**Introduction to Compounding Procedures**

 **Plan Blood Drive –Scheduled 3/13/15 with St. Luke Hospital**

**3/4/15-3/6/15**

**Agenda**: 1. Do Now-Pharmacy Facts (The misuse of medication)

 2. Display Posters for blood drive

 3. Research Key Terms

 4. PowerPoint Review-Compounding Procedures

 5. Practicing Compounding Mouthwash and Energy Cocktail for cancer patient.

 6. Complete workstations using review sheets in Certification Guide.

 7. Solve drugs problems containing drugs on the 200 Drug list

 8. Student will compound a drug using a Recipe formulary

**Objectives**: 1. Student will be able to list the reason for compounding drugs.

 2. Student will be able to list and describe equipment used for compounding.

 3. Student will be able to explain the basic procedure involve in compounding medication.

 4. Student will be able to list major forms used to compound medications.

**Key terms:** Aqueous Capsule Comminuting Compounding

 Emulsion Excipient Geometric dilution Lozenge

 Ointment Ophthalmic Otic Suppository

 Quality Assurance Tablet Powder Transdermal gel

 Sublingually Trituration Troche Suspension

**MASTERY FOCUS**  **(PL-2, PL-3, I-1, I-6) Pharmacy Technician**

**Essential Understanding:**

Student will understand the clear concise method to develop competence in the interpretation of medication orders and the calculation of safe medication dosages. The Principles of Technology in Pharmacy is essential to all health care workers.

Students will understand both the brand and generic names of drugs to help the learner become familiar with the correct dose forms. Compounding medications for patients’ specific needs is an integral part of the 5,000-year history of pharmacy.

Pharmacy Technicians assumed many of the duties of drug preparation: specifically, compounding and preparation of intravenous drugs.

**Lab Practice:** Skill Practice using proportions, multiplication, division and drug formulas.

Use blender to compound Energy cocktail for a cancer patient.

 Compound a mouthwash for a patient with a canker sore using sterile technique

**Standards: What will students know, understand, and be able to do?**

**Objectives:**

1 Student will be able to describe the metric, apothecary and household systems of measures to problem- solve methods of calculation to prescribe the correct dose.

2. Student will able to convert between household and apothecary systems.

3. Student will express the metric equivalents.

4. Student will learn to read and interpret doctors’ orders to fill a prescription

5.Student will review and study drugs on the 200 drug list to review for certification test every Monday**.**

 6. Student will be able to list the reason for compounding drugs.

 7. Student will be able to list and describe equipment used for compounding.

 8. Student will be able to explain the basic procedure involve in compounding medication.

 9. Student will be able to list major forms to compound medications

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| **TEKS**1 (D), 1 (E), 9 (B), 10 (A) | **ELPS**[Boggle's World ESL Activities | Project SHINE](http://www.google.com/url?sa=t&rct=j&q=boggle%20esl&source=web&cd=13&cad=rja&uact=8&ved=0CFQQFjAM&url=http%3A%2F%2Fwww.projectshine.org%2Fboggles-world-esl-activities&ei=9OPCVIL2LMy0yAT264GACA&usg=AFQjCNF6zIibOBHiW04Ye4oWHVS43km9Wg)( |

**Key Vocabulary: What key terms will my students need to understand?**

**Assessment Plan:** Discuss knowledge of key terms.

 **Do Now**: 1. System of measurements quiz

2. Practice medication problems

 3. Student demonstrations and feedback-Skill practice

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**LESSON CYCLE** I. Students Will learn the key terms of the metric systems, drug formulas and compounding procedures. Why It Is Important? (**The students need to know the meaning of the key terms and drug formulas to select the proper information needed to determine the correct dosage and prevent medication errors. Today, pharmacists rely on the pharmacy technicians to provide quality patient care by compounding and the preparation of intravenous drugs for specific patients.**

II. Introduction to New Material –

1. **Students will view and discuss a PowerPoint on Compounding Procedures**
2. **Review content in text book and handouts**
3. **Review computer software on** Health Century 21. **(Medical Math)**
4. **The Student will research Internet resources to complete six week project**
5. **Teacher will review content to be learned and objectives**
6. **Field Trip to Phar Medium Compounding Company presentation and student-learned activities.**

III. Guided Practice

1. **Teacher will clarify and check for understanding by asking open-ended questions. Teacher will pace the classroom to clarify misunderstanding.**
2. **Teacher will introduce content to be learned and review key terms.**
3. **Teacher will demonstrate skill practices.**
4. **Teacher will review agenda and objectives daily**

