BIG QUESTION #2
WHAT'S UP WITH GENES?

Sample Activity
Investigation – "Build a Bug"

Question:

What are the roles of genes in determining the appearance of your bug?

Method:

Craft a male or female imaginary bug with ten traits represented (one must be sex-linked). Create a class chart of the bug's genotype and phenotype and the parents' possible genotypes and phenotypes. Name and photograph the bug for your report.

Class discussion:

How many possible bugs can be made with the ten traits? How can the parents' possible genotype and phenotype be determined given the child's genotype and phenotype?

Assessment:

Write a report that includes the following:

- **The Point**
- **The Methods**
- **The Results**
- **What You Know Now**
- **Tidbits**

Extended Investigations:

Research DNA structure and its relationship to protein synthesis. Repeat the above analysis.

Rubric for "Big Questions"
Report Component of the Big Question

The Results

Include graphs and data tables –

- **Decide what type of graph(s) to create. (Scatter plot, bar graph, pie chart, etc.)**
- **Label the graphs and units of measurement.**
- **Include a title for each graph and table.**

Analyze and interpret your results –

- **Use the graph(s) to make predictions and draw conclusions.**
- **Assess the limitations of the methods employed to gather the data.**
- **Write several sentences that explain the quantitative data show in the graphs and tables.**