# Candy Compounds Teacher Information

I use this activity after we have discussed ionic and covalent bonds to give my students a chance to practice bonding. I walk around the classroom as students work on this activity and am able to identify those students who have grasped the concept of bonding as well as which students need additional instruction to understand bonding.

**Materials Needed:**
Toothpicks
Gumdrops (assorted colors) – May also use other small candy with 6 different colors
Ziploc bags
Copies of Candy Key
Copies of Student Worksheet

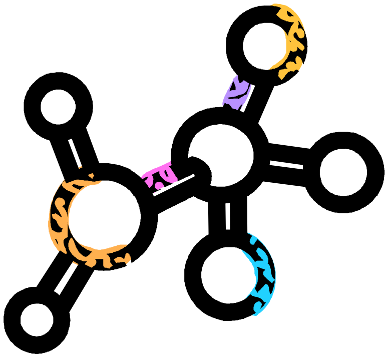
**Preparation:**
If you are having students work in groups, determine the number of groups you will have. I can usually get 5-6 sets out of 1 regular sized bag of gumdrops. Sort the gumdrops into Ziploc bags using the candy key as a guideline. You will not need to have all the colors the same in every bag (i.e. all red for hydrogen, all orange for chlorine), but may mix them up to make the gumdrops go further. One bag may have 4 red, 3 yellow, 2 orange, 2 green, 1 white, and 1 purple, while another may have 4 yellow, 3 green, 2 red, 2 purple, 1 white, and 1 orange.

**Directions:**

1 – Give each group 1 bag of gumdrops, a candy key, and colored pencils or crayons. Allow time for students to color in the key according to the number of gumdrops in their bag. They may pick which colors to use for oxygen and sodium as well as carbon and calcium.

2 – Give each student a copy of the student worksheet and read through the directions. You may also want to do the first bond together so they know exactly what they need to do.

3 – Allow time for groups to make each bond and fill in the chart. They will need to take apart the bonds and reuse the same gumdrops for the other molecules.



## Candy Compounds - Candy Key

Count the number of gumdrops you have for each color and match to the key. Use a crayon or colored pencil to color each gum drop. Match the colors to the numbers!

◠ 4 - Hydrogen
◠ 3 - Chlorine
◠ 2 - Oxygen
◠ 2 - Sodium
◠ 1 - Carbon
◠ 1 - Calcium

Names: ___________________________________

Candy Compounds - Candy Key

Count the number of gumdrops you have for each color and match to the key. Use a crayon or colored pencil to color each gum drop. Match the colors to the numbers!

◠ 4 - Hydrogen
◠ 3 - Chlorine
◠ 2 - Oxygen
◠ 2 - Sodium
◠ 1 - Carbon
◠ 1 - Calcium

Names: ___________________________________

Candy Compounds - Candy Key

Count the number of gumdrops you have for each color and match to the key. Use a crayon or colored pencil to color each gum drop. Match the colors to the numbers!

◠ 4 - Hydrogen
◠ 3 - Chlorine
◠ 2 - Oxygen
◠ 2 - Sodium
◠ 1 - Carbon
◠ 1 - Calcium

Names: ___________________________________

Candy Compounds - Candy Key

Count the number of gumdrops you have for each color and match to the key. Use a crayon or colored pencil to color each gum drop. Match the colors to the numbers!

◠ 4 - Hydrogen
◠ 3 - Chlorine
◠ 2 - Oxygen
◠ 2 - Sodium
◠ 1 - Carbon
◠ 1 - Calcium

Names: ___________________________________

Candy Compounds - Candy Key

Count the number of gumdrops you have for each color and match to the key. Use a crayon or colored pencil to color each gum drop. Match the colors to the numbers!

◠ 4 - Hydrogen
◠ 3 - Chlorine
◠ 2 - Oxygen
◠ 2 - Sodium
◠ 1 - Carbon
◠ 1 - Calcium

Names: ___________________________________

Candy Compounds - Candy Key

Count the number of gumdrops you have for each color and match to the key. Use a crayon or colored pencil to color each gum drop. Match the colors to the numbers!

