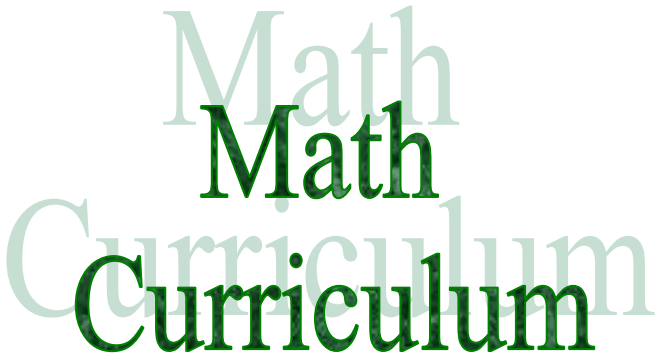
Wayne Central School District
Ontario Center, NY 14519



FOURTH GRADE
Draft

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I. District Philosophy

The Wayne Central School District believes that the goal of education is the all-around development of each student. The role of the school is to enable individuals to develop to their fullest potential.

The school, in cooperation with the home and community, will assist the student with intellectual, social, cultural, emotional, physical and moral growth. The school should help create within each student an awareness of civic responsibilities and respect for authority to assist the student in becoming a well-integrated, responsible person capable of assuming a vital role in an evolving civilization.

The Wayne Central School District subscribes to the general theory of individual differences; namely, that each student is an individual and has innate abilities, ambitions, and emotions. In the process of educating this individual, the program should provide a challenge while reflecting a concern for needs based on individual capabilities.

The Wayne Central School District further subscribes to the following fundamental principles:

1. **Children, regardless of potential, are capable of learning and acquiring the skill and knowledge needed to function to the best of their ability in our society,**

2. **Our responsibility is to see that children learn. The energies of all participants should be focused on achieving the desired outcomes. Accountability does not end with following established rules and procedures; its essence is found in results,**

3. **Minimum competence, while necessary, is not enough. Successful participation in our society demands much more. All children are entitled to approved curriculum, to instructional methods, and to expectations that challenge them to perform at their best, and help them to become truly proficient in knowledge and skills,**

4. **Every child in New York State is entitled to the resources necessary to provide the sound, basic education that the state constitution requires,**

5. **Each participant in the educational system should have the opportunity to effectively discharge his or her responsibility, and each participant should be held accountable for achieving desired results. This principle applies to all participants in the educational process – students, parents, teachers, counselors, librarians, administrators, the Board of Education, and others,**

6. **Achievement of desired results by individuals and groups should be rewarded. Creativity in our students needs to be nurtured and encouraged. Occasional failure in a large and diverse system us probably unavoidable. However, failure should not be permitted to persist. When it occurs, with either individuals or groups, help should be provided and the situation changed.**

II. District Mission Statement:

Based upon the belief that all students can learn, the staff of Wayne Central School district accepts the responsibility to teach all students regardless of differences, the fundamental skills. We further accept the responsibility to challenge all students to attain higher levels of achievement. Wayne Central will provide the opportunity, environment, and encouragement to meet this goal while developing the whole child physically, emotionally, and culturally.

III. NYS Learning Standards:

Health, Physical Education, and Home Economics

1. Personal Health and Fitness – Students will have the necessary knowledge and skills to establish and maintain physical fitness, participate in physical activity, and maintain personal health.
2. A Safe and Healthy Environment – Students will acquire the knowledge and ability necessary to create and maintain a safe and healthy environment
3. Resource Management – Students will understand and be able to manage their personal and community resources.

Mathematics, Science, and Technology

1. Analysis, Inquiry, and Design – Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions.
2. Information Systems – Students will access, generate, process, and transfer information using appropriate technologies
3. Mathematics – Students will understand mathematics and become mathematically confident by communicating and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and trigonometry.
4. Science – Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.
5. Technology – Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.
6. Interconnectedness: Common Themes – Students will understand the relationships and common themes that connect mathematics, science, and technology and apply the themes to these and other areas of learning.
7. Interdisciplinary Problem Solving – Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.

English Language Arts

1. Students will listen, speak, read and write for information and understanding. As listeners and readers, students will collect data, facts and ideas; discover relationships, concepts, and generalizations; and use knowledge generated from oral, written, and electronically produced texts. As speakers and writers, they will use oral and written language that follows the accepted conventions of the English language to acquire, interpret, apply, and transmit information.
2. Language for Literary Response and Expression – Students will read and listen to oral, written, and electronically produced texts and performances from American and world literature; relate texts and performances to their own lives; and develop an understanding of the diverse social, historical, and cultural dimensions the texts and performances represent. As speakers and writers. Students will use oral and written language that follows the accepted conventions of the English language for self-expression and artistic creation.
3. Language for Critical Analysis and Evaluation – Students will listen, speak, read and write for critical analysis and evaluation. As listeners and readers, students will analyze experiences, ideas, information, and issues presented by others using a variety of established criteria. As speaker and writers, they will use oral and written language that follows the accepted conventions of the English language to present, from a variety of perspectives, their opinions and judgements on experiences, ideas, information and issues.
4. Language for Social Interaction – Students will listen, speak, read, and write for social interaction. Students will use oral and written language that follows the accepted conventions of the English language for effective social communication with a wide variety of people. As reader and listeners, they will use the social communications of others to enrich their understanding of people and their views.

Languages Other Than English

1. Communication Skills – Students will be able to use a language other than English for communication.
2. Cultural Understanding – Students will develop cross-cultural skills and understandings.

The Arts

1. Creating, Performing, and Participating in the Arts – Students will actively engage in the processes that constitute creation and performance in the arts (dance, mucus, theatre, and visual arts) and participate in various roles in the arts.
2. Knowing and Using arts materials and Resources – Students will be knowledgeable about and make use of the materials and resources available for participation in the arts in various roles.
3. Responding to and Analyzing Works of Art – Students will respond critically to a variety of works in the arts, connecting the individual work to other works and to other aspects of human endeavor and thought.
4. Understanding the Cultural Contributions of the Arts – Students will develop an understanding of the personal and cultural forces that shape artistic communication and how the arts in turn shape the diverse cultures of past and present society.

