CTE Standards Unpacking
Pharmacy Technician

Course: Pharmacy Technician
Course Description: The Pharmacy Technician course prepares students to assist pharmacists. This includes learning about the roles and responsibilities of the Pharmacy Technician, safety measures, drug dosage calculations, and identification of various drugs and their effects on the human body. Students will also learn how to perform a wide range of duties in retail, hospital, and home care. The Pharmacy Technician course will equip the student to pass the national certification exam.
Career Cluster: Health Science
Prerequisites: Currently enrolled in 12th grade
Program of Study Application: Pharmacy Technician is a pathway course in the Health Science career cluster, Therapeutic Services pathway. The course would follow participation in one or more cluster courses and/or Gateway to Certified Nursing Assistant. Participation in Pharmacy Technician would prepare a student to participate in further pathway courses in the Therapeutic Services pathway or a capstone experience.

INDICATOR #PhT 1: Understand the roles and responsibilities of the Pharmacy Technician and governing laws.
SUB-INDICATOR 1.1 (Webb Level: 1 Recall): Understand the roles and responsibilities of a pharmacy technician.
SUB-INDICATOR 1.2 (Webb Level: 2 Skill/Concept): Interpret the laws and regulations involved in dispensing medication including controlled substances.
SUB-INDICATOR 1.3 (Webb Level: 2 Skill/Concept): Apply the requirements for dispensing medication in accordance with Federal and South Dakota law.
SUB-INDICATOR 1.4 (Webb Level: 1 Recall): List the various types of reimbursement for prescription coverage.

Knowledge (Factual):	Understand (Conceptual):	Do (Application):
-Pharmacy Technician role and responsibilities -Laws and regulations pertaining to pharmaceuticals -Federal and South Dakota laws for Pharmacy technicians -Types of payment accepted	-Function under the direct supervision of a licensed pharmacist. -Legal liability of a pharmacy technician -Pharmaceutical prescriptions may be paid by a variety of sources	-Research the role and responsibilities of a pharmacy technician -Locate and apply the law and regulation in dispensing medication at the job site -Recognize types of payments accepted for prescription coverage

Benchmarks:

Students will be assessed on their ability to:
- Create a job description that includes a scope of practice that defines the role of a pharmacy technician
- Summarize the laws and cite evidence for the dispensing of medication.
- List type of payments accepted for prescription coverage.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**
9-10.RST.7 Translate quantitative or technical information expressed in words in a text into visual form (e.g. a table or chart) and translate the information expressed visually or mathematically	-Make a flowchart from prescription to dispensing that details the pharmacy technician's role.
RL.11-12.1-Reading: Literature Key Ideas and Details 1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.	-Create a job description that includes a scope of practice that defines the role of a pharmacy technician

***INDICATOR #PhT 2:* Understand safety measures as they pertain to preparing prescriptions and maintaining inventory.**
SUB-INDICATOR 2.1 (Webb Level: 1 Recall): Identify the steps involved in preparing and processing prescriptions.
SUB-INDICATOR 2.2 (Webb Level: 2 Skill/Concept): Apply safety measures to prevent prescription errors and recognize the importance of reporting errors.
SUB-INDICATOR 2.3 (Webb Level: 1 Recall): Identify the process of maintaining pharmacy inventory.

Knowledge (Factual):	Understand (Conceptual):	Do (Application):
-Pharmacy protocol for preparing a prescription -Safety measures regarding prescriptions -Preventing and reporting prescription errors -Pharmaceutical inventory management system	-Significance of prescription errors -Pharmacies have a unique pharmaceutical management system -Importance for following protocol when filling prescriptions	-Practice the steps involved in preparing and processing a prescription -Research the cause and effect of safety measures on the prevention of prescription errors. -Practice using the individual pharmacy's inventory management system

Benchmarks:
Students will be assessed on their ability to:
- Write the steps involved in preparing and processing a prescription.
- List 2 safety measures that prevent prescription errors.
- Write a reflection about what was learned from using a pharmaceutical inventory management system.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**
11-12.SL.1. Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.	-Collaboratively discuss with diverse partners how prescription errors can be prevented.

INDICATOR #PhT 3: **Understand drug dosage calculations and preparation of prescriptions.**
SUB-INDICATOR 3.1 (Webb Level: 2 Skill/Concept): Solve Basic Math Problems.
SUB-INDICATOR 3.2 (Webb Level: 2 Skill/Concept): Convert between metric and apothecary measurements.
SUB-INDICATOR 3.3 (Webb Level: 1 Recall): Calculate dosage.

