
Model: Synectics: Making the Strange Familiar

Purposes:

Teach students the basic structure of an atom

Context:

Introduction to atomic structure

Phase One: Substantive Input

Go over the fundamental parts of an atom:

Nucleus: protons and neutrons Electron Cloud: electrons and electron levels

Discuss and sketch the basic behaviors of each.

Phase Two: Direct Analogy

Teacher states that an atom is like a solar system.

Now ask students to describe ways in which an atom is like the solar system.

Phase Three: Personal Analogy (I might skip this step)

Ask the students to become a solar system. How does it feel to be the sun, planets?

Phase Four: Comparing Analogies

Again, ask students to describe ways in which an atom is like the solar system.

Phase Five: Explaining Differences

Ask students how an atom is different than a solar system.

Phase Six: Exploration

Teacher asks students questions about the structure and nature of an atom and its components.

Phase Seven: Generating Analogies

Students come up with other analogies of what an atom is like. They make a list of how parts of their analogy are like and dislike an atom. They then will write a short essay on how their analogy is similar and different than an atom.