

Bonding & Polarity Cipher Puzzle

- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS

Students use clues
to answer
questions and their
answers reveal a
hidden message.

Bonding & Polarity Cipher Puzzle

Instructions: For each question, classify the type of bond or molecule as one of the following: ionic bond, covalent bond, metallic bond (for bonding questions) or polar molecule, nonpolar molecule (for polarity questions). Write your classification in the 'Answer' column. Then, in the 'Write the ____ letter' column, the number tells you which letter to take from your classification (focus letters only, ignore spaces, and punctuation). Put that letter in the 'Letter extracted' column. Once all rows are completed, write your letter(s) in order below the table. Fill squares to reveal the hidden message.

#	Question	Answer	Write the ____ letter →	Letter extracted
1	LiF bond		1st	
2	CO ₂ molecule		2nd	
3	HgBr bond		3rd	
4	Copper (I, I) bonding		4th	
5	Cl ₂ bond		5th	
6	H ₂ O bond		6th	
7	H ₂ O molecule		7th	
8	Cl ₂ bond		8th	
9	Aluminum metal		9th	
10	CH ₄ molecule		10th	
11	C-H bond in CH ₄		11th	
12	Li ₂ bond		12th	
13	H ₂ bond		13th	
14	Iron metal		14th	
15	O-H bond in H ₂ O		15th	
16	Sodium metal		16th	
17	H ₂ O molecule		17th	
18	CO ₂ molecule		18th	
19	H-H bond in H ₂		19th	
20	KBr bond		20th	
21	Cl ₂ bond		21st	

Write your answer letters in order: _____

Hidden message – include spaces to decipher the message: _____



#	Question	Answer	Write the ____ letter →	Letter extracted
1	LiF bond	ionic bond	1st	I
2	CO ₂ molecule	nonpolar molecule	2nd	O



NO PREP, MATERIALS, OR MARKING

SCROLL
to take a look inside!



HOW THESE ACTIVITIES HELP YOU

- **Saves Prep Time** - Everything is pre-made, ready to go, and fully editable.
- **Provides Built-In Assessments** - The activity lets students self-assess and lets you quickly check for understanding.
- **Perfect for:** Review, Practice, Homework, and more!

MULTIPLE QUESTION TYPES THAT CHECK FOR UNDERSTANDING

Example

#	Question	Answer	Write the ____ letter →	Letter extracted
1	LiF bond	ionic bond	1st	I
2	CO ₂ molecule	nonpolar molecule	2nd	O

Full Teacher Answer Key



Bonding & Polarity Cipher Puzzle – Answer Key

#	Correct answer	Letter extracted
1	ionic bond	I
2	nonpolar molecule	O
3	ionic bond	R
4	metallic bond	I
5	covalent bond	C
6	covalent bond	C
7	polar molecule	O
8	covalent bond	V
9	metallic bond	A
10	polar molecule	L
11	covalent bond	R
12	covalent bond	R
13	covalent bond	T
14	metallic bond	M
15	covalent bond	B
16	metallic bond	T
17	polar molecule	A
18	nonpolar molecule	I
19	covalent bond	L
20	ionic bond	I
21	covalent bond	C

Students Use Clues to Answer Questions. Their Answers Reveal a Hidden Message.

What Will Your Students Learn?

