***Lesson Plans for the Week of: 2/6/17 Teacher: Hough Course: Physical Science Period: 1,2,7/8***

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| Elements ofa Lesson | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
| Objective/Focus/Essential Question | PS.1i,j;10aReview for test | PS.1i,j;10a--Test | PS.10ca) Understand that force has a strength and a directionb) recognize SI unit of forcec) identify common forces which occur in the world around us | PS.10b,d--define inertia--give real world examples of Newton’s First Law of Motion--investigate Newton’s 2nd law | PS.10b,d--Investigate Newton’s 2nd Law |
| Lesson/Act.Type of Presentation | Bellwork: motion map to review speed vs velocity—same sized arrows moving forward vs same sized arrows (same as forward) moving backward: same speed? Same velocityGo over review sheet correct answers | Individual:Test about motion, pHPreview about forces  | Individual1. bellwork: does direction that a backpack is moved matter—bring up discussion about the topic (can use tackling on a football team as an example instead)

Whole group:1. discuss bellwork— lead to the idea that force depends on direction; eg. A force to the left is not equal to a force of the same strength directed to the right
2. define force
3. emphasize that strength of force and direction of force are necessary for completely describing the force; give examples
4. describe tool which is used to measure force
5. Give SI unit of force
6. Students will pick examples of forces (from the units) from a listing of values

Phet simulation can be used to illustrate the net effect of unbalanced forcesIf time filler is needed, start video Making Stuff Stronger | Individual:1. bellwork: have students answer two questions: i)If rubber duckie is being whirled in a circle, what will happen to it if it is released? ii) If a bowling ball is pushed to start it, what will be the motion of the ball after it is not being pushed anymore?

Whole group:1. discuss bellwork questions. Correct misconceptions.
2. Inertia demonstrator; YouTube of tablecloth being pulled off table from under dishes
3. Define inertia. Define Newton’s First Law of Motion. Give examples, including what happens to urestrained groceries in a moving car when the car stops suddenly.

Possibly show bike bait video off YouTube to show examples of inertia 1. If time permits, refer to
 | Individual:1. Bellwork: A heavy rock and a light rock are both pushed with the same amount of force. How will the motion of the two rocks differ?

Whole group:1. Go over bellwork. Air Track can illustrate this using masses on gliders and masses on strings
2. This is the essence of Newton’s 2nd Law. Define, then model how to use equation.

Individual:1. Students will practice applying Newton’s 2nd Law in equation
2. Differentiation: upper level students will find a or m, given F

As time permits: Making Stuff Stronger |
| Evaluation |  |  | classwork exercise listed above | Notes defining inertia and Newton’s 1st Law | Student classwork applying F=ma |
| Extension/Homework |  |  | --no homeworkThe content of this lesson is prerequisite for tomorrow’s lesson | --no homeworkThe content of this lesson is prerequisite for tomorrow’s lesson |  |
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MATERIALS:

Monday: teacher-made review

Tuesday: teacher-made test

Wednesday: bike bait video (the one using string), Making Stuff Stronger, Phet force simulation

Thursday: teacher-made notes; inertia apparatus; textbook; YouTube video of table cloth being pulled from under dishes

Friday: teacher-made notes; teacher-made homework worksheet; air track with 2 gliders