

Name: \_\_\_\_\_

Collisions Username: \_\_\_\_\_

Class: \_\_\_\_\_

## Atoms Quest

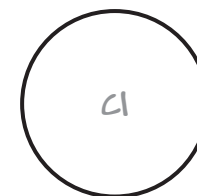
Now that you have completed the Atoms Challenges, you are ready to conduct this Atoms Quest.

### 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.

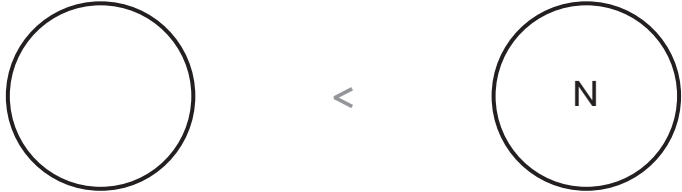
Sample Target	
Element Name	Chlorine
Atomic Number	17
Mass Number	35.453
# of Neutrons	17
Metal, Nonmetal, or Metalloid?	Nonmetal
Electron Configuration	$1s^2 2s^2 2p^6 3s^2 3p^5$
# of Valence Electrons	7
Group Name	Halogen
Number of Energy Levels	3
# of Unpaired Electrons	1

# 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

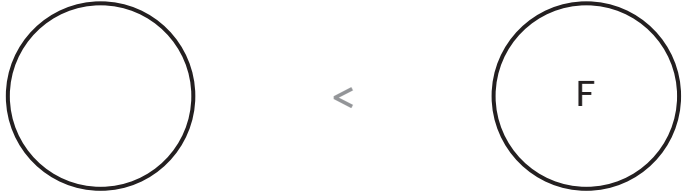
	Atom 1	Atom 2
Element Name		
Atomic Number		
Mass Number		
# of Neutrons		
Metal, Nonmetal, or Metalloid?		
Electron Configuration		
# of Valence Electrons		
Group Name		
Number of Energy Levels		
# of Unpaired Electrons		

# 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

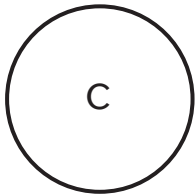
	Atom 1	Atom 2
Element Name		
Atomic Number		
Mass Number		
# of Neutrons		
Metal, Nonmetal, or Metalloid?		
Electron Configuration		
# of Valence Electrons		
Group Name		
Number of Energy Levels		
# of Unpaired Electrons		

# Atoms - Challenge Level 3

## MISSION 1. GATHER YOUR INTEL

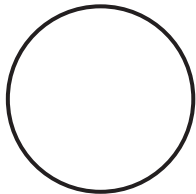
(smallest  $\longrightarrow$  largest)

Atom 1



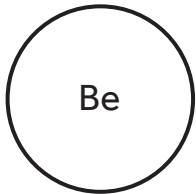
# of Protons: \_\_\_\_  
# of Electrons: \_\_\_\_

Atom 2



# of Protons: \_\_\_\_  
# of Electrons: \_\_\_\_

Atom 3



# of Protons: \_\_\_\_  
# of Electrons: \_\_\_\_

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## MISSION 2. EXPOSE THE DETAILS

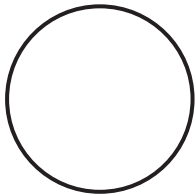
	Atom 1	Atom 2	Atom 3
Element Name			
Atomic Number			
Mass Number			
# of Neutrons			
Metal, Nonmetal, or Metalloid?			
Electron Configuration			
# of Valence Electrons			
Group Name			
Number of Energy Levels			
# of Unpaired Electrons			

# Atoms - Challenge Level 4

## MISSION 1. GATHER YOUR INTEL

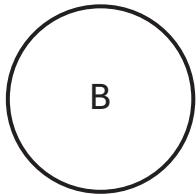
(smallest  $\longrightarrow$  largest)

Atom 1



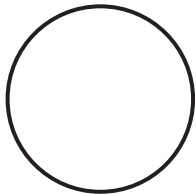
# of Protons: \_\_\_\_  
# of Electrons: \_\_\_\_