SIMPLY DOWNLOAD AND
GIVE TO YOUR STUDENTS

Solution Concentration & Dilutions Cipher Puzzle			
Instructions: For each clue, put the answer in the "Answer with Units" column. Then convert the answer to the "Number Only" column. Convert the number to the appropriate letter using the chart below. After you finish each question, write your letters in order below the table. Add spaces to reveal the hidden message. Example: If your answer was 15%, you'd write 15% in the "Answer with Units" column, 15 in the "Number Only" column, then C in the "Number to Letter" column.			
#	Question	Answer with Units	Number Only
1	25 g of sugar is dissolved in enough water to make 100 g of solution. What is the percent by mass of sugar?		
2	You dissolve 0.5 moles of NaCl in enough water to make 500 mL of solution. What is the molarity (M) of the solution?		
3	What is the molarity when 0.8 moles of HCl are dissolved to make 4.00 L of solution?		
4	Given 100 mL of a 4.0 M NaOH solution, what will be the concentration (M)? If you dilute it to a final volume of 1.0 L?		
5	If 10 g of ethanol is mixed with 40 g of water to make 50 g of solution, what is the percent by mass of ethanol?		
6	A water sample contains 8 mg of lead in 1.0 kg of water. What is the concentration in parts per million (ppm)?		
7	5.0 moles of HCl is the molarity?		
8	25 g of salt is dissolved in the water. What is the percent?		
9	Calculate the molarity of NaOH if 1.0 mole of NaOH is dissolved in 1.0 L of solution.		
10	If 1.0 mole of NaOH is dissolved in 1.0 L of solution, what is the molarity?		
11	A water sample is the concentration?		
12	Determine the molarity of a glucose solution if 0.5 mol of glucose is dissolved in 1.0 L of solution.		
13	If 0.5 mol of glucose is dissolved in 1.0 L of solution, what is the molarity?		
14	Calculate the molarity of NaOH if 0.5 moles of NaOH are dissolved in 1.0 L of solution.		
15	Given 100 mL of a 4.0 M NaOH solution, what will be the concentration (M) if you dilute it to a final volume of 1.0 L?		
16	If 10 g of ethanol is mixed with 40 g of water to make 50 g of solution, what is the percent by mass of ethanol?		
17	A water sample contains 8 mg of lead in 1.0 kg of water. What is the concentration in parts per million (ppm)?		
18	5.0 moles of HCl is the molarity?		
19	25 g of salt is dissolved in the water. What is the percent?		
20	Calculate the molarity of NaOH if 1.0 mole of NaOH is dissolved in 1.0 L of solution.		
21	If 1.0 mole of NaOH is dissolved in 1.0 L of solution, what is the molarity?		
22	A water sample is the concentration?		
23	Determine the molarity of a glucose solution if 0.5 mol of glucose is dissolved in 1.0 L of solution.		
24	If 0.5 mol of glucose is dissolved in 1.0 L of solution, what is the molarity?		
25	Calculate the molarity of NaOH if 0.5 moles of NaOH are dissolved in 1.0 L of solution.		
26	Given 100 mL of a 4.0 M NaOH solution, what will be the concentration (M) if you dilute it to a final volume of 1.0 L?		
27	If 10 g of ethanol is mixed with 40 g of water to make 50 g of solution, what is the percent by mass of ethanol?		
28	A water sample contains 8 mg of lead in 1.0 kg of water. What is the concentration in parts per million (ppm)?		
29	5.0 moles of HCl is the molarity?		
30	25 g of salt is dissolved in the water. What is the percent?		

- ✓ Full Answer Key
- ✓ No Prep, Just Print
- ✓ Perfect for

- Review
- Practice
- Additional work for early finishers

NO PREP or Materials

- How to identify ionic bonds
- How to identify covalent bonds
- How to identify metallic bonds
- How to distinguish between polar and nonpolar molecules
- How bonding and polarity are related to the types of atoms involved
- How to connect chemistry classifications to clues and patterns in a puzzle format

- **Bonding & Polarity Cipher Puzzle Worksheet**
- A student-friendly activity with 21 clues focused on classifying ionic bonds, covalent bonds, metallic bonds, polar molecules, and nonpolar molecules.
- **Clear Instructions**
 - Students solve each clue, extract the correct letter from their answer, and use it to decode a hidden message.
- **Reinforces:**
 - Ionic bonds, Covalent bonds, Metallic bonds
 - Polar molecules, Nonpolar molecules
 - Bonding and polarity classification practice
- **Includes answer key and extracted letters**
- **No-Prep Resource**
 - Ready to print or assign digitally for review, practice, or sub plans.

What You Get

Students Use Their Answers to Reveal a Hidden Message

1. For each clue, write the answer in the 'Answer' column.
2. Identify the letter to be extracted using the "Letter position" column.
3. Write the letter in the 'Letter extracted from Answer' column.
4. Write your letters in order below the table to reveal the hidden message.

