

Unit 4

NAME

Class Work

11/25/13

## 4.2 Bohr Model-Electron Configuration

DO NOW: Complete Do Now on your guided notes sheet!

Subatomic Particle	Charge	Location in an atom	Mass
Protons			
Neutrons			
Electrons			

## Objective

SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom

# Agenda:

- Do Now
- **Thought Provoker**
- Bohr Model
- Electron Configuration
- Edible Atoms Lab
- Ground & Excited State
- Kinesthetic Demo
- Classwork
- Exit Ticket
- Homework



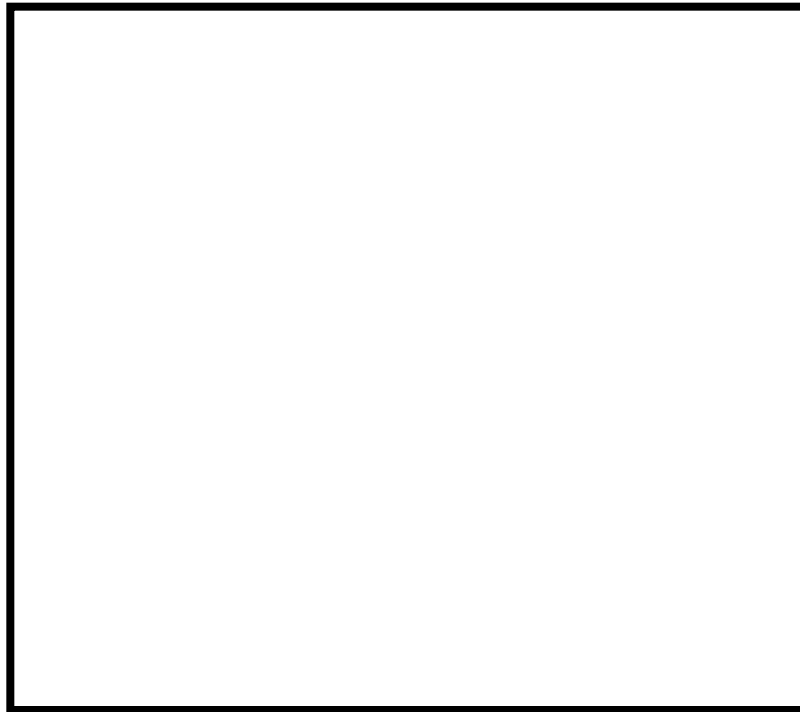
# Thought Provoker (5 minutes)

- **Directions:** Read the excerpt from your textbook about the Bohr Atomic Model (annotating the text as always!) and answer the questions below.
  - In the box, draw what you think the Bohr atomic model looks like.

Objective: SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom

# Thought Provoker (5 minutes)

- How is the Bohr Model different from Rutherford model?



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# Key Ideas of Bohr Model

- Electrons move in specific circles (energy levels) around the central nucleus
- The farther away the circles are from the nucleus, the more energy they have

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# Electron Configurations

KEY		
Atomic Mass →	12.011	← Selected Oxidation States
Symbol →	<b>C</b>	Relative atomic masses are based on $^{12}\text{C} = 12.000$
Atomic Number →	<b>6</b>	<b>Note:</b> Mass numbers in parentheses are mass numbers of the most stable or common isotope.
Electron Configuration →	2-4	

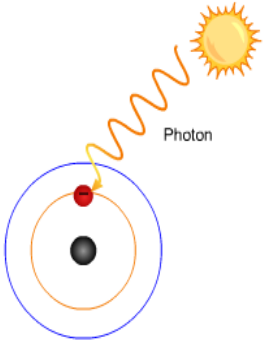
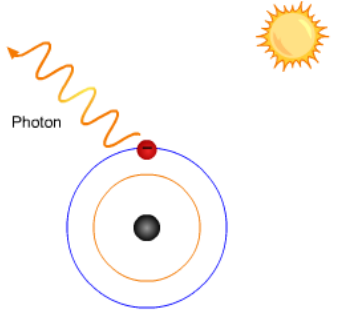
Complete questions 1-9 on your guided notes sheet to discover what electron configurations are!

