

# Be a Scientist & Investigate Atoms

The Adventures of Addie the Atom



# **Be a Scientist & Investigate Atoms**

The Adventures of Addie the Atom

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# Teacher & Parent Instructions

Activity: Be a Scientist & Investigate Atoms

Activity created to accompany the children's book series: The Adventures of Addie the Atom.

Audience: Students Grades 2-8

Goal: Use the Periodic Table to identify atoms.

The Adventures of Addie the Atom book series was created to introduce students to the concept of atoms. The “Be a Scientist & Investigate Atoms” activity was created to extend student knowledge and practice after reading the books.

Set-Up:

- Choose the appropriate Version of “Be a Scientist & Investigate Atoms” for your student/class.
  - “Be a Scientist & Investigate Atoms – Version A”: Protons + Periodic Table
  - “Be a Scientist & Investigate Atoms – Version B”: Protons + Atomic Number + Periodic Table
- Choose the appropriate Periodic Table for your student/class.
  - “Periodic Table A – Full/Complete”: Protons/Atomic Number + Symbol + Name + Atomic Mass + Group Numbers + Period Numbers
  - “Periodic Table B – Simplified”: Protons/Atomic Number + Symbol + Name
- Print
  - Print 1 copy per student of the “Be a Scientist & Investigate Atoms” worksheet.
  - Print a class set of “Periodic Tables” (*Optional: Print on cardstock, and laminate*).
  - Print 1 color copy of each atom (“Atoms A – L”) (*Optional: Print on cardstock, and laminate*).
- Post each atom (“Atoms A – L”) around the classroom.

Directions:

Step 1: Give each student a copy of the “Be a Scientist & Investigate Atoms” worksheet and a “Periodic Table.”

Step 2: Place students in groups of 2.

Step 3: Each student group will travel around the room to investigate each atom and complete their “Be a Scientist & Investigate Atoms” worksheet

Note: Some atoms in this activity are ions (atoms with a positive or negative charge). The charges for these ions are not included in the activity. Students are NOT expected to know and understand ions and charges at this point in their learning journey.

# Suggested Lesson Plans

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## Version A: Protons + Periodic Table

### Step 1: Read the Books

The Adventures of Addie the Atom (Books Available for Purchase on Amazon)

- Book 1: Who am I?
- Book 2: New Friends

### Step 2: Learn More About Atoms & Elements

(FREE Educational Resources available at <https://www.chemistrywithconfidence.com/childrensbooks>)

- “The World is Made of Atoms” Presentation

### Step 3: Read the Book

The Adventures of Addie the Atom (Books Available for Purchase on Amazon)

- Book 3: The Big Discovery

### **Step 4: Complete the “Be a Scientist & Investigate Atoms – Version A” Activity**

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## Version B: Protons + Atomic Number + Periodic Table

### Step 1: Read the Books

The Adventures of Addie the Atom (Books Available for Purchase on Amazon)

- Book 1: Who am I?
- Book 2: New Friends

### Step 2: Learn More About Atoms & Elements

(FREE Educational Resources available at <https://www.chemistrywithconfidence.com/childrensbooks>)

- “The World is Made of Atoms” Presentation

### Step 3: Read the Book

The Adventures of Addie the Atom (Books Available for Purchase on Amazon)

- Book 3: The Big Discovery

### Step 4: Learn More About Atoms & Elements

(FREE Educational Resources available at <https://www.chemistrywithconfidence.com/childrensbooks>)

- “Atom Vocabulary” Presentation
- “Atom Vocabulary Game”

### **Step 5: Complete the “Be a Scientist & Investigate Atoms – Version B” Activity**

# Be a Scientist & Investigate Atoms

Version A

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

The Problem: Dr. Rodriguez has 12 atoms, but Dr. Rodriguez has a problem. She does not know the name (identity) of these 12 atoms.

Your Job: Today, you are a scientist!

Goal: Help Dr. Rodriguez find the name (identity) of each atom.

Directions: Each unknown atom has been assigned a letter A–L, and a picture of each atom has been posted around the room. With a partner, examine each atom. Start with one atom. Determine the number of protons in the atom. Then, use a Periodic Table to determine the name (identity) of the atom. Repeat this process for each atom. Record all of your information in the atom chart below.

Atom Chart		
	Number of Protons	Name (Identity) of Atom
Atom A	20	Calcium
Atom B	13	Aluminum
Atom C	1	Hydrogen
Atom D	17	Chlorine
Atom E	12	Magnesium
Atom F	18	Argon
Atom G	6	Carbon
Atom H	15	Phosphorus
Atom I	11	Sodium
Atom J	3	Lithium
Atom K	16	Sulfur
Atom L	7	Nitrogen

# Be a Scientist & Investigate Atoms

Version B

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

The Problem: Dr. Rodriguez has 12 atoms, but Dr. Rodriguez has a problem. She does not know the name (identity) of these 12 atoms.

Your Job: Today, you are a scientist!

Goal: Help Dr. Rodriguez find the name (identity) of each atom.

Directions: Each unknown atom has been assigned a letter A–L, and a picture of each atom has been posted around the room. With a partner, examine each atom. Start with one atom. Determine the number of protons in the atom, and determine the atomic number for the atom. Then, use a Periodic Table to determine the name (identity) of the atom. Repeat this process for each atom. Record all of your information in the atom chart below.

<b>Atom Chart</b>			
	<b>Number of Protons</b>	<b>Atomic Number</b>	<b>Name (Identity) of Atom</b>
Atom A	<b>20</b>	<b>20</b>	<b>Calcium</b>
Atom B	<b>13</b>	<b>13</b>	<b>Aluminum</b>
Atom C	<b>1</b>	<b>1</b>	<b>Hydrogen</b>
Atom D	<b>17</b>	<b>17</b>	<b>Chlorine</b>
Atom E	<b>12</b>	<b>12</b>	<b>Magnesium</b>
Atom F	<b>18</b>	<b>18</b>	<b>Argon</b>
Atom G	<b>6</b>	<b>6</b>	<b>Carbon</b>
Atom H	<b>15</b>	<b>15</b>	<b>Phosphorus</b>
Atom I	<b>11</b>	<b>11</b>	<b>Sodium</b>
Atom J	<b>3</b>	<b>3</b>	<b>Lithium</b>
Atom K	<b>16</b>	<b>16</b>	<b>Sulfur</b>
Atom L	<b>7</b>	<b>7</b>	<b>Nitrogen</b>



