

Name: _____

Collisions Username: _____

Class: _____

Atoms Quest

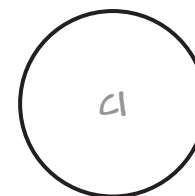
Now that you have completed the Atoms Challenges, you are ready to conduct this Atoms Quest.

MISSION 1. GATHER YOUR INTEL

Use your Collisions gameplay experience to gather the following intel:

1. Label the correct element symbol in the circle.
2. List the # of protons found in the atom.
3. List the # of electrons found in the atom.

Sample Target



of Protons: 17
of Electrons: 17

MISSION 2. EXPOSE THE DETAILS

Use your expertise to expose the following information for each target atom.

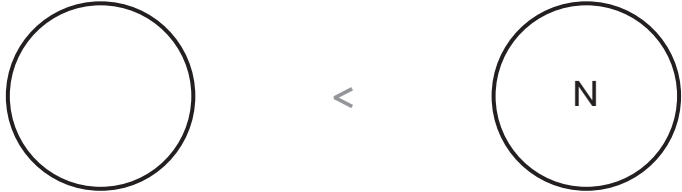
Sample Target	
Element Name	Chlorine
Atomic Number	17
Mass Number	35.453
# of Neutrons	17
Metal, Nonmetal, or Metalloid?	Nonmetal
Electron Configuration	$1s^2 2s^2 2p^6 3s^2 3p^5$
# of Valence Electrons	7
Group Name	Halogen
Number of Energy Levels	3
# of Unpaired Electrons	1

Atoms - Challenge Level 1

MISSION 1. GATHER YOUR INTEL

(smallest) \longrightarrow (largest)

Atom 1 Atom 2



of Protons: _____ # of Protons: _____
of Electrons: _____ # of Electrons: _____

MISSION 2. EXPOSE THE DETAILS

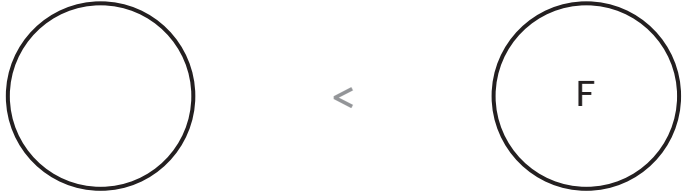
	Atom 1	Atom 2
Element Name		
Atomic Number		
Mass Number		
# of Neutrons		
Metal, Nonmetal, or Metalloid?		
Electron Configuration		
# of Valence Electrons		
Group Name		
Number of Energy Levels		
# of Unpaired Electrons		

Atoms - Challenge Level 2

MISSION 1. GATHER YOUR INTEL

(smallest) \longrightarrow (largest)

Atom 1 Atom 2



of Protons: _____ # of Protons: _____
of Electrons: _____ # of Electrons: _____

MISSION 2. EXPOSE THE DETAILS

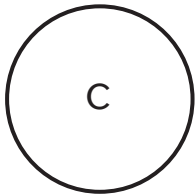
	Atom 1	Atom 2
Element Name		
Atomic Number		
Mass Number		
# of Neutrons		
Metal, Nonmetal, or Metalloid?		
Electron Configuration		
# of Valence Electrons		
Group Name		
Number of Energy Levels		
# of Unpaired Electrons		

Atoms - Challenge Level 3

MISSION 1. GATHER YOUR INTEL

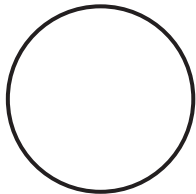
(smallest \longrightarrow largest)

Atom 1



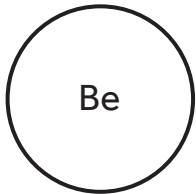
of Protons: ____
of Electrons: ____

Atom 2



of Protons: ____
of Electrons: ____

Atom 3



of Protons: ____
of Electrons: ____

< <

MISSION 2. EXPOSE THE DETAILS

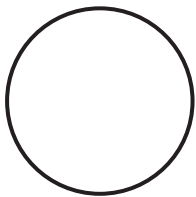
	Atom 1	Atom 2	Atom 3
Element Name			
Atomic Number			
Mass Number			
# of Neutrons			
Metal, Nonmetal, or Metalloid?			
Electron Configuration			
# of Valence Electrons			
Group Name			
Number of Energy Levels			
# of Unpaired Electrons			

Atoms - Challenge Level 4

MISSION 1. GATHER YOUR INTEL

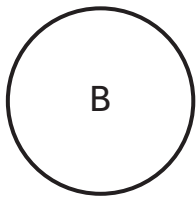
(smallest \longrightarrow largest)

