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| *Plum Pudding Atoms w/Charges*  CλeMis+ry: http://genest.weebly.com  Stop in for help every day at lunch and Tues &Thurs after school! |  | Name\_\_\_\_\_\_\_\_\_\_\_\_\_  Period\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Use the drawing below to answer #1 through #4 below.

Each circle here is an atom, each dot is an electron

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| --- | --- |
|  | ←atoms in sticky tape.  (they are neutral) |

1. Warm up questions:
   1. How many atoms are shown in the box above? \_\_\_\_\_\_
   2. What is the correct term for each circle? ( cation / neutral atom / anion )
   3. What is the charge of a single  ? ( -1 / zero / +1 )
   4. If electrons are removed from these atoms the charge of the tape will become more

( negative / positive )

1. Using the neutral sticky tape atoms shown up at the top of this page as a reference point, draw appropriate numbers of electrons into each circle below.

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| --- | --- | --- | --- | --- |
| an atom with two less electrons than a neutral tape atom |  |  | a cation with a charge of +1 |  |
|  |  |  |  |  |
| an anion with a charge of -4 |  |  | a cation with a charge of +3 |  |

1. Using the neutral sticky tape atoms above as a reference point, estimate the charge on each atom below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| The charge of this atom is  ( -2 / -1 / neutral / +1 / +2 ) |  |  | The charge of this atom is  ( -2 / -1 / neutral / +1 / +2 ) |  |
|  |  |  |  |  |
| The charge of this atom is  ( -2 / -1 / neutral / +1 / +2 ) |  |  | The charge of this atom is \_\_\_\_\_\_\_\_\_\_\_ |  |

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| 1. A neutral nitrogen atom looks like this according to JJ Thomson's Plum Pudding Model:     The charge is ( + / zero / - ) | Thomson would say this is a picture of  a) the plum?  b) the pudding?    The charge is ( + / zero / - ) | Thomson would say this is a picture of  a) the plum?  b) the pudding?    The charge is ( + / zero / - ) |

1. Pulling the 'Top Tape' in our lab removed electrons from the Top Tape and added electrons to the Bottom Tape.
2. This would cause the number of electrons in the Top Tape to (increase / decrease ).
3. This would cause the number of electrons in the Bottom Tape to (increase / decrease ).
4. Draw dots in each tape atom below to show your guess for how many electrons in the Top Tape and Bottom Tape (exact answers for each student will vary).

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|  | ←atoms in Top Tape.  (cations) |

|  |  |
| --- | --- |
|  | ←atoms in Bottom Tape.  (anions) |

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| --- | --- | --- | --- | --- |
| Use the following pictures of NEUTRAL atoms to answer the next four questions | | | | |
| neutral Hydrogen | neutral lithium | neutral nitrogen | neutral oxygen | neutral fluorine |
|  |  |  |  |  |

1. Draw enough dots (electrons) on each atom to create the object described

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a fluorine anion with a charge of -1 |  |  | a Li + cation |  |
|  |  |  |  |  |
| a nitrogen anion with a charge of -3 |  |  | a cation of hydrogen with a charge of +1 |  |

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| 1. In each model of an atom shown here, what part would go flying to the right if it could be the cathode in Thomson’s glass tube? | Which part?  a) the soft, mushy part  b) the seeds | Which part?    a) the negative plums  b) the positive pudding | Which part?    a) the dough  b) the chocolate chips |