**e. Teacher will review resources and equipment needed to problem solve student**

 **Centered lessons**.

**F**. **Teacher will check student for mastery of skill practice.**

**G. Teacher will create classroom activities and lessons to prepare student for field trip.**

IV. Independent Practice

1. **Student to define and write key terms.**
2. **Student to take notes from PowerPoint.**
3. **Student to complete homework**
4. **Student to complete worksheets in class**
5. **Student to study the 200 drug list for certification prep.**
6. **Student to learn Metric calculations used to prepare medications.**
7. **Groups and independent practice student will calculate drug problem per MD orders using the parental, orals and other routes to administration.**
8. **Students will compound medication on the Laminar Flow hood in the Lab using compound recipes**
9. **Student to research drugs for essay project.**

V. The Closing – **Classroom discussions to check for understanding. Ask students did we meet and learn the objectives for the day. Play kahoot or other games to check for mastery. Teacher will to clarify misunderstanding. Quizzes and exit ticket will be an option to check for understanding.**

**How will I engage my students in learning? How will I lead my students to mastery?**

 **CHECKS FOR UNDERSTANDING (I-2)**

|  |  |
| --- | --- |
| 1. **Engage and Connect (30-min):**

**Do Now:** 15 minutesHands on group activityIndependent practiceOnline group studies PTCB practice testActivity Stations in the classroom for skill practice. | Review Do NowClarify misunderstandingAllow students to demonstrate preparing medication pre-fill medication cart. |
| 1. **Introduce New Learning (15-20 min):**

PowerPoint- Medical MathDemonstrate skill practice using medication problems.Compound a medication for student practiceSummarize the uses of prepackage medicationsIntroduce to compounding-**Field Trip to Phar Medium** | Student provide feedback by demonstrating skills.Student are able to voice why lesson is important during guided questions.Students ask questions as needed. |
| 1. **Lead Guided and Independent Practice (25 min):**

**Guided Practice (10 min):****Independent Practice (25-30 min):**  | Clarify misunderstanding. By asking questions and reteach material as needed.Allow students to demonstrate practice filling prescriptions and medication carts and administer medications to patients..Practice compounding IV medications and calculating drip factors.Complete lab worksheetComplete homeworkParenteral & Liquid compounding |
| 1. **Close the Lesson and Assess Mastery (10 min):**
 | Check understanding by open ended questions involving all students.Play Kohoot.Exit ticket QuizzesTest-assess for understandingPlay medical Termo |

**DIFFERENTIATION (I-3)**

**How will I scaffold and/or accelerate learning? For whom? How will I group my students?**

**SCAFFOLD:** 200 drug list a resource to learn drugs for the certification test. PowerPoint presentations- Medical Math. **Internet research (Pharmacy Tech Certification Board). Have students problem-solve case studies to assist with compounding.**

**ACCELERATE:** Have students read power point and PTCB website as a resource tool.

 **Group activity-** Student will demonstrate how to withdraw medication from a vial and a syringe. Student will be checked off on mixing IV medication until he/she skill performance is mastered. Student will practice giving injections with an orange. Student will be able to calculate drops per minute to practice IV therapy.

 **Student will orally communicate how to prepare and administer medication per MD orders. Students will demonstrate compounding a medication and an energetic cocktail for a cancer patient.**

**GROUP:** Group according to academic level (high performing students grouped with lower performing students. (4-5 students per group). ESL student grouped with a Spanish speaking student.

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**What materials, resources, and technology will I need to prepare and arrange?**

* Text Book Unit dose packages
* U-tube videos on skill practices Maalox
* Syringes Hydrogen peroxide
* Sterile needles Medication labels
* Hand sanitizer Laminar Flow hood
* Sharp containers Safety shields
* Oranges Sterile gowns
* Alcohol pads **Mouth Wash-First aide care**
* 4’ X 4’ gauze Hydrogen peroxide
* Sterile field Bbaking soda
* IV tubing Anti Cavity Fluoride Rinse (alcohol free)
* Medication vials and ampules **Cocktail Recipe- Ingredients**
* Lab-top (technology based lesson) Spinach
* Diversified Health Occupational PowerPoint Emergi-C (vitamin C powder
* Case studies and Medication orders Crushed Ice
* Medical Math –Health Century 21 PowerPoint/handouts Yogurt or lemonade
* Medication forms Blue berries
* Clay bowls and mortar Banana
* Tablet Cutter (Coupe-pilule) Strawberries
* Pill Box/Pilulier
* IV Pole