Objective: SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom

# Edible Atoms Lab Activity

- *Task: demonstrate knowledge of the Bohr atom by creating and analyzing models made out of M & M*
- You have 30 minutes to complete this activity.

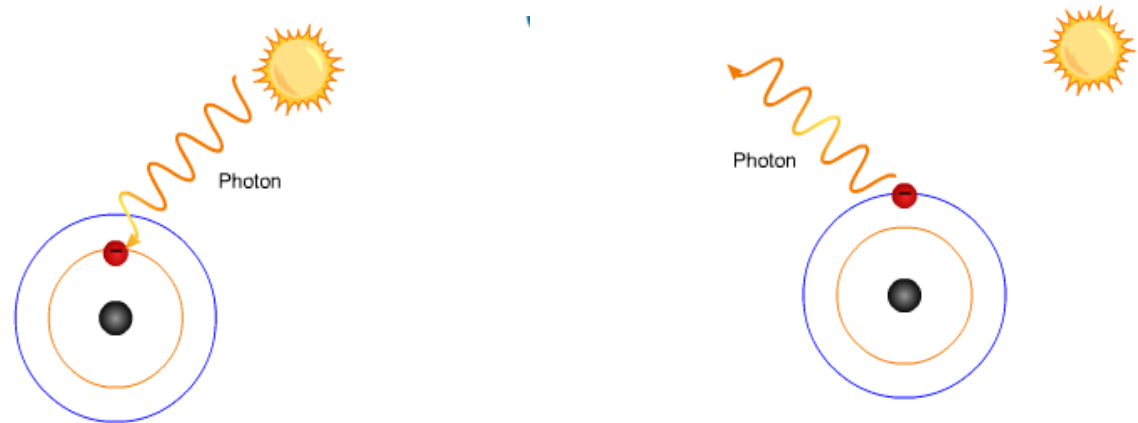
Objective: SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom

	Description of what is happening	What will happen to the electron?
		
		

Objective: SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom



# Ground & Excited State



**KEY IDEA:** As the electron loses energy, it emits a photon, which is a flash of beautifully colored light .

Objective: SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom

# Kinesthetic Demonstration

- **Directions:** Ms. Hart will demonstrate how an electron releases a photon (light) that we see as the beautiful colors we learned about yesterday in class.

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# Do you see a pattern?

Element	Ground State	Excited State(s)
Carbon	2-4	2-3-1 or 1-5
Oxygen	2-6	2-5-1 or 1-7
Aluminum	2-8-3	2-7-4 or 2-8-2-1
Phosphorus		
Calcium		

1. Does the total number of electrons in an element change when the atom is in the ground state or the excited state?
2. How would you describe the difference between the ground state electron configuration and the excited state configuration?

# Check for Understanding (1min)

- **Directions:** Answer the following question and wait to share your responses. What is a possible excited state configuration of Neon?

(1) 2-2

(2) 2-5

(3) 2-8

(4) 1-2

Objective: SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom

# Check for Understanding (1min)

- 2. What is the ground state configuration of Neon?

(1) 3-7

(2) 2-9

(3) 2-7

(4) 2-7-1

Objective: SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom

# Classwork (10-20 mins)

Quietly and in groups

Objective: SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom

[http://education-portal.com/  
academy/lesson/the-bohr-model-  
and-atomic-spectra.html#lesson](http://education-portal.com/academy/lesson/the-bohr-model-and-atomic-spectra.html#lesson)

# Exit Ticket

- **Complete your 4.2 Exit Ticket SILENTLY!**

Objective: SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom



# HOMEWORK

Complete 4.2 HW

Objective: SWBAT identify a stable and excited electron configuration for the Bohr Model of an atom