

Lesson Revision Template

Topic: Color of complex ions (Objective 13.2)

	Original Lesson	Revised Lesson
General Lesson Plan	<ul style="list-style-type: none">• Students explore d-orbital splitting in complex ions through POGIL (Process Oriented Guided Inquiry Learning) packets• Students summarize learning from packets and discuss questions• Students perform a lab looking at different complex ions and determine the ligand through color comparison and then determine an unknown ligand in a complex ion• Students practice concepts with old DP exam questions	<ul style="list-style-type: none">• Students are introduced to the design lab• Students explore d-orbital splitting in complex ions through POGIL (Process Oriented Guided Inquiry Learning) packets• Students act out d-orbital splitting in a skit• Students determine a complex ion concentration through a design lab using Beer-Lambert's Law for two different ligands

<p>Novel Application How are students applying what they already know to the task at hand? How are they applying their learning to a new context that pushes their thinking in new directions?</p>	<ul style="list-style-type: none"> • Some. Students must be able to answer exam questions in a novel situation (to them) 	<ul style="list-style-type: none"> • Students must use their newly acquired knowledge to create a method to determine the concentration of copper ions in the lab. Before, the POGIL was the last place for novel application; with the lab, they are doing a second, in-depth, application
<p>Meaningful Inquiry How many methods are possible to solve the problems or challenges in the lesson? To what extent am I giving the method and to what extent are students creating a method? Will all students be able to achieve the challenge? What space have I provided in the lessons for high achieving students to push their thinking?</p>	<ul style="list-style-type: none"> • Students are constructing their understanding through the POGIL exploration 	<ul style="list-style-type: none"> • The challenge lab allows them to extend their inquiry into d-orbital splitting by using their newly acquired knowledge to design their lab and choose wavelengths to analyze. There is no “right way” to do the lab, so students have the option to explore multiple paths to come to an answer.

<p>Effective Communication How much is the teacher talking? How much are the students talking? How are the students given time to share and communicate their ideas?</p>	<ul style="list-style-type: none"> On the POGIL handout students needed to write using appropriate language 	<ul style="list-style-type: none"> Students will continue to use appropriate language on POGIL and extend communication through the design of the procedure in the lab Students will spend time talking within their group and with other groups. Groups will check in with the teacher for feedback before going to the lab, but the challenge aspect of the lab minimizes teacher talking and input as to not give any groups an unfair advantage. The skit provides another means for students to discuss the chemistry of d-orbital splitting
<p>Perceived Worth To what extent is this lesson connected to a larger goal or context? How have I made connections to this larger context or goal clear to the students?</p>	<ul style="list-style-type: none"> It is Objective 13.2 in the DP Chemistry syllabus, so they will be assessed on it externally 	<ul style="list-style-type: none"> Students will gain an understanding on how the properties of colored complexes can be used to determine unknown concentrations. Analytical chemists use similar methods to determine unknown concentrations of colored complexes. In addition, the challenge to see which group is most accurate adds worth for some students.