Classifications of Matter

Activity 1: Matching Pairs - Class Matters

Question Group 1

Question 1

Each descriptive phrase can be matched to a class of matter. Find the matching pairs.

Element
A pure substance composed of a single type of atom.
Compound
A pure susbtance composed of two or more types of atoms that are chemically bound.
Homogeneous Mixture
Two or more different types of particles that are physically and evenly distributed.
Heterogeneous Mixture
Two or more different types of particles that are unevenly distributed.

Activity 2: Photo ID
Question Group 2
Question 2
Consider a coffee (with Sweetener) and a chocolate chip cookie. Consider what each is composed of. Then identify each according to its class.

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Question 3
Consider chili and apple juice. Consider what each is composed of. Then identify each according to its class.

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Question Group 3
Question 4
Consider mouthwash and pepperoni pizza. Consider what each must be composed of. Then identify each according to its class.

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Question 5
Consider cologne and muddy water. Consider what each must be composed of. Then identify each according to its class.

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

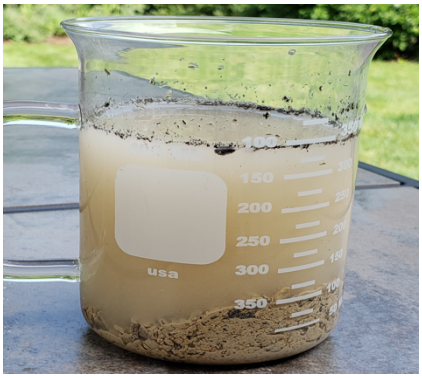
Question Group 3
Question 6
Consider water with food colorant and Italian salad dressing. Consider what each is composed of. Then identify each according to its class.

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Question 7
Consider Saline Solution and gravel and water. Consider what each is composed of. Then identify each according to its class.

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture



Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Question Group 5
Question 8
Consider a density column and a brass candlestick. Consider what each is composed of. Then identify each according to its class.

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Question 9
Consider the bottle of distilled water and a sample of granite rock. Consider what each is composed of. Then identify each according to its class.

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Choose One:
Pure Substance
Homogeneous Mixture
Heterogeneous Mixture

Activity 3: Matching Pairs - Formula for Class
Question Group 6
Question 10
Each formula listed below can be matched to a class of matter. Find the matching pairs.

Mixture of Two Compounds
Pure Substance of an Element
$O_3 + H_2O$
$CO_2 + NaF$
Pure Substance of a Compound
CO_2
Mixture of An Element and a Compound
Cu

Question 11
Each formula listed below can be matched to a class of matter. Find the matching pairs.

Pure Substance of an Element
Pure Substance of a Compound
Mixture of Two Compounds
Mixture of An Element and a Compound

$O_2 + NO_2$
N_2
$NO + H_2O_2$
NaCl

Question Group 7
Question 12
Each formula listed below can be matched to a class of matter. Find the matching pairs.

Pure Substance of an Element
Pure Substance of a Compound
Mixture of Two Compounds
Mixture of Two Elements

O_2
$Cl_2 + Br_2$
$HI + CO$
HCl

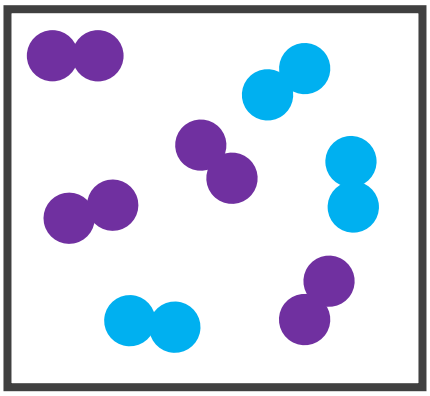
Question 13

Each formula listed below can be matched to a class of matter. Find the matching pairs.

