

# National Science Education Standards

## Standards Key

- M - major emphasis
- m - minor emphasis
- i - indirect; i.e., not directly tied to standard, but important background information.

The letters A-G represent various areas in the National Science Education Standards, as follows:

- A - Science as Inquiry
- B - Physical Science: Motion and Forces
- C - Life Science
- D - Earth and Space Science
- E - Science and Technology
- F - Science in Personal and Social Perspectives
- G - History and Nature of Science

Activity	A	B	D	E	F	G	Emphasis
16 - Mag. Line Plots		m					B: (Motion and Forces). Electricity and magnetism are two aspects of a single electromagnetic force. Moving electric charges produce magnetic forces, and moving magnets produce electric forces.
17 - Soda Bottle Mag.	M	M	i				A: Design and conduct scientific investigations; use technology and mathematics to improve investigations and communications. B: (Motion and Forces). Electricity and magnetism are two aspects of a single electromagnetic force. Moving electric charges produce magnetic forces, and moving magnets produce electric forces.
18 - Kp Index	M	M	i			m M	A: Design and conduct scientific investigations; use technology and mathematics to improve investigations and communications. B: (Motion and Forces). Electricity and magnetism are two aspects of a single electromagnetic force. Moving electric charges produce magnetic forces, and moving magnets produce electric forces. G: (Science as a Human Endeavor) Individuals and teams have contributed and will continue to contribute to the scientific enterprise. G: (Nature of Scientific Knowledge) Scientific explanations must meet certain criteria. First and foremost, they must be consistent with experimental and observational evidence about nature, and must make accurate predictions, when appropriate, about systems being studied.
19 - Mag. Mag. Changes	M	m	i			M	A: Design and conduct scientific investigations; use technology and mathematics to improve investigations and communications. B: (Motion and Forces). Electricity and magnetism are two aspects of a single electromagnetic force. Moving electric charges produce magnetic forces, and moving magnets produce electric forces. G: (Nature of Scientific Knowledge) Scientific explanations must meet certain criteria. First and foremost, they must be consistent with experimental and observational evidence about nature, and must make accurate predictions, when appropriate, about systems being studied.
20 - Spectro. Plots	M	m	i				A: Identify questions and concepts that guide scientific investigations, use technology and mathematics to improve investigations and communications. B: (Motion and Forces). Electricity and magnetism are two aspects of a single electromagnetic force. Moving electric charges produce magnetic forces, and moving magnets produce electric forces. G: (Nature of Scientific Knowledge) Scientific explanations must meet certain criteria. First and foremost, they must be consistent with experimental and observational evidence about nature, and must make accurate predictions, when appropriate, about systems being studied.

# National Math Standards

**NM-NUM.9-12.3:** (Numbers and Operations). Compute fluently and make reasonable estimates.

**NM-ALG.9-12.2:** (Algebra). Represent and analyze mathematical situations and structures using algebraic symbols.

**NM-ALG.9-12.3:** (Algebra). Use mathematical models to represent and understand quantitative relationships.

**NM-GEO.9-12.2:** (Geometry). Specify locations and describe spatial relationships using coordinate geometry and other representational systems.

**NM-GEO.9-12.4:** (Geometry). Use visualization, spatial reasoning, and geometric modeling to solve problems.

**NM-MEA.9-12.1:** (Measurement). Understand measurable attributes of objects and the units, systems, and processes of measurement.

**NM-MEA.9-12.2:** (Measurement). Apply appropriate techniques, tools, and formulas to determine measurements.

**NM-DATA.9-12.1** (Data Analysis & Probability). Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer.

**NM-DATA.9-12.2** (Data Analysis & Probability). Select and use appropriate statistical methods to analyze data.

**NM-DATA.9-12.3:** (Data Analysis & Probability). Develop and evaluate inferences and predictions that are based on data.

**NM-PROB.COMM. PK-12.2:** (Communication - Grades Pre-K - 12). Communicate their mathematical thinking coherently and clearly to peers, teachers and others.

**NM-PROB.COMM. PK-12.4:** (Communication - Grades Pre-K - 12). Use the language of mathematics to express mathematical ideas precisely.

**NM-PROB.CONN. PK-12.3:** (Connections - Grades Pre-K - 12). Recognize and apply mathematics in contexts outside of mathematics.

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Activity	NM- NUM. 9-12.3	NM- ALG. 9-12.2	NM- ALG. 9-12.3	NM- GEO. 9-12.2	NM- GEO. 9-12.4	NM- MEA. 9-12.1	NM- MEA. 9-12.2	NM- DATA. 9-12.1	NM- DATA. 9-12.2	NM- DATA. 9-12.3	NM- PROB. COMM. PK-12.2	NM- PROB. COMM. PK- 12.4	NM- PROB. CONN. PK- 12.3
15- Vectors A-B	M	M		M	M		M				m		m
16 - Line Plots	m				M	M	M					m	m

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17 - Soda Bottle Mag.					m	M	M	M	M	M			
18 - Kp Index			m			M	M	M	M	M			
19 - Mag. Mag. Ch.			m			M	M	M	M	M		m	M
20 - Plots & Spectrums						M	M	M		M			