

NOTE: This is a computer lab class. Please make sure you have signed up for the lab in advance.

TITLE OF LESSON

Physical Science Unit 1 Lesson 16 – Class Periodic Table

Nature of Matter: How do tribes comprehend items at the atomic and molecular level?

TIME ESTIMATE FOR THIS LESSON

One class period

ALIGNMENT WITH STANDARDS

California – Sciences: Chem, Atomic and Molecular Structure 1; Investigation and Experimentation 1a

MATERIALS

Kirinyaga Chapter 4 – Reading (not provided by ESubjects)

Too Busy for a Friend – Teacher Page

The Periodic Table 1 – Student Page

The Periodic Table 2 – Student Page

Class Periodic Table Grading Procedure – Teacher Page

paper

pen or pencils

periodic table

Computers with Microsoft Word

LESSON OBJECTIVES

- To create a class periodic table based on characteristics
 - To gain basic knowledge of table making with Word
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FOCUS AND MOTIVATE STUDENTS

- 1) Homework Check – Stamp/initial homework assignments. Collect class notes from yesterday and Atomic Structure sketches and problem solving. Pass back Lab Report 3 and have students place in **portfolios**.
 - 2) Agenda – Have students copy the agenda you have posted.
 - 3) Journal – Ask for 2 volunteers to read their *Kirinyaga Journal 6* to the class. Then collect the journals.
 - 4) Class Work – Positive Tribe Member Description (based on email chain letter **Too Busy for a Friend** – see *Teacher Pages* for copy of original). Remind your students that in this unit they are looking at tribes. Today, they will be looking at their class as if it were a tribe. Ask your students to take out two sheets of paper. Have them list the names of the other students (their class tribe members) on these sheets of paper leaving a space between each name. Tell them that today they are going to think of the nicest quality or characteristic that each of their classmates or class tribe members possesses and write it down next to the person's name. Give the students 10 min to work on the assignment. If they do not complete the assignment, tell them to do so as homework. Tomorrow you will collect and collate the information or choose to have students share some of their comments before collecting and collating the information. See tomorrow's lesson for details.
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ACTIVITIES – INDIVIDUAL AND GROUP

1. Mini Lecture on Periodic Table – Post a copy of the periodic table (see *Student Pages Periodic Table 1 and 2*) on an overhead or point out a copy that is in the classroom. Tell students that they should be taking notes. Explain the function of the periodic table. The periodic table is used to group similar elements together. By organizing the elements in this way it is easier to predict the properties of an element based on its location in the periodic table. The periodic table uses symbols to represent each element and they are arranged based on the



number of protons that atom has in its nucleus. For instance, hydrogen has 1 proton so it is the first element in the periodic table, while helium has 2 protons and it is the second element. Point out hydrogen and helium in the periodic table. Explain that the periodic table is divided into periods and groups. The periods are the horizontal rows in the table. As you move to the right in the table, the number of protons increases and so does the number of electrons. The groups are the vertical columns and each column has atoms with the same number of valence electrons, which indicates that they have similar properties. In addition, the elements in the periodic table can be thought of as family members that are related to other elements nearby. The elements are classified as metals or nonmetals. Point out the metals and nonmetals in the table. Tell students that in a later lesson they will learn more details about the periodic table.

