Strand: **8.1**	Standard: **8.1.2**	Episode 4	**Big Idea**: The Property of a Material Determines its Uses

Title: Periodic Table Patterns	**Time**: 15-20 minutes	CCCs: Structure and Function	Practices: **Obtain, Evaluate and Communicate Information**

Episode Snapshot
Students will get a basic understanding that the periodic table is grouped based on properties of the substances. They will be **obtaining and communicating information** by doing minor research on the groups then sharing the group they researched with the rest of their group to share the information.

Gather: Show students a periodic table that shows the 4 main groups alkali metals transition metals, halogens, and noble gases. Ask them as a class for any ideas on why the elements are organized the way they are on the periodic table. If necessary explain to the students that the organization is based on the structure of the atoms which affects the elements properties. Put students into groups of 4, assign each member of the group either: alkali metals, transition metals, halogens, or noble gases (we are focusing on 4 of the major groups). Each group will use either information you provide them describing each of the groups on the periodic table or information that they can get from the internet (This website could be helpful) to figure out the common properties the elements in the group have as well as some common uses. Let them know not to worry as much about the number of electrons in the outer shells, as we do not need to talk about how bonding happens, but instead to focus on the properties and uses of the elements in the group.

Communicate: Have the students share the information about the group they researched with the rest of the group so that they can all complete their student reflection sheet. Have them answer the question at the end of the sheet asking them to reflect back on the original phenomena with the two sandy substances. Ask them if they can explain why the two substances behave so differently? Ask for students to share and discuss the idea that while they don't know what the 2 sandy substances are made of they can assume that they are 2 different substances and therefore have different properties.

When finished have students add any additional properties they found out about to their master list of properties.

Assessment:Use the last question as a way of seeing if the students understand that the two substances were made of different substances and different substances have different properties depending on what atoms they are made of.	**Materials, resources, handouts, etc:** periodic table to observe the 4 groups and where they are located Student reflection sheet Computer lab for research OR printed information for the students to research from