SUB-INDICATOR 3.4 (Webb Level: 1 Recall): Identify characteristics of dosage forms.

SUB-INDICATOR 3.5 (Webb Level: 1 Recall): Identify common terminology and abbreviations related to pharmacy.

Knowledge (Factual):	Understand (Conceptual):	Do (Application):
-Basic Math problems	-Mathematical concepts and problem solving	-Practice solving basic math problems that include calculating dosage and conversion of metric to apothecary measurements and vice versa
-Metric and apothecary measurements	-Types of measurements (ex. Tsp, Tbsp., drops, cc)	
-Solving word problems		
-Pharmacy language	-Abbreviations are used frequently in the pharmacy technician role	-Know dosage forms
		-Recall terminology and abbreviations related to pharmacy

Benchmarks:
Students will be assessed on their ability to:
- Solve a math problem that includes calculating dosage.
- Solve a math problem that converts metric to apothecary or vice versa.
- Label dosage forms.
- Match terminology and abbreviations related to pharmacy.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**
11-12.RST.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.	-Practice reading medication labels

HSN.Q.A.1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	-Prepare a written prescription for patient with the correct dosage in accordance with workplace protocol.

INDICATOR #PhT 4: **Identify various drugs and their effects on the human body.**
SUB-INDICATOR 4.1 (Webb Level: 1 Recall): Define therapeutic effects of medications.
SUB-INDICATOR 4.2 (Webb Level: 1 Recall): Memorize common medications by brand and generic names.
SUB-INDICATOR 4.3 (Webb Level: 1 Recall): Identify the most common adverse effects of drugs.
SUB-INDICATOR 4.4 (Webb Level: 1 Recall): Identify common drug interactions of drugs.
SUB-INDICATOR 4.5 (Webb Level: 1 Recall): Identify monitoring parameters or labs for drug therapy.

Knowledge (Factual):	**Understand (Conceptual):**	**Do (Application):**
-Medication classifications -Effects of each classification of drugs -Common medications by both brand and generic names. -Common adverse effects -Common drug interactions -Common monitoring parameters or labs	-All medications have effects and can be therapeutic or adverse -Most drugs have a generic and a brand name. -All drugs have potential for adverse effects -Drug interactions can occur -Medication dosages may change depending on monitoring parameter results	-Recognize medication classifications -Match drug classifications with medical conditions (Ex. Insulin with diabetes, antacid with stomach upset) -Match medications within their classification title (ex. Lasix with diuretics, penicillin with antibiotics) -Read medication labels -Compare what is in both brand and generic medications

		-Collect and Display both brand and generic medication comparisons

-Memorize common medications by brand and generic names

-Recognize common signs and symptoms of adverse drug reactions

-Research side effects of 3 common drugs

-Research 3 common drugs that have interactions |

Benchmarks:
Students will be assessed on their ability to:
- Create a video/commercial for a specific drug that includes drug classification, therapeutic effect, adverse effects and possible drug interactions.
- Create a poster that illustrates three generic and brand name drugs and when the brand name or generic is used.
- Demonstrate understanding of drugs and their effects on the human body by successfully completing assessments.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**
9-12.CP.1.1 collaborate with external peers, experts, and others by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works.	-Collaborate with peers and create a video/commercial for a specific drug that includes drug classification, therapeutic effect, adverse effects and possible drug interactions.
W.11-12.2-2. Write	-Create a poster that illustrates three

informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.	generic and brand name drugs and when the brand name or generic is used.

Additional Resources
- Pharmacy Technician - https://www.ptcb.org/get-certified/prepare#.WW-8fojyvIU
- Pharmacy Tech Certification http://www.ptcb.org/
- Bureau of Labor Statistics-Occupational Outlook Handbook - https://www.bls.gov/ooh/healthcare/pharmacy-technicians.htm
- HOTT - Health Occupations for Today and Tomorrow-Careers Outlook - www.healthcareers.sd.gov
- South Dakota Board of Health-Board of Pharmacy - http://doh.sd.gov/boards/pharmacy/
- Quizlet for Medical Terminology - https://quizlet.com/759301/medical-terminology-350-flash-cards/
- Quizlet for Pharmacy Tech - https://quizlet.com/11848558/pharmacy-tech-top-200-drugs-flash-cards/
- Abbreviations Accepted - https://www.jointcommission.org/facts_about_do_not_use_list/
- Skills USA - http://www.skillsusa.org/
- HOSA Competitive Events Guidelines (Pharmacology Knowledge Test) - http://www.hosa.org/guidelines