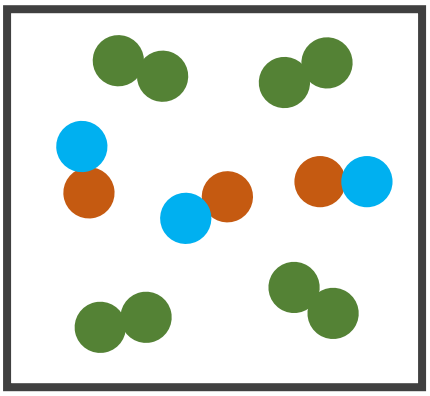
Pure Substance of an Element
Pure Substance of a Compound
Mixture of Two Compounds
Mixture of Two Elements

N_2
$N_2 + Br_2$
HF + NO
KCl

Activity 4: Particle Diagrams
Question Group 8
Question 14
Consider the Particle Diagrams of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.

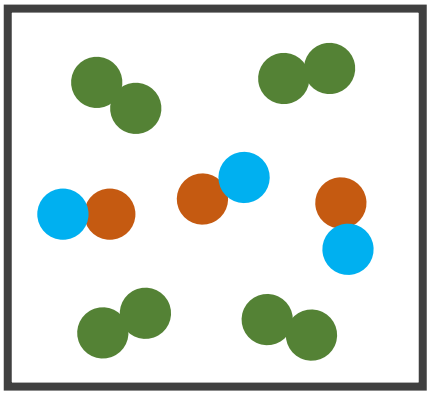


Choose One:
Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.

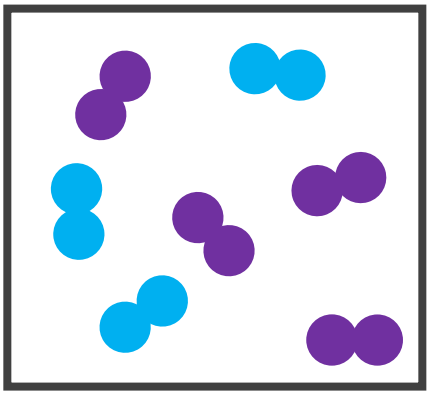


Choose One:
Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.

Question 15
Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.



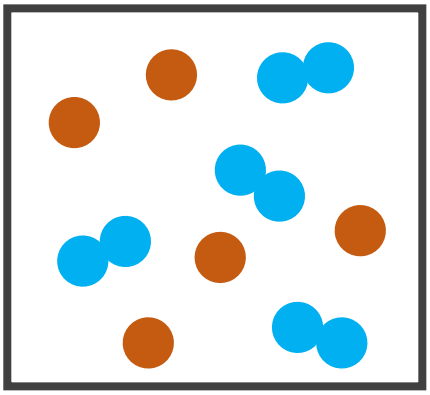
Choose One:
Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.



Choose One:
Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.

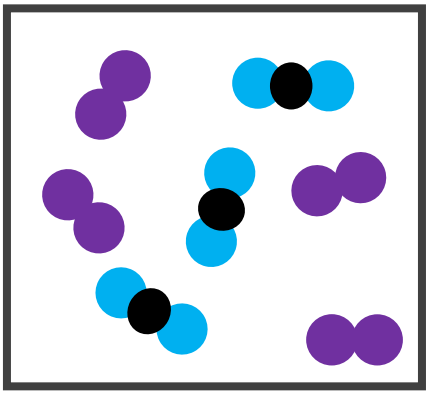
Question 16

Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.



Choose One:

Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.



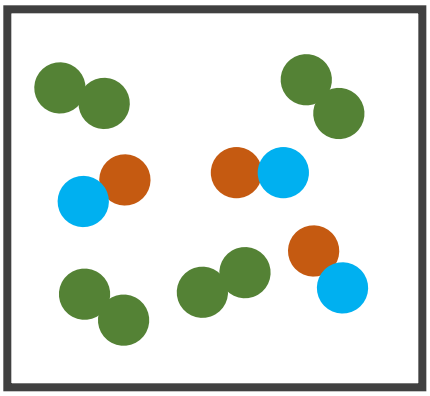
Choose One:

Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.

Question Group 9

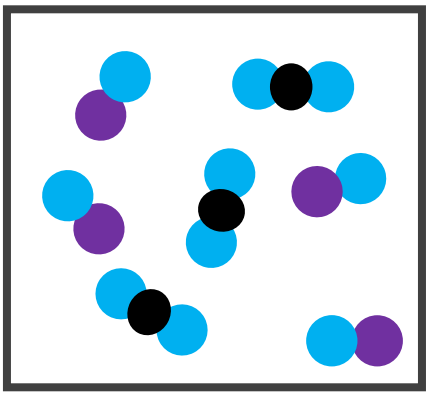
Question 17

Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.



