**DNA Jewelry Lab, A sample lesson plan that brings together a number of my ideas:**

**Learning Goal/Outcome**

NM Life Science Content Standard:

Strand II, Standard II, Benchmark II, GENETICS: Know that DNA carries all genetic information in the units of heredity called genes, including: the structure of DNA (subunits A,G,C,T), information-preserving replication of DNA.

Skills: Students will read and follow complex written directions. Students will work individually to build a model representing the structure of DNA. Students will use the model they build to “read” a short sequence of DNA noting which nitrogenous bases follow each other in their models.

**Preparation – Building Connections to Curriculum**

Literacy Connections: Basic reading: text chapter on the structure and function of DNA, enrichment reading: Original paper about the discovery of the structure of DNA by Watson and Crick, Excerpts from: The Double Helix by Watson and Crick, News article about the completion of the sequencing of the Human Genome.

Needed Math Skills: Basic arithmetic.

**Introduction – Building Connections to Kids**

Connection to Kids: The model is made of pretty beads and wire and can be worn as a pendant or used as a key fob. DNA is a natural code that humans have “decoded” just like spy codes throughout history.

Previous Lessons: We learned about Genetics and inheritance. DNA goes one step further to explain how information is stored by living things on a cellular/molecular level.

Engaging Demo: Not today

**Initial Direct Experience with Concept**

Hands-On Activity/Enrichment: The DNA Jewelry Lab.

Science Skills Used: Following complex instructions, Manipulating model making material, counting, color coding, measuring length, watching teacher model technique, take information from model.

**Performance Task – Understanding What Was Learned**

Specific Product or Performance (Assessment): The DNA model is the product of this lesson. In addition, the responses on the handout will show the level of understanding of the structure of DNA. As an assessment of understanding at the end of the unit, the student will be asked to “decode” a DNA model with a “code sheet” as part of a unit assessment.

Math, Language Arts, or Fine Arts Skills Used to Communicate Knowledge: counting color coding, decoding a sequence.

**Discussion – Building Connections to Ideas**

“Why” of Experience/Key points:

Why did we use 2 beads to represent A and G and only one bead to represent C and T? What does the wire represent? A can only pair with T and C can only pair with G. Can you think of any way to show this in a bead model? What are some of the differences between our model and real DNA?