Career Development and Occupational Studies

1. Career Development – Students will be knowledgeable about the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.
2. Integrated Learning – Students will demonstrate how academic knowledge and skills are applied in the workplace and other settings.
3. Universal Foundation Skills – Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.
4. Career Majors – Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Social Studies

1. History of the United State and New York – Students will use a variety of intellectual skills to demonstrate their understanding of major ideas, eras themes, developments, and turning points in the history of the United States and New York.
2. World History – Students will use a variety of intellectual skills to demonstrate their understanding of major ideas, eras, themes, developments and turning points in world history and examine the broad sweep of history from a variety of perspectives.
3. Geography – Students will use a variety of intellectual skills to demonstrate their understanding of the geography of the interdependent world in which we live – local, national and global – including the distribution of people, places, and environments over the Earth's surface.
4. Economics – Students will use a variety of intellectual skills to demonstrate their understanding of how the United States and other societies develop economic systems and associated institutions to allocate scarce resources, how major decision-making units function in the United States and other national economies, and how an economy solves the scarcity problem through market and nonmarket mechanisms.
5. Civics, Citizenship, and Government – Students will use a variety of intellectual skills to demonstrate their understanding of the necessity for establishing governments; the governmental system of the United States Constitution; the basic civil values of American constitutional democracy; and the roles, rights, and responsibilities of citizenship including avenues of participation.

IV. Commencement Outcomes

"Adult Roles, Skills & Knowledge"

CITIZEN

A citizen is a responsible, law-abiding member of society who:

- Has a strong sense of values;
- Knows right from wrong;
- Is aware of community news, issues and norms;
- Accepts diversity in ethnicity and belief;
- Has knowledge of government at all levels and issues relative to each;
- Associates with others in positive and productive ways.

LIFE - LONG LEARNER

A life-long learner is one who perseveres, is self-motivated, is innately curious, focused and:

- Is able to set goals;
- Adheres to deadlines/due-dates, has time management skills and abilities;
- Is a problem solver, can define problems, analyze information and task analyze/prioritize potential solutions, has the ability to select the best "tool/strategy" for the situation, and can enlist others in the process of evaluation and refocusing.

LEADER

A leader is a problem solver with effective communication skills. He/she has an ability to motivate others and:

- Is a strong willed person with vision, beliefs and convictions to carry out each.
- Is able to recognize and effectively use all resources, such as material, time and human
- Is responsible and accountable for self and others.

WORKER/WAGE EARNER/BUSINESS OWNER

A worker/wage earner is an individual who is trust worthy, moral and ethical, and who:

- Possess basic job skills with a willingness to change, grow and develop new skills;
- Is a good communicator;
- Demonstrates leadership skills and initiative and the ability to work as a team player;
- Is responsible, reliable and respectful to others;
- Has the ability to make sound decisions.

CONSUMER

A consumer is an individual who has knowledge of the global economy and:

- Utilizes and applies budgeting skills and credit awareness;
- Maintains long-terms personal financial planning (savings, banking, retirement);
- Understand one's rights, responsibilities and risks.

COUNSELOR/TEACHER/MENTOR

A counselor/teacher/mentor is an individual who is patient, self-confident, assertive leader who:

- Is a problem solver and can guide others to solve problems;
- Is an active listener;
- Is aware of issues, societal, family, religious differences and different customs;
- Has interpersonal skills and values others opinions.

PARENT/FAMILY MEMBER

A parent/family member is an individual who:

- Is nurturing and loving;
- Displays flexibility;
- Has high character and morals;
- Is accountable and consistent with respect to expectations and follow through;
- Becomes actively involved in their children and family's education and other pursuits.

FRIEND

A friend is an individual who shows great interest and respect for others, and who:

- Is non-judgmental and available when a time of need arises;
- Is unselfish, honest, supportive, caring and genuine;
- Is an open-minded listener who seeks to understand before being understood;
- Give him/herself to other without expectations of compensation or return of favor.

V. Scope and Sequence

Strand	**Standard**	**PK**	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Numbers and Numeration **Conservation of Numbers**											
N1 One to one correspondence	**2A**	**T**	**M**	**R**							
N2 Counting cardinal numbers up to 100 by ones and tens	**2A, 2D**	**I**	**T**	**M**	**R**	**R**					
N3 Counting to 100, forward and backward by ones and twos, on a *number line* matching of words and symbols 0-15	**2A**			**M**	**R**	**R**	**R**				
N4 *Place value* to 100	**2C**		**T**	**M**	**R**	**R**					
N5 *Estimate* quantity and grouping by using manipulatives, *expanded notation* 17=10+7	**6A**		**T**	**M**	**R**	**R**					
N6 Introduce concept of *odd and even*	**2B**		**I**	**T**	**M**	**R**					
N7 Introduce symbols =,<,>	**7B**		**I**	**I**	**T**	**M**	**R**	**R**			
N8 Counting ordinal numbers 1-5	**2A, 2D**	**I**	**T**	**M**	**R**						
N9 Counting ordinal numbers 6-10	**2A, 2D**		**I**	**M**	**R**						
N10 Develop concept of *first, middle, last*	**2A**	**I**	**M**	**R**							
N11 Investigate patterns for *sums and differences* using concrete models	**3A**		**I**	**M**	**R**	**R**					

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R Concept is reviewed or expanded

