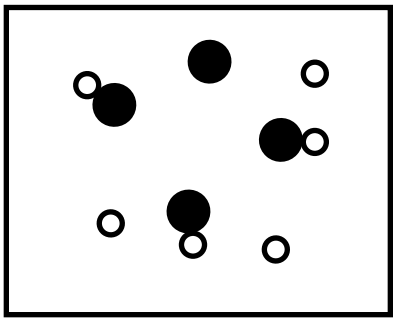
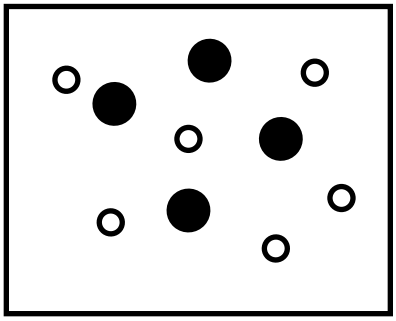
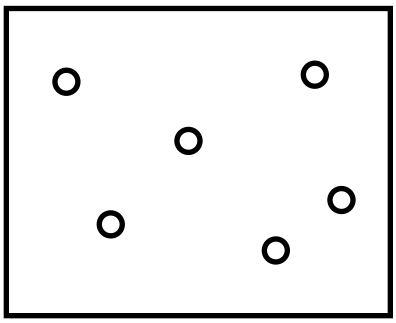
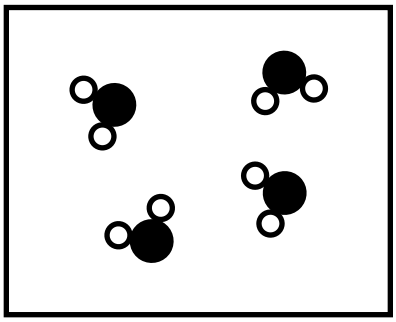
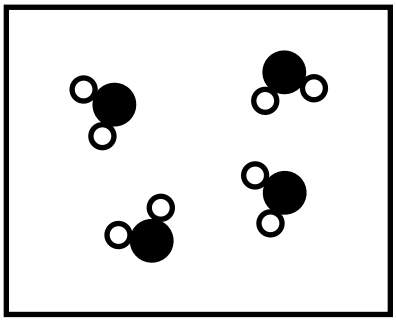
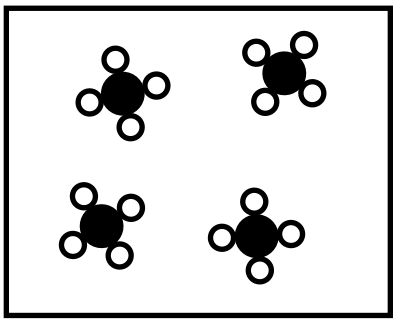
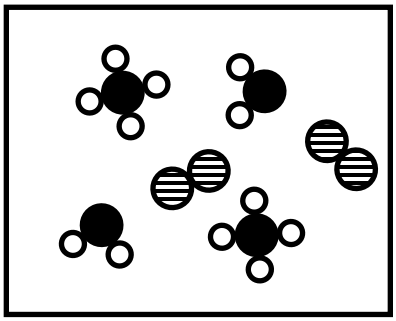
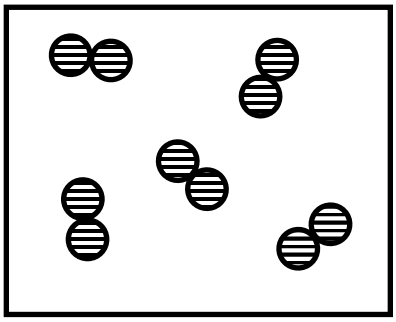
Chemistry Name: _____

