Individual Test Item Specifications

8417161-Electrocardiograph Aide 3

2015

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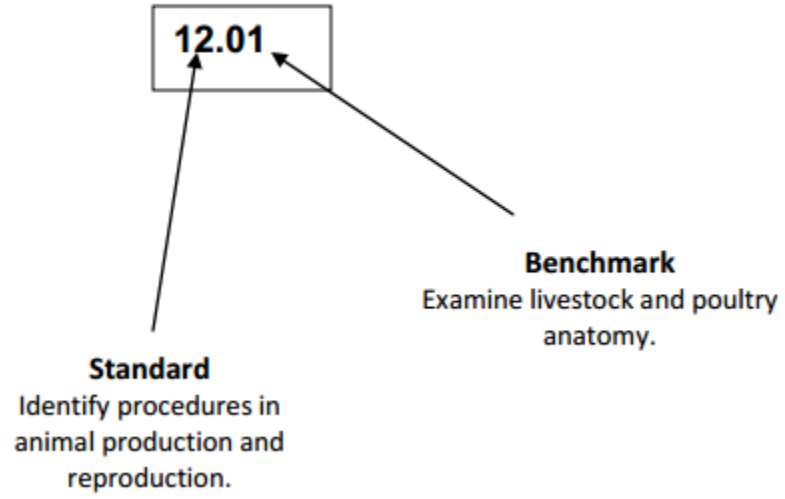
I. Guide to the Individual Benchmark Specifications

Content specific guidelines are given in the *Individual Benchmark Specifications* for each course. The *Specifications* contains specific information about the alignment of items with the Florida Standards. It identifies the manner in which each benchmark is assessed, provides content limits and stimulus attributes for each benchmark, and gives specific information about content, item types, and response attributes.

Benchmark Classification System

- Each Career and Technical Education course has its own set of course standards. The benchmarks are organized numerically, with two numbers separated by a decimal point. The first number is the standard number, and the second number is the benchmark number. You will see these numbers on the Item Specifications for each course.

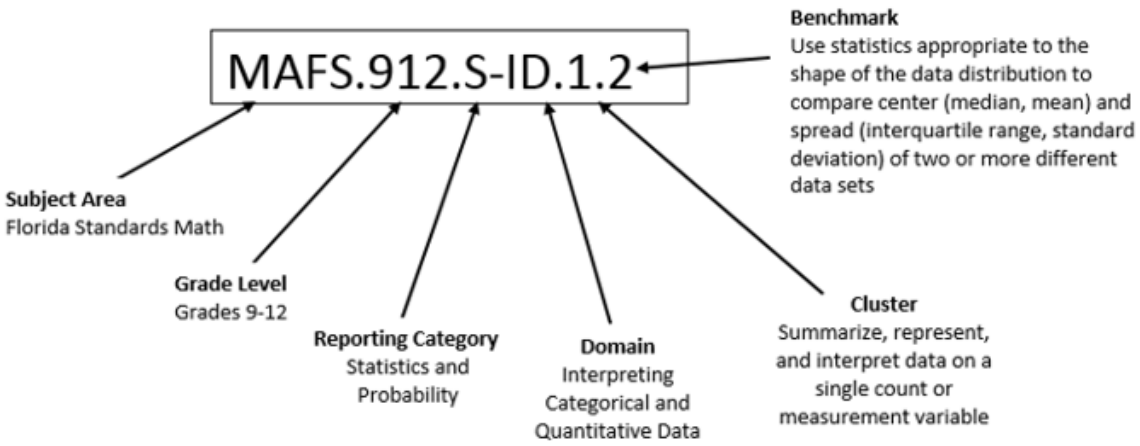
An example, from Agritechnology 1:



The image above describes the components of a Career and Technical Education Standard and Benchmark classification system.

Each MAFS benchmark is labeled with a system of letters and numbers.

- The four letters in the *first position* of the label identify the **Subject**.
- The number(s) in the *second position* represents the **Grade Level**.
- The letter(s) in the *third position* represents the **Category**.
- The number in the fourth position shows the **Domain**.
- The number in the *fifth position* identifies the **Cluster**.
- The number in the last position identifies the specific **Benchmark**.



