# Unit Plan: Science

## **Stage 1**: Desired Results

### Learning Expectations:

**MA: Science and Technology/Engineering**

### Curriculum Frameworks and Learning Standards

**MA: Science and Technology/Engineering**
*Appendix I: Science and Engineering Practices*

**The Science and Engineering Practices:** Science and engineering practices include the skills necessary to engage in scientific inquiry and engineering design. It is necessary to teach these so students develop an understanding and facility with the practices in appropriate contexts.

**MA: Science and Technology/Engineering**
*Appendix XI: Safety Practices*

**Safety Practices:** Safe practices are integral to teaching and learning of STE at all levels. It is the responsibility of each district to provide safety information and training to educators and students and the responsibility of each educator to understand and implement safe laboratory practices.

**Flinn Middle School Science Contract**

| **Enduring Understandings**<br>*Discovery Education Lesson Objectives* | **Essential Questions**<br>*Discovery Education Overarching Question* |
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| • Students will learn safe science practices | • How can you “think” like a scientist? |
| **Content** | **Skills** (Science and Engineering Practices)<br>*Massachusetts STE Frameworks - 2016* |
| **Lab Safety**<br><br>**Thinking like a Scientist**<br>• Scientific method<br>• Creating hypotheses<br>• Writing procedures<br>• Observations and inferences<br>• Measurement<br>• Metric measurements | • Asking questions (for science) and defining problems (for engineering).<br>• Developing and using models.<br>• Planning and carrying out investigations.<br>• Analyzing and interpreting data.<br>• Using mathematics and computational thinking.<br>• Constructing explanations (for science) and designing solutions (for |

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| • Tools for measuring | engineering).<br>• Engaging in argument from evidence.<br>• Obtaining, evaluating, and communicating information. |

| **Stage 2**: Assessment Evidence | |
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| **Performance Tasks** | **Other Evidence** |
| **Thinking like a Scientist**<br>• Scientific method<br>• Creating hypotheses<br>• Writing procedures<br>• Observations and inferences<br>• Measurement<br>• Metric measurements<br>• Tools for measuring | • Laboratory Experiments<br>• Group Projects/Presentations<br>• Interactive Gizmos<br>• Quizzes/Tests<br>• Formative Assessments |

| **Stage 3**: Learning Activities | |
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| **Optional Learning Activities** | **Vocabulary** |
| • Activity Padlet<br>• Lab Safety Slideshow<br>• Safety Poster<br>• Metric Mass Lab<br>• Volume Lab<br>• Design an Experiment<br>• Mythbusters: Talking to Plants<br>• SpongeBob Experiments | Hypothesis, procedures, control, manipulated variable, responding variable, mass, weight, volume, metric system, Safety Symbols |
| **Instructional Resources** | |
| • **Discovery Education** (Grade 8 Unit 1: Matter) *Concept 1.2 and 1.3*<br>• **ExploreLearing Gizmos**<br>• **Generation Genius** (Atoms and Molecules, Chemical Reactions 6-8)<br>• **CK-12** | |

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