**Periodic Table**  
Periodic Table B - Simplified  
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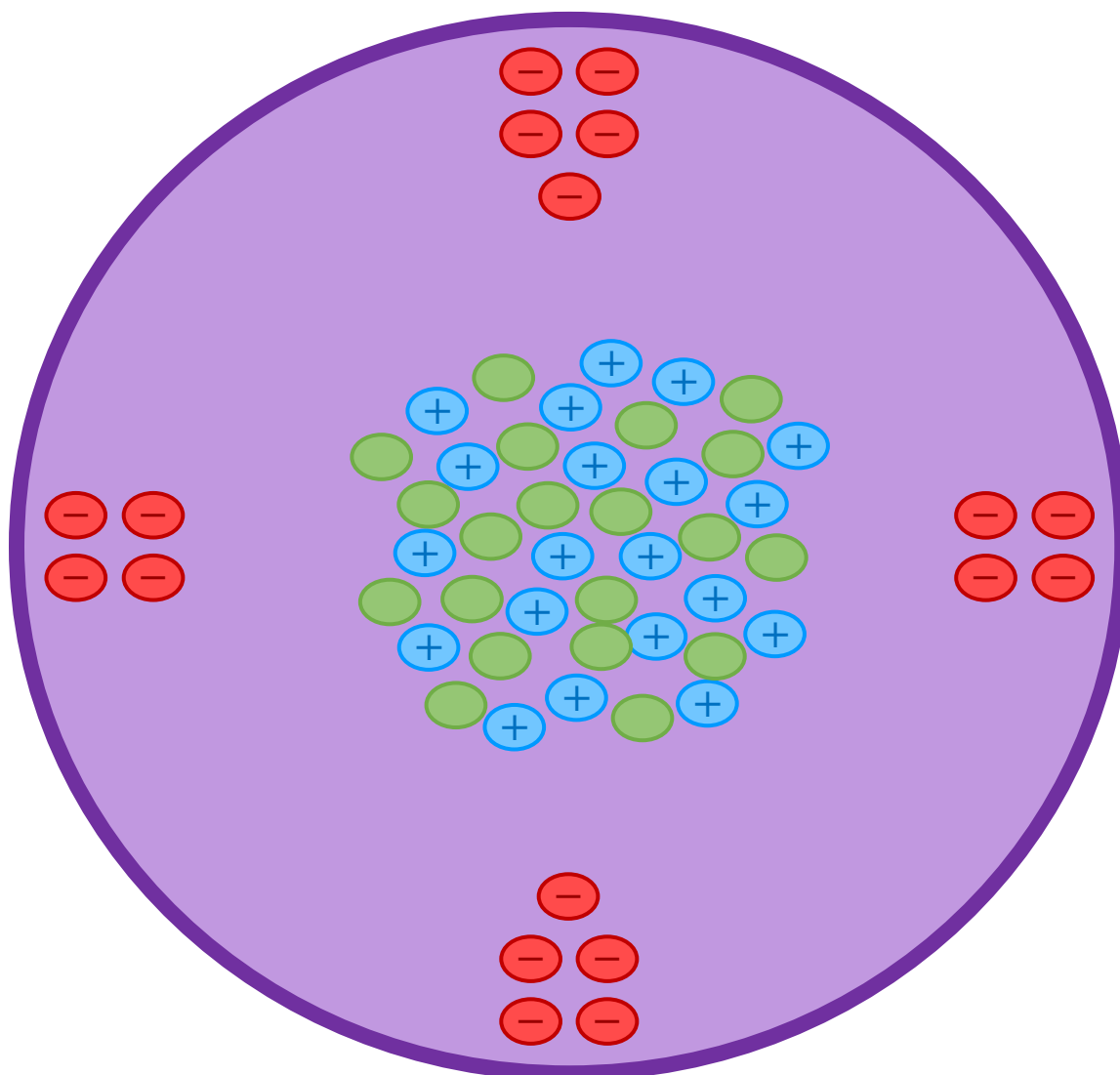
<b>1</b> <b>H</b> Hydrogen											<b>2</b> <b>He</b> Helium																																																										
<b>3</b> <b>Li</b> Lithium	<b>4</b> <b>Be</b> Beryllium											<b>9</b> <b>F</b> Fluorine																																																									
<b>11</b> <b>Na</b> Sodium	<b>12</b> <b>Mg</b> Magnesium											<b>17</b> <b>Cl</b> Chlorine																																																									
<b>19</b> <b>K</b> Potassium	<b>20</b> <b>Ca</b> Calcium	<b>21</b> <b>Sc</b> Scandium	<b>22</b> <b>Ti</b> Titanium	<b>23</b> <b>V</b> Vanadium	<b>24</b> <b>Cr</b> Chromium	<b>25</b> <b>Mn</b> Manganese	<b>26</b> <b>Fe</b> Iron	<b>27</b> <b>Co</b> Cobalt	<b>28</b> <b>Ni</b> Nickel	<b>29</b> <b>Cu</b> Copper	<b>30</b> <b>Zn</b> Zinc	<b>35</b> <b>Br</b> Bromine																																																									
<b>37</b> <b>Rb</b> Rubidium	<b>38</b> <b>Sr</b> Strontium	<b>39</b> <b>Y</b> Yttrium	<b>40</b> <b>Zr</b> Zirconium	<b>41</b> <b>Nb</b> Niobium	<b>42</b> <b>Mo</b> Molybdenum	<b>43</b> <b>Tc</b> Technetium	<b>44</b> <b>Ru</b> Ruthenium	<b>45</b> <b>Rh</b> Rhodium	<b>46</b> <b>Pd</b> Palladium	<b>47</b> <b>Ag</b> Silver	<b>48</b> <b>Cd</b> Cadmium	<b>53</b> <b>I</b> Iodine																																																									
<b>55</b> <b>Cs</b> Cesium	<b>56</b> <b>Ba</b> Barium	<b>71</b> <b>Lu</b> Lutetium	<b>72</b> <b>Hf</b> Hafnium	<b>73</b> <b>Ta</b> Tantalum	<b>74</b> <b>W</b> Tungsten	<b>75</b> <b>Re</b> Rhenium	<b>76</b> <b>Os</b> Osmium	<b>77</b> <b>Ir</b> Iridium	<b>78</b> <b>Pt</b> Platinum	<b>79</b> <b>Au</b> Gold	<b>80</b> <b>Hg</b> Mercury	<b>85</b> <b>At</b> Astatine																																																									
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<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1"> <tbody> <tr> <td><b>5</b> <b>B</b> Boron</td> <td><b>13</b> <b>Al</b> Aluminum</td> <td><b>14</b> <b>Si</b> Silicon</td> <td><b>15</b> <b>P</b> Phosphorus</td> <td><b>16</b> <b>S</b> Sulfur</td> <td><b>31</b> <b>Ga</b> Gallium</td> <td><b>32</b> <b>Ge</b> Germanium</td> <td><b>33</b> <b>As</b> Arsenic</td> <td><b>34</b> <b>Se</b> Selenium</td> <td><b>35</b> <b>Br</b> Bromine</td> <td><b>51</b> <b>Sb</b> Antimony</td> <td><b>52</b> <b>Te</b> Tellurium</td> <td><b>81</b> <b>Tl</b> Thallium</td> <td><b>82</b> <b>Pb</b> Lead</td> <td><b>83</b> <b>Bi</b> Bismuth</td> <td><b>84</b> <b>Po</b> Polonium</td> <td><b>85</b> <b>At</b> Astatine</td> <td><b>86</b> <b>Xe</b> Xenon</td> </tr> <tr> <td><b>57</b> <b>La</b> Lanthanum</td> <td><b>58</b> <b>Ce</b> Cerium</td> <td><b>59</b> <b>Pr</b> Praseodymium</td> <td><b>60</b> <b>Nd</b> Neodymium</td> <td><b>61</b> <b>Pm</b> Promethium</td> <td><b>62</b> <b>Sm</b> Samarium</td> <td><b>63</b> <b>Eu</b> Europium</td> <td><b>64</b> <b>Gd</b> Gadolinium</td> <td><b>65</b> <b>Tb</b> Terbium</td> <td><b>66</b> <b>Dy</b> Dysprosium</td> <td><b>67</b> <b>Ho</b