Strand	Standard	PK	K	1	2	3	4	5	6	7	8
N12 Counting orally ordinal numbers 1st to 31st and beyond	2A, 2B		I	T	M	R					
N13 Count to 1,000	2A, 2B			I	M	R					
N14 Count by 2's, 3's 4's 5's and 10's using a number line and *number charts*	2A, 2B		I	T	M	R					
N15 Write numbers 0-10	7B	I	T	M	R						
N16 Place value to 999, expanded notation 999=9 hundreds+9 tens + 9 ones: 900 + 90 + 9	2B				T	M	R				
N17 *Rounding* using a number line to 100	6A			I	T	M	R				
N18 Count cardinal numbers through 100,000	2A				I	T	M	R			
N19 Count ordinal numbers through 500	2A				I	T	M				
N20 Count to 100's by 2's, 3's, 4's, 5's and 10's	2B			I	T	M	R				
N21 Use place value in *decimals* and in reading numbers through 100,000 with money	2A				I	T	M	R			
N22 Round numbers to hundreds	6A				I	M	R				
N23 Round numbers to thousands	6A					T	M	R			
N24 Introduce concept of *positive and negative* integers (temperature)	2B			I	I	M	R	R			
N25 Predict odd or even numbers in addition and subtraction	2B, 7B				T	M	R				
N26 Read and write whole numbers to hundred millions	2A, 2C					I	M	R	R		
N27 Skip count to numbers greater than 100	2B			I	I	T	M	R	R		
N28 Extend place value to concepts to millions and hundredths	2C				I	T	M	R			
N29 Round numbers to nearest *whole number*	6D				I	T	M	R			
N30 *Predict* when *product* of two numbers will be odd or even	2B, 7B					T	M	R			

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N31 Continue discussion of positive and negative numbers, temperature	**2B**						**M**	**R**			
N32 Look for patterns in *sequences* of positive numbers	**1B**			**I**	**I**	**T**	**M**	**R**			
N33 Read and write numbers to one billion	**2A**						**T**	**M**	**R**		
N34 Investigate powers of 10 in place value (hundreds place is 10 *squared or* 10x10)	**2A**							**I**	**T**		
N35 Express numbers in expanded notation using powers of 10	**2A**						**I**	**M**	**R**		
N36 Round off numbers to nearest 10,000	**6A**						**I**	**M**	**R**		
N37 Use number line as aid in understanding negative concept	**2D**							**M**	**R**		

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Operations With Whole Numbers and Integers											
O1 *Addition* and *subtraction* of whole numbers: combine sets to produce new sets and explore the idea of one more	**3A**	**I**	**T**	**M**	**R**	**R**					
O2 Sharing of sets such as cookies or crayons as objects for *Multiplication and Division*	**3A**		**T**	**M**	**R**	**R**					
O3 Introduce role of zero in addition and subtraction	**3B, 3C**		**T**	**M**	**R**	**R**					
O4 Practice addition and subtraction of sums and differences through 10	**3A**	**I**	**T**	**M**	**R**	**R**					
O5 Add three numbers with sum being 10 or less	**3D**		**I**	**M**	**R**	**R**					
O6 Develop concept of *order*	**3C, 3D**		**I**	**M**	**R**	**R**					
O7 *Regrouping* of two *digit* numbers	**3A**				**T**	**M**					
O8 Explore *inequality* in number sentences 2<3	**7C**		**I**	**T**	**M**	**R**					
O9 Explore different groupings when adding three or more numbers *(associative property)* 2+(6+4) with or without manipulatives	**3D**		**I**	**T**	**M**	**R**					
O10 Show inverse operations (addition and subtraction)	**3A**			**I**	**M**	**R**					
O11 Explore multiplication and division through sharing sets or groups	**3B**			**I**	**T**	**M**					
O12 Show inverse operations of multiplication and division	**3B, 3C**				**T**	**M**	**R**				

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O13 Show that order of factors in multiplication problems does not change answer (cumulative property)	3B, 3C			T	M	R					
O14 Practice *estimation* with operations	6B				T	M	R				
O15 Addition and subtraction mastering sums and differences through 18	3A, 3C			T	M	R					
O16 Add and subtract three digit numbers with no regrouping	3A				T	M					
O17 Addition and subtraction up to two digit numbers requiring regrouping	3A				T	M					
O18 Add and subtract 2,3, and 4 digit numbers totaling 10,000 or less	3A					M	R				
O19 Explore role of 0 and 1 in multiplication (identify)	3C				I	T	M				
O20 Experiment with grouping (associative of multiplication)	3D					T	M				
O21 Work with multiplication and division products and quotients through 100	3C				I	T	M				
O22 Study of algorithms for division (one digit divisor)	3A					T	M				
O23 Study of commutative property by name (multiplication)	3B					T	M				
O24 Explore division in finding number of *equal* groups of items	1A			I	I	T	M	R			
O25 Emphasize multiplication and division being inverse operations	3B					T	M	R			
O26 Concepts of *equality* and inequality in all four operations	7B, 7C					M	R	R			
O27 Add and subtract whole numbers with sums less than one million	3A					T	M	R			

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O28 Subtract whole numbers when zero is in the *minuend* with regrouping	3A				T	M	R				
O29 Estimation of sums and differences prior to computation	1D, 6E				I	T	M	R	R		
O30 Find missing addends in an addition sentence	1D			I	T	T	M	R			
O31 Introduce concept of a *prime factor*	2B						M	R			
O32 Multiplication of three digit numbers by two digits	3A					I	M	R			
O33 Multiplication by *multiples* of 10	3A					T	M	R			
O34 Find *common factors* of groups of numbers less than 100	2B, 2D					T	M	R			
O35 Begin concept of *least common factor* and *greatest common multiple*	2B, 2D						T	M	R		
O36 Find *quotient* and *remainder* when three digit number is divided by one digit number	3A					T	M	R			
O37 Find *quotient* and *remainder* when three digit number is divided by a two digit number	3B						T	M			
O38 Use inverse operations to check division by multiplication	3B					T	M	R			
O39 Investigate *distributive* property 326X4= (300X4) + (20X4) +6X4))	3B					T	M	R			
O40 Quick review of operations	3A							M			
O41 Literal problems using single operations across curriculum	3A					T	T	M	R		
O42 Develop concept of *order of operation* (addition, subtraction, multiplication, and division)	3B							I	T	M	
O43 Continue to find greatest common factor and least common multiple	2C							T	M	R	