The image above describes the components of a Florida Standard and Benchmark classification system.

Definitions of Benchmark Specifications

The *Individual Benchmark Specifications* provides standard-specific guidance for assessment item development for the Florida Department of Education Career and Technical Education item banks. For each benchmark assessed, the following information is provided.

Reporting Category	is a grouping of related benchmarks that can be used to summarize and report achievement.
Standard	refers to the standard statement presented in the Florida Standards.
Benchmark	refers to the benchmark statement presented in the Florida Standards. In some cases, two or more related benchmarks are grouped together because the assessment of one benchmark addresses another benchmark.
Item Types	are used to assess the benchmark or group of benchmark.
Cognitive Complexity	ideal level at which item should be assessed.
Benchmark Clarifications	explain how achievement of the benchmark will be demonstrated by students. In other words, the clarification statements explain what the student will do when responding to questions.
Content Limits	define the range of content knowledge and that should be assessed in the items for the benchmark.
Stimulus Attributes	define the types of stimulus materials that should be used in the items, including the appropriate use of graphic materials and item context or content.
Response Attributes	define the characteristics of the answers that a student must choose or provide.
Content Focus	addresses the broad key terms and concepts associated with the examples found in the standards, benchmarks, or benchmark clarifications.
Sample Items	are provided for each type of question assessed. The correct answer for all sample items is provided.

II. Individual Benchmark Specifications

Standard	34.0 Describe the cardiovascular system
Benchmark	34.01 Locate the heart and surrounding structures
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will localize the cardiovascular system and its surrounding vessels of the heart.
Content Focus	Knowledge of the cardiovascular system including the anatomy of the heart, veins, arteries and heart valves .
Content Limits	Content may include the heart and surrounding structures but does not include the entire circulatory vasculature.
Stimulus Attributes	Stimulus may include diagrams of the heart and surrounding blood vessels, multiple choice questions or labeling a model of the heart.
Response Attributes	Students may be able to label the heart in a variety of media.
Sample Item	Which vein carries blood to the right ventricle from the upper part of the body? A. aorta B. brachocephalic artery C. inferior vena cava D. superior vena cava Correct Answer: D

Standard	34.0 Describe the cardiovascular system
Benchmark	34.02 Diagram and label the parts of the heart and list the functions of each labeled part
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will identify the heart anatomy and physiology
Content Focus	Aorta, atrioventricular valves, atrium, endocardium, inferior vena cava myocardium, semilunar valves, superior vena cava ventricles,
Content Limits	Content may include the identification of the heart and surrounding structures but does not include the entire circulatory vasculature.
Stimulus Attributes	May include multiple choice or short response questions with Diagrams of the heart and surrounding blood vessels.
Response Attributes	Students may have the ability to label the heart AND state the physiology involvement of those parts
Sample Item	Provided with a picture of a heart diagram that has varying numbers in areas of the heart: the student will match words on flashcards to the correct cardiovascular anatomy and state the function of the particular area of the heart. Rubric 4 Points: The student correctly matches between 9 to 10 structures of the heart and states their genereal function. 3 Points: The student correctly matches between 7 to 8 structures of the heart and states their general function. 2 Points: The student correctly matches between 5 to 6 structures of the heart and states their general function. 1 Point: The student correctly matches between 3 to 4 structures of the heart and states their general function. 0 Points: The student correctly matches 2 or less structures of the heart and states their function.

Standard	34.0 Trace the flow of blood through the cardiopulmonary system
Benchmark	34.03 Trace the flow of blood through the cardiopulmonary system.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will identify the blood flow from the right side of the heart to the lungs and from the lungs to left side of the heart.
Content Focus	Aorta, aortic valve, atria, bicuspid valve, coronary circulation, deoxygenated blood, inferior vena cava, oxygenated blood, pulmonary artery, pulmonary valve, pulmonary vein, superior vena cava, tricuspid valve, ventricle
Content Limits	Limited to the major blood vessels leading to the heart and away from the heart (superior vena cava, inferior vena cava, aorta) and the blood flow from the right side of the heart to the lungs and from the lungs to the left side of the heart. May differentiate oxygenated blood flow and deoxygenated blood flow.
Stimulus Attributes	May include multiple choice and short response questions.
Response Attributes	Students must explain the flow of blood through the cardiovascular system which includes the major blood vessels lead to and away from the heart. Students will identify oxygenated and deoxygenated blood flow.
Sample Item	Which of the following blood flow is correct? A. right atria, tricuspid valve, right ventricle, pulmonary valve, pulmonary vein B. right atria, bicuspid valve, right ventricle, pulmonary vein, pulmonary valve C. right atria, tricuspid valve, right ventricle, pulmonary artery, pulmonary valve D. right atria, tricuspid valve, right ventricle, pulmonary valve, pulmonary artery Correct Answer: D

