Circle 5 Syllabus

Course Summary

This course is meant for students ages 8 to 11 who have completed the Common Core (or equivalent) for Grade 4. Students will be exposed to the Focus Areas section listed below, and we expect students to master the skills listed in the Expected Outcomes section listed below.

Focus Areas at this Level

Concepts, skills, and learning tools students see in this course include, but are not limited to:

- Understanding factors, primes, factorizations, and expanding powers
- Expand order of operations to include exponents, parentheses and absolute value
- Introducing integers, probability and counting principles

Expected Outcomes

Students will be **expected to adequately perform in or explain** the following areas after course completion:

- Rounding by place value up and down to 100,000,000s and 1,000ths
- Addition and subtraction of fractions and decimals numbers
- Multiplication of one number by another (whole or fractions)
- Division of one number by a whole with remainders
- Understanding fractions, how to operate with them and how to make equivalent fractions
- Using integers and decimals and simple operations with them
- Using counting principles and probability
- Properties (like perimeter and area) of shapes, including triangles and circles

Pre Requisites

Students registering for this course should be **comfortable with the following Math**:

- Identifying numbers up to 100,000,000
- Comfortable with arithmetic operations: addition and subtraction (3-digits), multiplication and division (both 2-digit operands)
- Adding simple fractions with one denominator being a multiple of the other denominator
- Simple order of operations with addition, subtraction, parentheses and multiplication

Students should also be **willing and able to**:

- Communicate in English at a beginner's level
- Be respectful of other students in their classes
- Practice writing things down on paper
- Share their thoughts with the instructors to help them discover solutions to their problems
- Take constructive criticism when it comes to their learning habits

Course Materials (Required)

- All classes will be taught online, via Zoom. Your student will need a device with a microphone and camera.

- Parents are expected to have read and understood the Parent Handbook
    - Parents should review the expectations in class with their student(s)
    - Parents of this age group will need to help their students learn the technology used on the student's end

Students should also have access to:

- Ruler
- Pencils
- Eraser
- Paper
- Colored pencils or markers
- Reliable internet connection and digital device capable of using Zoom effectively

Homework Expectations

Homework at EMC is set up to be flexible for the needs of your student. Usually we feel students fall into three general categories:

- EMC is **replacing public school or** accelerating my student for **testing out of Math** in the future
    - All Homework is **mandatory**
- EMC is helping **improve my grades** or **skills**
    - Homework is **highly recommended**, we recommend concentrating on school homework first
- EMC is for **interest's sake** and/or for **exposure** to problem solving **before seeing it in school**
    - Homework is **recommended, yet optional**

Homework Delivery

Homework is delivered in a two main ways:

- **Practice Homework**
    - Nearpod, an interactive slideshow, facilitates self-paced learning including lesson review and extra practice at the end of each Content section
        - Lesson slides you already may have seen are provided as reference for review
        - Draw It, Quiz or Matching slides are the **mandatory practice**
        - "Extras" are extra practice and competition style questions to keep other skills sharp
    - PDFs to download and print the lesson or questions are also made available
- **Assessment Homework** (aka Quizzes, Tests)
    - Canvas, set of questions to show instructors a student's understanding of the content
    - Auto-graded upon submission
    - Instructors adjust grades after seeing results to give partial marks where appropriate, and plan to cover certain problem areas in the Homework Check portion of next class

Course Calendar

On yellow dates on the calendar below, no classes are held. Some days of the week (Sat, Sun, Mon) have less classes per year. These courses will have slightly condensed in-class schedules, and your instructor will let you know which homework assignments to do each week.

EMC SCHOOL

2026-2027 School Calendar

August 2026

M	Tu	W	Th	F	Sa	Su
					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 2026

M	Tu	W	Th	F	Sa	Su
	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 2026

M	Tu	W	Th	F	Sa	Su
			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 2026

M	Tu	W	Th	F	Sa	Su
						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 2026

M	Tu	W	Th	F	Sa	Su
	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 2027

M	Tu	W	Th	F	Sa	Su
				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 2027

M	Tu	W	Th	F	Sa	Su
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 2027

M	Tu	W	Th	F	Sa	Su
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 2027

M	Tu	W	Th	F	Sa	Su
			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 2027

M	Tu	W	Th	F	Sa	Su
					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 2027

M	Tu	W	Th	F	Sa	Su
	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 and Last Day of School
School Holidays & Vacations

Aug 17	First Day of Classes
Sep 5 - 7	Labor Day Weekend - No Classes
Nov 23 - 29	Thanksgiving Week - No Classes
Dec 21 - Jan 3	Winter Break - No Classes
Apr 12 - 18	Spring Break - No Classes
May 29 - 31	Memorial Day - No Classes
Jun 13	Last Day of School