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Strand	**Standard**	**PK**	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Fractions and Decimals											
F1 Awareness in daily life (money)	**5B**		**M**								
F2 Concept of *half*	**2B**		**M**								
F3 Develop concept of unit *fractions*	**2B**			**M**	**R**	**R**					
F4 Develop concept of oneness	**2B**			**M**	**R**	**R**					
F5 Explore many to one (five fingers to one hand)	**2E**			**M**							
F6 Use money to develop concept of *decimals*	**2C**			**T**	**M**						
F7 Relate units to whole	**2D**				**T**	**M**	**R**				
F8 Unit fractions to 1/8, 1/10	**2D**				**T**	**M**	**R**				
F9 Location of halves on number line and ruler	**2D**				**T**	**M**	**R**				
F10 Find 1/2, 1/3, 1/4 of a collection	**2D**				**T**	**M**	**R**				
F11 Relate many to one in preparation for the concept of *ratio* (5 fingers to 1 hand)	**2E**			**I**	**T**						
F12 Concept of *ratio*	**2E**				**T**	**M**	**R**				
F13 Explore money notation using two place decimals	**2C**			**I**	**M**	**R**					
F14 Order unit fractions using < and > symbols with denominators 2,3,4,5,6,8,10,12	**2B, 2D**					**T**	**M**	**R**			
F15 Review concept of 1=2/2 etc.	**2B**					**M**					

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Strand	Standard	PK	K	1	2	3	4	5	6	7	8
F16 Use terms *numerator* and *denominator*	2B			I	I	M	R				
F17 Find *equivalent* fractions	2B					T	M	R			
F18 Relate fractions and decimals to money and *metric* system	2A					T	M	R			
F19 Add and subtract like denominators	2B					I	T	M			
F20 Add and subtract decimals with one tenth	2B					M	R				
F21 Compare fractions on a number line and decimals to tenths	2B					T	M	R			
F22 Study order of unit fractions	2B					T	M	R			
F23 Correlate the common fraction notation for decimals to the tenths place (1/10 =0.1, .1, etc.)	2B						M	R			
F24 Add and subtract fractions with unlike denominators	2B						I	T	M	R	
F25 Add and subtract decimals to the hundredths place	2D					T	M	R	R		
F26 Multiply decimal to tenths	3A						T	M	R		
F27 Practice locating decimal points in products	2D						T	M	R		
F28 Develop concept of *proper* and *improper* fractions	2A						T	M	R		
F29 Develop concept of *percent* in multiples of five	2E						T	M	R		
F30 Continue addition and subtraction of fractions with like and unlike denominators	3A						T	M	R		
F31 Change improper fractions to *mixed number*	2A							T	M	R	
F32 Compare fractions to fractions and decimals to decimals	2D							T	M	R	
F33 Addition and subtraction of decimals with hundredths and thousandths	3A						T	M	R		

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F34 Multiply and divide decimals to hundredths	3A						T	M	R		
F35 Multiply and divide decimals by powers of 10	3A							I	T	M	
F36 Round off decimals to thousandths	6A							T	M	R	
F37 Use pictures and or graphic illustrations to demonstrate multiplication and division of fractions	1A, 3D							M	R		
F38 Practice writing equivalent forms of common fractions and decimals 1/2 = .5	2A, 2B							T	M	R	
F39 Multiplication of fractions	2A, 2B							T	M		
F40 Multiplication and mixed numbers and division of fractions	2A, 2B							I	M		

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Probability and Statistics											
P1 Organize and *classify data* (e.g. color, size, and shape)	**4B, 5D**	**I**	**M**								
P2 *Likeness* and *difference* concept of more, less and same	**4B**		**T**	**M**	**R**						
P3 *Certainty* and *uncertainty*/ guessing and estimation	**6A, 6B**		**T**	**M**	**R**						
P4 Collect data and record *results*	**4B**		**I**	**T**	**M**	**R**					
P5 Practice prediction	**6C**		**I**	**T**	**M**	**R**					
P6 Collect and tabulate data	**4B, 4C**		**I**	**T**	**M**	**R**					
P7 Arrange data using *tables* and *graphs*	**4B, 4C**		**I**	**T**	**M**	**R**					
P8 Compare data	**4B, 5E, 7D**		**I**	**T**	**M**	**R**					
P9 Investigate beginning *logic*	**1D**		**I**	**T**	**M**	**R**					
P10 Collect *statistical data* from newspapers, magazines, polls, and activities in other content areas	**6G**				**I**	**T**	**M**	**R**			
P11 Organize data using tables and bar graphs	**4B, 7F**		**I**	**I**	**I**	**T**	**M**	**R**			
P12 Discuss graphs used in everyday publications	**4B, 7F**				**I**	**T**	**M**	**R**			
P13 Conduct experiments and predict outcomes	**6F**				**T**	**M**	**R**	**R**			

Key:

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T Skill receives considerable instruction (taught but not benchmarked)
M Concept is mastered and benchmarked. Note that a skill may be introduced and benchmarked in one year. In those cases, only an M appears
R Concept is reviewed or expanded

Strand	Standard	PK	K	1	2	3	4	5	6	7	8
P14 Use fractional notation to express probability of outcomes	**6H**				**I**	**T**	**M**	**R**			
P15 Use orderly methods to count number of *outcomes* in an experiment (pictures, models, tree diagrams)	**6H**				**I**	**T**	**M**	**R**			
P16 Introduce logic concepts	**1D**			**I**	**T**	**M**	**R**	**R**			
P17 Make *frequency* tables from *tallied* data	**5E, 6G**			**I**	**I**	**T**	**M**	**R**			
P18 Use models, pictures and tree diagrams	**6E**					**T**	**M**	**R**			
P19 Examine *range* and differences between smallest and largest	**7F**				**I**	**T**	**M**	**R**			
P20 Develop concept of *average (arithmetic mean)*	**7F**						**T**	**M**			
P21 Continue to explore methods of collecting and analyzing data	**5D**					**I**	**T**	**M**	**R**		
P22 Use tables, graphs and *diagrams* to represent collected data	**5E**					**I**	**T**	**M**	**R**		
P23 Use *compass* and *protractors* to construct circle graphs	**4I**							**I**	**I**	**T**	**M**
P24 Continue to investigate logic concepts	**1D**					**T**	**M**	**R**	**R**		
P25 Compare bar, line and circle graphs which represent same information	**5E**							**T**	**M**	**R**	
P26 Determine *probabilities* of *independent* events	**6E**					**I**	**T**	**T**	**M**	**R**	
P27 Make *arrangements* and *combinations*	**6C**						**T**	**T**	**M**	**R**	