Atom 1



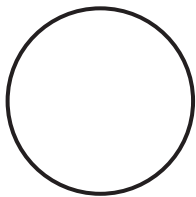
of Protons: ____
of Electrons: ____

Atom 2



of Protons: ____
of Electrons: ____

Atom 3



of Protons: ____
of Electrons: ____

< <

MISSION 2. EXPOSE THE DETAILS

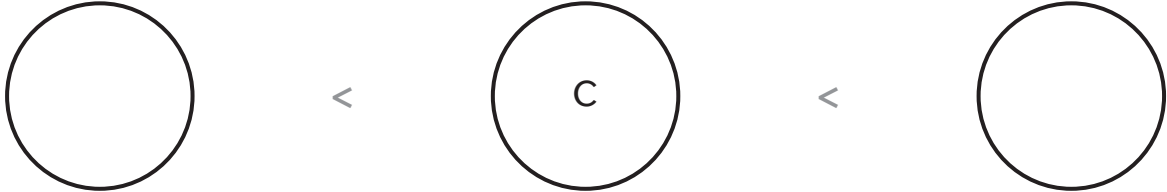
	Atom 1	Atom 2	Atom 3
Element Name			
Atomic Number			
Mass Number			
# of Neutrons			
Metal, Nonmetal, or Metalloid?			
Electron Configuration			
# of Valence Electrons			
Group Name			
Number of Energy Levels			
# of Unpaired Electrons			

Atoms - Challenge Level 5

MISSION 1. GATHER YOUR INTEL

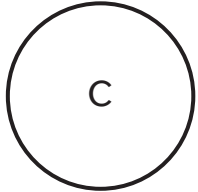
(smallest \longrightarrow largest)

Atom 1



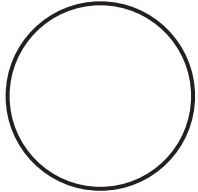
of Protons: ____
of Electrons: ____

Atom 2



of Protons: ____
of Electrons: ____

Atom 3



of Protons: ____
of Electrons: ____

< <

MISSION 2. EXPOSE THE DETAILS

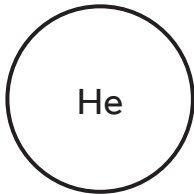
	Atom 1	Atom 2	Atom 3
Element Name			
Atomic Number			
Mass Number			
# of Neutrons			
Metal, Nonmetal, or Metalloid?			
Electron Configuration			
# of Valence Electrons			
Group Name			
Number of Energy Levels			
# of Unpaired Electrons			

Atoms - Challenge Level 6

MISSION 1. GATHER YOUR INTEL

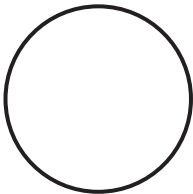
(smallest \longrightarrow largest)

Atom 1



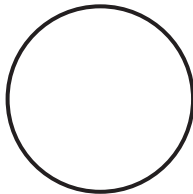
of Protons: _____
of Electrons: _____

Atom 2



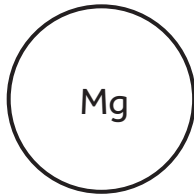
of Protons: _____
of Electrons: _____

Atom 3



of Protons: _____
of Electrons: _____

Atom 4



of Protons: _____
of Electrons: _____

< < <

MISSION 2. EXPOSE THE DETAILS

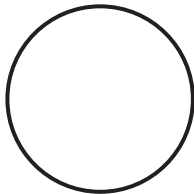
	Atom 1	Atom 2	Atom 3	Atom 4
Element Name				
Atomic Number				
Mass Number				
# of Neutrons				
Metal, Nonmetal, Metalloid?				
Electron Configuration				
# of Valence Electrons				
Group Name				
# of Energy Levels				
# of Unpaired Electrons				

Atoms - Challenge Level 7

MISSION 1. GATHER YOUR INTEL

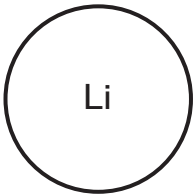
(smallest \longrightarrow largest)

Atom 1



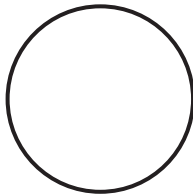
of Protons: _____
of Electrons: _____

Atom 2



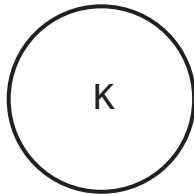
of Protons: _____
of Electrons: _____

Atom 3



of Protons: _____
of Electrons: _____

Atom 4



of Protons: _____
of Electrons: _____

< < <

MISSION 2. EXPOSE THE DETAILS

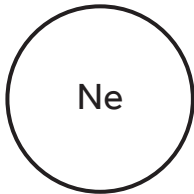
	Atom 1	Atom 2	Atom 3	Atom 4
Element Name				
Atomic Number				
Mass Number				
# of Neutrons				
Metal, Nonmetal, Metalloid?				
Electron Configuration				
# of Valence Electrons				
Group Name				
# of Energy Levels				
# of Unpaired Electrons				

Atoms - Challenge Level 8

MISSION 1. GATHER YOUR INTEL

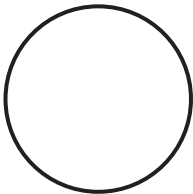
(smallest \longrightarrow largest)

