

Electron Configuration Student Activity

BUILD IT, CONFIGURE IT!

Name: _____ KEY

DIRECTIONS: Complete the following activity to extend your knowledge and practice of electron configuration.

Part 1: Given the electron configuration, build the correct atom in Collisions.

Electron Configuration	What is the atom?	# of electrons
1s ² 2s ² 2p ³	nitrogen (N)	7
1s ² 2s ² 2p ⁶ 3s ¹	sodium (Na)	11
1s ² 2s ² 2p ⁵	fluorine (F)	9
1s ² 2s ² 2p ⁶ 3s ² 3p ⁴	sulfur (S)	16
1s ² 2s ² 2p ⁶ 3s ² 3p ²	silicon (Si)	14
1s ² 2s ² 2p ⁵	fluorine (F)	9
1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ²	calcium (Ca)	20
1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ² 3d ⁷	cobalt (Co)	27
1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ² 3d ¹⁰ 4p ³	arsenic (As)	33
1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ² 3d ¹⁰ 4p ⁶ 5s ¹	rubidium (Rb)	37
1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ² 3d ¹⁰ 4p ⁶ 5s ² 4d ¹⁰ 5p ⁶ 6s ² 4f ¹⁰	ytterbium (Yb)	70

Part 2: Given the atom, build it in Collisions and determine the electron configuration.

Atom	# of electrons	Electron Configuration
He	2	1s2
Ca	20	1s2 2s2 2p6 3s2 3p6 4s2
P	15	1s2 2s2 2p6 3s2 3p3
Br	35	1s2 2s2 2p6 3s2 3p6 4s2 3d10 4p5
Si	14	1s2 2s2 2p6 3s2 3p2
Mn	25	1s2 2s2 2p6 3s2 3p6 4s2 3d5
Sr	38	1s2 2s2 2p6 3s2 3p6 4s2 3d10 4p6 5s2
Al	13	1s2 2s2 2p6 3s2 3p1
N	7	1s2 2s2 2p3
Cs	55	1s2 2s2 2p6 3s2 3p6 4s2 3d10 4p6 5s2 4d10 5p6 6s2

Part 3: Complete the challenge below!

1. What is the largest atom that you can build in Collisions?

Cs is the largest atom (by radius) that you can build; although Rn has the most protons, Cs is a larger atom.

2. What is the electron configuration of the atom?

Cs: 1s2 2s2 2p6 3s2 3p6 4s2 3d10 4p6 5s2 4d10 5p6 6s2

Rn: 1s2 2s2 2p6 3s2 3p6 4s2 3d10 4p6 5s2 4d10 5p6 6s2 4f14 5d10 6p6