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| **Physics: Warneck/DeHaan** | | **Week: S2W1** | | |
| **Objective** | **Standards** | | **TEACH/ASSESS** | **HW** |
| **1/21/Monday**  Remember Dr. Martin Luther King Jr. | **P3.1A** - Identify the force(s) acting between objects in “direct contact” or at a distance.  P3.1d - Identify the basic forces in everyday interactions.  P3.2A - Identify the magnitude and direction of everyday forces (e.g., wind, tension in ropes, pushes and pulls, weight).  **P3.3A** - Identify the action and reaction force from examples of forces in everyday situations (e.g., book on a table, walking across the floor, pushing open a door). | | **No School** |  |
| **1/22/Tuesday**  Elicit prior conceptions of forces. | Force concept debate. Save class answers for later on in the unit. |  |
| **1/23/Wednesday**  Investigate normal forces. | Normal force demo. | **Reading**: Free-body diagrams |
| **1/24/Thursday**  Describe and diagram forces. | Introduction to free-body diagrams. | **Activity 2**: Force Diagrams |
| **1/25/Friday**  Discuss the representation of forces in free-body diagrams. | Student discussion of Activity 2. |  |

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| **Physics: Warneck/DeHaan** | | **Week: S2W3** | | |
| **Objective** | **Standards** | | **TEACH/ASSESS** | **HW** |
| **2/4/Monday**  Review force diagrams and explore force diagrams on an incline. | **P3.1A** - Identify the force(s) acting between objects in “direct contact” or at a distance.  P3.1d - Identify the basic forces in everyday interactions.  P3.2A - Identify the magnitude and direction of everyday forces (e.g., wind, tension in ropes, pushes and pulls, weight).  **P3.3A** - Identify the action and reaction force from examples of forces in everyday situations (e.g., book on a table, walking across the floor, pushing open a door). | | Go over part 2 of **Activity 1a**.  Collect **Activity 1a**.  Start part 1 of **Activity 1b.** | Turn in **Activity 1a.** |
| **2/5/Tuesday**  Review forces and force diagrams on an incline. | Go over part 1 of **Activity 1b**.  Start part 2 of **Activity 1b.** |  |
| **2/6/Wednesday**  Investigate component forces and force diagrams. | Collect **Activity 1b**. | Turn in **Activity 1b.** |
| **2/7/Thursday**  Assess understanding of force diagrams. | **Quiz**: Forces and Force Diagrams | **Quiz** |
| **2/8/Friday**  Watch movie. | Movie |  |

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| **Physics: Warneck/DeHaan** | | **Week: S2W4** | | |
| **Objective** | **Standards** | | **TEACH/ASSESS** | **HW** |
| **2/11/Monday** | P3.1d - Identify the basic forces in everyday interactions.  P3.2A - Identify the magnitude and direction of everyday forces.  P3.2C - Calculate the net force acting on an object.  P3.2d - Calculate all the forces on an object on an inclined plane and describe the object’s motion based on the forces using free-body diagrams.  P3.3A - Identify the action and reaction force from examples of forces in everyday situations. | | **Snow Day** |  |
| **2/12/Tuesday**  Understand force sensor operation. | Experiment with force sensors. |  |
| **2/13/Wednesday**  Review force diagrams and explore the relationship between force and mass. | Go over and discuss **Quiz 1**.  Begin taking data for **Force vs. Mass Lab**. |  |
| **2/14/Thursday**  Complete and share investigation of the relationship between force and mass. | **Pep Assembly**  Those wishing to retake the quiz may do so during 3rd hour**.** |  |
| **2/15/Friday**  Reassess understanding of force diagrams. | Finish taking data and whiteboard **Force vs. Mass Lab**. |  |