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Strand	**Standard**	**PK**	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Geometry and Measurement											
G1 Compare *dimensions* of various objects using terms like larger than, taller than, smaller than, shorter than, as long as, farther, or nearer; measure objects using non-standard units	**5A, 5C**	**I**	**M**	**R**							
G2 Compare *capacity* of containers using sand and water	**5B**	**I**	**T**	**M**	**R**						
G3 Compare temperatures/duration of time	**5A, 5B**	**I**	**M**	**R**							
G4 Weighing experiences using terms heavier than and lighter than	**5A**		**T**	**M**	**R**						
G5 Observe objects in the environment that have geometric shapes; make geometric pictures, patterns, and designs using geometric shapes.	**4D, 7A, 7E**	**I**	**M**	**R**							
G6 Study time to the hour, day, month, and year using clocks and calendars	**5A, 5B**	**I**	**T**	**M**	**R**						
G7 Investigate how to make change for amounts of money	**5B**		**I**	**T**	**M**	**R**					
G8 Use meter, centimeter, and *decimeter* for measuring length	**5A, 5C**			**T**	**M**	**R**	**R**				
G9 Introduce kilogram, liter, and Celsius thermometer	**5C**			**T**	**M**	**R**					
G10 Identify shapes in everyday life	**4E**	**I**	**T**	**M**	**R**						
G11 *Measure* objects using non-standard units	**5A, 5B**		**I**	**M**	**R**						

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Strand	Standard	PK	K	1	2	3	4	5	6	7	8
G12 *Weigh* objects using grams, kilograms	5B, 5C				M	R					
G13 Measure time in half hours, quarter hours, and 5 minutes intervals	5A, 5B			I	T	M					
G14 Make change up to $1.00	5C				T	M	R				
G15 Measure liquids in liters, milliliters	5C				M	R					
G16 Practice addition of measures	3A				M	R					
G17 Use shapes to create designs	4A		I	T	M	R					
G18 Observe two and three dimensional objects	7G			I	M	R					
G19 Introduce English units of measure	5D		I	T	M	R					
G20 Select and use appropriate measurement tools	5D			I	T	M	R				
G21 Estimate using actual units of measure	6B			T	M	R					
G22 Identify equivalent measures within a measuring system	5B				T	M	R				
G23 Introduce *coordinate geometry* (positive)	4B					M					
G24 Relate the clock to fractions as well as circle construction	5B			I	T	M	R				
G25 Find the *perimeter* of *polygons*	5D				T	M	R				
G26 Investigate properties of plane figures (number of sides, number of angles)	4A					T	M	R			
G27 *Plane figures* (polygons and circles)	4E		I	T	T	M	R				
G28 Explore three dimensional figures to understand *volume* (taking up space)	4C					T	M	R	M		
G29 Learn how to use a compass and protractor	4E						I	T	M		

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Strand	Standard	PK	K	1	2	3	4	5	6	7	8
G30 Continue to investigate *symmetry*	4E			I	T	M					
G31 Find perimeter, area and volume of specific figures by counting units	4C					T	M	R			
G32 Use rulers, protractors and compasses to construct plane geometric figures (circles and squares, etc.)	4E					I	T	T			
G33 Use terms such as polygon, circle, chord, radius, angle, diameter, face edge, vertex, line segment, point parallel and perpendicular and intersecting	4E					I	T	T			
G34 Extend work in coordinate geometry to both positive and negative coordinates	2B					I	T	M			
G35 Be familiar with common metric units used in everyday life	5A					I	T	M			
G36 Continue to study perimeter and area using graph paper and manipulative	5B					I	T	M	R		
G37 Develop formulas for the area and perimeter of squares and rectangles	5C					I	T	M	R		
G38 Measure area and perimeter of rectangles, triangles and irregular polygons using blocks, geoboards, graph paper etc.	5C							T	M		
G39 Continue to measure volume (prisms) with manipulatives	5B, 5C							T	M		
G40 Continue to measure temperature using *Celsius* and *Fahrenheit* thermometers	5A							T	M		
G41 Continue to draw and measure plane figures using rulers, protractors, and compasses	4I					I	T	M	R		
G42 Use pictures to explore *similar* and *congruent* figures; symmetry	4H					I	T	M	R		

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R Concept is reviewed or expanded

Strand	**Standard**	**PK**	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Problem Solving **Mathematical Reasoning**											
P1 Develop number concepts through sorting and classifying	**1A**	**I**	**M**	**R**							
P2 Integrate comparison of sets and counting with other activities (real life situations)	**1A**	**I**	**M**	**R**							
P3 Participate in sorting and classifying	**1A**	**I**	**M**	**R**							
P4 Explore likeness and differences	**1A**	**I**	**M**	**R**							
P5 Begin to recognize number sequence	**1B**	**I**	**M**	**R**							
P6 Relate counting to repeated patterns	**1B**	**I**	**M**	**R**							
P7 Describe rationale for grouping or sequencing	**1C**	**I**	**M**	**R**							
P8 Categorize objects by attributes	**1A**		**T**	**M**	**R**						
P9 Observe likenesses and differences using at least two categories at a time	**1A**		**I**	**T**	**M**	**R**					
P10 Draw pictures and use manipulatives to represent problems	**1A**		**I**	**T**	**M**	**R**					
P11 Use models, facts and relationships to draw conclusions	**1A**						**T**	**M**	**R**		
P12 Use statements "and" or "not"	**1A**							**I**	**T**		
P13 Use patterns and relationships to analyze math situations	**1B**						**T**	**M**	**R**		
P14 Be able to justify answers, math checks	**1C**					**I**	**T**	**M**	**R**		
P15 Use logical reasoning to reach simple conclusions	**1D**					**I**	**T**	**M**	**R**		
P16 Apply a variety of reasoning strategies	**1A**						**I**	**T**	**M**		
P17 Make conclusions based on inductive reasoning	**1C**							**I**	**T**		
P18 Justify conclusions involving simple and compound	**1D**							**I**	**T**		