Course Itinerary

Chapter	Lesson	Class Dates	Focus Skills
Chapter 1: Order of Operations	**1) Order of Operations**	Aug 17- Aug 23	• replacing PEMDAS • reviewing operations and parentheses
	2) Distributive Property	Aug 24 - Aug 30	• multiplying distributively • what order do we distribute in
Chapter 2: Applying Multiplication	**3) Multiplication Algorithms**	Aug 31 - Sept 6 **OFF Sat Sept 5, Sun Sept 6 Labor Day**	• Japanese visual algorithm • dance partner algorithm • classic stacking algorithm
	4) Powers	Sept 7 - Sept 13 **OFF Mon Sept 7 Labor Day**	• define power, base, exponent • expanded vs exponent form
	5) Perfect Squares	Sept 14 - Sept 20	• perfect squares under 20×20 • visually understanding squares
	6) Alternate Bases	Sept 21 - Sept 27	• base 10 versus binary (base 2) • base 10 versus hexadecimal (base 16)
Chapter 3: Division	**7) Division**	Sept 28 - Oct 4	• define divisor, dividend, quotient and remainder • learn to divide with remainders
	8) Long Division	Oct 5 - Oct 11	• partial quotient • long division
Chapter 4: Integers	**9) Intro-gers**	Oct 12 - Oct 18	• defining positive, negative and integer • models of integers
	10) Adding and Subtracting	Oct 19 - Oct 25	• adding positive with negatives on a number line • subtracting with negatives as paying off a loan
	11) Absolute Value	Oct 26 - Nov 1	• define magnitude (length) vs absolute value • applying absolute value to Order of Operations
Chapter 5: Equations	**12) Creating Equations**	Nov 2 - Nov 8	• how to write an equation from a word problem • how to simplify numbers in equations
	13) One-Step, Two-Step	Nov 9 - Nov 15	• how to solve by using an inverse operation • applying inverse operations in reverse order

	14) Systems of Equations	Nov 16 - Nov 22	• simple systems of equations
Holiday	**Thanksgiving**	**OFF** Nov 23 - Nov 29	**Have a great week!**
Chapter 6: Factors	**15) Divisibility and Divisibility Tests**	Nov 30 - Dec 6	• define factor, multiple and divisible by • introduce some common divisibility tests
	16) Prime Factorization	Dec 7 - Dec 13	• define prime, coprime, composite • how to use a tree diagram to create a prime factorization in power form
17) Midterm Review		Dec 14 - Dec 20	• Review of Chapters 1 through 5
Holiday	**Winter Break**	**OFF 2 WEEKS** Dec 21 - Jan 3	**Have a great break!**
Chapter 6: Factors	**18) Simplifying with Factors**	Jan 4 - Jan 10	• reviewing fractions • canceling like factors in a fraction
Chapter 7: Fractions	**19) Mixed vs Improper**	Jan 11 - Jan 17	• converting between mixed and improper • adding fractions (common denominator)
	20) Adding with Fractions	Jan 18 - Jan 24	• finding a common denominator (d_1d_2 OR $kd_1 = d_2$) • able to add and subtract most fractions
	21) Skip Counting and Subtraction	Jan 25 - Jan 31	• subtracting mixed numbers • skip counting then multiplying fractions
Chapter 8: Advanced Fractions	**22) Multiplying Fractions**	Feb 1 - Feb 7	• using skip counting to multiply by a whole • formal algorithm
	23) Mixed Number Multiplication	Feb 8 - Feb 14	• Discussion: improper = best for operations mixed = talking or answers • multiplying mixed numbers by whole numbers (distributive) • multiplying mixed numbers by fractions (improper conversion)
	24) Reciprocals and Division	Feb 15 - Feb 21	• defining reciprocals • using reciprocals to divide by a fraction
Chapter 9:	**25) Decimal Place Values**	Feb 22 - Feb 28	• tenths down to hundred millionths • get the next value by dividing by 10

Decimals	**26) Comparing and Rounding**	Mar 1 - Mar 7	• ordering decimal numbers by their most significant digits • rounding to the nearest tenth, hundredth or thousandth
27) Spring Review		Mar 8 - Mar 14	• Review of Chapters 6 through 9 • **Math Map** Where does this go?
Chapter 9: Decimals	**28) Decimal Operations**	Mar 15 - Mar 21	• Adding & Subtracting
Chapter 10: Statistics	**29) Possibilities**	Mar 22 - Mar 28	• enumeration as a tool when counting possible outcomes
	30) Addition Principle	Mar 29 - Apr 4	• addition principle: subtract the overlap • using Venn diagrams to find the overlap
	31) Multiplication Principle	Apr 5 - Apr 11	• multiply when you have a list of choices, factorial notation • using tree diagrams to illustrate choice
Holiday	**Spring Break**	**OFF** **Apr 12 - Apr 18**	**Have a great week!**
Chapter 10: Statistics	**32) Probability**	Apr 19 - Apr 25	• define events, outcomes and probability • computing as a fraction • using factorials
	33) Dependent vs Independent Events	Apr 26 - May 2	• identifying event types • connecting events to counting principles
Chapter 11: Geometry	**34) Angles**	May 3 - May 9	• measuring, naming and identifying • right and straight angle identities • parallel and perpendicular lines
	35) Polygons & Area	May 10 - May 16	• area formulas of polygons (triangles, squares, rectangles, rhombus, kite, isosceles trapezoid, regular hexagon) • using triangles for more complex polygons
	36) Circles	May 17 - May 23	• define a circle, radius, diameter and π • finding the circumference of a circle
	37) Area of a Circle	May 24 - May 30 **OFF Sat Sun May 29 and 30 Memorial Day**	• finding the area of a circle • circle word problems
	38) Circles in 3D	May 31 - June 6 **OFF Mon May 31 Memorial Day**	• nets and surface area • surface area and volume of cylinders • volume of cones

39) Final Review	June 7 - June 13	● Review of Chapters 6 through 11