Standard	34.0 Describe the cardiovascular system - The student will be able to:
Benchmark	34.04 Identify and describe the electrical conduction system.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will describe the electrical conductivity of the heart and its effect on the ECG.
Content Focus	Atrioventricular node, automaticity, bundle of His, Bundle branches, complexes, conductivity, contractility, depolarization, excitability, interval, isoelectric, polarization, Purkinje fibers, repolarization, segment, wave
Content Limits	May include the following: P wave, QRS complex, T wave U wave, PR interval, QT interval, ST segment,
Stimulus Attributes	May include multiple choice or short response questions where students will explain the correlation of the heart activity with each component of the ECG waveform.
Response Attributes	Students will describe the heart activity as it corresponds to various parts of the ECG waveform.
Sample Item	Which of the components of the ECG represent the period of time from the start of ventricular depolarization to the end of ventricular repolarization? A. PR interval B. QRS complex C. QT interval D. ST segment Correct Answer: C

Standard	34.0 Describe the cardiovascular system: The student will be able to:
Benchmark	34.05 Describe the function of the autonomic nervous system.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will describe the effects of the autonomic nervous has on the cardiovascular system.
Content Focus	Acetylcholine, adrenaline, autonomic nervous system, cardio accelerator, cardio inhibitor, conductivity, fight or fight response, excitability, Neurotransmitter, norepinephrine, vagus nerve
Content Limits	Limited to the sympathetic and parasympathetic nervous system.
Stimulus Attributes	May include multiple choice and short response questions referring to the effects of the autonomic nervous system on the cardiovascular system.
Response Attributes	Students will recognize what effects the sympathetic and parasympathetic systems have on the cardiovascular system.
Sample Item	Which of the following is a false statement? A. It will cause coronary constriction. B. It will cause myocardial excitability. C. It will affect both the atria and ventricle D. It release of norepinephrine as a neurotransmitter. Correct Answer: A

Standard	34.0 Describe the cardiovascular system: The student will be able to:
Benchmark	34.06 Describe a patient demonstrating poor perfusion and understand the importance of rapid reporting.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will recognize signs and symptoms of poor cardiac output and understand the importance of rapid reporting.
Content Focus	Dyspnea, hypotension, palpitation
Content Limits	May include neurological, cardiac, respiratory, urinary and peripheral signs & symptoms.
Stimulus Attributes	May include multiple choice and short response questions. May include a descriptive scenario.
Response Attributes	The student will recognize signs and symptoms of poor cardiac output.
Sample Item	Which of the following is not associated with poor cardiac output? A. confusion B. decrease urine output C. hypertension D. shortness of breath Correct Answer: C

Standard	35.0 Identify legal and ethical responsibilities of an EKG aide--The student will be able to:
Benchmark	35.01 Recognize and practice legal and ethical responsibilities as they relate to an EKG aide
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will identify the legal and ethical responsibilities of being an EKG Aide
Content Focus	Abandonment, Bill of Rights, false imprisonment, fraud, HIPAA, liability, malpractice, negligence,
Content Limits	The student will be able to identify legal and ethical responsibilities but is not expected to rationalize the reasons for the legalities.
Stimulus Attributes	May include multiple choice or short response questions with a descriptive scenario.
Response Attributes	The student will understand legal and ethical responsibilities and an EKG aide.
Sample Item	The release of medical records without the patient's consent is known as which of the following? A. battery B. defamation of character C. invasion of privacy D. tort Correct Answer: C