Choose One:

Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.

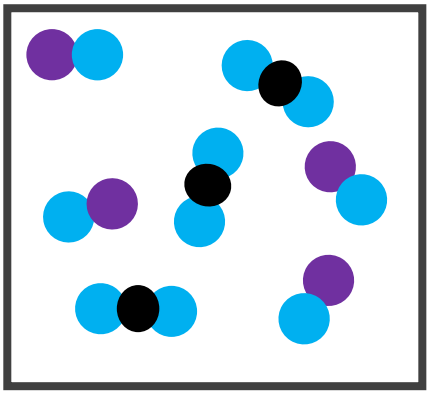


Choose One:

Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.

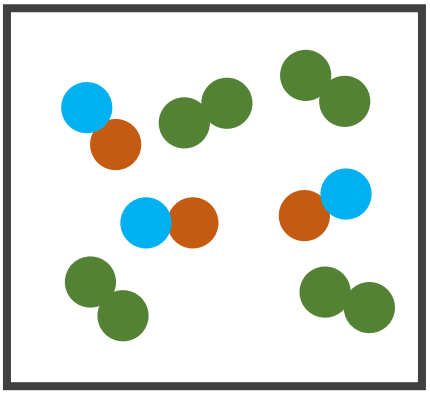
Question 18

Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.



Choose One:

Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.

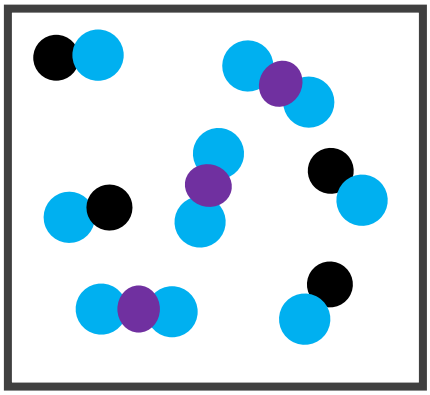


Choose One:

Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.

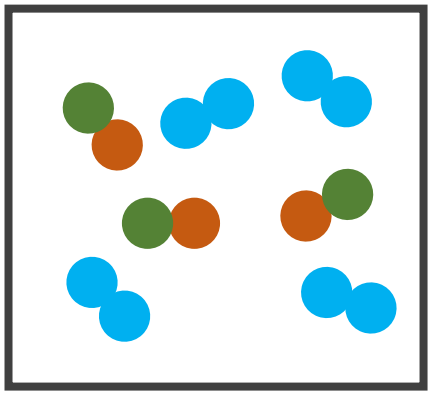
Question 19

Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.



Choose One:

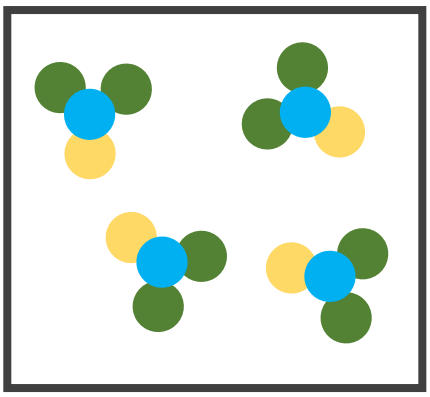
Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.



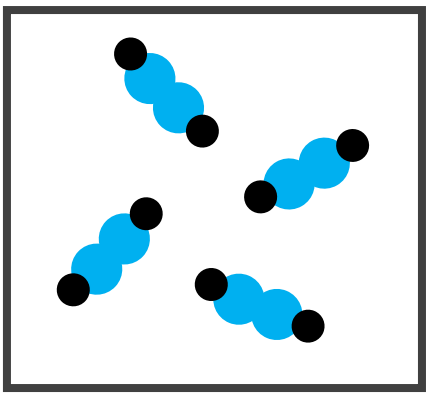
Choose One:

Pure substance of 2 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 2 compounds.
Mixture of an element and a compound.

Question Group 10
Question 20
Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.

