



Thornton High School
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School Year	2017/2018	Teacher Name	Ben Arp
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Course Name	Physics		
Course Description	PHYSICS – 5100 <i>Credit: 1</i> <i>Grade 11,12</i> <i>Level: 1</i> <i>Physics courses involve the study of the forces and laws of nature affecting matter, such as equilibrium, motion, momentum, and the relationships between matter and energy. The study of physics includes examination of sound, light, and magnetic and electric phenomena.</i>		
	Physics is a course designed for students to explore the world around them from an observational and interactive level . Some topics that will be covered include: measurement, motion, motion due to gravity, Newton’s laws of motion, work, energy & power, heat, sound waves & light waves, electrostatics and electricity. Students will spend much of their time designing labs, collecting data, graphing data, analyzing data and communicating results.		
Unit of Study	Grade Level Expectations/Content Standards	Approximate Time Spent or Percent of time Spent	Targeted Date of Assessment
Measurement, Observations, Variables & Graphing	Pre-requisite knowledge necessary for Evidence Outcomes	3 Weeks	Sept. 7
Kinematics: Motion Along a Line	HS-PS2: Motion and Stability: Forces and Interactions. Describe the relationship among forces acting on and between objects, their masses, and changes in their motion.	5 Weeks	Oct. 11
Newton’s Laws of Motion	HS-PS2-1: Motion and Stability: Forces and Interactions.	5 weeks	Nov. 18
Work, Energy & Power	HS-PS3: Energy Pre-requisites	2 weeks	Dec. 9
Final Semester 1	Comprehensive Final		Dec. 16 & 17
Energy Transformations, Renewable and Non-renewable Energy	HS-PS3-1: Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known. Energy exists in many forms such as mechanical, chemical, electrical, radiant, thermal, and nuclear. HS-PS3-2: Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored. When energy changes form, it is neither created nor destroyed; however, because some energy is transformed, there is less energy available to do work.	4 weeks	February 1, 2017
Thermal Energy	HS-PS3-4: Conduct a series of investigations to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system.	3 Weeks	Feb. 24
Electrostatics	HS-PS3-5: Develop and use a model of two objects interaction through electric field to illustrate the forces between objects and the change in energy of the objects due to the interaction (What happens when opposite polarities are near each other?)	3 Weeks	March 10, 2017
Circuits and Electricity	HS-PS3-5:	3 Weeks	April 7
Waves: Sound and Light	HS-PS4-1: Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media. HS-PS4-4: Look at the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter HS-PS4-5: Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.	3 Weeks	April 28
Physics Final Review	Cumulative Final 2nd Semester		May 25 & 26
Literacy strategies will be utilized throughout every unit. Labs, data collection, graphing, analysis and communicating results		On going	



Grading Scale		Grade Percentages/Weights	
A	90-100	Summative Assessments & Projects	80% SPLIT 50/30
B	80-89	Formative Assessments & Projects	20%
C	70-79		
D	60-69	*Weekly progress grades are posted at https://ic.adams12.org/campus/portal/adams12.isp	
F	59-50		
NE	0	No Evidence (must be made up in order to pass the semester)	

General Physics Expectations

- Grades are based upon the demonstration of proficiency on units associated with a standard given during each formative or summative assessment. Formative grades in addition to summative unit assessments will be used to holistically determine your grade.
- **Summative: 80%** Summative measures of achievement are taken when unit master is expected. (i.e., unit tests, culmination of a project, embedded assessments, etc.). An NE means you did not take the summative assessment or you did not make a good faith attempt. You **MUST** take the assessment, if you do not, you fail for the semester. This includes the semester final.
- One test re-take will be given and must be made up in the two week window after knowledge of test score is given back.
- **Formative: 20%** Formative assessments measure the scaffolding skills and/or content embedded in the unit. Formative assessments are taken frequently, after a student has practiced a skill or become familiar with content. Examples of formative assessments include but are not limited to exit tickets, paragraphs, oral check for understanding, warm-ups, stages in a large project, etc.
- On group projects, students will receive a grade for individual work and a group grade.
- Grades are based on achievement of Content Standards and Grade Level Expectations.

Student Expectations:

Take Responsibility for all of your actions!!!!

- Students are prompt (on time) for their classes and appointments. Class will start when promptly. If you arrive when the door is shut, knock once. Upon entering, quietly, without disruption, look at objectives written on the board to determine what the class is doing, get out materials and do NOT make any disruptions to the learning environment. For each semester, you get 3 FREE tardies, at the fourth unexcused tardy, and each succeeding tardy, you get a **detention with Arp**.
- **Students must wear ID.**
- Students arrive prepared for class with physics binder/folder, paper/notebook, writing utensil, calculator, and formula card.
- Electronic devices may be used to connect to the internet for **relevant classroom activities**. Electronic devices (music, phones etc.) for **personal or social reasons during class will NOT be allowed** in the classroom. RULE: if I have my phone out, you can have yours out. If you cannot handle this, you will turn your phone over for safe keeping. If this becomes an issue, the phone will need to be checked in and out at the beginning and end of class.
- If you miss a day, you must get and do all homework on your own time. I have period 4, 5, and 8. I am in the science office, Room 412. Labs, in particular, are difficult to make up and generally must be made up within two days of the original date.

Honor Each Other

- Students are polite to each other and to adults.
- Students comply with reasonable requests from adults. Failure to comply may result in a warning, parental contact, lunch detention or a referral.

Strive for Success

- **Don't Quit Get Grit!**
- Students produce work that demonstrates their skills and abilities.
- Individual work needs to be your own. Both the person copying and the person being copied will get zeros.
- Students actively participate in classroom activities
- Students come to class with a positive mental attitude. I encourage you to be engaged and motivated to complete **all** assignments

Please come and see me if you need extra help, or just want to talk. I am in the science office, room 412 per. 4, 5 and 8th. I want each of you to have a successful year!

Sincerely,

Mr. Arp