



New Hampshire

# Department of Education

## CHAPTER Ed 300 ADMINISTRATION OF MINIMUM STANDARDS IN PUBLIC SCHOOLS

### Ed 306.43 Mathematics Program.

(a) Pursuant to Ed 306.26, the local school board shall require that a mathematics program in each elementary grade, excluding kindergarten, provides:

- (1) Opportunities for all students to solve problems by:
  - a. Using multiple strategies;
  - b. Communicating mathematical ideas through speaking and writing; and
  - c. Making logical connections between different mathematical concepts;
- (2) Opportunities for all students to build and construct knowledge and understanding of mathematical concepts through developmentally appropriate activities that include concrete experiences and interactions with manipulatives, technology, and their environment;
- (3) Opportunities for authentic tasks that:
  - a. Promote student decision making and questioning;
  - b. Encourage students to develop unique problem solving strategies while allowing students to defend their strategies and results;
- (4) Planned activities that promote developing mathematical concepts from the concrete to the representational and finally to the abstract level;
- (5) Opportunities for all students to develop positive attitudes such as inquisitiveness and appreciation of the multiple ways to approach and solve mathematical situations;
- (6) Interactive instruction and sustained activities designed to enable all students to demonstrate proficiency using the concepts and skills articulated in any grade level expectations that are adopted at the state level; and

(7) A developed curriculum incorporating number and operations, geometry and measurement, data, statistic and probability, and functions and algebra consistent with RSA 193-C:3, III.

(b) Pursuant to Ed 306.26, the local school board shall require that a mathematics program in each middle school grade provides:

(1) Opportunities for all students to solve problems by:

- a. Using multiple strategies;
- b. Reading and interpreting mathematics;
- c. Communicating mathematical ideas through speaking and writing; and
- d. Making connections within and among mathematical ideas and across disciplines;

(2) Opportunities for all students to build and construct knowledge and understanding of mathematical concepts through developmentally appropriate activities that include concrete experiences and interactions with manipulative, technology, and their environment;

(3) Opportunities for authentic tasks that:

- a. Promote student decision making and questioning; and
- b. Encourage students to develop unique problem solving strategies while allowing students to defend their strategies and results through inductive and deductive reasoning;

(4) Opportunities for all students to explore the historical and cultural development of mathematics;

(5) Opportunities for all students to:

- a. Explore mathematically-related careers; and
- b. Have direct interaction with the mathematics involved in various careers;

(6) Planned activities that promote developing mathematical concepts from the concrete to the representational and finally to the abstract level;

(7) Opportunities for all students to develop positive attitudes such as inquisitiveness, appreciation of the multiple ways to approach and solve mathematical situations, and an appreciation of mathematical patterns;

(8) Sustained projects and labs that are designed to:

- a. Incorporate multiple mathematical ideas, research, technology, mathematical communication, and interdisciplinary interaction; and

- b. Encourage students to solve problems that are meaningful and unique to their lives;
  - (9) Interactive instruction and sustained activities designed to enable all students to demonstrate proficiency using the concepts and skills articulated in any grade level expectations that are adopted at the state level; and
  - (10) A developed curriculum incorporating number and operations, geometry and measurement, data, statistics and probability, and functions and algebra consistent with RSA 193-C:3, III.
- (c) Pursuant to Ed 306.27, the local school board shall require that a mathematics program in each high school provides:
- (1) Opportunities for all students to solve problems by:
    - a. Using multiple strategies;
    - b. Reading and interpreting mathematics;
    - c. Communicating mathematical ideas through speaking and writing; and
    - d. Making connections within and among mathematical ideas and across disciplines;
  - (2) Opportunities for all students to build and construct knowledge and understanding of mathematical concepts through developmentally appropriate activities that include concrete experiences and interactions with manipulatives, technology, and their environment;
  - (3) Opportunities for authentic tasks that:
    - a. Promote student decision making and questioning; and
    - b. Encourage students to develop unique problem-solving strategies while allowing students to defend their strategies and results through inductive and deductive reasoning and proof;
  - (4) Opportunities for all students to explore the historical and cultural development of mathematics;
  - (5) Opportunities for all students to:
    - a. Research mathematically-related careers;
    - b. Have direct interaction with the mathematics involved in various careers; and
    - c. Research the mathematical requirements of various college majors;
  - (6) Planned activities that promote developing mathematical concepts from the concrete to the representational and finally to the abstract level;

- (7) Opportunities for all students to develop positive attitudes such as inquisitiveness, appreciation of the multiple ways to approach and solve mathematical situations, appreciation of mathematical patterns, and the ability to make predictions from patterns;
- (8) Sustained projects and labs designed to incorporate multiple mathematical ideas, research, technology, mathematical communication, and interdisciplinary interaction, and to encourage students to solve problems that are meaningful and unique to their lives;
- (9) Interactive instruction and sustained activities developed to increase mathematical maturity and allow students to be successful in solving problems outside of the classroom;
- (10) Opportunities for all students to attain competency in mathematics for each year in which he or she is in high school, through graduation, to ensure career and college readiness.
- (11) Such competency may be met by satisfactorily completing:
- a. A minimum of 4 courses in mathematics; or
  - b. A minimum of 3 mathematics courses and one non-mathematics content area course in which mathematics knowledge and skills are embedded and applied, as may be approved by the school board.
- (12) Interactive instruction and sustained activities designed to enable all students to demonstrate proficiency on the state assessment; and
- (13) A developed curriculum incorporating number and operations, geometry and measurement, data, statistics and probability, and functions and algebra consistent with RSA 193-C:3, III.

Source. #5546, eff 7-1-93; ss by #6366, eff 10-30-96, EXPIRED: 10-30-04

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