Sweet 16 Periodic Table Tournament

With spring just around the corner, your students' attention will soon be turning to spring break, sunshine and the NCAA basketball tournament. This activity combines the popularity of the March Madness basketball pool with an overview of the periodic table, including the concepts of atomic number, atomic mass, chemical symbols and physical properties of elements. Students will have fun playing the "tournament" as they use the periodic table to find the "winning" element.

Review of Element Concepts

Define each of the following terms.

- Atomic mass
- Atomic number
- Element symbol

Tournament Rules

The rules for filling out the tournament bracket are simple.

- First round: Write the number of protons next to each element name in the first round brackets. The winner is the element with the greater number of protons.
- Second round: Write the element symbol next to each element name. The symbol that comes first alphabetically advances to the next round.
- Semifinals: The element often used in magnets advances to the finals (a little research may be necessary).
- Finals: Write the atomic mass next to each element name. The element that has the lower atomic mass is declared the winner of the Sweet 16 Periodic Table Tournament!

NGSS Alignment

This laboratory activity relates to the following Next Generation Science Standards (2013):

Disciplinary Core Ideas: Middle School
MS-PS1 Matter and Its Interactions
PS1.A: Structure and Properties of Matter
Disciplinary Core Ideas: High School
HS-PS1 Matter and Its Interactions
PS1.A: Structure and Properties of Matter

Science and Engineering Practices
Asking questions and defining problems
Analyzing and interpreting data

Crosscutting Concepts
Patterns
Structure and function

Extension

Most students may be surprised to find that nickel has a lower atomic mass than cobalt even though Ni follows Co in the arrangement of elements based on increasing atomic number. This provides an opportunity to discuss the concepts of isotopes, natural abundance and average atomic weight. Have students look for other examples of elements with a lower atomic mass than the preceding element (e.g., argon and potassium).

References

Flinn Scientific Periodic Table of the Elements, Catalog No. AP9020

Publication No. 10943
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