|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learning Goal** | **Learning Objective** | **Learning Activity** | **Assessment** | **Evidence of Inclusivity** |
| **What will students learn?** | **If they have learned it, that will students know and be able to do?** | **What will students do to learn it?** | **How will students demonstrate they know it or are able to do it?** |  |
| * **Understand** the effect of environmental pH on the ionization status of weak acids and weak bases
* **Explain** to ‘layperson’ why this relationship matters in human health (unit goal)
 | Explain that pKa is a measure of how easy it is to remove a proton from a moleculePredict ionization state and charge of a molecule @ particular pH based on its pKa (use the HH equation QUALITATIVELY)Apply in medical context | Clicker: Place in Order Exercises to Correct pKa Value Misconception *TPS:* Sticky Note Exercise Concerning Prediction of Ionization*TPS: Compare ionization status of aspirin in various compartments/pH environments*Clicker: In which compartment is aspirin better absorbed? | **Formative**Clicker Questions regarding value of pKa**Formative**Sticky note Exercise**HOMEWORK/Formative**Transfer knowledge to predicting charge on amino acids at different pH values**Summative**Exam question similar to aspirin using other drugs with different chemical structure and pKa | Accommodates students who have yet to build a pH/pKa scaffold so that transfer can be accomplished The concept of pKa is addressed from multiple anglesAspirin should be a drug that is widely recognized. If not, we show pictures and structureAvoids red/green color blindness problemsUses both numbers and pictures to explain concept |