> Holmium</td> <td><b>68</b> <b>Er</b> Erbium</td> <td><b>69</b> <b>Tm</b> Thulium</td> <td><b>70</b> <b>Yb</b> Ytterbium</td> </tr> <tr> <td><b>89</b> <b>Ac</b> Actinium</td> <td><b>90</b> <b>Th</b> Thorium</td> <td><b>91</b> <b>Pa</b> Protactinium</td> <td><b>92</b> <b>U</b> Uranium</td> <td><b>93</b> <b>Np</b> Neptunium</td> <td><b>94</b> <b>Pu</b> Plutonium</td> <td><b>95</b> <b>Am</b> Americium</td> <td><b>96</b> <b>Cm</b> Curium</td> <td><b>97</b> <b>Bk</b> Berkelium</td> <td><b>98</b> <b>Cf</b> Californium</td> <td><b>99</b> <b>Es</b> Einsteinium</td> <td><b>100</b> <b>Fm</b> Fermium</td> <td><b>101</b> <b>Md</b> Mendelevium</td> <td><b>102</b> <b>No</b> Nobelium</td> </tr> </tbody> </table> </div> <div style="width: 45%; text-align: right;"> <table border="1"> <tbody> <tr> <td><b>118</b> <b>Og</b> Oganesson</td> <td><b>119</b> <b>Ts</b> Tennessine</td> <td><b>120</b> <b>Lv</b> Livermorium</td> <td><b>121</b> <b>Mc</b> Moscovium</td> <td><b>122</b> <b>Fl</b> Flerovium</td> <td><b>123</b> <b>Uu</b> Ununtrium</td> <td><b>124</b> <b>Uu</b> Ununquadium</td> <td><b>125</b> <b>Uu</b> Ununpentium</td> <td><b>126</b> <b>Uu</b> Ununhexium</td> <td><b>127</b> <b>Uu</b> Ununseptium</td> <td><b>128</b> <b>Uu</b> Ununoctium</td> </tr> </tbody> </table> </div> </div>													<b>5</b> <b>B</b> Boron	<b>13</b> <b>Al</b> Aluminum	<b>14</b> <b>Si</b> Silicon	<b>15</b> <b>P</b> Phosphorus	<b>16</b> <b>S</b> Sulfur	<b>31</b> <b>Ga</b> Gallium	<b>32</b> <b>Ge</b> Germanium	<b>33</b> <b>As</b> Arsenic	<b>34</b> <b>Se</b> Selenium	<b>35</b> <b>Br</b> Bromine	<b>51</b> <b>Sb</b> Antimony	<b>52</b> <b>Te</b> Tellurium	<b>81</b> <b>Tl</b> Thallium	<b>82</b> <b>Pb</b> Lead	<b>83</b> <b>Bi</b> Bismuth	<b>84</b> <b>Po</b> Polonium	<b>85</b> <b>At</b> Astatine	<b>86</b> <b>Xe</b> Xenon	<b>57</b> <b>La</b> Lanthanum	<b>58</b> <b>Ce</b> Cerium	<b>59</b> <b>Pr</b> Praseodymium	<b>60</b> <b>Nd</b> Neodymium	<b>61</b> <b>Pm</b> Promethium	<b>62</b> <b>Sm</b> Samarium	<b>63</b> <b>Eu</b> Europium	<b>64</b> <b>Gd</b> Gadolinium	<b>65</b> <b>Tb</b> Terbium	<b>66</b> <b>Dy</b> Dysprosium	<b>67</b> <b>Ho</b> Holmium	<b>68</b> <b>Er</b> Erbium	<b>69</b> <b>Tm</b> Thulium	<b>70</b> <b>Yb</b> Ytterbium	<b>89</b> <b>Ac</b> Actinium	<b>90</b> <b>Th</b> Thorium	<b>91</b> <b>Pa</b> Protactinium	<b>92</b> <b>U</b> Uranium	<b>93</b> <b>Np</b> Neptunium	<b>94</b> <b>Pu</b> Plutonium	<b>95</b> <b>Am</b> Americium	<b>96</b> <b>Cm</b> Curium	<b>97</b> <b>Bk</b> Berkelium	<b>98</b> <b>Cf</b> Californium	<b>99</b> <b>Es</b> Einsteinium	<b>100</b> <b>Fm</b> Fermium	<b>101</b> <b>Md</b> Mendelevium	<b>102</b> <b>No</b> Nobelium	<b>118</b> <b>Og</b> Oganesson	<b>119</b> <b>Ts</b> Tennessine	<b>120</b> <b>Lv</b> Livermorium	<b>121</b> <b>Mc</b> Moscovium	<b>122</b> <b>Fl</b> Flerovium	<b>123</b> <b>Uu</b> Ununtrium	<b>124</b> <b>Uu</b> Ununquadium	<b>125</b> <b>Uu</b> Ununpentium	<b>126</b> <b>Uu</b> Ununhexium	<b>127</b> <b>Uu</b> Ununseptium	<b>128</b> <b>Uu</b> Ununoctium
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# **Atom Cards**

