

Chapter mini Challenge



Your challenge for this chapter is to create a game that will both entertain and teach people about the periodic table. Since you have completed five activities, this is a good time to give your game a *first try*.

Your *mini-challenge* is to create or adapt a game that has chemistry content as part of its structure. You will only be providing the class with a two-minute explanation of the game that you are developing. Within your two minutes, you should explain some of the rules of the game and some of the chemistry content that a player will get to learn from the game.

Chemistry Content

Your team should first review the chemistry content that may be included in this periodic-table game challenge.

Activity 1: You learned about organization. The periodic table is a way in which your knowledge about the properties of matter can be organized.

Activity 2: You investigated the properties of some elements. These properties included the ability to conduct electricity, whether the element reacted with HCl, and whether the material was a metal or nonmetal. You also attempted to organize the elements in terms of these properties.

Activity 3: You learned how to compare and contrast elements and compounds. You were also able to determine the relative masses of elements. The mass of elements is another property by which elements can be organized.

Activity 4: The game of battleship helped you learn about the structure of the atom. You learned that the nucleus takes up a very, very small part of the atom. That tiny space holds all of the positive charge and almost all of the mass of the atom. You also learned about the discovery of the electron and its place in the atom.

Activity 5: You observed the specific colors of the light given off by hydrogen gas. By investigating these colors (and energies) of light, you learned how Bohr developed a model of the atom. You learned that electrons jumping from a higher energy orbit to a lower energy orbit emitted light of a specific energy and color.

Criteria

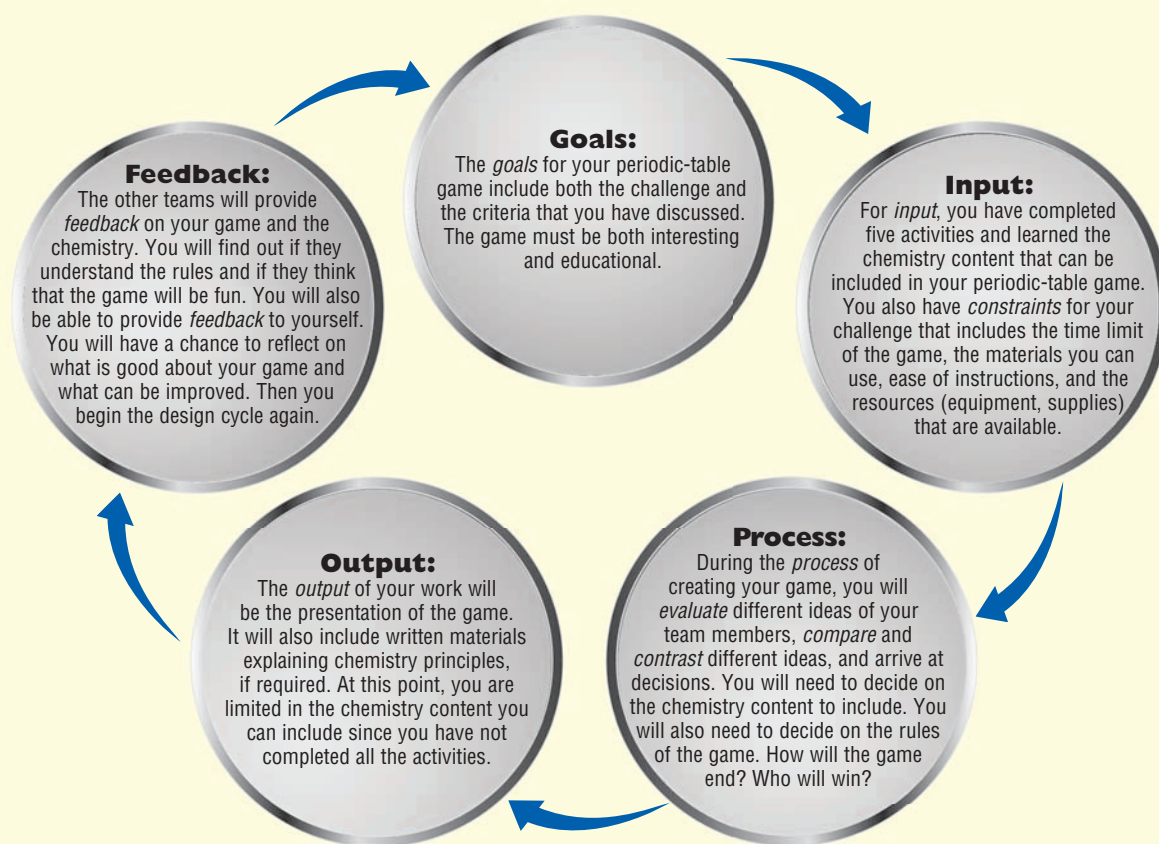
Your team should also review the criteria that you discussed on the first day of this chapter. Your periodic-table game should be creative and fun. It should demonstrate an understanding of chemistry concepts and help teach these concepts.

Preparing for Your **mini** Challenge

Your team should begin the process of creating a game by brainstorming ideas about games that you enjoy that may be adapted for this purpose. You should then discuss how you could include chemistry concepts from at least two of the activities in the game. You can then decide on the rules of the game.

Engineering/Technology Design

The engineering-design process involves a number of distinct steps. In creating a game, you are involved in a design process. Note how your efforts follow the design model described.



Remember: This is a *first try*. The feedback that you get from this brief presentation of your game will be extremely valuable when you prepare for the full periodic-table game that you will develop at the end of the chapter. At that point, you will begin the entire design cycle again. That's why it is called a cycle. You keep going through it over and over to improve your design or, in this case, the periodic-table game.