Lesson plan for *Alpha Decay*:

http://phet.colorado.edu

Learning Goals: Students will be able to:

- Explain alpha decay process. (*radiation of alpha particles tunneling out of the nucleus causing a decrease in mass number).*
- Explain what half-life means in terms of single particles and larger samples. (*Alpha particles escape the nucleus in variant intervals, but the time to decay can be averaged to give an overall "half-life"- time for half of the particles to undergo decay.)*

Background:

My students have likely heard about nuclear decay. They are high school seniors. I have written this activity to be used with a substitute teacher near the end of the school year. They have done many PhET activities throughout the year in class and as homework.

***Alpha Decay* Introduction:**

I don't plan to tell or show the students how to interact with the sim, but I will be watching to see if they use the graph on the Single Atom tab for sense making or if it is a distraction. If I see problems, I'll tell students that they can ignore it. Tips for Teachers are provided by the PhET team for this sim.

Lesson: My students will work in pairs in a computer lab. They have 95 minutes, so I will have them do my activity with Beta Decay when they finish this one.

Post-Lesson: I plan to write clicker questions, but have not done so yet.

Follow-up sims: Beta Decay, Nuclear Fission (I plan to use Chasteen's activity http://phet.colorado.edu/en/contributions/view/3335) , Radioactive dating (I plan to use Bire's activity http://phet.colorado.edu/en/contributions/view/3534)

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