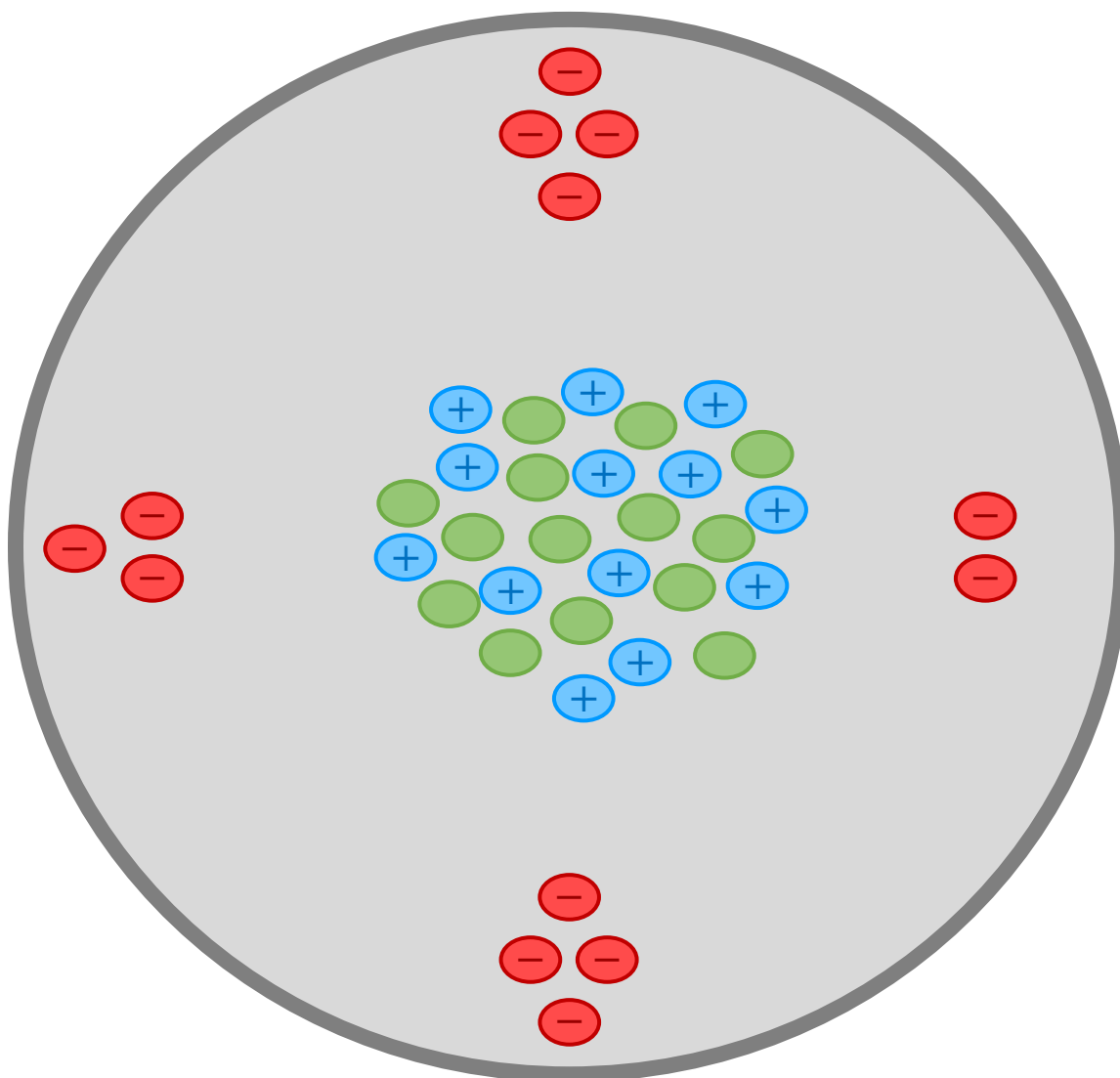
## **(Atoms A – L)**

# Atom A



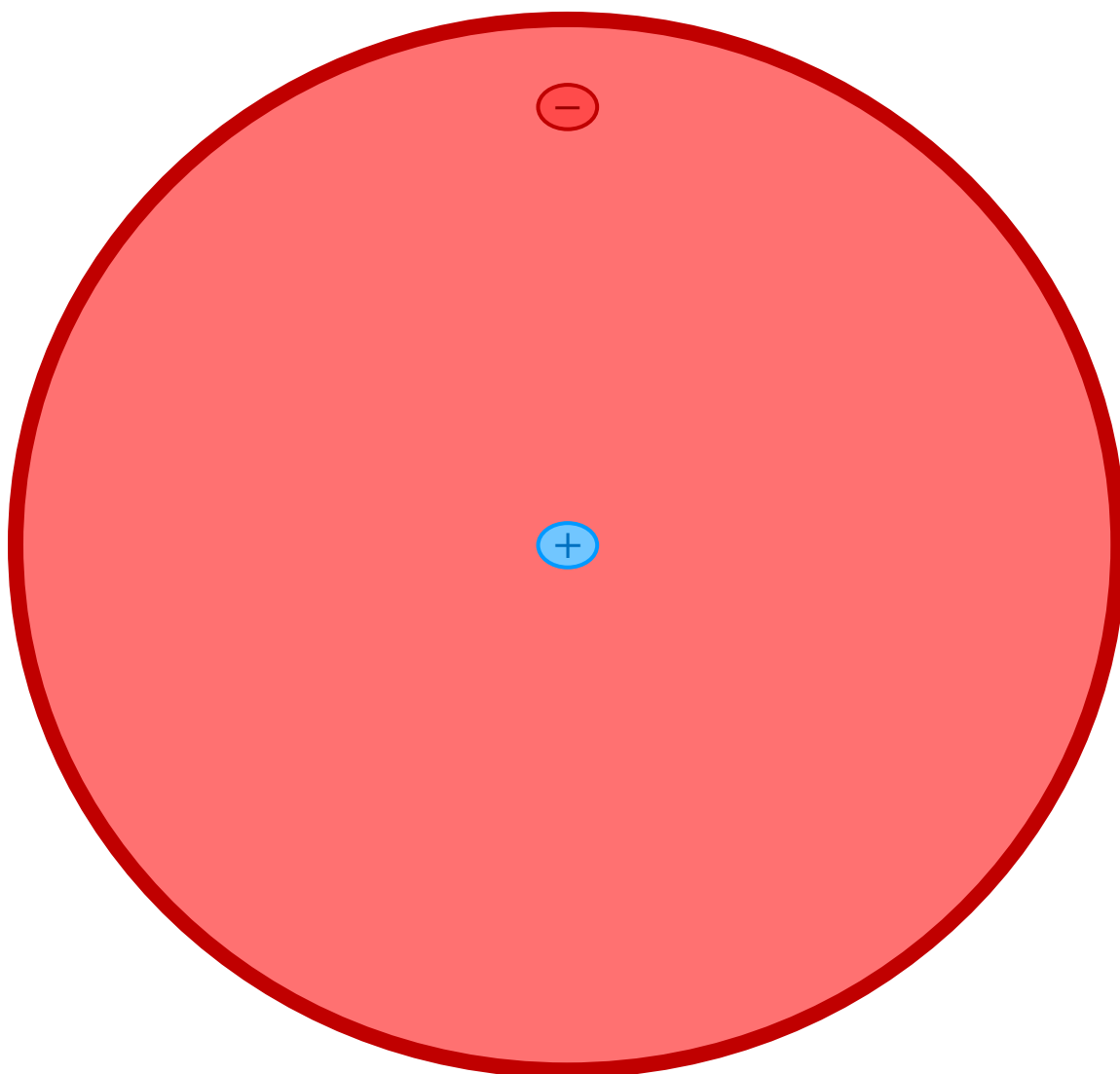
Who am I?

# Atom B



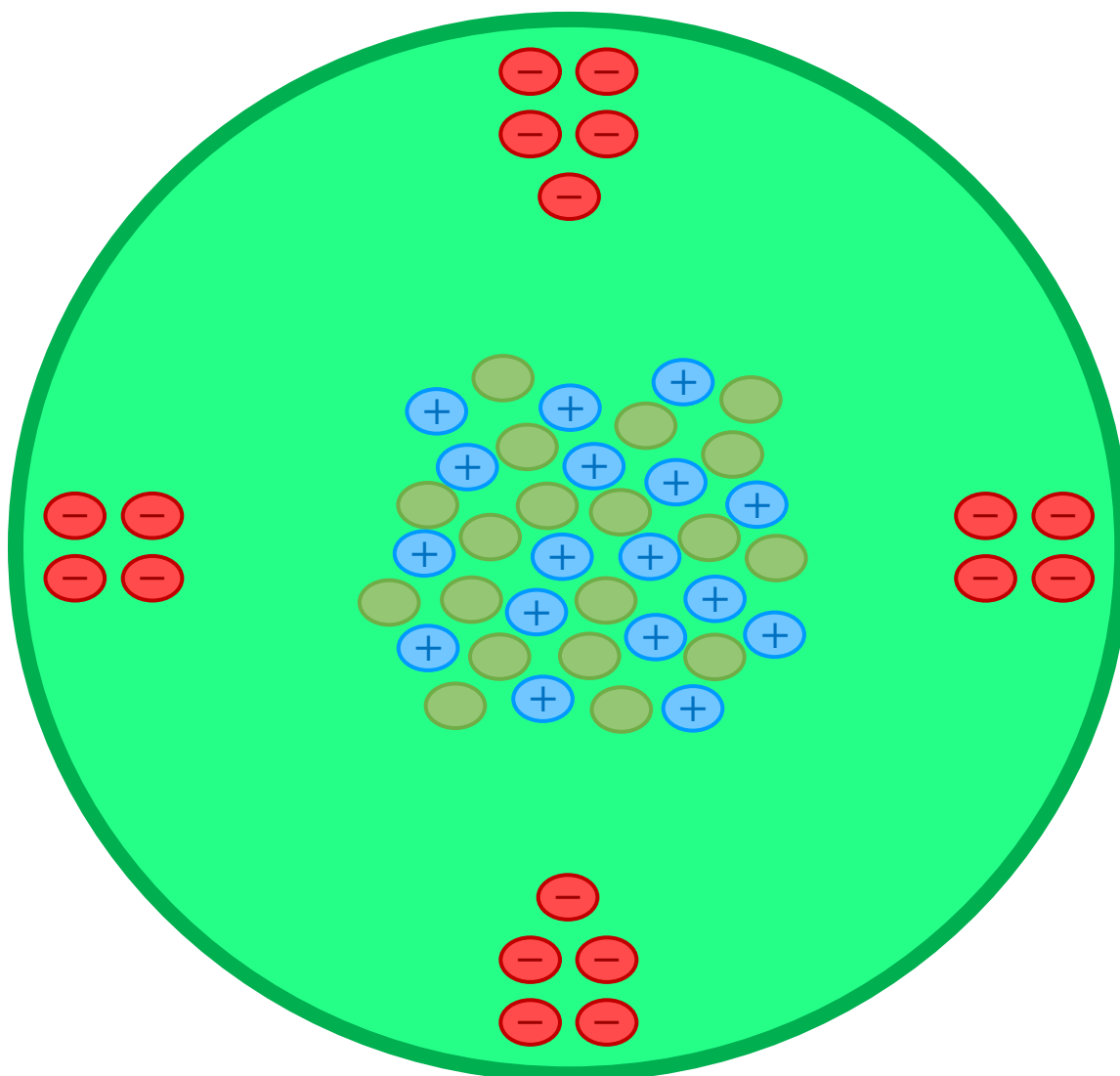
Who am I?