Standard	35.0 Identify legal and ethical responsibilities of an EKG aide--The student will be able to:
Benchmark	35.02 Maintain a safe and efficient work environment.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will identify a safe and efficient work environment.
Content Focus	CDC, OSHA, body mechanics, ergonomics,
Content Limits	The student may be expected to identify the safety necessary in the work environment as well as the organizations involved in guidelines but is not expected to know all of the details of the organizations.
Stimulus Attributes	May include multiple choice and short response giving sample labs simulating body mechanics.
Response Attributes	The student will understand what a safe or efficient work environment is.
Sample Item	When lifting heavy objects, what is the best possible position for your feet? A. 6-8 in. apart B. as close as possible C. as far apart as possible D. one foot slightly in front of the other Correct Answer: A

Standard	36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities
Benchmark	36.01 Calibrate and standardize the cardiograph equipment
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will define/understand corrections of calibration and standardization of the EKG machine
Content Focus	Amplitude, calibration, gain, normal baseline, speed
Content Limits	Students may know the standards required for an electrocardiogram but is NOT expected to repair the machine.
Stimulus Attributes	May include multiple choice questions with scenarios regarding EKG examples with varying speed, calibration marks qne examples of increased gain, amplitude and paper speed that show comparisons of each.
Response Attributes	Students may know standard speed on EKG machine, amplitude of EKG rhythm, change of waveform gains and choose the correct answers for what normal baseline calibration marks show.
Sample Item	Which EKG machine control changes the amplitude of waveforms? A. amplitude B. atrial filter C. gain D. waveform Correct Answer: C

Standard	36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities--
Benchmark	36.02 Identify three types of lead systems.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will identify different lead systems for a 12-lead EKG, a holtor monitor and a stress test.
Content Focus	3-lead, 5-lead, 12-lead EKG, holtor monitor, stress test, telemetry monitor.
Content Limits	The student should be familiar with the application of all heart monitors but will not be expected to diagnose adverse cardiac health issues.
Stimulus Attributes	May include multiple choice questions. May include pictures of the different types of heart monitors.
Response Attributes	The student should be able to select the correct options for at least three different types of heart monitors.
Sample Item	The lead placement for a stress test is most similar to what other type of heart monitor? A. 3-lead B. 5-lead C. 7-lead D. 12-lead Correct Answer: D

Standard	36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities
Benchmark	36.03 Demonstrate proper lead placement for patients with special needs to include pediatric, posterior and right sided EKG
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will label planes of heart with leads for ALL types of patients
Content Focus	Angle of Louis, anterior axillary line, dextrocardia, Einthoven Triangle, intercostal space, manubrium, midaxillary line, midclavicular line, suprasternal notch
Content Limits	The students will be able to identify where Leads I, II, III, V1-6, aVR, aVL, aVF, and V1, V2, V3, V4, V5,V6 locations. May include lead placement for a child, Special needs include mastectomy, breast implants, amputee, and dextrocardia
Stimulus Attributes	May include multiple choice or short response with special needs scenarios. May include a diagram for students to use for placement of leads.
Response Attributes	The student will demonstrate lead placement for individuals with special needs.
Sample Item	When performing an EKG on a patient with a dextrocardia diagnosis, what must the technician do? A. Increase the paper speed and decrease the voltage. B. Keep the paper speed the same and increase the voltage. C. Move V3 to the right side of the chest at the 4th intercostal space. D. Reposition the precordial leads to the right side and reverse arm leads. Correct Answer: D

Standard	36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities
Benchmark	36.04 Identify artifacts and mechanical problems.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will define artifacts and/or mechanical problems in the production of an EKG.
Content Focus	Artifact, electrical interference, somatic tremor, wandering baseline,
Content Limits	Students may be able to identify artifacts and mechanical problems.
Stimulus Attributes	Stimulus may include EKG strips with varying artifacts.
Response Attributes	The student should be able to identify artifact and/or mechanical problems on an EKG rhythm strip.
Sample Item	Which if the following artifacts is caused by a patient breathing heavily? A. electrical interference B. somatic tremor C. wandering baseline D. 100 Hz background Correct Answer: C

