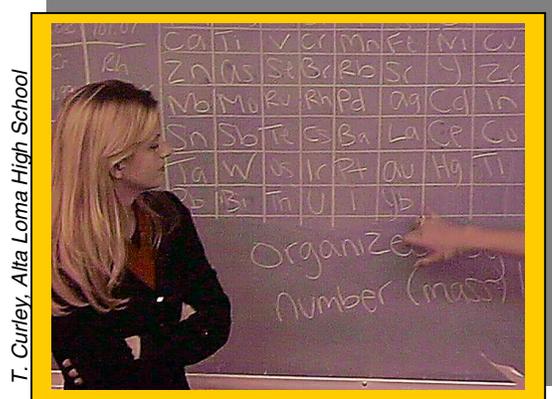
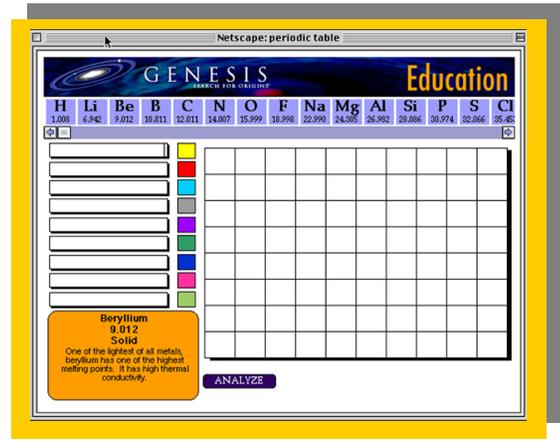


Cosmic Chemistry: Understanding Elements

Making Sense of the Elements

STUDENT ACTIVITY

1. As you are making sense of these elements, record your ideas for organizing them and the results of that organization.
2. Make a display showing your group's organization scheme. Summarize the primary identifying characteristic(s) you used to classify the elements. Identify any possible sources of error and any additional information or data that would assist you in deciding the appropriate placement for each element.
3. Scientists often make predictions with the use of a model. The model can be the result of external data that has been gathered and recorded. By studying a model, scientists often can use trends indicated by known data to predict missing information. If this missing data is surrounded by known data points, it is much easier to make an accurate prediction. Scientists call this interpolation. Attempt to interpolate information about the missing pieces of your periodic table model. Describe your predictions. If the missing data is beyond known data points, it is much more difficult to make a prediction. Scientists call this extrapolation.



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4. Remember that Mendeleev arranged his historical table in order of increasing atomic mass. Look carefully at iodine (I) and tellurium (Te) on the modern and Mendeleev tables. Why do they differ? Which arrangement follows group descriptions better? Which arrangement is more useful? Why?
5. Following the class discussion, in your original group devise a possible process for solving a problem of organizing information such as this. For each step, write the questions you should ask to successfully complete the step. As you do this, consider the best procedures to follow and the most valuable questions to ask in order to minimize error. Remember that you should be able to clearly communicate the processes you are using to other scientists. Keep a copy of this process for the assessment activity.