Section _____ Particle Modeling WS Date: _____

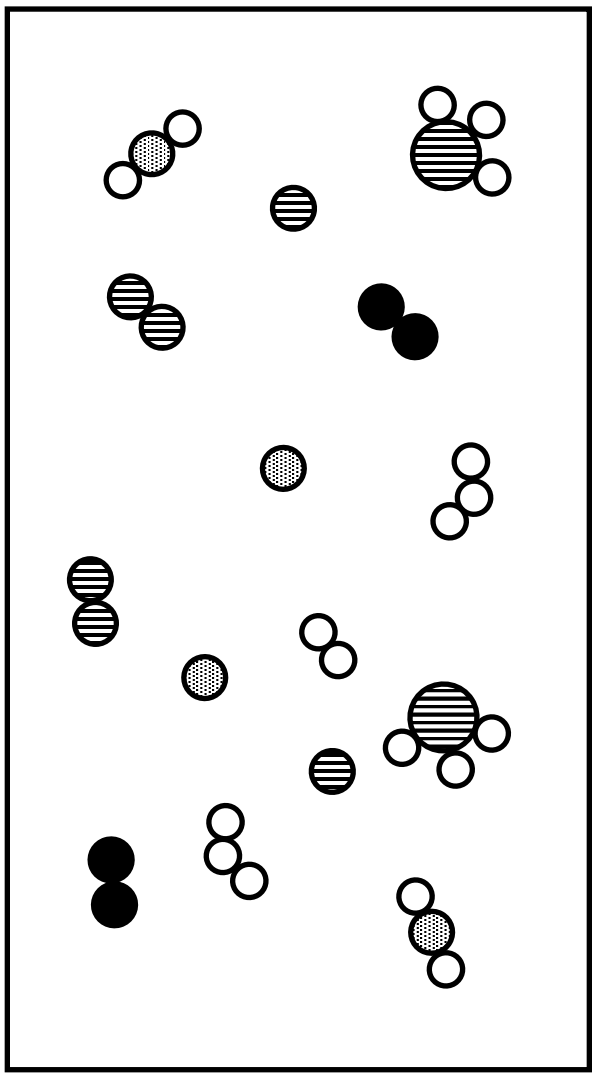
Look at the following models. Identify each as a substance or a mixture. Describe the composition as elements only, compounds only, or elements and compounds. Explain your answers.

	This represents a (circle one): substance mixture This represents (circle all that apply): elements compounds Explain your answer above: There are two separate gaseous elements and one gaseous compound.
	This represents a (circle one): substance mixture This represents (circle all that apply): elements compounds Explain your answer above: There are two different gaseous elements but no bonded atoms, so there are no compounds.
	This represents a (circle one): substance mixture This represents (circle all that apply): elements compounds Explain your answer above: There is only one type of atom so this is a monatomic gaseous element.
	This represents a (circle one): substance mixture This represents (circle all that apply): elements compounds Explain your answer above: There are two different types of elements bonded to form a gaseous compound. All the particles are the same, so there is only one compound present.

Identify the following diagrams as representing $N_{2\,(g)}$, $CH_{4\,(g)}$, $H_2O_{\,(g)}$, or a mixture of gases. Identify eash diagrams as representing an element, a compound, or both. Explain your answers.

	Identify as $N_{2\,(g)}$, $CH_{4\,(g)}$, $H_2O_{\,(g)}$, or a mixture of gases This represents (circle all that apply): elements compounds Explain your answer above: There are two different types of elements bonded to form a gaseous compound. All the particles are the same, so there is only one compound present.
	Identify as $N_{2\,(g)}$, $CH_{4\,(g)}$, $H_2O_{\,(g)}$, or a mixture of gases This represents (circle all that apply): elements compounds Explain your answer above: There are two different types of elements bonded to form a gaseous compound. All the particles are the same, so there is only one compound present.
	Identify as $N_{2\,(g)}$, $CH_{4\,(g)}$, $H_2O_{\,(g)}$, or a mixture of gases This represents (circle all that apply): elements compounds Explain your answer above: There are two different types of compounds because of the differing number of open circles bonded to solid filled circles. The diatomic particles are the same type of atom so these are diatomic elements.
	Identify as $N_{2\,(g)}$, $CH_{4\,(g)}$, $H_2O_{\,(g)}$, or a mixture of gases This represents (circle all that apply): elements compounds Explain your answer above: All the particles are the same and are made up of the same type of atom so these are diatomic elements.

The following diagram represents a mixture of substances. Classify the components as monatomic elements, diatomic elements, diatomic compounds, polyatomic elements, or polyatomic compounds by drawing each substance in the appropriate box.



Monatomic elements

Diatomic elements

Polyatomic elements

Diatomic compounds

There are none, both compounds have at least 3 atoms. (Binary compounds have two elements but may have more than two atoms.)

Polyatomic compounds