Standard	36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities
Benchmark	36.05 Perform a 12 lead EKG.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will perform a 12-lead EKG with proper lead placement.
Content Focus	12 lead EKG, Artifact, bipolar lead, contiguous, isoelectric line, PR interval, QT interval, sinus arrhythmia
Content Limits	The student should be able to perform a 12 lead EKG but will not be expected to diagnose adverse cardiac health issues.
Stimulus Attributes	May include multiple choice or short response questions with scenarios. May include picture of chest for lead placement. If a performance skill you will need the following: Individual to do the EKG on, EKG leads, EKG machine.
Response Attributes	The student will know where to place leads in a variety of scenarios and body types.
Sample Item	On a 12-lead EKG, the 5th intercoastal space, left midaxillary line is the location for which of the following electrodes? A. V3 B. V4 C. V5 D. V6 Correct Answer: B

Standard	36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities
Benchmark	36.06 Recognize normal sinus rhythm.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will analyze an EKG strip and determine the heart rate. They may be able to count the atrial and ventricular rates and identify normal, slow and rapid rates.
Content Focus	atrial fibrillation, atrial flutter, bradycardia, heart block myocardial infarction, myocardial ischemia, sinus bradycardia, sinus tachycardia, supraventricular tachycardia, tachycardia
Content Limits	Students may recognize adverse heart arrythmias but will not be expected to diagnose the cause of the any abnormalities.
Stimulus Attributes	May include multiple choice or short response questions. May use EKG strips for students to use 5-step process for identifying rhythms. If a performance task will need the following: Individual to perform the EKG on, leads, EKG machine.
Response Attributes	In a multiple choice questions the student may be able to identify proper size variations of the P wave, QRS complex, QT complex with a variety of acceptable rates and rhythms.
Sample Item	In a normal sinus rhythm, the P wave in lead II should be which of the following? A. biphasic B. inverted C. triphasic D. upright Correct Answer: D

Standard	36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities - The student will be able to:
Benchmark	36.07 Report any rhythm that is not normal sinus rhythm.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will recognize normal sinus rhythm and recognize rhythms that should be reported immediately.
Content Focus	Atrial fibrillation, atrial flutter, bradycardia, heart block, myocardial infarction, myocardial ischemia, normal sinus rhythm, sinus bradycardia, sinus tachycardia, supraventricular tachycardia
Content Limits	Student will use the 5-step process to identify normal sinus rhythm and recognize abnormal rhythms.
Stimulus Attributes	May include multiple choice or short response questions referring to the 5-step process to identify normal and abnormal findings. May include an ECG tracing to interpret as either normal or abnormal or identifying the ECG component which makes it an abnor
Response Attributes	Students will use the 5-step process and recognize normal and abnormal findings.
Sample Item	Which of the following would indicate an abnormal rhythm? A. a PRI of 0.24 B. a QRS of 0.10 C. a heart rate of 95 D. a slightly irregular P-P interval Correct Answer: A

Standard	36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities - The student will be able to:
Benchmark	36.08 Use documentation skills to identify electrocardiographs.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)= (P)=X (ER)=
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will recognize electrocardiographs by using the 5-step process of analyzing rhythm strips.
Content Focus	Artifact, bipolar lead, isoelectric line, 12 lead EKG, rhythm, rate, P wave configuation, PR interval, QRS duration, sinus bradycardia, sinus dysrhythmia, sinus rhythm, sinus tachycardia
Content Limits	Using the 5-step process, the student will identify rhythm, rate, PR interval, QRS duration and rhythm strip interpretation. Limited to sinus rhythms.
Stimulus Attributes	May use multiple choice questions. May use EKG strips for interpretation, measuring rate, PRI, and/or QRS duration. May ask normal values for rates, PR interval and QRS duration. If performing the 5-step process for interpretating an EKG strip you will n
Response Attributes	The student will demonstrate proper documentation of the 5-step process of identifying EKG strips. The student will identify rate, PR interval, QRS duration and interpret sinus rhythms.
Sample Item	Which of the following is the value range for a normal QRS complex? A. 0.04 to less than 0.10 second B. .04 to less than 0.12 second C. 0.06 to less than 0.10 second D. 0.06 to less than 0.12 second Correct Answer: D