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VI. Course Overview

Students will understand mathematics and become mathematically confident by communicating and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems. Students will engage in many problem solving situations and have an opportunity to reflect upon and express their skills, knowledge and understandings. A variety of ongoing assessments will be used throughout each of the following units:

1. Numbers and Numeration
2. Operations
3. Fractions and Decimals
4. Probability and Statistics
5. Geometry and Measurement
6. Problem Solving

VII. Instructional Outline

1. NUMBERS AND NUMERATION

a) Place value up to 999 and expanded notation
b) Count to 100's by 2's, 3's, 4's, 5's, and 10's
c) Use place value in decimals and in reading numbers through 100,000 with money
d) Round numbers to thousands
e) Introduce concept of positive and negative integers (temperature)
f) Predict odd or even numbers in addition, subtractions, and multiplication
g) Skip count to numbers greater than 100
h) Extend place value to millions and hundredths
i) Round numbers to nearest whole number
j) Look for patterns in sequences of positive numbers
k) Read and write whole numbers to one billion
l) Count and use ordinal numbers through 500
m) Prime Numbers
n) Use a number line and coordinates with positive and negative numbers

2. OPERATIONS

a) Explore different groupings when adding 3 or more numbers (associative property)
b) Use inverse operations with multiplication and division
c) Explore commutative property of multiplication
d) Practice estimation with operations
e) Addition and subtraction mastering sums and differences through 18
f) Explore role of 0 and 1 in multiplication
g) Experiment with grouping (associative property) in multiplication
h) Work with multiplication and division products and quotients through 144
i) Study of algorithms for division (one digit divisor)
j) Explore division in finding number of equal groups of items
k) Concepts of equality and inequality in all four operations ($<$, $>$, $\leq$, $\geq$)
l) Add and subtract whole numbers with sums less that one million
m) Subtract whole numbers when zero is in the minuend with regrouping
n) Find missing digits in a number sentence
o) Introduce concept of a prime factor
p) Multiplication of 2-digit and 3-digit numbers by 2 digits
q) Multiplication by multiples of 10
r) Find common factors of groups of number less than 100
s) Introduce concept of least common factor and greatest common multiple
t) Find quotient and remainder when 2 and 3 digit numbers are divided by one and two digit numbers
u) Investigate distributive property
v) Develop a variety of strategies for estimating addition, subtraction, multiplication, and division

3. FRACTIONS AND DECIMALS

a) Relate units to whole
b) Unit fractions to 1/8, 1/10
c) Location of halves, quarters, and eighths on a number line and ruler
d) Find ½, 1/3, ¼, of a number
e) Concept of ratio
f) Order unit fractions using < and > symbols with denominators to 12 and decimals to hundredths
g) Review concept of 1 = 2/2 etc.
h) Use terms numerator and denominator
i) Find equivalent fractions
j) Relate fractions and decimals to money and metric system
k) Add and subtract like denominators
l) Compare fractions on a number line and decimals to the tenths
m) Study order of unit fractions
n) Correlate the common fraction notation for decimals to the tenths place
o) Introduce addition and subtraction of fractions with unlike denominators
p) Add and subtract decimals to the hundredths place
q) Develop concept of proper and improper fractions
r) Introduce concept of percent
s) Change improper fractions to mixed numbers
t) Compare fractions to fractions, decimals to decimals and fractions to decimals
u) Addition and subtraction of decimals with hundredths and thousandths
v) Practice writing equivalent forms of common fractions and decimals (i.e. ½ = .5)

4. PROBABILITY AND STATISTICS

a) Collect statistical data from newspapers, magazines, polls and activities in other content areas
b) Organize data using tables, and bar graphs, models, pictures, and lists
c) Discuss graphs used in everyday publications
d) Conduct experiments and predict outcomes using equally and unequally likely outcomes
e) Use fractional notation to express probability of outcomes
f) Use orderly methods to count number of outcomes in an experiment (pictures, models, tree diagrams)
g) Make frequency tables from tallied data
h) Examine range and differences between smallest and largest
i) Continue to explore methods of collecting and analyzing data
j) Use models, pictures, tables, graphs and diagrams to represent collected data
k) Compare bar, line, and circle graphs which represent same information and describe trends
l) Determine probabilities of independent events
m) Make arrangements and combinations
n) Find the range, median, mode, and mean in a collection of organized data
o) Draw conclusions and make predictions from graphs
p) Make estimates to compare to actual results of computations
q) Recognize events that are certain and events that have no chance of occurring
r) Make predictions using unbiased random samples (i.e. a set in which every member has an equal chance of being chosen)
s) Determine probabilities of simple events

5. GEOMETRY AND MEASUREMENT

a) Compare temperatures/duration of time
b) Use meter, centimeter, and decimeter for measuring length
c) Weigh objects using grams kilograms
d) Measure time in half hours, quarter hours, 5 minute, 1 minute, and 1 second intervals
e) Make change up to $1.00
f) Measure liquids in liters, milliliters
g) Practice additions of measures
h) Use shapes to create designs
i) Select and use appropriate measurement tools
j) Estimate using actual units of measure
k) Identify equivalent measure within a measuring system
l) Relate the clock to fractions as well as circle construction
m) Investigate properties of plane figures (# of sides, # of angles)
n) Plane figures (polygons and circles)
o) Explore 3-dimensional figures to understand volume
p) Introduce how to use a compass and protractor
q) Find perimeter, area, and volume of specific figures by counting units
r) Use rulers, protractors, and compasses to construct plane geometric figures
s) Use terms such as polygon, circle, chord, radius, angle, diameter, face edge, vertex, line segment, point, parallel, perpendicular, intersecting, and circumference
t) Extend work in coordinate geometry with positive coordinates
u) Be familiar with common metric units used in everyday life
v) Continue to study perimeter and area using graph paper and manipulatives
w) Develop and use formulas for the area of and perimeter of squares and rectangles
x) Measure area and perimeter of rectangles, triangles, circles, and irregular polygons using blocks, geoboards, graph paper, etc.
y) Continue to measure temperature using Celsius and Fahrenheit
z) Use pictures to explore similar and congruent figures; symmetry
aa) Explore connections between factors and multiplication facts and area and volume
bb) Develop a variety of strategies for estimating quantities
cc) Develop strategies for estimating measurement
dd) Recognize, describe, extend and create a wide variety of patterns, including repeated and design patterns
ee) Use a variety of maniplulative materials and technologies to explore patterns
ff) Identify the geometric shapes and faces of prisms, pyramids, cones and cylinders
gg) Identify different types of prisms and pyramids
hh) Discover patterns in nature, art, music, and literature, including tessellations (a repeating shape that completely covers an area with no overlapping and no gaps)

