**Materials Needed**

* Samples you want to run
* Agarose
* LAB buffer
* GelRed
* Loading dye
* 2-log ladder

1. Prepare the gel
   1. Use the scale and the weigh boats to measure out 0.6 grams of agarose
   2. Use a graduated cylinder to measure out 60 ml of LAB Buffer and add to a 250-ml Erlenmeyer flask
   3. Add the agarose
   4. Microwave in short intervals (20-40 seconds) until the agarose is completely dissolved, stirring gently in between
      1. NOTE: the flask will be EXTREMELY HOT. Use a paper towel tong holder to swirl and be careful not to drop it
   5. Let the LAB/agarose solution cool for a few seconds
   6. Add 1.6 ul GelRed
      1. NOTE: GelRed is light sensitive. Keep covered when not in use
2. Cast the gel
   1. Make sure that the gel cast is oriented within the gel chamber such that the open ends are aligned with the walls of the chamber. Otherwise, when you pour, it will spill out of the caster and into the larger chamber
   2. Add the comb carefully
   3. Wait for the gel to set (about 30 minutes)
3. Prep the chamber
   1. Fill the chamber with buffer so that the whole gel is covered but not above the fill line; be careful not to get the electrode ports wet
   2. The chamber will usually have buffer already in it. Make sure that it is covering the gel.
   3. The buffer will get gross overtime. Change the buffer in the chamber occasionally (every 1-2 weeks)
   4. Remove the combs
      1. Do so carefully to avoid ripping the set gel
4. Prep the samples
   1. Figure out how much of each sample you are going to load
   2. If you are loading DNA:
      1. And your concentration is at/above 100 ng/ul, load 1 ul
      2. And your concentration is less than 100 ng/ul, load enough ul to get to 100 ng
   3. If you are loading RNA:
      1. And your concentration is at/above 50 ng/ul, load 1 ul
      2. In general, do not load RNA samples below 50 ng/ul
   4. Cut a small strip of Parafilm (this will be your sample workstation) and lay it on the bench
   5. Load about [1ul x your number of samples] of loading dye into the pipette
      1. Create a number of small dots of loading dye on the Parafilm corresponding to your number of samples
      2. Get a fresh tip and take up your first sample
      3. Add to the first dot of loading dye and gently back-pipette a time or two to mix the sample with the dye thoroughly
      4. Add the sample to the first well in the gel with the same tip
      5. Repeat for each sample
   6. When loading the samples, be careful not to stab the well, hovering close to the top should be sufficient because the sample-dye mix will sink
5. Add 1 ul of 2-log ladder to the final well
6. Run the gel
   1. 180 V for 20 minutes
   2. Visualize on the UV transilluminator