Mental Math

Key components of Mental Math

Instructions:
- Give 2-3 problems that are READ only to students. (No printed copy)
- "I will read each problem carefully, TWICE"
- Review the solutions or ask students to review how they solved the problems
- (Repeated each day for …., with variations)
- Grading/assessment:
  - Consider not assigning values, just use them for review, development, etc.
  - Possibly use EPR (Every pupil response – thumbs up/down, whiteboards, etc)
- Discussions:
  - **How did you do it? Explain it. (There are usually multiple ways).**
  - **Why is your answer correct?**
  - **Variations? What would happen if . . .**

Benefits of Mental practice:
- Basic number facts
- Combining operations
- Reflect computational standards for specific grade or course
- Concepts that students should know, but they don't know
- Reinforce grade-level or course standards
- Match conceptual focus of current instructional unit
- Reinforce prior learning of math skills
- Provide daily practice for mathematical computation problems on state tests
- Promote mathematical reasoning and develop number sense

Reinforces number sense:
- Properties of number system
- Measurement concepts
- Reasonableness of answer
- Math vocabulary

Typical themes include:
- Number facts
- Skip counting
- Powers of 10
- Inverse operations
- Fractional parts of numbers
- Measurement conversions

Example 1
1. 1 more than 3; double; subtract 1

2. 3 times 5; double; times 10; times 10

3. ¼ of 12; square it; 1/3 of it; cube it

Example 2
1. Add 5 to a number; double that; subtract the number

2. ¼ of 20; times -3; add 5

3. First prime number; increased by 7; take the square root; divide by 1

Example 3
1. Factor $x^2 - 8x + 16$; divide by ($x-4$); add 4

2. Area of a square with sides 9 cm; subtract 17 cm^2; take square root

3. Start with 1 foot; convert to inches; multiply by 3; convert to yards