# Atom C



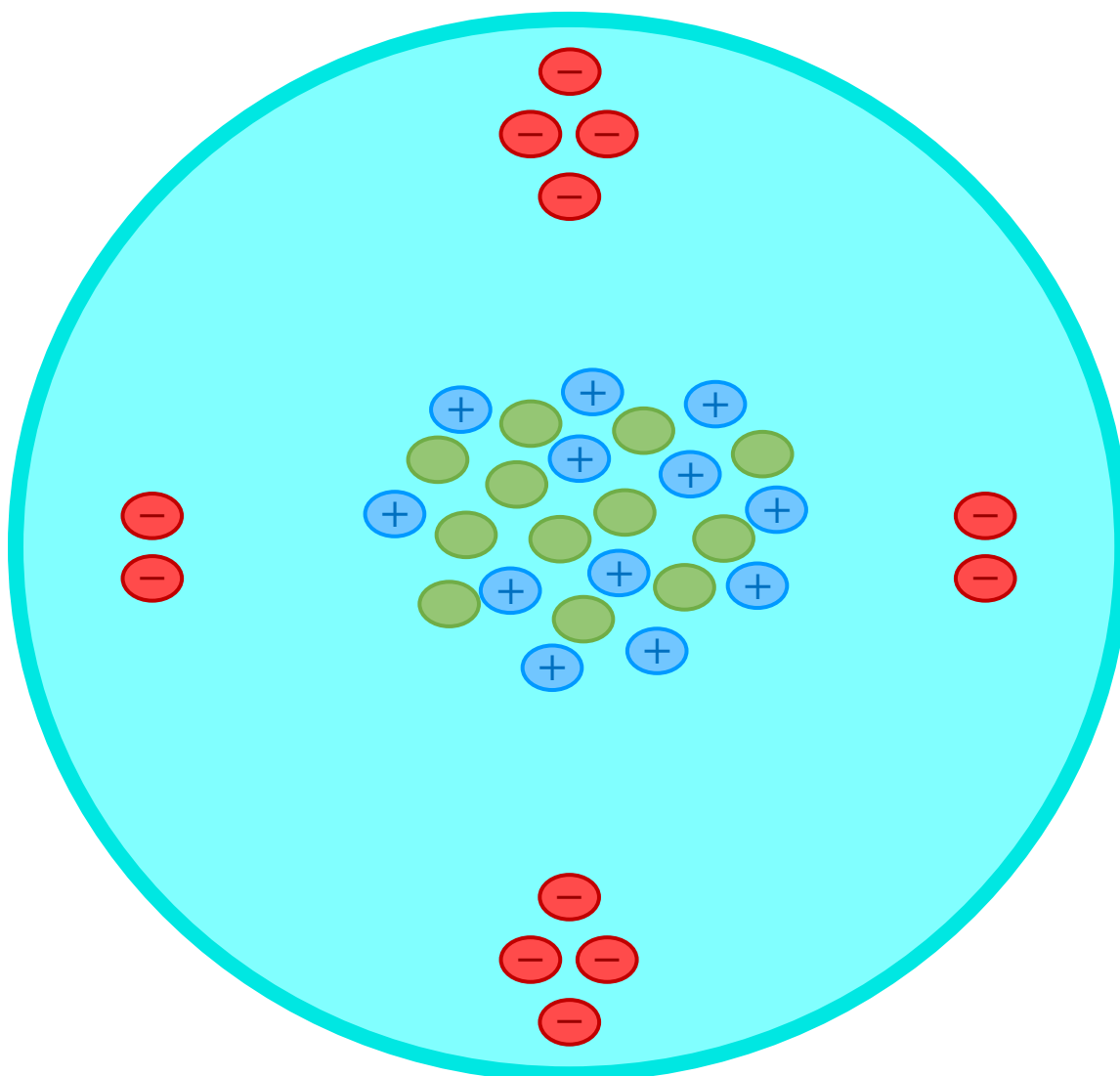
Who am I?

# Atom D



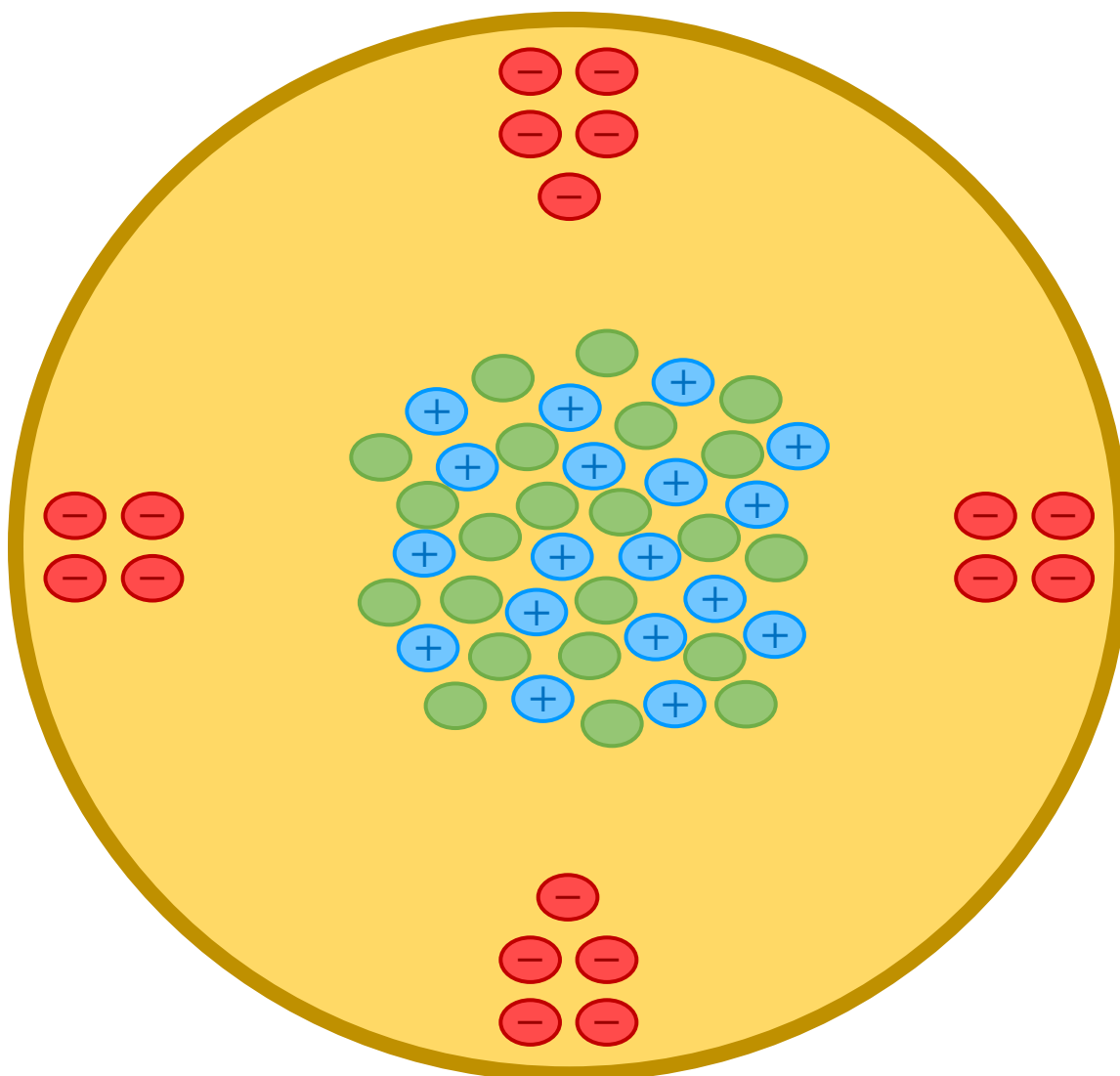
Who am I?

