***Lesson Plans for the Week of: 11/7/16 Teacher: Hough Course: Physics Period: 3***

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| Elements of  a Lesson | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
| Objective/  Focus/  Essential  Question | PH.2e;5d  Assess student abilities in quantitative system analysis of forces | PH.2a,e;4a;5d,e  --Review for test | PH.2a,e;4a;5d,e  --Force test | PH.5d  --observe the relationship between force and acceleration  (~~senior pictures)~~ | PH.2e;5d,e  ~~--Calculate the net force on an object (nonzero) (spiral and extension from previous chapter)~~ |
| Lesson/Act.  Type of Presentation | Whole group: go over homework  Model how to solve a tension cable problem  Guided practice: solve a tension cable problem  Individual:  Quiz about quantitative force analysis  If time permits:  Whole group:  Begin test review | Whole Group:  Review returned quiz—highlight components, and friction  Individual: Practice one simple quantitative force problem  Review terms, laws, and their applications for the test: Make references to previous worksheets and activities, like the bowling ball and the spring scales  Inertia—broom activity  3rd law select force and reaction rxn pair—air track  Force diagrams: ws 1,2 using normal force and friction **qualitatively**;  Calculating vector components;  ws 3,4 quantitatively using vector components, forces on an incline, and trig functions, plus all things **quantitatively**  Weight: ws 4  Difference between weight and mass | Individual:  Test about forces | Whole group:  Look at Atwood machine Gizmo on explorelearning.com; note (a) that tension in cable is equal on both sides of pulley; and after observation of many different mass combinations (b) that heavier mass accelerates, but when there are equal masses, a steady pull causes a constant velocity→net force = 0  ~~Define Atwood machine; show students modified Atwood machine using air track~~  ~~After demonstrating how it works, have students relate the forces on the glider and the hook, highlighting the friction and the tension in the string.~~  Illustrate how more force causes greater acceleration of mass  Have students Identify whether the gliders have a zero or nonzero net force acting on them  Identify relationship between force, acceleration, and mass—put in notes; write Newton’s 2nd Law  ~~Model how to solve Newton’s 2~~~~nd~~ ~~Law problem~~  ~~Independent practice: solve Newton’s 2~~~~nd~~ ~~Law problem~~ | Whole group:  Get on elevator with scales to see how weight changes as elevator goes up and down  Show elevator video to confirm student observations; explain forces on people in elevator  Model drawing force diagrams for elevator scenarios  ~~Model how to calculate the net force on an object; note steps~~  ~~Individual:~~  ~~Student practice calculating the net force on an object~~ |
| Evaluation | Student work | Teacher observations; student questions |  | Teacher observation; student responses | Student accuracy and teacher observations |
| Extension/  Homework |  | This is preparation for a summative assessment |  | p~~. 130 #1-4~~ |  |

Materials:

Monday: ws4, quiz3

Tuesday: modeling ws 3 and teacher examples

Wednesday: teacher made test

Thursday: Air tracks, gliders, masses, pulleys, string, associated masses, photogates

Friday: classwork: p. 126 #2,3; p. 143#7 (adapted) & 10