

NOTES on the software components utilized
with the
LEGO DNA Learning Center Set

- 1) The **Molecular Workbench CD** is provided on DVD/ CD
 - There are 14 disks plus a copy on the flash drive.
 - These materials are also available online. The Concord Consortium produced them.
 - <http://workbench.concord.org/database/activities/324.html> (Alternately go to the Molecular Workbench Database site and search for “MIT Cell Activity” or “MIT Museum Activity”)
 - The selected lessons for MIT are called THE MIT CELL ACTIVITY. In this version and on the CD, the colors in the simulations will **match** the LEGO DNA nucleotides A, C, T, G. The colors also will match with the LEGO amino acid types, hydrophobic, etc. This is very useful for teaching, having the colors be consistent in their use.

- 2) **Star BioChem** is a tool developed at MIT for easy 3-D viewing of proteins from the Protein Data Base and we use this with the more advanced biology students. This MIT protein visualization software is free and available on-line. The website offers additional student lessons of varying difficulty.
 - <http://web.mit.edu/star/biochem/index.html>
 - The exercise to select is the “DNA Glycosylase” exercise. This student worksheet guides the students through all the steps on the computer. On the flash drive, there is a folder labeled “computer lessons” and it may have a copy of the Glycosylase worksheet.
 - POWER POINT PRESENTATION about DNA repair.
Prior to working with the Star BioChem glycosylase exercise, at MIT we help the students to recognize the important role of the protein by giving an introductory talk about DNA repair proteins (and the DNA glycosylase specifically). This PPT is included in this LEGO package, kindness of Dr. Lourdes Aleman, the author. Please credit any slides if you choose to use them separately.

Kathy Vandiver, July 12, 2011