# Atom E



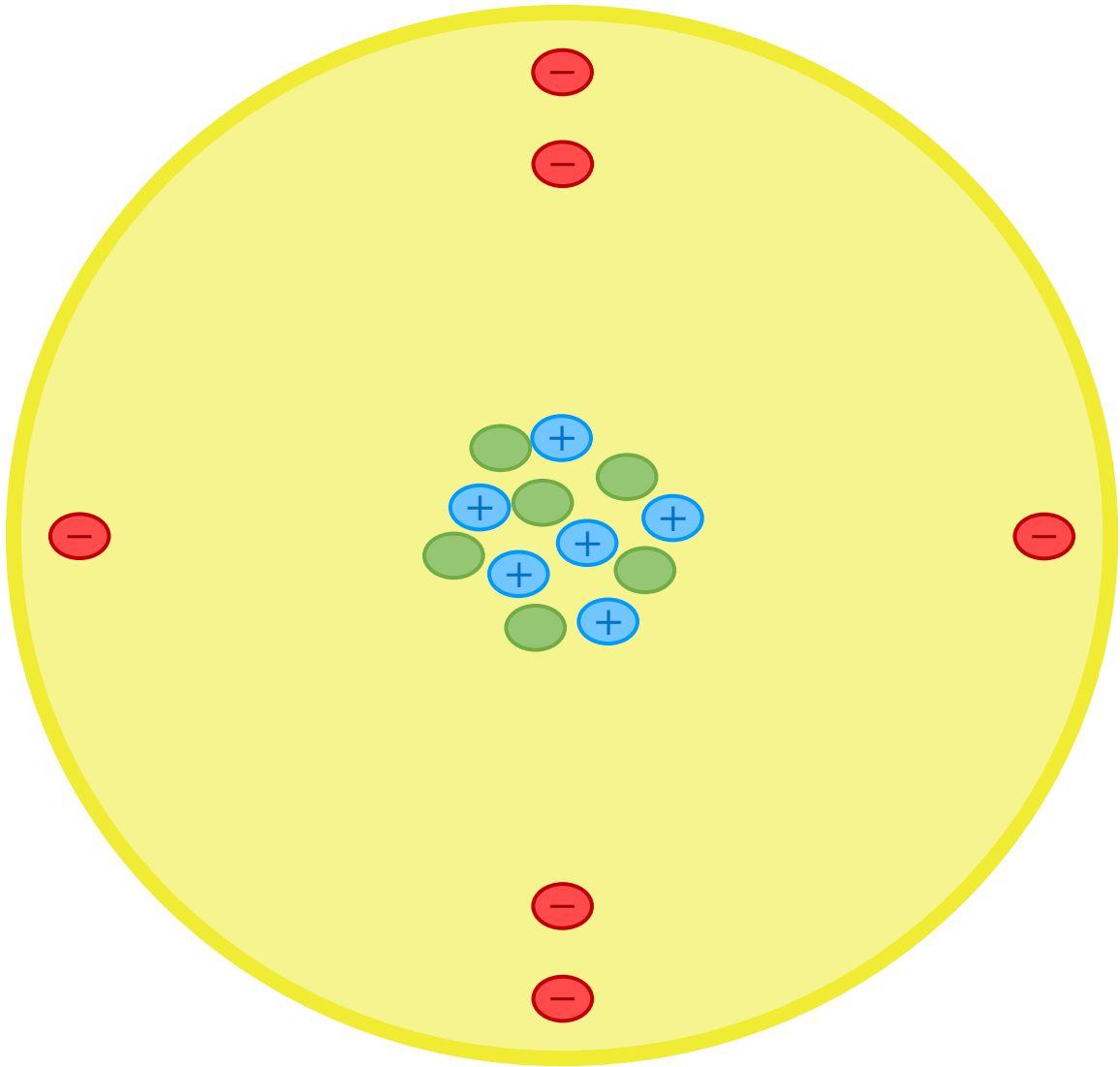
Who am I?

# Atom F



Who am I?

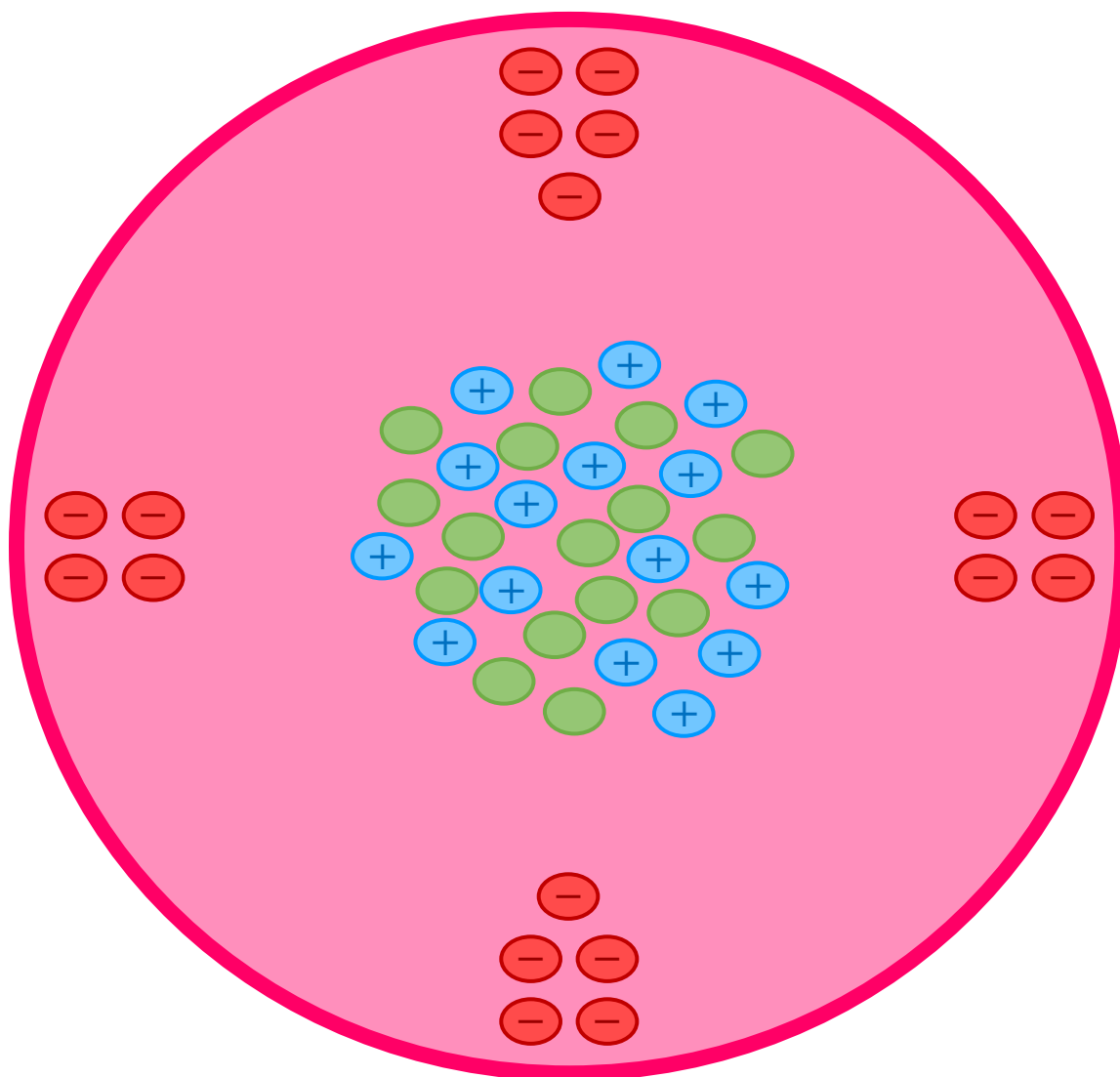
# Atom G



Who am I?