Atom 2



# of Protons: \_\_\_\_  
# of Electrons: \_\_\_\_

Atom 3



# of Protons: \_\_\_\_  
# of Electrons: \_\_\_\_

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## MISSION 2. EXPOSE THE DETAILS

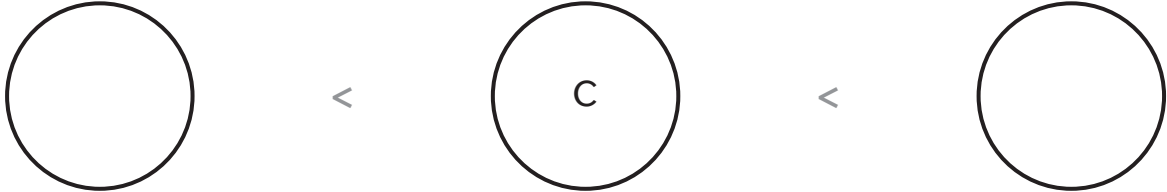
	Atom 1	Atom 2	Atom 3
Element Name			
Atomic Number			
Mass Number			
# of Neutrons			
Metal, Nonmetal, or Metalloid?			
Electron Configuration			
# of Valence Electrons			
Group Name			
Number of Energy Levels			
# of Unpaired Electrons			

# Atoms - Challenge Level 5

## MISSION 1. GATHER YOUR INTEL

(smallest  $\longrightarrow$  largest)

Atom 1                      Atom 2                      Atom 3



# of Protons: \_\_\_\_\_                      # of Protons: \_\_\_\_\_                      # of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_                      # of Electrons: \_\_\_\_\_                      # of Electrons: \_\_\_\_\_

## MISSION 2. EXPOSE THE DETAILS

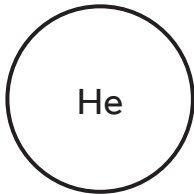
	Atom 1	Atom 2	Atom 3
Element Name			
Atomic Number			
Mass Number			
# of Neutrons			
Metal, Nonmetal, or Metalloid?			
Electron Configuration			
# of Valence Electrons			
Group Name			
Number of Energy Levels			
# of Unpaired Electrons			

# Atoms - Challenge Level 6

## MISSION 1. GATHER YOUR INTEL

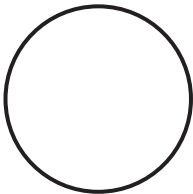
(smallest  $\longrightarrow$  largest)

Atom 1



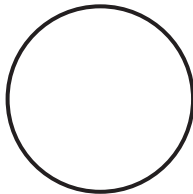
# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 2



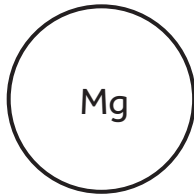
# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 3



# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 4



# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

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## MISSION 2. EXPOSE THE DETAILS

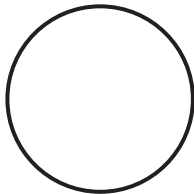
	Atom 1	Atom 2	Atom 3	Atom 4
Element Name				
Atomic Number				
Mass Number				
# of Neutrons				
Metal, Nonmetal, Metalloid?				
Electron Configuration				
# of Valence Electrons				
Group Name				
# of Energy Levels				
# of Unpaired Electrons				

# Atoms - Challenge Level 7

## MISSION 1. GATHER YOUR INTEL

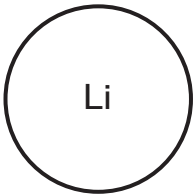
(smallest  $\longrightarrow$  largest)

Atom 1



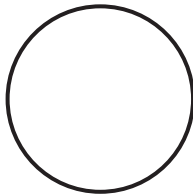
# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 2



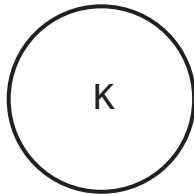
# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 3



# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 4



# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

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## 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				

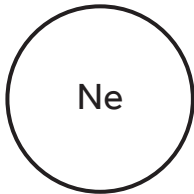


# Atoms - Challenge Level 8

## MISSION 1. GATHER YOUR INTEL

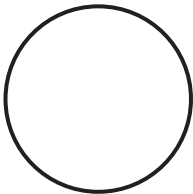
(smallest  $\longrightarrow$  largest)

