Test Code	Year	Form
3181	18	3
Last Revision Date: 05/17/2018		

ACP Blueprint
Physics 8
Semester 1, 2018–2019

SE Descriptions	TEKS/SE	No. of Items	% of Test
1. Generate and interpret graphs and charts describing different types of motion, including investigations using real-time technology such as motion detectors or photogates.	P.4A	3	11%
2. Describe and analyze motion in one dimension using equations and graphical vector addition with the concepts of distance, displacement, speed, average velocity, instantaneous velocity, frames of reference, and acceleration.	P.4B	4	14%
3. Analyze and describe accelerated motion in two dimensions, including using equations, graphical vector addition, and projectile and circular examples.	P.4C	3	11%
4. Calculate the effect of forces on objects, including the law of inertia, the relationship between force and acceleration, and the nature of force pairs between objects using methods, including free-body force diagrams.	P.4D	4	14%
5. Describe and calculate how the magnitude of the gravitational force between two objects depends on their masses and the distance between their centers.	P.5B	2	7%
6. Investigate and calculate quantities using the work-energy theorem in various situations.	P.6A	3	11%
7. Investigate examples of kinetic and potential energy and their transformations.	P.6B	3	11%
8. Calculate the mechanical energy of, power generated within, ~~impulse applied to, and momentum of~~ a physical system.	P.6C	3	11%
9. Demonstrate and apply the law~~s~~ of conservation of energy ~~and conservation of momentum in one dimension~~.	P.6D	3	11%
Total		**28**	

Note: ~~Strikethrough~~ text indicates specified content not measured for this assessment. Percentages are rounded to the nearest whole number. A copy of the STAAR Physics Reference Materials will be printed with the test. Schools must ensure each student has access to a calculator with scientific or graphing capability; however, features or functions that are not allowed must be disabled. (*A list of these features and functions to disable will be posted to the Assessment website as soon as the list is made available by TEA.*)
CAS calculators are ***NOT*** allowed.

Descriptions	Scientific Process Skills Eligible for Assessment	SE
1.	Demonstrate safe practices during laboratory and field investigations.	P.1A
2.	Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.	P.1B
3.	Know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section.	P.2A
4.	Know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence.	P.2B
5.	Know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but may be subject to change.	P.2C
6.	Design and implement investigative procedures, including making observations, asking well defined questions, formulating testable hypotheses, identifying variables, selecting appropriate equipment and technology, evaluating numerical answers for reasonableness, and identifying causes and effects of uncertainties in measured data.	P.2D
7.	Demonstrate the use of course apparatus, equipment, techniques, and procedures, including multimeters (current, voltage, resistance), balances, batteries, dynamics demonstration equipment, collision apparatus, lab masses, magnets, stopwatches, trajectory apparatus, graph paper, magnetic compasses, protractors, metric rulers, spring scales, thermometers, slinky springs, and/or other equipment and materials that will produce the same results.	P.2E
8.	Use a wide variety of additional course apparatus, equipment, techniques, materials, and procedures as appropriate such as ripple tank with wave generator, wave motion rope, tuning forks, hand-held visual spectroscopes, discharge tubes with power supply (H, He, Ne, Ar), electromagnetic spectrum charts, laser pointers, micrometer, caliper, computer, data acquisition probes, scientific calculators, graphing technology, electrostatic kits, electroscope, inclined plane, optics bench, optics kit, polarized film, prisms, pulley with table clamp, motion detectors, photogates, friction blocks, ballistic carts or equivalent, resonance tube, stroboscope, resistors, copper wire, switches, iron filings, and/or other equipment and materials that will produce the same results.	P.2F
9.	Make measurements with accuracy and precision and record data using scientific notation and International System (SI) units.	P.2G
10.	Organize, evaluate, and make inferences from data, including the use of tables, charts, and graphs.	P.2H
11.	Communicate valid conclusions supported by the data through various methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports	P.2I
12.	Express relationships among physical variables quantitatively, including the use of graphs, charts, and equations.	P.2J
13.	Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.	P.3A
14.	Communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials.	P.3B

Descriptions	Scientific Process Skills Eligible for Assessment	SE
15.	Explain the impacts of the scientific contributions of a variety of historical and contemporary scientists on scientific thought and society.	P.3C
16.	Research and describe the connections between physics and future careers.	P.3D
17.	Express, manipulate, and interpret relationships symbolically in accordance with accepted theories to make predictions and solve problems mathematically.	P.3E