

-Mathematics-

- **Use alternative forms of expressing numbers**

Developing an Interpretation

- Identify alternative forms of expressing whole numbers $< 1,000$ using expanded notation
- Identify alternative forms of expressing whole numbers $< 1,000$ using regrouping

Making Connections

- Solve problems involving 10 and 100 more or less
- Use place value concepts to interpret the meaning of numbers
- Solve problems involving elementary notions of probability

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

Initial Understanding

- Construct pictorial representations of fractions, decimals (tenths) and mixed numbers
- Identify points representing whole numbers fractions and decimals on a number line

Developing an Interpretation

- Order and Describe the magnitude of whole numbers $< 10,000$
- Relate fractions and mixed numbers to pictorial representations, and vice versa
- Relate decimals (0.1 - 2.9) to pictorial representation, and vice versa
- Relate equivalent fractions (using pictorial representations)
- Describe magnitude of fractions, mixed numbers, and decimals (tenths)

Making Connections

- Round whole numbers in context

- **Develop estimation strategies**

Developing an Interpretation

- Identify the best expression to find an estimate.
- Determine a reasonable estimate and describe the strategy used to make the estimate
- Estimate a reasonable answer to a problem including estimating change from \$1, \$5, and \$10
- Estimate lengths
- Estimate area

Critical Stance

- Use estimation to make and defend decisions

- **Use strategies, to add and subtract, multiply, and divide Rational Numbers.**

Initial Understanding

- Find multiplication facts where one factor is 2, 3, 4, 5 or 10
- Find division facts where one factor is 2, 3, 4, 5 or 10
- Add and subtract 2 and 3 digit whole numbers and money amounts $< \$10.00$

Developing an Interpretation

- Identify members of multiplication and division fact families from arrays
- Solve 1-step problems involving whole numbers and money amounts
- Solve simple story problems involving add and subtract with extra information.

Making Connections

- Solve 1-step problems and explain how the solution was determined
- Solve extended numerical problems
- Write the appropriate operations or number sentence to solve a story problem
- Write a story problem that matches a given addition, subtraction or multiplication number sentence

- **Extend patterns and identify or state the rule for a given pattern.**

Making Connections

- Extend or complete patterns involving numbers and attributes

Critical Stance

- States rules for given patterns and defend your answer.

- **Use Elementary Statistics to analyze Data**

Initial Understanding

- Create bar and pictographs from data in tables and charts

Developing an Interpretation

Solve problems involving the organization of data, including sorting objects and data by common attribute
Identify correct information from tables, graphs, and charts

Making Connections

Solve extended statistical problems

Critical Stance

Justify reasonable conclusions from tables, graphs, and charts

- **Use money, apply time, measure length,**

Initial Understanding

Measure or draw lengths to the nearest inch, 1/2-inch.

Measure or draw lengths to the nearest centimeter

Developing an Interpretation

Identify an appropriate customary measure for a given situation

Identify an appropriate metric measure for a given situation

Making Connections

Solve problems involving elapsed time

Solve problems involving the conversion of measures of time

- **Develop spatial relationships in Geometry**

Initial Understanding

Identify and draw geometric shapes and figures

Describe geometric shapes and 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," "prove."