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| **Physics: Warneck/DeHaan** | | **Week: S2W5** | | |
| **Objective** | **Standards** | | **TEACH/ASSESS** | **HW** |
| **2/18/Monday** | P3.1d - Identify the basic forces in everyday interactions.  P3.2A - Identify the magnitude and direction of everyday forces.  P3.2C - Calculate the net force acting on an object.  P3.2d - Calculate all the forces on an object on an inclined plane and describe the object’s motion based on the forces using free-body diagrams.  P3.3A - Identify the action and reaction force from examples of forces in everyday situations. | | Presidents’ Day |  |
| **2/19/Tuesday**  Come to consensus on the relationship between force and mass. | Discuss and take notes on results from **Force vs. Mass Lab**. |  |
| **2/20/Wednesday**  Investigate force pairs. | Introductory demonstration to Newton’s third law forces pairs.  Record notes in CB. | **Due:** Weight vs. Mass lab in CB  **Lab: Notes:** |
| **2/21/Thursday**  Practice identifying and labeling force pairs. | Introduce **Activity 2: Interactions**. |  |
| **2/22/Friday**  Correct mistakes and misconceptions about force pairs. | Discuss and make corrections on  **Activity 2: Interactions** | **Due:** Activity 2: Interactions |

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| **Physics: Warneck/DeHaan** | | **Week: S2W6** | | |
| **Objective** | **Standards** | | **TEACH/ASSESS** | **HW** |
| **2/25/Monday**  Share N3LFP (Newton’s 3rd Law Force Pair) diagrams. Present questions and suggestions on Activity 2. | P3.1d - Identify the basic forces in everyday interactions.  P3.2A - Identify the magnitude and direction of everyday forces.  P3.2C - Calculate the net force acting on an object.  P3.2d - Calculate all the forces on an object on an inclined plane and describe the object’s motion based on the forces using free-body diagrams.  P3.3A - Identify the action and reaction force from examples of forces in everyday situations. | | Present individual N3LFP diagrams. Discuss and make corrections on **Activity 2: Interactions**. | **Due:** Activity 2: Interactions |
| **2/26/Tuesday**  Compile and reflect on CB notes from Unit 4. | Compile and reflect on CB notes from Unit 4. Pass out **Unit 4 Test – Review Guide**. |  |
| **2/27/Wednesday\*PLC**  Practice Unit 4 Test concepts. Prepare for ACT. | Practice ACT passage. Continue working on **Unit 4 Test – Review Guide**. | Complete Unit 4 Test – Review Guide. |
| **2/28/Thursday**  Share questions about Unit 4 Test concepts. | Discuss answers and mistakes on **Unit 4 Test – Review Guide**. | Bring in completed Unit 4 Test – Review Guide for 5 extra credit points. |
| **3/1/Friday**  Assess understanding of force concepts and Newton’s 1st and 3rd laws. | **Unit 4 Test** |  |

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| **Physics: Warneck/DeHaan** | | **Week: S2W7** | | |
| **Objective** | **Standards** | | **TEACH/ASSESS** | **HW** |
| **3/4/Monday**  Assess understanding of force concepts and Newton’s 1st and 3rd laws. | P3.1d - Identify the basic forces in everyday interactions.  P3.2A - Identify the magnitude and direction of everyday forces.  P3.2C - Calculate the net force acting on an object.  P3.2d - Calculate all the forces on an object on an inclined plane and describe the object’s motion based on the forces using free-body diagrams.  P3.3A - Identify the action and reaction force from examples of forces in everyday situations. | | **Unit 4 Test** |  |
| **3/5/Tuesday**  ACT, MME and PLAN testing. | ACT, MME and PLAN testing. | |
| **3/6/Wednesday**  ACT, MME and PLAN testing. | ACT, MME and PLAN testing. | |
| **3/7/Thursday** |  |  |
| **3/8/Friday** | Introduction to Independent Research Project. |  |