6. PROBLEM SOLVING (MATHEMATICAL REASONING)

a) Describe rationale for grouping or sequencing
b) Categorize objects by attributes
c) Draw pictures and use manipulatives to represent problems
d) Use models, facts and relationships to draw conclusions
e) Use patterns and relationships to analyze math situations
f) Be able to justify answers, math checks
g) Apply a variety of reasoning strategies
h) Develop strategies for selecting appropriate computational and operational methods, such as diagrams, charts, tables, open sentences, patterns, breaking problems into parts
i) Measurement problems related to other areas such as literature, science, and social studies
j) Explore the meaning of large numbers through estimation
k) Discuss real-world examples of when estimating is acceptable and when it is not
l) Determine the reasonableness of results
m) Solve for an unknown using manipulatives (counters)

VIII. Course Benchmarks

IX. Units of Study

Unit One

Numbers and Numeration

A. Unit Benchmarks

Students will be able to:

1. use place value up to 999 and expanded notation
2. count to 100's by 2's, 3's, 4's, 5's, and 10's
3. use place value in decimals and in reading numbers through 100,000 with money
4. round numbers to thousands
5. introduce concept of positive and negative integers (temperature)
6. predict odd or even numbers in addition, subtractions, and multiplication
7. skip count to numbers greater than 100
8. extend place value to millions and hundredths
9. round numbers to nearest whole number
10. look for patterns in sequences of positive numbers
11. read and write whole numbers to one billion
12. count and use ordinal numbers through 500
13. identify Prime Numbers
14. use a number line and coordinates with positive and negative numbers

B. Unit Assessment

C. Rubric

D. Activities

1. Teacher Constructed Activities:

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

2. Textbook with Teaching Strategies

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

3: Apply Across Disciplines

3. Computer Assisted Instruction

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

3: Apply Across Disciplines

4. Cross Disciplinary

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

3: Apply Across Disciplines

5. Miscellaneous

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

3: Apply Across Disciplines

E. Vocabulary

number line
place value
estimate
expanded notation
odd
even
first
middle
last
sum, addend
difference
number charts
rounding
decimals
positive
negative
whole number
predict
product
sequences
squared
addition
subtraction
multiplication
division, dividend, divisor
order
regrouping
digit
inequality
associative property
estimation
equal
equality
minuend
prime factor
multiples
common factors
least common multiple
greatest common factor
quotient
remainder
distributive property
order of operations
half
fractions
ratio
numerator
denominator
equivalent
metric
proper
improper
percent
mixed number
classified data
perimeter
polygon
plane figures
volume
symmetry
Celsius
Fahrenheit
similar
congruent
exponent
integer
commutative property
identity property
prime
composite
equation
variable
cubic measures
array
area
vertical
horizontal
axis
plot
formula
compare
interpret
frequency
reasonable
likeness
difference
certainty
uncertainty
results
tables
graphs
logic
statistical data
outcomes
frequency
tally
range
average (mean)
mode
median
diagrams
compass
protractor
probability
independent events
arrangements
combinations
dimensions
capacity
decimeter
measure
weigh
coordinate geometry
random
perpendicular
parallel
intersecting
vertex
ray
line
line segment
plane
angle
face
edge
prism
grid
chance
simplifying
reducing
proportion

F. References and Resources

Unit Two

Operations

A. Unit Benchmarks

Students will be able to:

1. explore different groupings when adding 3 or more numbers (associative property)
2. use inverse operations with multiplication and division
3. explore commutative property of multiplication
4. practice estimation with operations
5. addition and subtraction mastering sums and differences through 18
6. explore role of 0 and 1 in multiplication
7. experiment with grouping (associative property) in multiplication
8. work with multiplication and division products and quotients through 144
9. study of algorithms for division (one digit divisor)
10. explore division in finding number of equal groups of items
11. use concepts of equality and inequality in all four operations ($<$, $>$, $\leq$, $\geq$)
12. add and subtract whole numbers with sums less that one million
13. subtract whole numbers when zero is in the minuend with regrouping
14. find missing digits in a number sentence
15. introduce concept of a prime factor
16. multiply 2-digit and 3-digit numbers by 2 digits
17. multiply by multiples of 10
18. find common factors of groups of number less than 100
19. introduce concept of least common factor and greatest common multiple
20. Find quotient and remainder when 2 and 3 digit numbers are divided by one and two digit numbers
21. Investigate distributive property
22. Develop a variety of strategies for estimating addition, subtraction, multiplication, and division

B. Unit Assessment

C. Rubric

D. Activities

1. Teacher Constructed Activities:

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

2. Textbook with Teaching Strategies

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

3. Computer Assisted Instruction

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

4. Cross Disciplinary

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

5. Miscellaneous

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

E. Vocabulary

F. References and Resources

Unit Three

Fractions and Decimals

A. Unit Benchmarks

Students will be able to:

1. relate units to whole
2. identify unit fractions to 1/8, 1/10
3. locate halves, quarters, and eighths on a number line and ruler
4. find ½, 1/3, ¼, of a number
5. use concept of ratio
6. order unit fractions using < and > symbols with denominators to 12 and decimals to hundredths
7. review concept of 1 = 2/2 etc.
8. use terms numerator and denominator
9. find equivalent fractions
10. relate fractions and decimals to money and metric system
11. add and subtract like denominators
12. compare fractions on a number line and decimals to the tenths
13. study order of unit fractions
14. correlate the common fraction notation for decimals to the tenths place
15. introduce addition and subtraction of fractions with unlike denominators
16. add and subtract decimals to the hundredths place
17. develop concept of proper and improper fractions
18. introduce concept of percent
19. change improper fractions to mixed numbers
20. compare fractions to fractions, decimals to decimals and fractions to decimals
21. add and subtract decimals with hundredths and thousandths
22. practice writing equivalent forms of common fractions and decimals (i.e. ½ = .5)