Standard	36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities - The student will be able to:
Benchmark	36.09 Recognize and respond cardiac emergency as seen on the EKG and understand the importance of rapid reporting.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will identify a cardiac arrythmia that could be life threatening.
Content Focus	Atrial fibrillation, tachycardia, bradycardia, supraventricular tachycardia, myocardial infarction, myocardial ischemia, heart block.
Content Limits	Student may know what an irregular heart rhthym. Student will recognize signs/symptoms of low cardiac output.
Stimulus Attributes	May include multiple choice or short response questions with scenarios regarding EKG rhythm strips with normal and abnormal readings and cardiac emergencies.
Response Attributes	Students may be able to recognize correct the appropriate patient preparation for an EKG, Stress Test, Holter monitoring and telemetry monitoring. Student will recognize signs/symptoms of low cardiac output.
Sample Item	An inverted T-Wave on an EKG may be indicitive of which of the following? A. hypokalemia B. hypocalcemia C. myocardial infarction D. myocardial ischemia Correct Answer: D

Standard	37.0 Perform patient care techniques in the health care facility
Benchmark	37.01 Describe the physical and mental preparation of the patient for EKG testing.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will explain the requirements necessary to prepare a patient mentally and physically for a heart monitoring test.
Content Focus	Trendelenberg, Semi-Fowlers and Supine position; contraindicated, stress test, beta-blockers, dextrocardia, tachycardia, bradycardia, myocardial infarction, arrhthmia
Content Limits	Student may know what the basic preparation is for heart monitoring.
Stimulus Attributes	May include multiple choice questions with Case scenarios of actual patient preparation
Response Attributes	Students may be able to id correct answers in a MC question given a variety of responses to appropriate patient preparation for an EKG, Stress Test, Holter monitoring and telemetry monitoring.
Sample Item	If a patient is experiencing shortness of breath during an EKG, which of the following would be the best position to do the exam in? A. horizontal recumbant B. semi-fowler's C. supine D. trendelenberg Correct Answer: B

Standard	37.0 Perform patient care techniques in the health care facility - The student will be able to:
Benchmark	37.03 Prepare patient for cardiovascular diagnositc testing.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)= (P)=X (ER)=X
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will demonstrate understanding on how to prepare patients for and EKG.
Content Focus	Ambulating, ambulatory monitoring, arrhythmia, echocardiogram, exercise electrocardiography, Holter monitor, hypertension, hyperventilation, invasive, maximal exercise, noninvasive, oscilloscope, palpitations, stress electrocardiogram, submaximal exercis
Content Limits	Limited to a standard 12-lead ECG, exercise ECG, and ambulatory monitoring. May include preparing the patient and educating the patient.
Stimulus Attributes	May include multiple choice or short response questions with scenarios regarding patient education and preparing the patient for ECG testing.
Response Attributes	Students will demonstrate understanding of proper protocol in administering various ECGs and proper patient education.
Sample Item	A patient is having a Holter monitor attached and asks you how long he will have to wear the device. How would you respond? A. 6 to 12 hours B. 12 to 24 hours C. 24 to 48 hours D. Up to one week Correct Answer: C

Standard	37.0 Perform patient care techniques in the health care facility - The student will be able to:
Benchmark	37.04 State precautions required when performing diagnostic procedures.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will understand safety precautions for performing diagnostic procedures.
Content Focus	airborne precautions, body mechanics, contact precautions, droplet precautions, infection control, patient identification, isolation precautions, standard precautions
Content Limits	May include proper patient identification, infection control and body mechanics.
Stimulus Attributes	May use multiple choice and short response questions. May use descriptive scenarios.
Response Attributes	The student will understand safety precautions used when performing EKGs.
Sample Item	Which of the following statements are incorrect? A. You should use two forms of identification when verifying a patient. B. Standard precautions are used only if you suspect an infection. C. Once a procedure is complete, you should clean the lead wires with a disinfectant. D. Droplet precautions requires wearing of a mask only if you are within 3 feet of the patient. Correct Answer: B