

# Krug Chemistry – Deep Run Daily Planning Guide

Date of Lesson: Q1 Day 5 – Unit 1 Quiz, Separation Techniques Lab

<b>Topic /Big Questions:</b> ( <a href="#">Question Stems</a> & <a href="#">Question Creation Chart</a> )	
<ul style="list-style-type: none"> <li>• <b>What have I learned so far in Unit 1?</b></li> <li>• <b>Is it possible to recover the ingredients in a mixture?</b></li> <li>• <b>What separation techniques do chemists use?</b></li> </ul>	
<b>State SOL</b>  CH 1 a - j	<b>Unpacking the Standards</b> ( <a href="#">Video explanation shown at 3:18</a> )  <b>a) designated laboratory techniques;</b> b) safe use of chemicals and equipment; c) proper response to emergency situations; d) manipulation of multiple variables, using repeated trials; e) accurate recording, organization, and analysis of data through repeated trials; f) mathematical and procedural error analysis; g) mathematical manipulations including SI units, scientific notation, linear equations, graphing, ratio and proportion, significant digits, and dimensional analysis; h) use of appropriate technology including computers, graphing calculators, and probeware, for gathering data, communicating results, and using simulations to model concepts; i) construction and defense of a scientific viewpoint; and j) the use of current applications to reinforce chemistry concepts.
<b>Visible Learning (For the three items with asterisks*, think from a student perspective. Use simple language)</b>	
<b>*What am I learning today?</b> Lab Separation Techniques	
<b>*Why is it important?</b> Separation Techniques can be used to recover ingredients in a mixture. Recovering materials means they can be reused in chemical processes, which saves money for industries.	
<b>*How will I know I've learned it?</b> Participation and recording notes during hands-on activities such as filtration, evaporation, decanting, distillation, and thin layer chromatography.	
<b><a href="#">Differentiation strategies:</a></b>  <b>Unit 1 Quiz</b> – small group testing available  <b>Lab Activities</b> – common separation techniques; hands on activity; drawing and recording observations in notebooks	
<b>Accommodations and/or modifications are being met for students with IEP's/504's.</b>  Access to all materials on Schoology; frequent checks for understanding; working in small groups; small group testing	

### Daily Plan/Sequence of Instruction:

Teacher will assign new seats by distributing group station cards at the beginning of class. Students will take the Unit 1 Quiz, which will cover lab safety, sig figs, scientific notation, recording measurements, and accuracy and precision. Students will have 30 minutes to complete the quiz.

After the quiz, teacher will demonstrate **Distillation** of an alcohol and water mixture. Students will record observation in notebook. Teacher will then set up salt water **evaporation** apparatus and allow the water to evaporate, while students perform other separation techniques.

Students will work in groups to rotate through the following stations:

- **Filtration** – Students will complete the “Going to the Beach” lab worksheet by recording the mass of sand, salt, and water. After mixing the ingredients, students will filter the solids and investigate which solid dissolved and which remained a solid. Filter paper and residue will be set aside and re-measured next class after it has time to dry. Percent error will be recorded at that time.
- **Decanting** – Students will use graduated cylinders to combine 25 ml of water (premixed with blue dye) with 25 ml of baby oil in a 100 ml beaker. Students will then use a glass rod to transfer the baby oil off the top of the mixture into a separate beaker. It is difficult to perfectly separate all the baby oil. Students will understand if they accident poured out the water because they will see blue drops mixed in the baby oil. Students will sketch set up and record observations in notebook.
- **Chromatography** – Students will cut strips of filter paper and tape on end to a pencil. Students will then hand the filter paper inside a solo cup and cut the end of the filter paper so that it is about 2 -5 mm above the bottom of the cup. Students will remove the filter paper and use a black **Expo vis-à-vis marker**, black **Liquimark marker**, or a black **MrSketch marker** to draw a dot about 5 mm from the bottom of the filter paper. Then they will hang the filter paper back in the solo cup and add 10 ml of isopropyl alcohol. Students will sketch set up and record observations in notebook.

At the end of class, the teacher will show the recrystallized salt from the evaporation salt water demonstration.

**Assessments (List all [formative/summative](#) assessments used to check for understanding during this lesson. Summative assessments may occur during a different class period.):**

Unit 1 Quiz (summative)

Separation Techniques Lab Activities (formative)

After assessing today’s lesson are you and your students comfortable moving forward with your next objective?

**Yes** - Hands on activities and recording sketches and observations will enhance understanding

**No**, remediation required to proceed – Parents will be contacted if students fail the quiz; students may visit during One Lunch to discuss their mistakes.

**Teacher reflection:**