



Thomas Haney Secondary School

Science 10

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LG #10: Nuclear Reactions

(What I need to understand)

BIG IDEA: How Does energy in the form of radiation affect living things?

Learning Standards:	
<p>Fundamental Knowledge (what I need to know)</p> <ul style="list-style-type: none"> ☆ Define chain reaction, emission, critical mass, proton, helium nucleus, photon, alpha particle, and beta particle. ☆ Compare and contrast nuclear fission and fusion. ☆ Describe some common uses of different radioactive materials. (It's NOT just waste) 	<p>Curricular Competencies (What I need to do)</p> <ul style="list-style-type: none"> ● Explain the advantages and disadvantages of using nuclear technologies. ● Create a visual representation to explain the different physics terms associated with nuclear reactions. Such as: ● List different nuclear technologies that produce a useful "waste" product and explain what the use is.

Assessment of Learning Standards:		
Have an interview to show evidence of the Learning Standards , or elect to take a quiz		
<p style="text-align: center;">ESSENTIALS (C/C+)</p> <p>I CAN:</p> <ul style="list-style-type: none"> ☆ Define chain reaction, emission, critical mass, photon, beta particle, alpha particle, nuclear fission, and nuclear fusion. ☆ Describe multiple uses for radioactive materials. ☆ List the current arguments (a minimum of 5) that exist for the use or disuse of nuclear reaction technologies to produce electricity. 	<p style="text-align: center;">ADVANCED (B)</p> <p>I CAN:</p> <ul style="list-style-type: none"> ➤ Outline the ethical and environmental impacts of using nuclear reactions to create electrical energy. ➤ List the advantages and disadvantages of using nuclear reactions to produce electrical energy. 	<p style="text-align: center;">MASTERY (A)</p> <p>I CAN:</p> <ul style="list-style-type: none"> ✓ Create a presentation to explain the associated benefits and drawbacks to using nuclear technologies.

Reflection:

After finishing my learning activities what do I understand? How have I answered the BIG Question?

OPTION 1

Choose your own adventure:

- ☆ Pick up an Adventure proposal form from the Science Kiosk
- ☆ Create a plan, include what topics will be covered
- ☆ Get teacher approval for your plan before beginning
- ☆ Bring your approved plan and your evidence of learning to the LG interview

OPTION 2

- ☆ After **reading** Pgs. 312 – 321 complete the “Check Your Understanding on: Pg. 325 #s: 1-6

- ☆ **Watch** the following video about nuclear reactions:

<https://www.youtube.com/watch?v=fES21E0qebw>

Complete the attached worksheet.

- ☆ **Create** a brochure outlining 3-5 technologies that use radioactive isotopes to function and do their jobs
- **Research** and list 5 advantages and 5 disadvantages of using nuclear reactions to produce energy. Record your sources
- ✓ **Discuss** with your teacher your argument for or against using nuclear reaction technologies. **WRITE IT DOWN! Provide** three (3) reliable sources to support your argument

OPTION 3

- ☆ **Create** a digital presentation defining AND explaining the following terms: chain reaction, emission, critical mass, proton, helium nucleus, photon, alpha particle, and beta particle

- ☆ **Watch** the following video about nuclear reactions:

<https://www.youtube.com/watch?v=fES21E0qebw>

Complete the attached worksheet.

- ☆ **Create** a digital presentation outlining 3-5 technologies that use radioactive isotopes to function..... do their jobs
- **Research** and list 5 advantages and 5 disadvantages of using nuclear reactions to produce energy. Record your sources
- ✓ **Compose** a letter to the government arguing for or against using nuclear reaction technologies. **Provide** three (3) reliable sources to support your argument