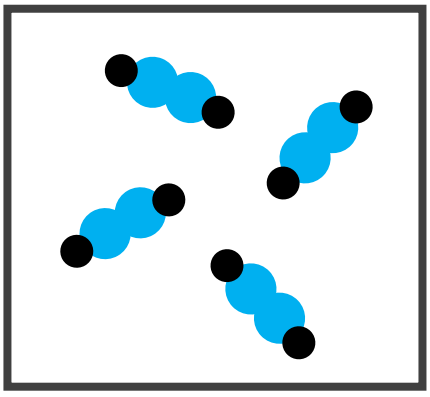


Choose One:
Pure substance of 1 compound.
Pure substance of 4 compounds.
Pure substance of 4 elements.
Mixture of 3 elements.
Mixture of 4 compounds.

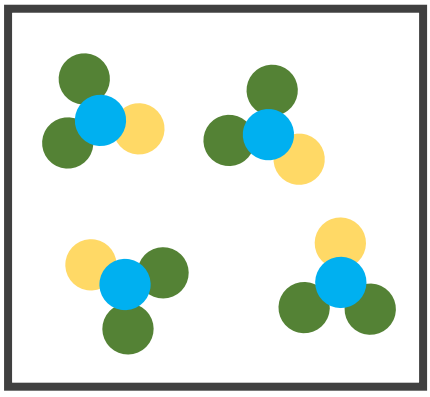


Choose One:
Pure substance of 1 compound.
Pure substance of 4 compounds.
Pure substance of 4 elements.
Mixture of 2 elements.
Mixture of 2 compounds.

Question 21
Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.



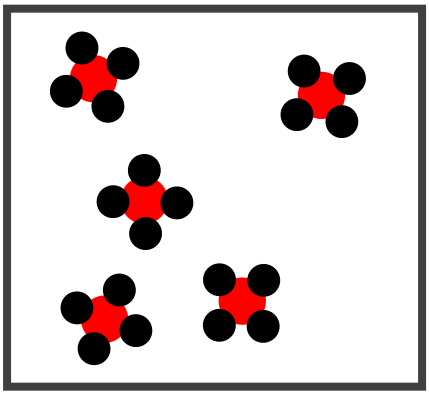
Choose One:
Pure substance of 1 compound.
Pure substance of 4 compounds.
Pure substance of 4 elements.
Mixture of 3 elements.
Mixture of 4 compounds.



Choose One:
Pure substance of 1 compound.
Pure substance of 4 compounds.
Pure substance of 4 elements.
Mixture of 2 elements.
Mixture of 2 compounds.

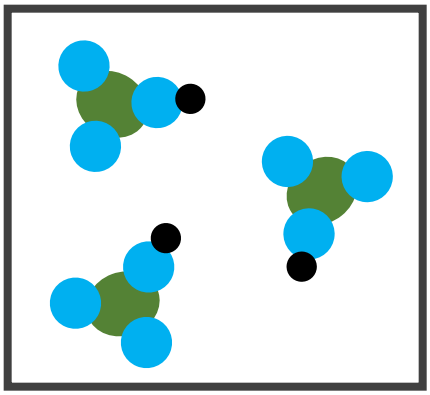
Question 22

Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.



Choose One:

Pure substance of 1 compound.
Pure substance of 5 compounds.
Pure substance of 2 elements.
Mixture of 2 elements.
Mixture of 1 compound and 1 element.



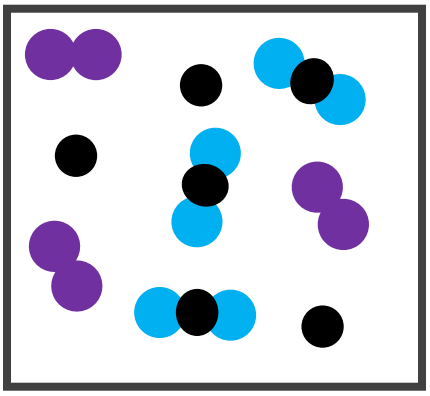
Choose One:

Pure substance of 1 compound.
Pure substance of 3 compounds.
Pure substance of 3 elements.
Mixture of 3 elements.
Mixture of 1 compound and 2 elements.