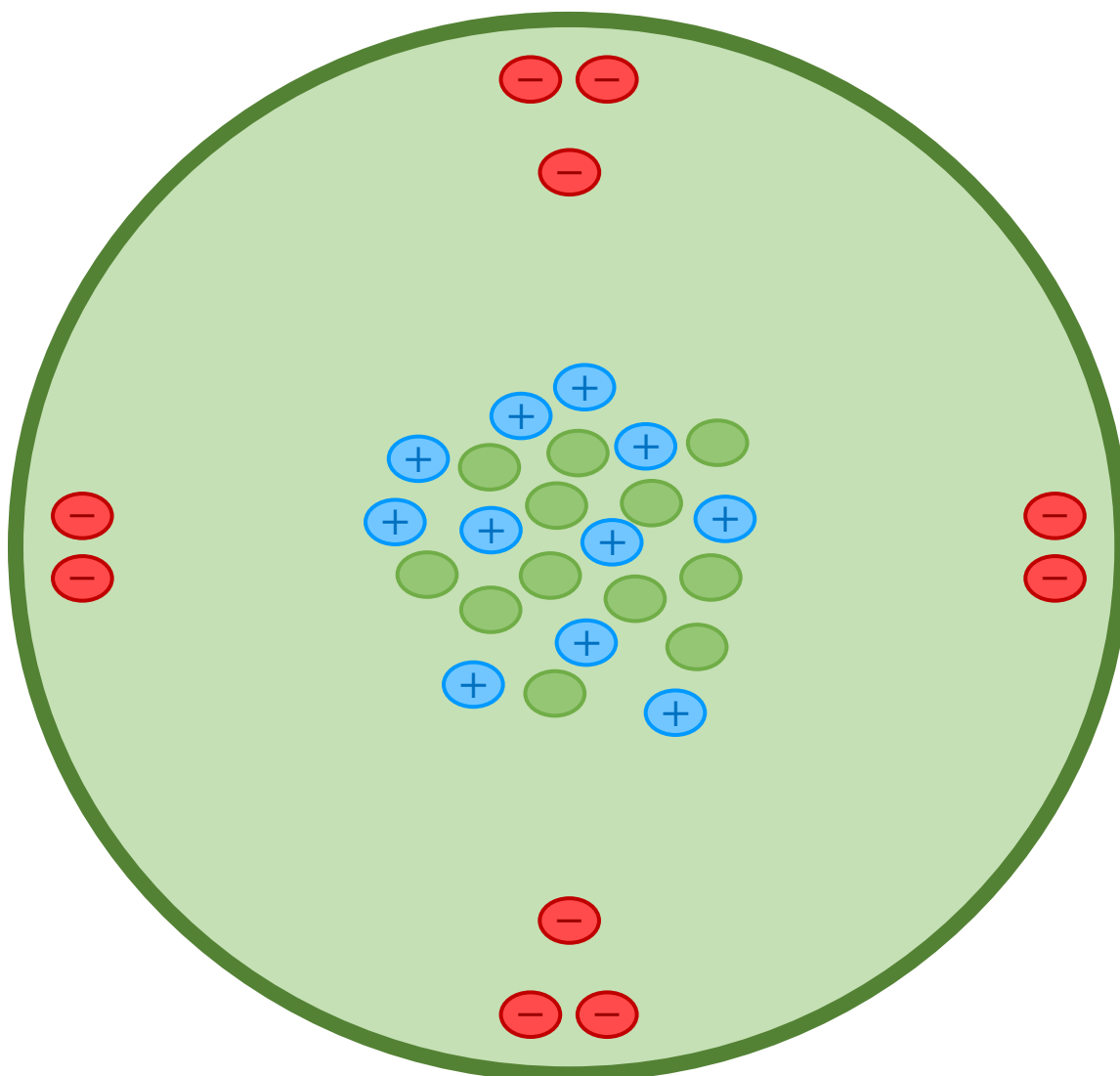


# Atom H



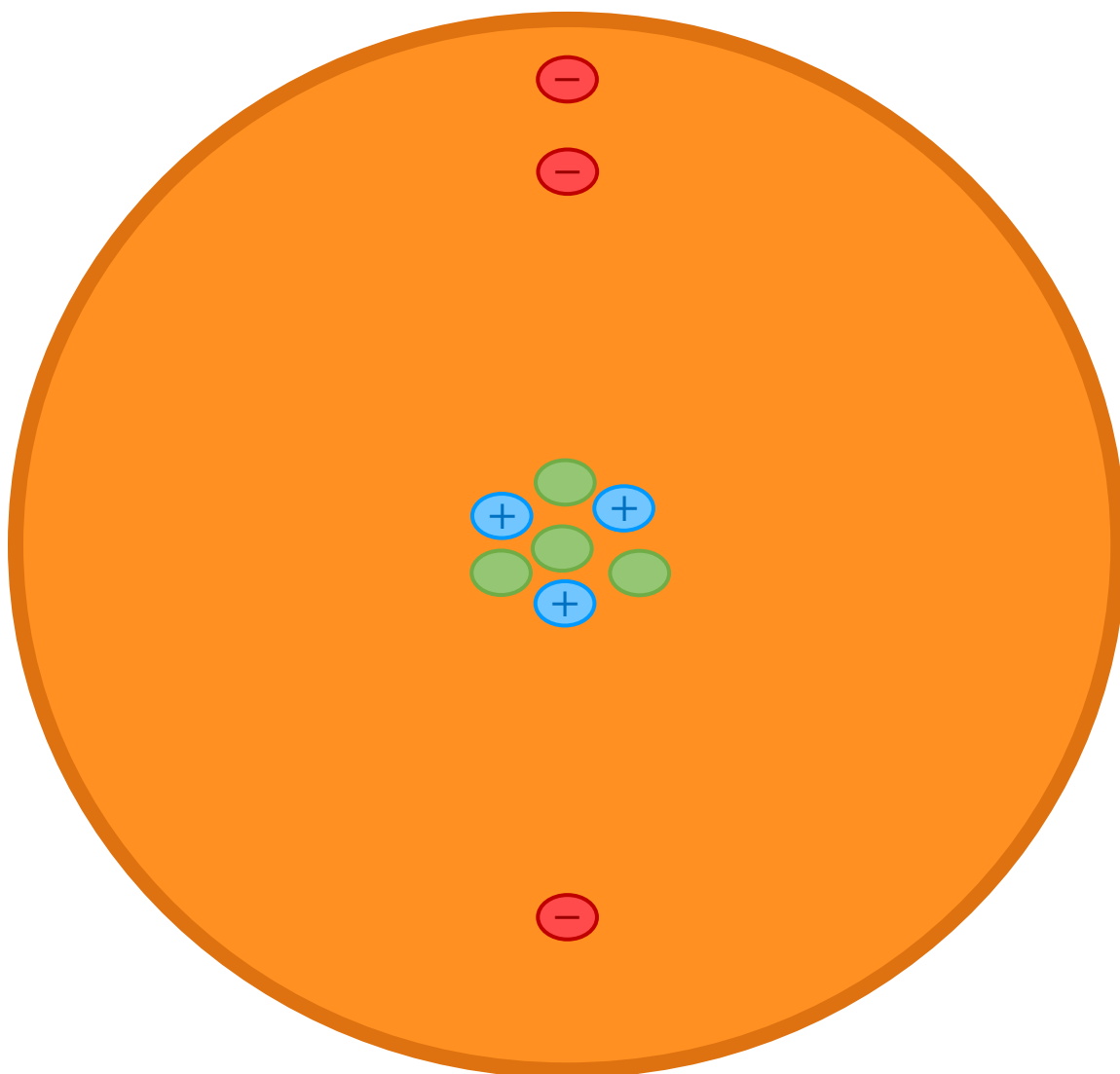
Who am I?

