EASTERN LEBANON COUNTY SCHOOL DISTRICT
STUDENT LEARNING MAP
Revised 2/2/14

Course/Subject: GEN SCIENCE Days: ALL
Topic: MOTION Grade Level: 11/12

Key Learning: Concepts of measurement are to be discussed visually, summarized numerically, and theoretically .

Unit Essential Question
What are the advantages of various measurement systems?

Concept **Mathematics and Physics**	**Concept** **Measurement**	**Concept** **Graphing data**
Standards: **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**	**Standards:** **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**	**Standards:** **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**
Lesson Essential Question **How are math and physics different and the same?**	**Lesson Essential Question** **What are the difference between precision and accuracy?**	**Lesson Essential Question** **What is the relationship between dependent and independent variables?**
Vocabulary **Phyisics** **Dimensional analysis** **Significant digits** **Scientific method** **Hypothesis** **Scientific law** **Scientific theory**	**Vocabulary** **Measurement** **Precision** **accuracy**	**Vocabulary** **Independent variable** **Dependent variable** **Line of best fit** **Linear relationship** **Quadratic relationship** **Inverse relationship**

Additional Information/Resources:

EASTERN LEBANON COUNTY SCHOOL DISTRICT
STUDENT LEARNING MAP
Revised 2/2/14

Course/Subject: GEN SCIENCE
Topic: REPRESENTING MOTION
Days: ALL
Grade Level:11/12

Key Learning

Concepts of motion are to be discussed visually, summarized numerically, and theoretically .

Unit Essential Question

How can motion be represented and calculated?

Concept **Picturing Motion**	**Concept** **Where and when**	**Concept** **Position-Time Graph**
Standards: **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**	**Standards:** **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**	**Standards:** **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**
Lesson Essential Question **How do motion diagrams describe motion?**	**Lesson Essential Question** **How are distance and displacement the same and different?**	**Lesson Essential Question** **How does a position-time graph represent an objects motion?**
Vocabulary **Motion Diagram** **Particle Model**	**Vocabulary** **Coordinate systems** **Origin** **Position** **Distance** **Magnitude** **Vectors** **Scalars** **Resultant** **Time interval** **displacement**	**Vocabulary** **Position-time graph** **Instantaneous position**

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Concept **How fast?**	**Concept**	**Concept**
Standards: **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**	**Standards:**	**Standards:**
⇩	⇩	⇩
Lesson Essential Question **How are speed and velocity the same and different?**	**Lesson Essential Question**	**Lesson Essential Question**
⇩	⇩	⇩
Vocabulary **Average velocity** **Average speed** **Instantaneous velocity**	**Vocabulary**	**Vocabulary**

Additional Information/Resources:
Textbook, guided notes, calculators

EASTERN LEBANON COUNTY SCHOOL DISTRICT
STUDENT LEARNING MAP
Revised 2/2/14

Course/Subject: GEN SCIENCE
Topic: ACCELERATED MOTION
Days: ALL
Grade Level: 11/12

Key Learning
Concepts of motion are to be discussed visually, summarized numerically, and theoretically .

Unit Essential Question
How can accelerated motion be represented and calculated?

Concept **Acceleration**	**Concept** **Motion with Constant Acceleration**	**Concept** **Free - Fall**
Standards: **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**	**Standards:** **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**	**Standards:** **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**
Lesson Essential Question **How do velocity and acceleration relate to each other?**	**Lesson Essential Question** **How does constant acceleration and changing acceleration affect motion?**	**Lesson Essential Question** **How does gravity affect objects falling?**
Vocabulary **Velocity – time graph** **Acceleration** **Average acceleration** **Instantaneous acceleration**	**Vocabulary**	**Vocabulary** **Free fall** **Acceleration due to gravity**

Additional Information/Resources:	Textbook, guided notes, calculators	

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Course/Subject: GEN SCIENCE
Topic: FORCES
Days: ALL
Grade Level: 11/12

Key Learning
Concepts of motion are to be discussed visually, summarized numerically, and theoretically .

Unit Essential Question
How do forces (1 Dimensional) affect motion?

Concept **Force and Motion**	**Concept** **Using Newton's Laws**	**Concept** **Interaction forces**
Standards: **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**	**Standards:** **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**	**Standards:** **3.1.P.B1; 3.2.P.B1; 3.2.P.B5; 3.1.P.B6; 3.2.P.B2; 3.2.P.B6; 3.1.P.C4; 3.2.P.B3; 3.2.P.A6; 3.2.P.B4**
Lesson Essential Question **How can one use Newton's 2nd Law to help solve motion problems?**	**Lesson Essential Question** **How are weight and mass related?**	**Lesson Essential Question** **How does Newton's 3rd help describe forces in your life?**
Vocabulary **Force** **Free – body diagram** **Net force** **Newton's 1st law** **Newton's 2nd law** **Inertia** **equilibrium**	**Vocabulary** **Apparent weight** **Weightlessness** **Drag force** **Terminal velocity**	**Vocabulary** **Interaction pair** **Newton's 3rd law** **Tension** **Normal force**

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Concept	**Concept**	**Concept**
Standards:	**Standards:**	**Standards:**
⇩	⇩	⇩
Lesson Essential Question	**Lesson Essential Question**	**Lesson Essential Question**
⇩	⇩	⇩
Vocabulary	**Vocabulary**	**Vocabulary**

Additional Information/Resources:
Textbook, guided notes, calculators