Question Group 11

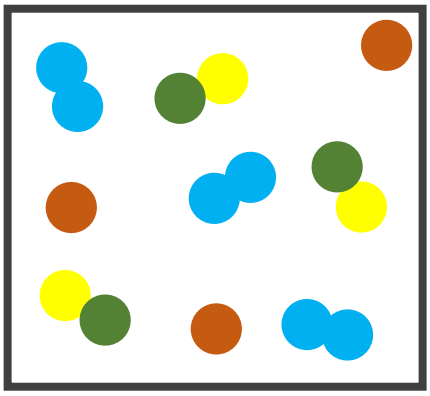
Question 23

Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.



Choose One:

Mixture of 3 elements.
Mixture of 4 elements.
Mixture of 2 elements and 1 compound.
Mixture of 1 element and 2 compounds.
Mixture of 3 compounds.

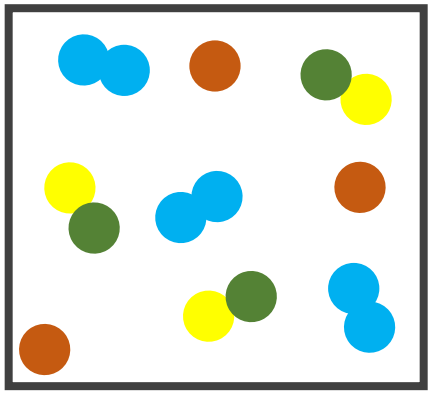


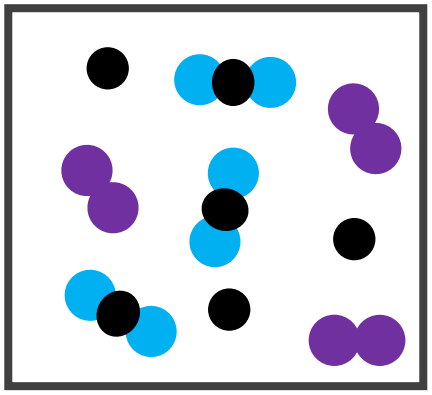
Choose One:

Mixture of 3 elements.
Mixture of 4 elements.
Mixture of 2 elements and 1 compound.
Mixture of 1 element and 2 compounds.
Mixture of 3 compounds.

Question 24

Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.

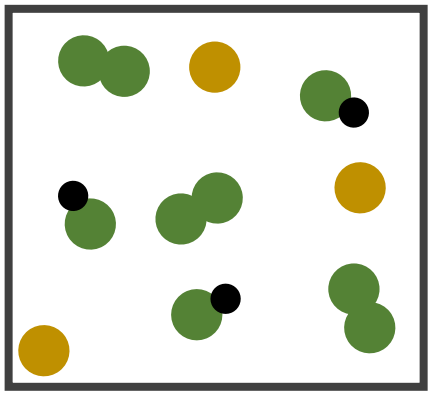


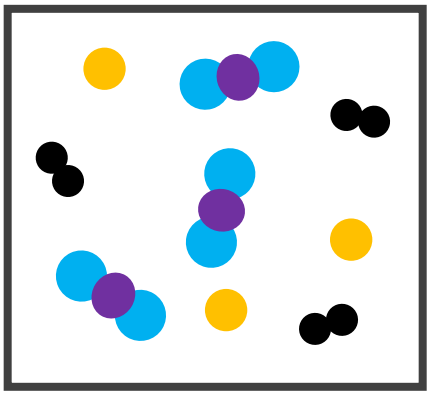


Choose One:	**Choose One:**
Mixture of 3 elements.	Mixture of 3 elements.
Mixture of 4 elements.	Mixture of 4 elements.
Mixture of 2 elements and 1 compound.	Mixture of 2 elements and 1 compound.
Mixture of 1 element and 2 compounds.	Mixture of 1 element and 2 compounds.
Mixture of 3 compounds.	Mixture of 3 compounds.

Question 25

Consider the Particle Views of two samples of matter. Consider what each is composed of. Then identify the best description of each sample of matter.





Choose One:	**Choose One:**
Mixture of 3 elements.	Mixture of 3 elements.
Mixture of 4 elements.	Mixture of 4 elements.
Mixture of 2 elements and 1 compound.	Mixture of 2 elements and 1 compound.
Mixture of 1 element and 2 compounds.	Mixture of 1 element and 2 compounds.
Mixture of 3 compounds.	Mixture of 3 compounds.