# Atom I



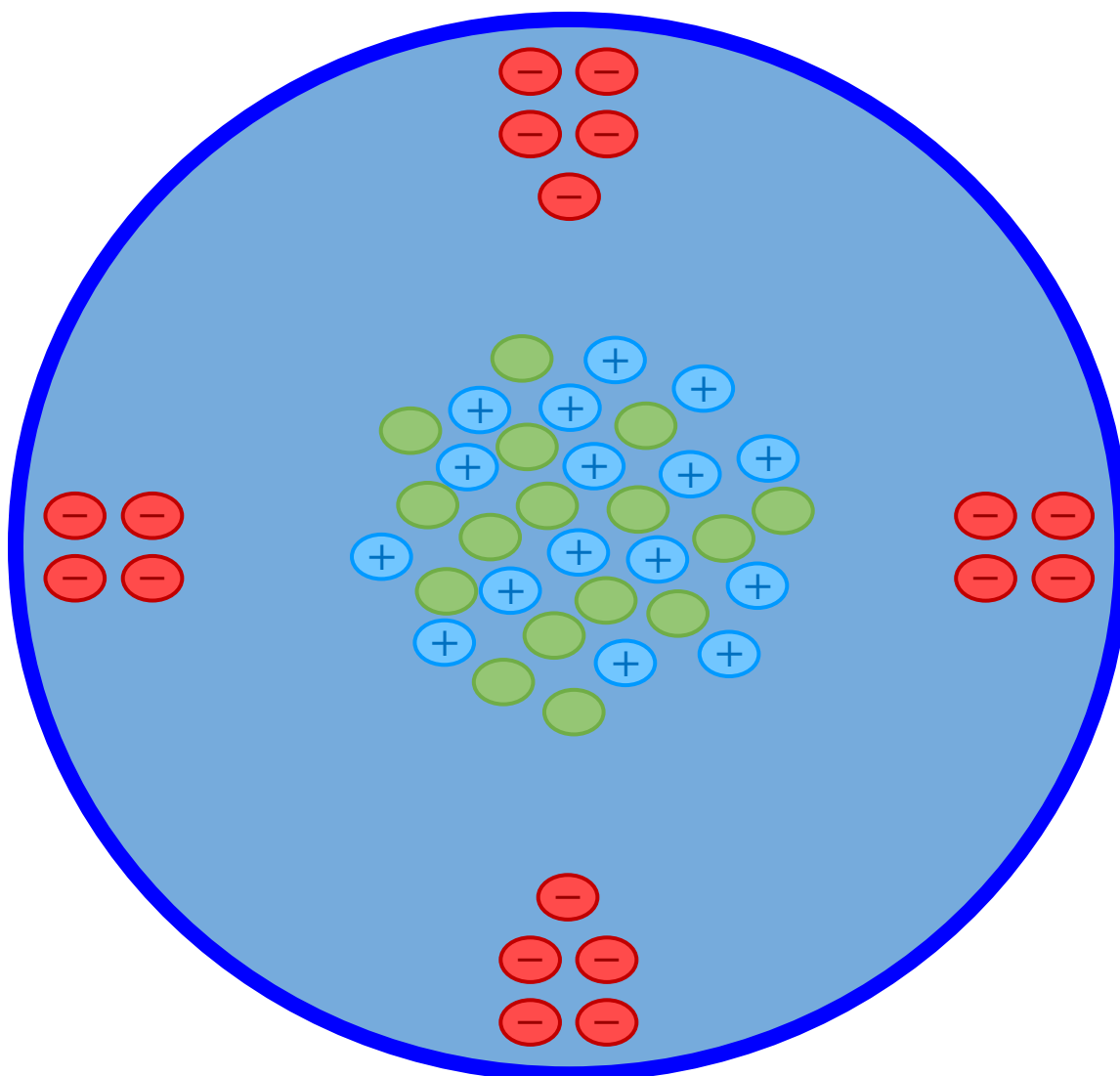
Who am I?

# Atom J



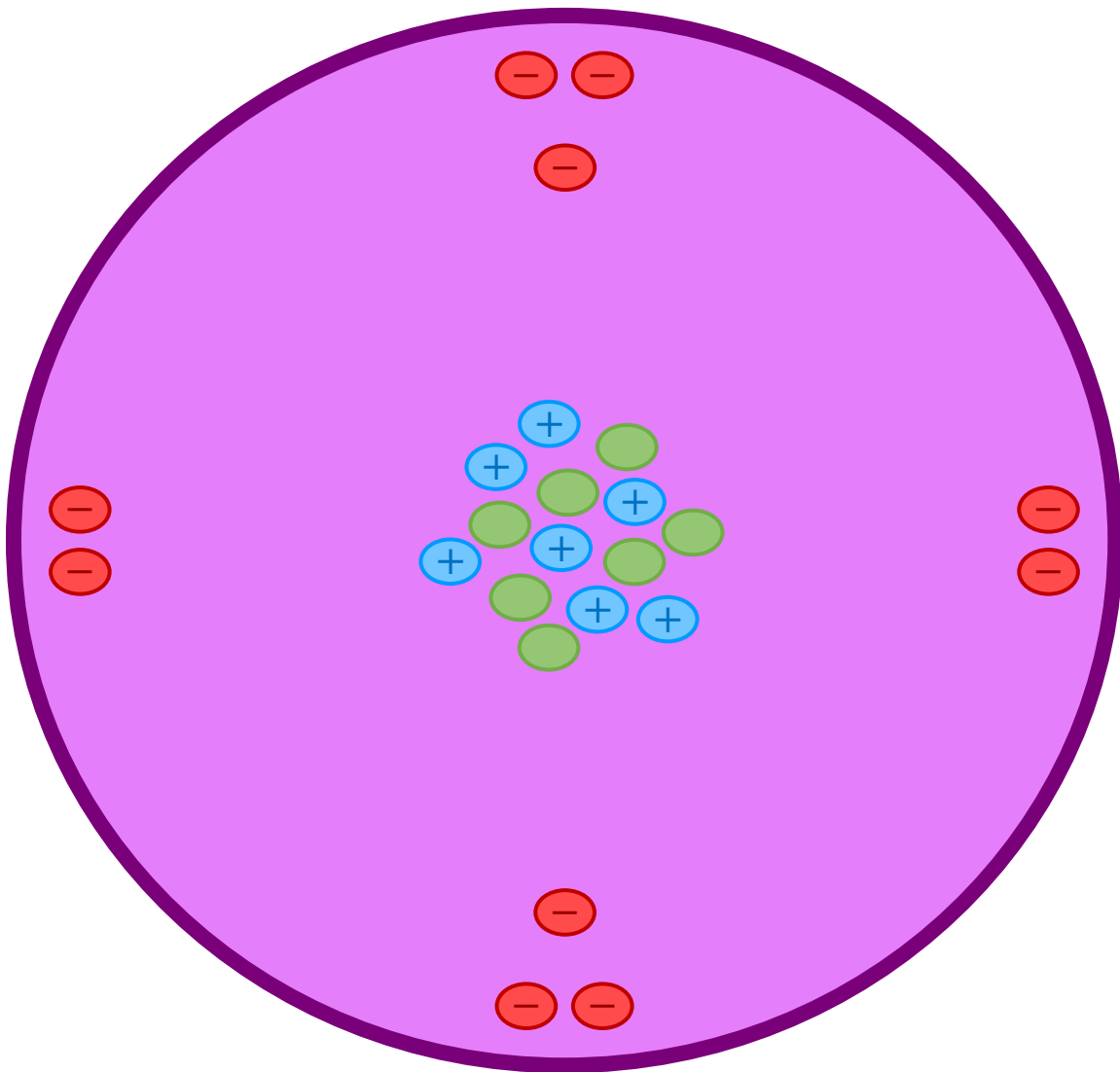
Who am I?

# Atom K



Who am I?

# Atom L



Who am I?