Unit 4: Forces

Do Nows

Thursday, October 17 Physics Essentials Do Now

What does the word "force" mean in everyday terms. Create a sentence with the word force.

When you hear the word "force" in science, what do you think of?

Friday, October 18 Physics Essentials Do Now

What is one force that you have encountered in the last 24 hours?

Today's Activities: Force notes, Force Body Diagrams Examples **Homework**: none

Monday, October 21 Physics Essentials Do Now

Using the Big 7 forces and your notes from yesterday, <u>list</u> all the forces acting on the object in the different scenarios.

- An egg is dropped from the top of a building. There is no air resistance.
- A book is sitting on a desk
- A cart is being pushed by two students to the right. There is friction.
- A ball is thrown up straight in the air. There is air resistance.

Today's Activities: Force Body Diagrams Challenges **Homework**: Finish Force Body Diagrams Challenges

Tuesday, October 22 Physics Essentials Do Now

Using your notes from last week.

Create a free body diagram for the situation.

- 1. A car is stuck in the mud and is being moved by three people.
- 2. A ball is thrown up straight in the air. There is air resistance.
- 3. A cart is being pushed up a ramp.

Wednesday, October 23 Physics Essentials Do Now

Create a Free Body Diagram for each of the situations and answer the questions.

- 1) A box is pushed to the left with a force of 10 N and to the right with a force of 5 N. What is the net force? Is the force balanced or unbalanced?
- 1) A car is pushed to the right with a force of 100N but friction has a force of 400 N. What is the net force on the car? Will it move?

Today's Activities: PhET Forces and Motion Lab

Thursday, October 24 Physics Essentials Do Now

- 1) Find your seat, sit quietly, and wait for instructions.
- 2) Classwork due at the end of the hour. Yes, it will be graded.

Friday, October 25 Physics Essentials Do Now

A box is pushed with 10 N to the left and 50 N to the left. Create a FBD to represent the situation and find the net force on the box.

Create a FBD with forces that shows a balanced force.

Create a FBD that shows unbalanced forces.

Which one will move, a balanced or unbalanced force? Why?

Monday, October 28 Physics Essentials Do Now

What are the three steps in creating a force body diagram?

Today's activities: Review of forces, force body diagrams, net force; Newton's Laws

Physics Essentials Do Now

What is Newton's First Law?

What is Newton's Second Law?

Think about how seatbelts work... what does Newton's Laws have to do with why seatbelts are important.



Wednesday, October 30 Essentials of Physics Do Now

Choose 1 Newton's 1st Law Station

- How does it show that an object at rest will stay at rest?

Choose 1 Newton's 2nd Law Station

- How does it show that acceleration will increase with force?

Wednesday, October 31 Essentials of Physics Do Now

In your opinion, what is the best Halloween candy?

Today's Activities: Newton's Laws challenges

Friday, November 1 Physics Essentials Do Now

A 40 kg box is pushed with an acceleration of 3 m/s². What is the force on the box?

If I push the box with a greater acceleration, what will happen to the force on the box? Why?

Today's Activities: FBD & Net Force Review, binder organization

Friday, November 1 Physics Essentials Do Now

A 40 kg box is pushed with an acceleration of 3 m/s². What is the force on the box?

Vote for the best staff costume at bit.ly/AHSHalloween2019

Today's Activities: FBD & Net Force Review, binder organization

Monday, November 4 Physics Essentials Do Now

Draw the forces acting on the object(s) in the situation.





Today's Activities: Newton's Laws Review, Turn in missing assignments

Tuesday, November 5 Physics Essentials Do Now

For each situation, determine which of Newton's Laws relates to the situation and WHY:

- 1. A magician pulls a tablecloth out from under dishes and glasses on a table without disturbing them.
- 2. Rockets are launched into space using jet propulsion where exhaust accelerates out from the rocket and the rocket accelerates in an opposite direction.
- 3. A picture is hanging on a wall and does not move.
- 4. Pushing a child on a swing is easier than pushing an adult on the same swing, because the adult has more inertia.

Today's Activities: final review before test tomorrow

Test Protocol

- 1. Sit down and prepare to take the test immediately
 - a. Everything put away except a pencil/pen and a calculator
 - b. Yes, this includes phones
- 2. There is no talking or leaving your seat during the test
- 3. Do your own work, there is no penalty for guessing but there is one for cheating
- 4. Show your work. Multiple points are available for each question, don't lose them by failing to show how you solved the problem.
- 5. If you do not adhere to the above, or otherwise disrupt the class in any way, you will forfeit your test and be sent to the office.

When you are finished with your test, put it in the bin at the front of the classroom and pick up the assignment to work on for the rest of the hour.

Physics Essentials Do Now

- Get a sticky note from up front
- If you need to organize your binder write
 "Organize Binder" first
- Write down ALL work you need to complete (Including Content Notes)
- Then write, Review Sheet

Physics Essentials Do Now

- 1) What is the equation for momentum?
- 2) What is the abbreviation for momentum (what letter stands for momentum)?
- 3) What is the unit for momentum?

Do Now

- Did you have a hard time adjusting to the end of Daylight Saving Time (falling back an hour)?

Today in Class

- Work on missing assignments
- Video games reading
- Science of Self-Control
- Work on something from another class
- You must stay in your seat the entire class