After watching the video segment, write down key points, main ideas, and big questions.

Objective(s):

- Understand the role of protons, neutrons, and electrons in determining an element’s identity and atomic mass.
- Describe the conditions under which alpha, beta, and gamma radioactive decay occur, and the changes in the atom that happen when each type of decay occurs.
- Determine the resulting nuclei that are formed from alpha, beta, and gamma decay of a nucleus.

Notes:

During the video segment, use words, phrases, or drawings to take notes.

Summary:

After watching the video segment, write at least three sentences explaining what you learned. You may ask yourself: “If I was going to explain this to someone else, what would I say?”
Answer the following.

1. Label the diagram of the atom below. Identify the nucleus, the electron cloud, and where protons, neutrons, and electrons are located.

2. The _______________ ____________ force holds the nucleus together.

3. The number of ____________ in the nucleus determines an atom’s identity.

4. An object’s mass number is equal to the sum of the ____________ and ____________ in the nucleus of the atom.

5. Atoms that have the same number of protons but a different numbers of neutrons are called ____________.

6. For the symbol of Uranium-235 below, label the mass number and atomic number:

7. Define radioactivity in your own words:

________________________________________________________________________________________
Unit 7A
Radioactive Decay

Note-Taking Guide and Questions to Consider

Name:
Date:

8. Complete the chart for each of the three types of radioactive decay:

<table>
<thead>
<tr>
<th>Type of Decay</th>
<th>Particles Emitted</th>
<th>Change in Mass and/or Atomic Number</th>
<th>Charge of Emitted Particle(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beta minus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beta plus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gamma</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Rank the types of radioactive decay in order from most energetic to least energetic: