- Slicing Solids
- Volume of Right Prisms
- Decomposing Bases for Area
- Surface Area of Right Prisms
- Distinguishing Volume and Surface Area
- Applying Volume and Surface Area
- *Building Prisms (Optional)*

Unit 8: Probability and Sampling
Power Standards:7.RP.A, 7.NS.A, 7.SP.A, 7.SP.N, 7.SP.C

- Mystery Bags
- Chance Experiments
- What Are Probabilities
- Estimating Probabilities wit Repeated Experiments
- More Estimating Probabilities
- Estimating Probabilities Using Simulation
- Simulating Multi-Step Experiments
- Keeping Track of All Possible Outcomes
- Multi-Step Experiments
- Designing Simulations
- Comparing Groups
- Larger Populations
- What Makes a Good Sample?
- Sampling in a Fair Way
- Estimating Population Measures of Center
- Estimating Population Proportions
- *More about Sampling Variability (Optional)*
- Comparing Populations Using Samples
- Comparing Populations With Friends
- *Memory Test (Optional)*

End of the School Year

2025-2026 District Calendar

Helena Public Schools
A great place to learn

Holiday and Student Dismissal Dates

August 25 & 26	Staff Orientation
August 27	First Day of School for Grs 1-5, Gr 6 CRA & HMS, Grs 9-12 PAL, Gr 9 CHS & HHS
August 28	First Day of School for Grs 7-8 CRA & HMS, Grs 10-12 CHS & HHS
September 1	Labor Day - No School - District Closed
September 2	First Day of School for Kindergarten
October 16 & 17	Educator Conferences-No School
November 3	2nd Quarter Begins: Grades 6-12
November 26-28	Thanksgiving Break-No School
November 27 & 28	District Closed
December 1	Trimester 2 Begins: Grades K-5
December 5	12:00 P.M. Grades K-5 Student Early Dismissal
December 5	Grades 6-12: Full Day of School
December 5	P.M. K-5 Staff Records Day
December 22 - Jan. 2	Winter Break-No School
December 24, 25 & January 1	District Closed
January 19	Martin Luther King Jr. Day-No School-District Closed
January 21, 22 & 23	High School Semester Testing
January 23	Grades K-5: Full Day of School
January 23	12:00 P.M. Grades 6-8 Early Dismissal
January 23	P.M. 6-8 Staff Records Day
January 26	No School K-12, HS Staff In-Service & Records Day
January 27	3rd Quarter Begins: Grades 6-12
February 16	Presidents' Day-No School-District Closed
March 16	Trimester 3 Begins: Grades K-5
March 30- April 3	Spring Break-No School
April 6	4th Quarter Begins: Grades 6-12
May 1	Vigilante Day - No School Grades 9-12/11:00 AM Dismissal K-8
May 25	Memorial Day-No School-District Closed
June 6	High School Graduation
June 8, 9	High School Semester Testing
June 9	Last Day & 12:00 p.m. Early Dismissal Students K-8
June 9	Last Day for Students 9-11
June 9	P.M. K-8 Staff Records Day
June 10	HS Staff In-Service-Records Day

Mondays are Professional Release days for Helena School District staff. School for students will dismiss early. Please see below.

- Elementary School Student day ends 45 minutes early
- Middle School Student day ends 45 minutes early
- High School Student day ends 45 minutes early

July 2025

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

July 3 & 4 District Closed

August 2025

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September 2025

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

October 2025

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

November 2025

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2025

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

January 2026

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February 2026

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2026

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2026

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2026

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2026

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

- First Day of School for Various Grade Levels
- Holiday or Break- No School-All Grades
- Staff Orientation
- Last Day of School 9-12 Students
- High School Semester Testing
- Early Dismissal Students K-5 ONLY/Halfday K-5 Records Day
- Early Dismissal Students 6-8/ Halfday 6-8 Records Day
- Early Dismissal K-8 Students Last Day / Halfday K-8 Rec. Day
- HS Staff In-Service-Records Day-No School K-12
- Vigilante Day-K-8 Released 11:00 AM / HS No School

Trustees Approved on 2/11/2025