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| **Physics: Warneck/DeHaan** | | **Week: S2W8** | | |
| **Objective** | **Standards** | | **TEACH/ASSESS** | **HW** |
| **3/11/Monday**  Brainstorm wireless devices. Generate questions about these devices. | **P4.4A** - Describe specific mechanical waves (e.g., on a demonstration spring, on the ocean) in terms of wavelength, amplitude, frequency, and speed.    **P4.4B** - Identify everyday examples of transverse and compression (longitudinal) waves.    **P4.4C** - Compare and contrast transverse and compression (longitudinal) waves in terms of wavelength, amplitude, and frequency. | | Introduce **Independent Study**  **Activity 1:** Devices List  **Activity 2:** Four Questions  *Guest Speaker?* | Select a question for your group to study. |
| **3/12/Tuesday**  Investigate the properties of mechanical waves. | Introduce **Independent Study**  Wave inquiry lab. | Record lab in composition book. |
| **3/13/Wednesday \*PLC**  Research unique topic in wireless technology. | Begin research for **Activity 2**. | Complete **Activity 2** by Monday, 3-11. *(one per group)* |
| **3/14/Thursday**  Research unique topic in wireless technology. | Continue research for **Activity 2**. | Complete **Activity 2** by Monday, 3-11. *(one per group)* |
| **3/15/Friday**  Expand on understanding of mechanical waves’ properties. | Mechanical waves demonstration and note session. | Record notes on waves in composition book. |

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| **Physics: Warneck/DeHaan** | | **Week: S2W9** | | |
| **Objective** | **Standards** | | **TEACH/ASSESS** | **HW** |
| **3/18/Monday**  Collect and analyze data from microphone/speaker transfer. | **P4.5A** - Identify everyday examples of energy transfer by waves and their sources.  **P4.5B** - Explain why an object (e.g., fishing bobber) does not move forward as a wave passes under it.  **P4.5C** - Provide evidence to support the claim that sound is energy transferred by a wave, not energy transferred by particles. | | **Activity 4: Speaker and Microphone** (no whiteboard) |  |
| **3/19/Tuesday**  Collect and analyze data from microphone/speaker transfer. | **Activity 4: Speaker and Microphone** (no whiteboard) | *Record lab in composition book.* |
| **3/20/Wednesday**  Collect and analyze voltage, time, pitch and wavelength data. | **Activity 3:** Voice Analysis  Collect data and observation in composition book and create whiteboard presentation. | *Record lab in composition book.* |
| **3/21/Thursday**  Research the physics behind an interesting topic. | **Independent Study:**  Computer lab research | **Research Project Check:**  3 Sources (1 print) |
| **3/22/Friday**  Research the physics behind an interesting topic. | **Independent Study:**  Computer lab research | **Research Project Check:**  5 Sources (2 print)  3 Talking Points |

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| **Physics: Warneck/DeHaan** | | **Week: S2W10** | | |
| **Objective** | **Standards** | | **TEACH/ASSESS** | **HW** |
| **3/25/Monday**  Explore and experiment with fiber optics and light signals. | **P4.5C** Provide evidence to support the claim that sound is energy transferred by a wave, not energy transferred by particles.  **P4.5E** Explain why everyone in a classroom can hear one person speaking, but why an amplification system is often used in the rear of a large concert auditorium.  **P4.6e** Explain why antennas are needed for radio, television, and cell phone transmission and reception.  **P4.6f** Explain how radio waves are modified to send information in radio and television programs, radio-control cars, cell phone conversations, and GPS systems. | | **Activity 5: Light Beams to Sound** Complete the activity and record observations and notes in **CB**. | Homework:  **Anatomy of a Wave** worksheet. Due Thursday (3/28) |
| **3/26/Tuesday**  Explore further how light can be used to send sound. Record observations in **CB.** | **Activity 6: Sound Over Light**  Complete the activity and record observations and notes in **CB**. | *Make sure* ***CB*** *is completely filled out.* |
| **3/27/Wednesday \*PLC**  Explore further how light can be used to send sound. Record observations in **CB.** | **Activity 6: Sound Over Light**  Complete the activity and record observations, answers to questions and notes in **CB**. | *Turn in completed composition book by* ***Friday, March 29.*** |
| **3/28/Thursday**  Compile a complete list of potential resources in a formal works cited page. | **Independent Study:**  Computer lab research | **Research Project Check:**  *Completed Works Cited*  Homework Due:  **Anatomy of a Wave** worksheet. |