Bonding & Polarity Cipher Puzzle

Instructions: For each question, classify the type of bond or molecule as one of the following: ionic bond, covalent bond, metallic bond (for bonding questions) or polar molecule, nonpolar molecule (for polarity questions). Write your classification in the 'Answer' column. For polarity questions, write the letter in the 'Letter position' column. For bonding questions, write the letter in the 'Letter extracted from Answer' column. For polarity questions, write the letter in the 'Letter extracted from Answer' column. Put that letter in the 'Letter extracted' column. Add spaces to reveal the hidden message.

#	Question	Answer	Letter position	Letter extracted
1	LiF bond		1st	
2	CO ₂ molecule		2nd	
3	Br ₂ bond		3rd	
4	Copper (Cu) bonding		4th	
5	Cl ₂ bond		5th	
6	HCl bond		6th	
7	H ₂ O molecule		7th	
8	O ₂ bond		8th	
9	Aluminum metal		9th	
10	NH ₃ molecule		10th	
11	C-H bond in CH ₄		11th	
12	S ₈ bond		12th	
13	N ₂ bond		13th	
14	Iron metal		14th	
15	O-H bond in H ₂ O		15th	
16	Sodium metal		16th	
17	H ₂ molecule		17th	
18	CO ₂ molecule		18th	
19	N-H bond in NH ₃		19th	
20	Br ₂ bond		20th	
21	Cl ₂ bond		21st	

Bonding & Polarity Cipher Puzzle – Answer Key

#	Correct answer	Letter extracted
1	ionic bond	I
2	covalent bond	C
3	covalent bond	C
4	metallic bond	M
5	covalent bond	C
6	covalent bond	C
7	polar molecule	P
8	covalent bond	C
9	metallic bond	M
10	polar molecule	P
11	covalent bond	C
12	covalent bond	C
13	covalent bond	C
14	metallic bond	M
15	covalent bond	C
16	metallic bond	M
17	polar molecule	P
18	covalent bond	C
19	covalent bond	C
20	covalent bond	C
21	covalent bond	C

