

## Unit #2 Title...Intro to Motion:

### Speed Velocity, Graphs and Equations

#### Big Idea

- Motion can be represented by a position-time graph.

#### Essential Questions...

- How do forces combine?
- How does an object in mechanical equilibrium behave?
- How do we observe forces?
- What is inertia?
- How do distance and displacement differ?
- What distinguishes velocity from speed?

#### Vocabulary...

coordinate system    distance    displacement    average speed    slope    average    velocity

Students who demonstrate understanding can:

**HS-PS1-2.** **Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.**[Clarification Statement: Examples of chemical reactions could include the reaction of sodium and chlorine, of carbon and oxygen, or of carbon and hydrogen.] [*Assessment Boundary: Assessment is limited to chemical reactions involving main group elements and combustion reactions.*]

The performance expectations above were developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

*Connections to other DCIs in this grade-band:*

**HS.LS1.C** (HS-PS1-2) **HS.ESS2.C** (HS-PS1-2)

*Articulation of DCIs across grade-bands:*

**MS.PS1.A** (HS-PS1-2) **MS.PS1.B** (HS-PS1-2)

*Common Core State Standards Connections:*

*ELA/Literacy -*

**WHST.9-12.2** Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. (HS-PS1-2)

**WHST.9-12.5** Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. (HS-PS1-2)

*Mathematics -*

**HSN-Q.A.1** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale

and the origin in graphs and data displays. (HS-PS1-2)

**HSN-Q.A.3**

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (HS-PS1-2)