Website and Software Resources

1. MIT Edgerton Center K-12 Curriculum:
http://edgerton.mit.edu/k-12/teacher-resources/k-12-curriculum
This website contains both our Atoms and Molecules curriculum and DNA and Proteins curriculum, downloadable for free.

- Teacher guides
- Laminates
- Booklets
- Student worksheets and keys
- Power Point presentations
- Links to videos and related lessons

2. Concord Consortium Molecular Workbench:
http://workbench.concord.org/database/activities/324.html
"From DNA to Proteins and Protein Folding" is an activity that was created by the Concord Consortium as a companion to our DNA and Proteins curriculum.

The software is free and available online. The colors in the simulations match the model nucleotides and amino acids found in the kits. A worksheet was created to go along with this activity. It can be found on the Edgerton Center website, under the DNA and Proteins curriculum, or here directly:
http://edgerton.mit.edu/sites/default/files/media/ConcordConsortiumWorksheet11-15-11.pdf

3. MIT OEIT Star BioChem:
http://star.mit.edu/biochem/
Star BioChem was developed at the MIT Office of Educational Innovation and Technology (OEIT) as a tool for easy viewing and manipulation of 3-D protein structure.

This software is free and available online. Any protein structure from the RCSB Protein Data Bank can be uploaded and viewed, along with a variety of other sample molecules that come with the software, such as carbohydrates, nucleic acids, and lipids. The website also offers several sample exercises to work through, including an exercise about DNA repair and DNA glycosylases that we often use for more advanced groups:
http://star.mit.edu/media/uploads/biochem/exercises/version_2-3/dna_glycosylase_exercise_levels_1-2_ver2.pdf

Our website also has a Power Point presentation, created by Dr. Lourdes Aleman, on DNA damage and repair. We use this presentation as an introduction to the topic before students complete the exercise with the software (Notes on the PPT file may be helpful to you):
http://edgerton.mit.edu/sites/default/files/media/Intro-to-Glycosylases-KMV-teacher-notes-6-10_0_0.ppt