Final Message: ICMCCOVALENTMETALICPCCOVALENTMETALIC

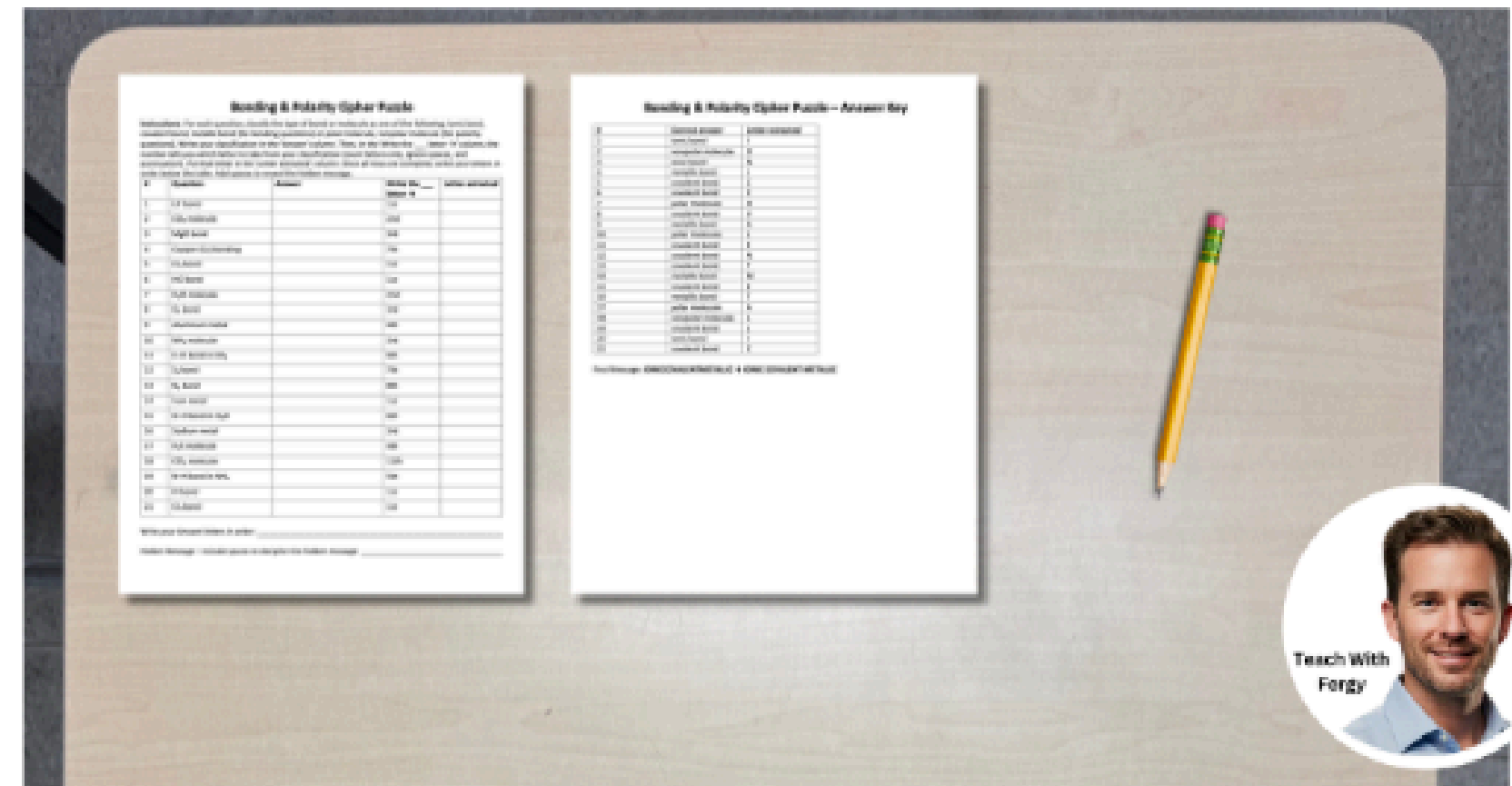
Your Activity

- Is a fun and interactive way to reinforce concepts and study
- **DIGITAL** and **PRINT** ready
- **FULLY EDITABLE**
- Complete Answer Key



Bonding & Polarity Cipher Puzzle

- Students solve problems to discover a secret message
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NO PREP, MATERIALS, OR MARKING

Chemistry Concepts Cipher Puzzle Bundle

Get all my Chemistry Cipher Puzzle Activities at a **HUGE** discount. Additionally, you'll get access to all additional chemistry ciphers I create in the future.

Ionic and Molecular Compounds Cipher Puzzle

- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS



NO PREP, MA

Periodic Table Element Cipher Puzzle

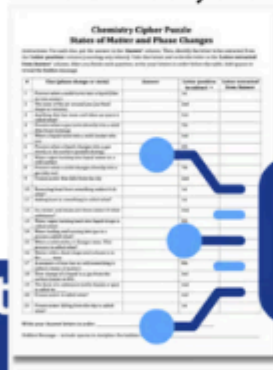
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NO PREP, MATERIALS, OR MARKING

States of Matter and Phase Change Cipher Puzzle

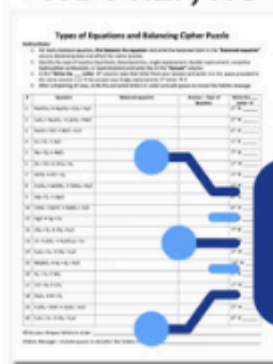
- Students solve problems to discover a secret message
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NO PREP, MATER

Types of Equations Balancing Cipher Puzzle

- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS



NO PREP, MATERIALS, OR MARKING

Acid-Base Calculation Cipher Puzzle

- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS



NO PREP, MATERIALS, OR MARKING

Chemistry Concepts Cipher Puzzle Bundle

- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS



NO PREP, MATERIALS, OR MARKING

Plus Many More!
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Thanks
**for your interest
in this resource!**

I am a real person and if
you have any questions,
suggestions, or concerns,
please reach out.



devon@teachwithfergy.com

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*Let's
Connect!*