◠ 4 - Hydrogen
◠ 3 - Chlorine
◠ 2 - Oxygen
◠ 2 - Sodium
◠ 1 - Carbon
◠ 1 - Calcium

Names: ___________________________________

Candy Compounds - Candy Key

Count the number of gumdrops you have for each color and match to the key. Use a crayon or colored pencil to color each gum drop. Match the colors to the numbers!

◠ 4 - Hydrogen
◠ 3 - Chlorine
◠ 2 - Oxygen
◠ 2 - Sodium
◠ 1 - Carbon
◠ 1 - Calcium

Names: ___________________________________

Candy Compounds - Candy Key

Count the number of gumdrops you have for each color and match to the key. Use a crayon or colored pencil to color each gum drop. Match the colors to the numbers!

◠ 4 - Hydrogen
◠ 3 - Chlorine
◠ 2 - Oxygen
◠ 2 - Sodium
◠ 1 - Carbon
◠ 1 - Calcium

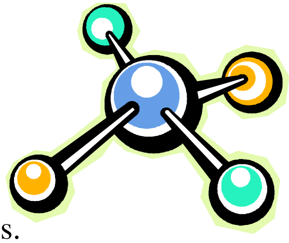
Names: ___________________________________

*T. Trimpe 2005 http://sciencespot.net/*

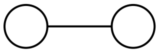
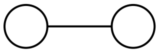
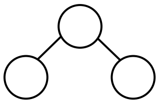
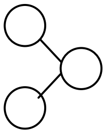
# *Candy Compounds*

Name ______________________________

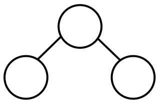
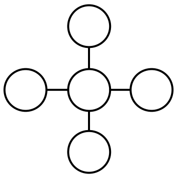
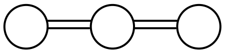
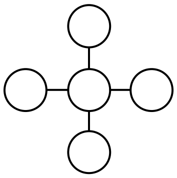
Complete your key based on the number and colors of gumdrops in your bag. Follow the directions to complete this worksheet.



For each compound, you will need to:
(1) List the atoms and number of each,
(2) Identify the type of bond,
(3) Make and color the gumdrop model, and
(4) Draw the bond structure showing the transfer or sharing of electrons.

| **Information**<br>List the names of the atoms and number of each | **Type of Bond**<br>Is it ionic or covalent? | **Gumdrop Model**<br>Make the gumdrop compound and color the diagram. | **Dot Structure**<br>Show the electron dot diagrams and charges/bonds |
|---|---|---|---|
| **$H_2$** | |  | |
| **NaCl** | |  | |
| **$H_2O$** | |  | |
| **$Na_2O$** | |  | |

*T. Trimpe 2005 http://sciencespot.net/*

| | | | |
|---|---|---|---|
| **$CaCl_2$** | |  | |
| **$CH_4$** | |  | |
| **$CO_2$** | |  | |
| **$CHCl_3$** | |  | |

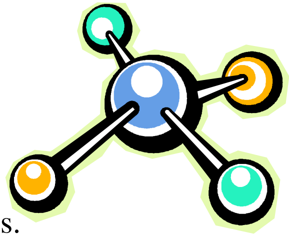
What type of bond occurs between a metal and a nonmetal? ________________________

What type of bond occurs between two nonmetals? _______________________________

# *Candy Compounds*

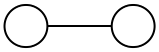
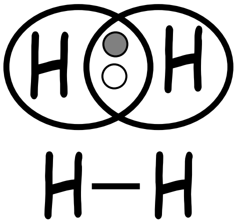
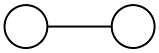
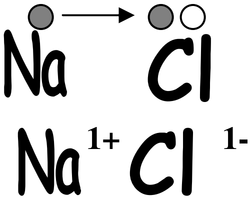
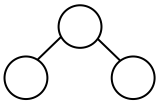
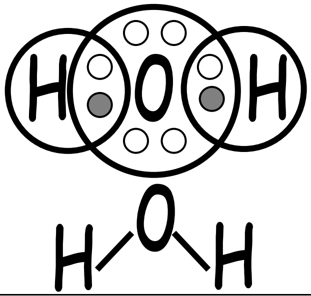
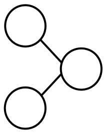
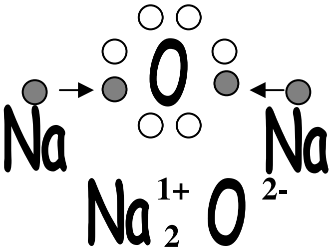
ANSWER KEY