Atom 1



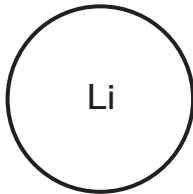
of Protons: _____
of Electrons: _____

Atom 2



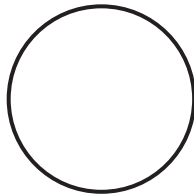
of Protons: _____
of Electrons: _____

Atom 3



of Protons: _____
of Electrons: _____

Atom 4



of Protons: _____
of Electrons: _____

< < <

MISSION 2. EXPOSE THE DETAILS

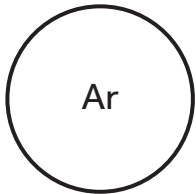
	Atom 1	Atom 2	Atom 3	Atom 4
Element Name				
Atomic Number				
Mass Number				
# of Neutrons				
Metal, Nonmetal, Metalloid?				
Electron Configuration				
# of Valence Electrons				
Group Name				
# of Energy Levels				
# of Unpaired Electrons				

Atoms - Challenge Level 9

MISSION 1. GATHER YOUR INTEL

(smallest → largest)

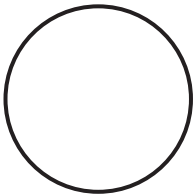
Atom 1



of Protons: ____
of Electrons: ____

<

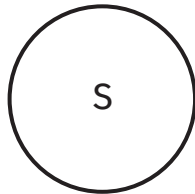
Atom 2



of Protons: ____
of Electrons: ____

<

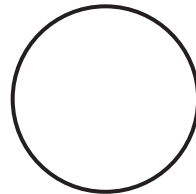
Atom 3



of Protons: ____
of Electrons: ____

<

Atom 4



of Protons: ____
of Electrons: ____

MISSION 2. EXPOSE THE DETAILS

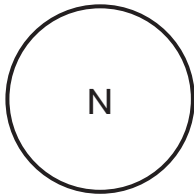
	Atom 1	Atom 2	Atom 3	Atom 4
Element Name				
Atomic Number				
Mass Number				
# of Neutrons				
Metal, Nonmetal, Metalloid?				
Electron Configuration				
# of Valence Electrons				
Group Name				
# of Energy Levels				
# of Unpaired Electrons				

Atoms - Challenge Level 10

MISSION 1. GATHER YOUR INTEL

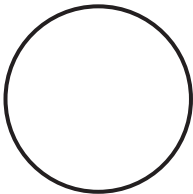
(smallest \longrightarrow largest)

Atom 1



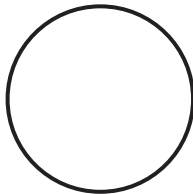
of Protons: _____
of Electrons: _____

Atom 2



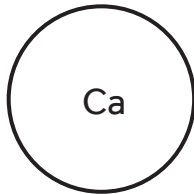
of Protons: _____
of Electrons: _____

Atom 3



of Protons: _____
of Electrons: _____

Atom 4



of Protons: _____
of Electrons: _____

< < <

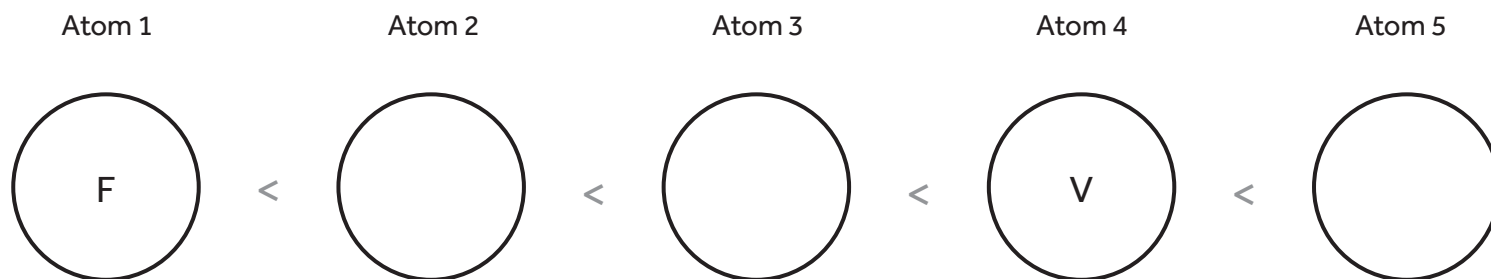
MISSION 2. EXPOSE THE DETAILS

	Atom 1	Atom 2	Atom 3	Atom 4
Element Name				
Atomic Number				
Mass Number				
# of Neutrons				
Metal, Nonmetal, Metalloid?				
Electron Configuration				
# of Valence Electrons				
Group Name				
# of Energy Levels				
# of Unpaired Electrons				

Atoms - Challenge Level 11

MISSION 1. GATHER YOUR INTEL

(smallest \longrightarrow largest)



of Protons: _____
of Electrons: _____

of Protons: _____
of Electrons: _____

of Protons: _____
of Electrons: _____

of Protons: _____
of Electrons: _____

of Protons: _____
of Electrons: _____

MISSION 2. EXPOSE THE DETAILS

	Atom 1	Atom 2	Atom 3	Atom 4	Atom 5
Element Name					
Atomic Number					
Mass Number					
# of Neutrons					
Metal, Nonmetal, Metalloid?					
Electron Configuration					
# of Valence Electrons					
Group Name					
# of Energy Levels					
# of Unpaired Electrons					