IB Physics

Simple Harmonic Motion and Waves

|  |  |  |  |
| --- | --- | --- | --- |
| B/A | Class | Due on this class | If you miss this class: |
| 1  Apr  25/26 | -Intro to Simple Harmonic Motion (SHM)  -Kinematics of SHM |  | **Read:** 11.1,3  **Watch:** Videos A (ch 11) |
| 2  Apr  27/28 | -Dynamics and Energy in SHM  -Resonance (Intro/Film)  -Resonance Demos/Destroying the School | **Check: 11.1:** 1, 2, 6, 7, 11, 12 | **Read:** 11.2,4-6  **Watch:** Videos B, C |
| 3  May  1/2 | -More Resonance | **Check:** **11.1:** 16, 17, 21, 22 | **Read:** 11.6  **Watch:** Videos D |
| 4  May  3/4 | -Intro to Waves: Frequency, wavelength and velocity | **Turn in: 11.1** | **Read:** 11.7  **Watch:** Videos A (ch 12) |
| May 8/9 | **Oaks Park Prep** |  |  |
| May  10/11 | **Oaks Park Prep** |  |  |
| May 12 | **Oaks Park Day!!!!!!!** |  |  |
| May  15/16 | **Work on Presentations** |  |  |
| May  17/18 | **Work on Presentations** |  |  |
| May  19/22 | **Oaks Park Presentations to class** | |  |
| 5  May  23/24 | -Types of waves /Energy Transport  -Reflections | Practice: 11: 36(2.2 m/s), 37 | **Read:**  11.8,9,11, 23.2  **Watch:** Videos B,C |
| 6  May  25/26 | -Superposition and Interference patterns  -Young's double slit experiment (qualitative)  -Standing waves intro | Practice: 11: 38(190 m to 550 m, and 2.78 m to 3.41 m) | **Read:** 11.12,13 24.3  **Watch:** Videos D, E, F, G |
| 7  May  30/31 | -Standing waves frequency and wavelength  -Standing wave demos | Practice: 12: 46(343 Hz, 1029 Hz, 1715 Hz) | **Read:** 12.4  **Watch:** Videos G |
| 8  June  1/2 | -The Doppler effect/Shock Waves  -Pass out FA 11.1, 12.1, 12.2 | **Check:** **12.1:** 1a-c, 2a-c on front, 1, 2, 3, 6, 7, 8 on the back  **Turn in: 12.1** | **Read:**12: 7,8  **Watch:** Videos H |
| 9  June  5/6 | -Sound Introduction –-Beat formation  -Sound, Standing waves and Music  -Description of Sound lab | **Check:** **12.2:** 1, 2, 3, 4, 5, 9, 10, 11, 12  **Turn in: 12.2** | **Read:** 12.1,2,3,5,6  **Watch:** Videos I |
| 10  June  7/8 | **Summative Assessments on:**  **11.1 - Simple Harmonic Motion**  **12.1 - Standing Waves**  **12.2 - Doppler Effect** | **Turn In:** FA 11.1, 12.1, 12.2 |  |
| 11  June  9/12 | -Sound lab or SHM Lab - An eclectic group project | **Seniors don't do the lab or FA 12.3**  **: - (** |  |
| 12  June  13/14 | -Refraction in one dimension  -Solving refraction problems in two dimensions  -Total internal reflection and critical angle/dispersion  -Hand out FA 12.3 | **Turn In:** Sound Lab | **Read:** 11.14, 23.4, 5, 6  **Watch:** Videos J, K, L |
| Finals | **Cumulative Super Fun Final** | **Turn In:** FA 12.3 |  |
| skip | -Diffraction and resolution  -The Rayleigh Criterion  -Bats |  | **Watch:** Videos M, N, O  **Read:** 25.7, 8 |
| skip | -Properties of Electromagnetic waves  -Polarisation |  | **Watch:** Videos P, Q  **Read:** 24.10,11,12 |
| 4 Formative Assessments/3 Summative:   * 11.1 – Simple Harmonic Motion * 12.1 – Standing Waves * 12.2 – Doppler and interference * 12.3 – Refraction and interference (Formative Only)   Homework   * 11.1: 1, 2, 6, 7, 11, 12, 16, 17, 21, 22 /20 pts * 12.1: 1a-c, 2a-c on front, 1, 2, 3, 6, 7, 8 on the back /24 pts * 12.2: 1, 2, 3, 4, 5, 9, 10, 11, 12 /18 pts   A Cumulative Final (Don't freak out - I will tell you exactly what is on it)  Two Labs:   * Sound lab – Your own procedure – done in class. No handout. * Oaks Park – Student presentations of analysis of work done at Oaks Park | | | Handouts: | |