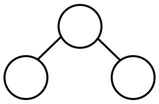
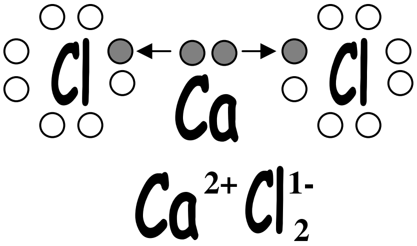
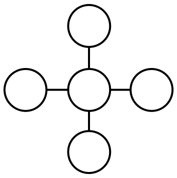
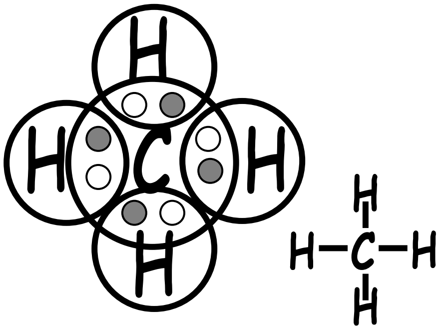
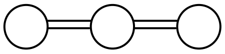
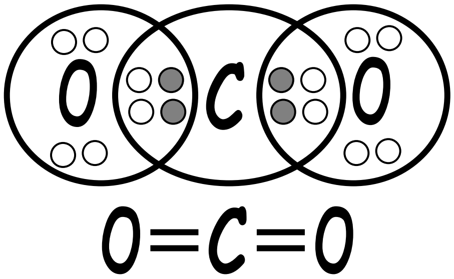
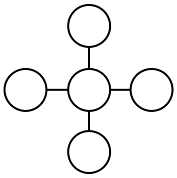
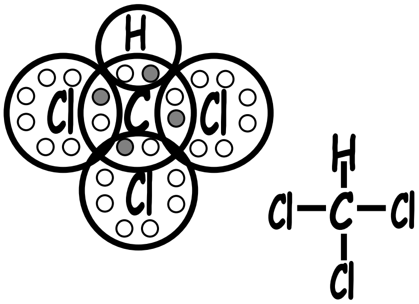
Complete your gumdrop key based on the number and colors of gumdrops in your bag. Follow the directions to complete this worksheet.



For each compound, you will need to:

(1) List the atoms and number of each,
(2) Identify the type of bond,
(3) Make and color the gumdrop model, and
(4) Draw the bond structure showing the transfer or sharing of electrons.

| **Information**<br>List the names of the atoms and number of each | **Type of Bond**<br>Is it ionic or covalent? | **Gumdrop Model**<br>Make the gumdrop compound and color the diagram. | **Dot Structure**<br>Show the electron dot diagrams and charges/bonds |
|---|---|---|---|
| **$H_2$**<br>H = Hydrogen = 2 | Covalent | <br>Colors depend on candy key |  |
| **NaCl**<br>Na = Sodium = 1<br>Cl = Chlorine = 1 | Ionic |  |  |
| **$H_2O$**<br>H = Hydrogen = 2<br>O = Oxygen = 1 | Covalent |  |  |
| **$Na_2O$**<br>Na = Sodium = 2<br>O = Oxygen = 1 | Ionic |  |  |

| | | | |
|---|---|---|---|
| **$CaCl_2$**<br>Ca = Calcium = 1<br>Cl = Chlorine = 2 | Ionic |  |  |
| **$CH_4$**<br>C = Carbon = 1<br>H = Hydrogen = 4 | Covalent | Colors depend on candy key<br> |  |
| **$CO_2$**<br>C = Carbon = 1<br>O = Oxygen = 2 | Covalent |  |  |
| **$CHCl_3$**<br>C = Carbon = 1<br>H = Hydrogen = 1<br>Cl = Chlorine = 3 | Covalent |  |  |

What type of bond occurs between a metal and a nonmetal? **Ionic**

What type of bond occurs between two nonmetals? **Covalent**