B. Unit Assessment

C. Rubric

D. Activities

1. Teacher Constructed Activities:

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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3: Apply Across Disciplines
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2. Textbook with Teaching Strategies

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

3. Computer Assisted Instruction

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

4. Cross Disciplinary

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

5. Miscellaneous

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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E. Vocabulary

F. References and Resources

Unit Four

Probability and Statistics

A. Unit Benchmarks

Students will be able to:

1. collect statistical data from newspapers, magazines, polls and activities in other content areas
2. organize data using tables, and bar graphs, models, pictures, and lists
3. discuss graphs used in everyday publications
4. conduct experiments and predict outcomes using equally and unequally likely outcomes
5. use fractional notation to express probability of outcomes
6. use orderly methods to count number of outcomes in an experiment (pictures, models, tree diagrams)
7. make frequency tables from tallied data
8. examine range and differences between smallest and largest
9. continue to explore methods of collecting and analyzing data
10. use models, pictures, tables, graphs and diagrams to represent collected data
11. compare bar, line, and circle graphs which represent same information and describe trends
12. determine probabilities of independent events
13. make arrangements and combinations
14. find the range, median, mode, and mean in a collection of organized data
15. draw conclusions and make predictions from graphs
16. make estimates to compare to actual results of computations
17. recognize events that are certain and events that have no chance of occurring
18. make predictions using unbiased random samples (i.e. a set in which every member has an equal chance of being chosen)
19. determine probabilities of simple events

B. Unit Assessment

C. Rubric

D. Activities

1. Teacher Constructed Activities:

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

2. Textbook with Teaching Strategies

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

3. Computer Assisted Instruction

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

4. Cross Disciplinary

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

5. Miscellaneous

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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E. Vocabulary

F. References and Resources

Unit Five

Geometry and Measurement

A. Unit Benchmarks

Students will be able to:

1. compare temperatures/duration of time
2. use meter, centimeter, and decimeter for measuring length
3. weigh objects using grams kilograms
4. measure time in half hours, quarter hours, 5 minute, 1 minute, and 1 second intervals
5. make change up to $1.00
6. measure liquids in liters, milliliters
7. practice additions of measures
8. use shapes to create designs
9. select and use appropriate measurement tools
10. estimate using actual units of measure
11. identify equivalent measure within a measuring system
12. relate the clock to fractions as well as circle construction
13. investigate properties of plane figures (# of sides, # of angles)
14. identify plane figures (polygons and circles)
15. explore 3-dimensional figures to understand volume
16. introduce how to use a compass and protractor
17. find perimeter, area, and volume of specific figures by counting units
18. use rulers, protractors, and compasses to construct plane geometric figures
19. use terms such as polygon, circle, chord, radius, angle, diameter, face edge, vertex, line segment, point, parallel, perpendicular, intersecting, and circumference
20. extend work in coordinate geometry with positive coordinates
21. be familiar with common metric units used in everyday life
22. continue to study perimeter and area using graph paper and manipulatives
23. develop and use formulas for the area of and perimeter of squares and rectangles
24. measure area and perimeter of rectangles, triangles, circles, and irregular polygons using blocks, geoboards, graph paper, etc.
25. continue to measure temperature using Celsius and Fahrenheit
26. use pictures to explore similar and congruent figures; symmetry
27. explore connections between factors and multiplication facts and area and volume
28. develop a variety of strategies for estimating quantities
29. develop strategies for estimating measurement
30. recognize, describe, extend and create a wide variety of patterns, including repeated and design patterns
31. use a variety of manipulative materials and technologies to explore patterns
32. identify the geometric shapes and faces of prisms, pyramids, cones and cylinders
33. identify different types of prisms and pyramids
34. discover patterns in nature, art, music, and literature, including tessellations (a repeating shape that completely covers an area with no overlapping and no gaps)

B. Unit Assessment

C. Rubric

D. Activities

1. Teacher Constructed Activities:

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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2. Textbook with Teaching Strategies

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
3: Apply Across Disciplines
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5: Apply to Real World Unpredictable Situations

3. Computer Assisted Instruction

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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4. Cross Disciplinary

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
3: Apply Across Disciplines
4: Apply to Real World Predictable Situations
5: Apply to Real World Unpredictable Situations

5. Miscellaneous

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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E. Vocabulary

F. References and Resources

Unit Six

Problem Solving
(Mathematical Reasoning)

A. Unit Benchmarks

Students will be able to:

1. describe rationale for grouping or sequencing
2. categorize objects by attributes
3. draw pictures and use manipulatives to represent problems
4. use models, facts and relationships to draw conclusions
5. use patterns and relationships to analyze math situations
6. be able to justify answers, math checks
7. apply a variety of reasoning strategies
8. develop strategies for selecting appropriate computational and operational methods, such as diagrams, charts, tables, open sentences, patterns, breaking problems into parts
9. measurement problems related to other areas such as literature, science, and social studies
10. explore the meaning of large numbers through estimation
11. discuss real-world examples of when estimating is acceptable and when it is not
12. determine the reasonableness of results
13. solve for an unknown using manipulatives (counters)

B. Unit Assessment

C. Rubric

D. Activities

1. Teacher Constructed Activities:

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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2. Textbook with Teaching Strategies

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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2: Apply in Discipline
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3. Computer Assisted Instruction

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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4. Cross Disciplinary

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

1: Knowledge
2: Apply in Discipline
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5. Miscellaneous

Activity	Benchmark	Standard	Application Level
a. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
b. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
c. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	
d. *Materials:*		HPEHE: MST: ELA: Arts: LOTE: CDOS: SS:	

Application Level:

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2: Apply in Discipline
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E. Vocabulary

F. References and Resources

X. Course Assessment

XI. Curriculum Review Process