

-Mathematics-

- **Use numbers and objects to count, classify sort, compare, and order**

Initial Understanding

- Compare 2 objects on the basis of 1 attribute
- Count orally to 100
- Make a reasonable estimate of the number of objects in a small set
- Use objects to correctly count a given set
- Match pictures of < 10 objects to numerals and words
- Use objects to create a wide variety of representations for numbers 1-10
- Build and interpret graphs using concrete objects
- Count forward to 100 by fives and tens; to 20 by twos; backward by ones from 20 to 0
- Identify half of a region, object or design as well as parts that are cut in 2 but are not halves; extend to fourths
- Determine ordinal position; objects 3-9.
- Use objects to explore many-to-one relationships (place value).

Developing an Interpretation

- Sort collections by 1 or 2 attributes; verbalize sorting rules
- Classify objects using 1 or 2 attributes (size, color, and shape); verbalize classification rule.
- Order 3-5 objects on the basis of 1 attribute and verbalize rule
- Compare 2 sets of objects (10) and verbalize relationship (more, less, and same)

- **Develop strategies to add and subtract simple whole numbers**

Initial Understanding

- Use objects and build a set: 1 more/1 less, 2 more/2 less than given set
- Given 2 sets, count on from larger set; find sums to 10
- Use objects. (10) to find add/subtract relationships
- Use counters to model simple addition and subtraction story problems
- Use computer graphics to illustrate. a simple number sentence
- Use the calculator to create and extend simple number patterns

Developing an Interpretation

- Match addition and subtraction number sentences to sets of concrete objects (10)

Making Connections

- Solve oral story problems involving add and subtract (10) with pictorial representation

- **Discover, analyze, and create patterns**

Initial Understanding

- Copy, extend, and create simple patterns involving attributes

Developing an Interpretation

- Copy, extend, and create simple patterns involving numbers (1-19)
- Determine the probability of a simple chance event

- **Recognize money, time, linear measurement, and geometric shapes**

Initial Understanding

- Identify pennies, nickels, dimes; their value and relationships
- Tell time to the hour using analog and digital clocks
- Estimate area of small shapes using spatial material
- Use non-standard units to measure familiar objects

Making Connections

- Relate simple plane shapes (circle, rectangle, triangle, and square) to objects

NOTE:

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 each other'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 student 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."