2. Computer Protocol – Establish your rules for the computer lab before class today. You may want to get together with your site technology person first to determine what is already in place. Explain to your students appropriate computer lab etiquette and the consequences for any misbehavior. Explain that they will be working for the first half of the period with their groups. During this time, their computers should NOT be turned on. During the second half of the period, they will work on the computers to input the information their group agrees upon.
3. Classification and Grouping – Ask students to get into groups. Tell them they are going to characterize the class as if it were a tribe. They will need to decide what characteristics they will use to categorize their classmates (physical, mental, emotional, personality type, etc). They can use the information in the positive tribe description to describe some aspects of the class. They should look at similarities and differences in classmates and see if there are any trends within particular groups within the class or within the class itself based on the characteristics they decide they want to use. Then use all of this information to place their classmates in the class periodic table in periods and groups based on their characterizations. Remind them that they must not only show the placement of students in the class periodic table, but explain why they chose to group them in this way. Tell them they will be responsible for sharing why their grouping could be useful in the class. (Such as which people would work better on a team project, why and how.) Then they must determine how they will show these connections in a graphic organizer, in this case a table. They should draw out their table on a sheet of paper. Remind students that they may use whatever classifications they choose, but that in all cases they must be respectful of each other. If respect is not shown, the group's work will be thrown out and the group will receive a zero for the assignment.
4. Group Work – Have students assign group roles. Tell students to get to work. They have 25 min to work on their categorizations before they create their table in Word. Remind students that each person in the group should have a copy of the class periodic table they create since each person in the group will create their own version of the class periodic table in Word.
5. Call time. Have each student sit in front of a computer.
6. Mini Lecture – Explain the basics of table making to the students by having them walk through the steps you explain or show them via a projected screen. Tell students they must first open Microsoft Word by clicking on the Word icon on the desktop or by going to start, programs and then Microsoft Word. Then they must open a new document by clicking on the new document icon or by clicking File, then new. Once they have a document open they must click on Table followed by insert and then table. A dialog box opens that asks about the table size, i.e. the number of columns and number of rows. The students will have to insert the amount of columns and rows that they need. Have them create a table that has 5 columns and 4 rows for now so that they can practice. Ask if they think they can add or delete columns and/or rows once they have inserted this table. *They should answer yes.* Show them how to do so by clicking on cell of the table where they would like the row or column to appear next to, insert and then insert columns to the left, columns to the right, rows above or rows below. The portion of the table they have placed their cursor in is where the new row or column will appear. They can delete columns or rows in this fashion by having the cursor in the column or row they want to delete. Or they can simply highlight the rows or columns they would like to delete and go to table, delete rows or columns. Ask if they think they can do anything else with this table. *They should respond yes.* Show them that they can specify the height and width of the cells, as well as whether the text is left or right, justified or centered by looking at table properties. Show students that they can select a specific cell, row or column or the whole table depending on what changes they would like to make. They can also split or merge cells if needed. They also have the option of creating a table based on an autoformat, which has some preformatted tables. Once they

open autoformat they can click on the various options available and create a table just like the one shown. Students may also use the draw table function in order to add colors to cells within the table or change the borders of the table. Of course, make sure students remember how to use the most important tool... the UNDO. It is the easiest way to eliminate mistakes. Also remind them to save often. Tell them they should experiment with the tables in word today. The only way to learn is by doing.

7. Save – Before students start their individual periodic tables, have them open a new document and save (use the method for saving that best fits with your site technology persons recommendation). Tell them you will not be responsible for any lost or deleted work because they forgot to save. Remind them to save frequently today. Also have students save to a floppy disk so that they can work on the project outside of class.
 8. Individual Work – Have students create their Class Periodic Table. They should become familiar with as many of the options available as possible. Tell them they will have the rest of the period to work on their tables. They will have 15 minutes to complete their table and print it tomorrow.
 9. Homework Review –
 - a) Remind students to complete their periodic table classification and design for their class periodic table. They will have 15 minutes tomorrow to complete their table before presenting it to the class. Their presentation should be no more than 5 minutes long. If possible open the lab for students at lunch and after school so those students interested in taking advantage of lab time can work on their class periodic table design outside of class. Post a copy of the **Class Periodic Table Grading Procedure** and go over it with students so they know what is expected of them during their presentation tomorrow.
 - b) Assign *Kirinyaga* Chapter 4, The Manamouki. Their assignment is to write a one-page journal titled Kirinyaga Journal 7 due at the beginning of Lesson 21 on: Comment on the inflexibility of tradition found in *Kirinyaga* and the difference between tradition and stagnation. Support your opinion with 3 examples from the book.
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HOMEWORK

- 1) Complete Positive Tribe Member Description for tomorrow.
 - 2) Complete classification for and design of Class Periodic Table.
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GROUP ROLES

Recorder – Each student will be responsible for having a copy of the Class Periodic Table classification.

Facilitator – You will be responsible for keeping your group focused.

Manager – You will be responsible for making sure all members of the group are participating.

Illustrator – Each student will be responsible for creating a Class Periodic Table.

DOCUMENTATION FOR PORTFOLIO

Lab Report 2
Test 1: Matter
Lab Report 3