

-Mathematics-

- **Use alternative forms of expressing rational numbers**

Developing an Interpretation

- Rename equivalent fractions
- Rename equivalent mixed numbers and improper fractions
- Identify alternative forms of expressing whole numbers less than 10,000 using expanded notation.
- Identify alternative forms of expressing whole numbers less than 10,000 using regrouping

Making Connections

- Use place value concepts to interpret the meaning of numbers

- **Use whole numbers, decimals and fractions to determine magnitude, compare, order, picture, and round**

Initial Understanding

- Relate and construct pictorial representations of decimals (0.01-2.99)
- Relate and construct pictorial representations of fractions and mixed numbers

Developing an Interpretation

- Order and describe the magnitude of whole numbers <100,000
- Order and describe the magnitude of mixed numbers and fractions
- Order and describe the magnitude of decimals
- Locate points on number lines and scales

Making Connections

- Round whole numbers in a context
- Round decimals in a context

- **Develop estimation strategies**

Developing an Interpretation

- Identify the best expression to find an estimate
- Identify whether and why a particular strategy will result in an overestimate or an underestimate
- Estimate lengths and areas

Making Connections

- Determine a reasonable estimate and describe the strategy used to make the estimate

- **Use strategies to add, subtract, multiply, and divide rational numbers**
- Estimate a reasonable answer to a problem and make and defend decision

Initial Understanding

- Add and subtract 2, 3, and 4 digit whole numbers and money amounts less than \$100.00
- Multiplication and Division Facts
- Multiply and divide multiples of 10 and 100 by 10 and 100
- Multiply and divide 2 and 3 digit whole numbers and money amounts less than \$10 by 1 digit numbers
- Add and subtract fractions and mixed numbers with like denominators

Developing an Interpretation

- Identify the appropriate operation or number sentence to solve a story problem
- Write story problems from multiplication and division number sentence

Making Connections

- Solve 1-step problems involving whole numbers and money amounts
- Solve 2-step problems involving whole numbers and dollar amounts and explain how the solution was determined
- Solve extended numerical problems

- **Develop algebraic concepts**

Initial Understandings

- Solve 1-step algebraic equations

Developing an Interpretation

- Extend or complete patterns involving numbers and attributes

Critical Stance

- State rules for given patterns

- **Use elementary statistics and probability to analyze data**

Initial Understanding

Create bar and pinto graphs from data in tables and charts

Developing an Interpretation

Identify correct information from graphs, tables, and charts

Making Connections

Solve problems involving data organization

Solve problems involving elementary notions of probability and fairness, including justifying answers

Solve extended statistical problems

Critical Stance

Draw and justify reasonable conclusions from graphs, tables, and charts

- **Apply time, measure length, find area**

Initial Understanding

Measure lengths in metric units

Measure lengths to the customary unit specified

Measure and determine perimeter and area

Developing an Interpretation

Identify appropriate metric units of measure for a given situation

Identify appropriate customary units of measure for a given situation

Making Connections

Solve problems involving elapsed time

Solve problems involving the conversion of measures of time

Solve problems involving the conversion of measures of length

- **Develop spatial relationships in Plane Geometry**

Initial Understanding

Locate points on grids

Draw geometric shapes and figures

Developing an Interpretation

Describe and classify geometric shapes and figures

Identify and draw lines of symmetry

Identify congruent figures

Making Connections

Solve extended spatial problems

Critical Stance

In Mathematics justifying, proving or explaining a conjecture or answer is connected to the learning environment. Students are encouraged and expected to question one another's ideas and to explain and support their own ideas in the face of others' challenges. Each objective in mathematics can be framed to have students defend, support, explain or prove their answer. Educational research offers compelling evidence that students learn mathematics well only when they construct their own mathematical understandings. To understand what they learn, students must enact for themselves verbs that permeate the mathematics curriculum: examine, represent, transform, solve, apply, and prove