

Phet Simulator: Build a Molecule!

Learning Goals:

- Describe the difference between a molecule name and a chemical formula.
- Distinguish between the coefficient and subscript in a chemical formula.
- Use pictorial representations of molecules to generate chemical formulas.



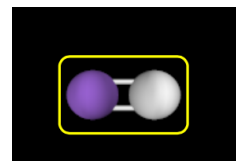
Go to bit.ly/3IS3gRT and click **Play**.

Part A: **Single** First Screen: Single

1. Make one of the molecules in the collection: Write which molecule you chose: _____

How do you know you made a molecule? _____

2. Click on 3D button and select the model that shows the bonds.
3. Draw the image.



How many bonds are in the diagram? _____ How do you know? _____

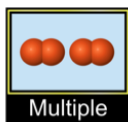
Each bond represents the sharing of 2 electrons, one from each element.

4. Drag the molecule into the list at the side.
5. Complete the chart for all the molecules in collection 1 and 2

Collection 1					
Chemical Formula	Name of Molecule	# of elements	# of atoms	Number of Bonds	Sketch (Ball & Stick)

Collection 2

Chemical Formula	Name of Molecule	# of elements	# of atoms	Number of Bonds	Sketch (Ball & Stick)



Part B:

Making Many Molecules

a. Fill all the collection boxes and then complete the questions for each Goal.

Multiple Second Screen: **Multiple**

Goal: 4H₂	
Draw it!	
What does the big '4' in 4H ₂ mean?	
What does the little '2' in 4H ₂ mean?	

Goal: 2CO₂

Draw it!

What does the big '2' in 2CO₂ mean?

What does the little '2' in 2CO₂ mean?

Goal: 2O₂

Draw it!

What does the big '2' in 2O₂ mean?

What does the little '2' in 2O₂ mean?

Goal: 2NH₃

Draw it!

What does the big '2' in 2NH₃ mean?

What does the little '3' in 2NH₃ mean?