Atom 1



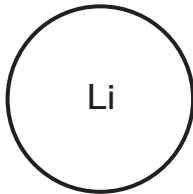
# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 2



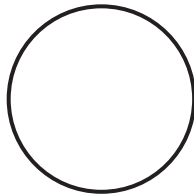
# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 3



# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 4



# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

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## MISSION 2. EXPOSE THE DETAILS

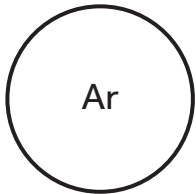
	Atom 1	Atom 2	Atom 3	Atom 4
Element Name				
Atomic Number				
Mass Number				
# of Neutrons				
Metal, Nonmetal, Metalloid?				
Electron Configuration				
# of Valence Electrons				
Group Name				
# of Energy Levels				
# of Unpaired Electrons				

# Atoms - Challenge Level 9

## MISSION 1. GATHER YOUR INTEL

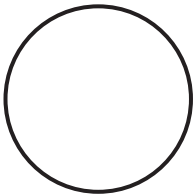
(smallest  $\longrightarrow$  largest)

Atom 1



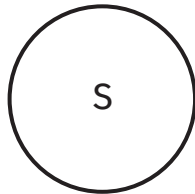
# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 2



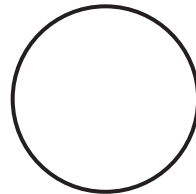
# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 3



# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 4



# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

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## MISSION 2. EXPOSE THE DETAILS

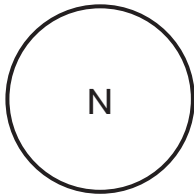
	Atom 1	Atom 2	Atom 3	Atom 4
Element Name				
Atomic Number				
Mass Number				
# of Neutrons				
Metal, Nonmetal, Metalloid?				
Electron Configuration				
# of Valence Electrons				
Group Name				
# of Energy Levels				
# of Unpaired Electrons				

# Atoms - Challenge Level 10

## MISSION 1. GATHER YOUR INTEL

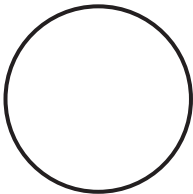
(smallest  $\longrightarrow$  largest)

Atom 1



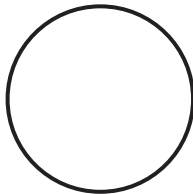
# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 2



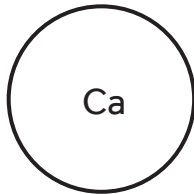
# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 3



# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

Atom 4



# of Protons: \_\_\_\_\_  
# of Electrons: \_\_\_\_\_

<      <      <

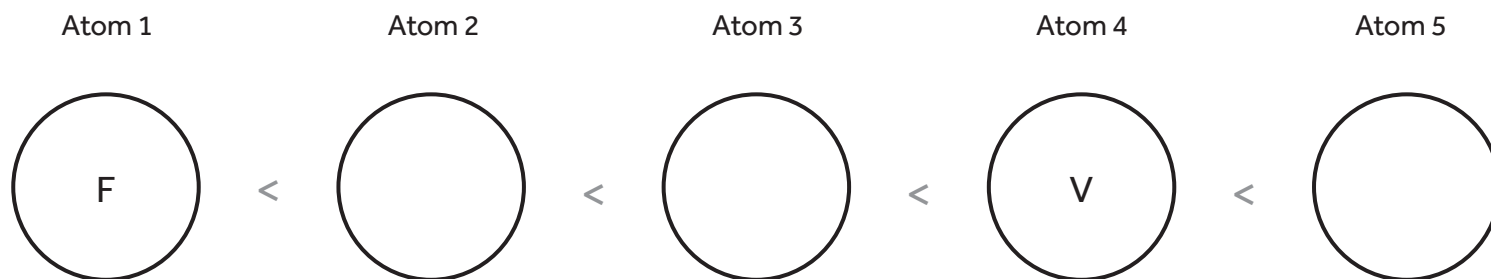
## MISSION 2. EXPOSE THE DETAILS

	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					