

Use the metric system to convert between measurements
Properly weigh materials and liquids
Accurately measure liquids with volumetric flasks, graduated cylinders etc.
Properly pipette using serological and micropipettes
Calculate and perform dilutions
Properly care for and use a microscope effectively
Use a spectrophotometer to obtain spectra and to measure concentration

Quantitative Reasoning

- Report conclusions, calculations, interpret scientific data and graphs, and use results to
- Analyze data to collect for that data with error to include. Do not and discuss the findings and

Regulatory Mechanisms: cell signaling, G-protein-coupled receptors, enzyme-coupled

- **Membranes and Transport:** membrane structure, transmembrane transport structures, intracellular compartments and protein transport, ion channels. Suggested laboratory topics: cell permeability and active transport.
- **Regulatory Mechanisms:** cell signaling, G-protein-coupled receptors, enzyme-coupled receptors, apoptosis.
- **Growth and Division:** DNA replication and repair, cell cycle and control mechanisms, cancer development. Suggested laboratory topics: aseptic technique, bacterial growth curves, cell and tissue culture.
- **Differentiation:** Central Dogma, how genes function, control of gene expression. Suggested laboratory topics: PCR, gel electrophoresis, DNA/RNA extraction genome sequencing, Western blot, protein analysis.
- **Specialized Cell Functions:** excitation, motility and contraction, secretion, and immunity