

Properties of Materials



1. Match up the descriptions on the left-hand side with their opposites on the right.

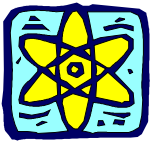
- | | |
|------------------------|------------------------|
| Hard • | • Dull |
| Rigid • | • Absorbent |
| Strong • | • Electrical Insulator |
| Rough • | • Opaque |
| Shiny • | • Smooth |
| Brittle • | • Flexible |
| Transparent • | • Thermal Insulator |
| Waterproof • | • Soft |
| Electrical Conductor • | • Weak |
| Thermal Conductor • | • Tough |

2. Identify the words from the lists above described here.

- Bendy _____
- Will shatter easily _____
- Will let light through _____
- Not very reflective _____

3. Use words from the lists to describe each of these materials

- Wood _____
- Glass _____
- Wool _____
- Aluminium foil _____
- Plastic _____
- Tissue _____
- Leather _____
- Paper _____
- Diamond _____

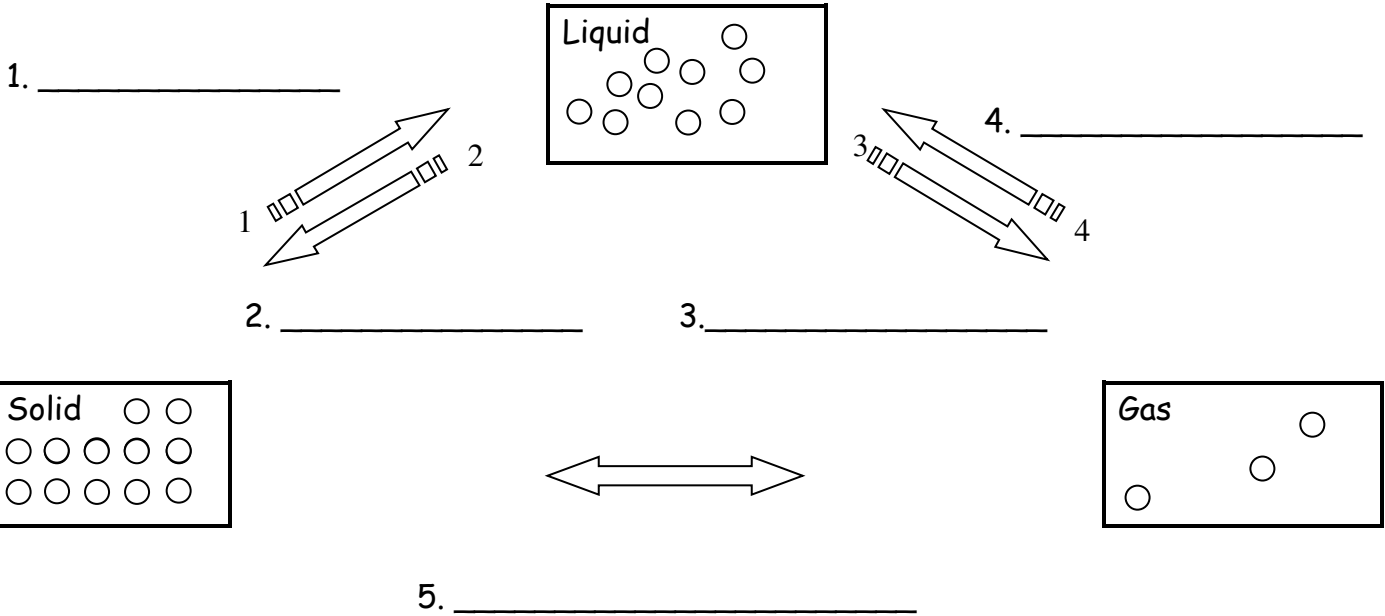


Changes of State



A. Choose words from this list to complete the spaces below:

condensation, melting, sublimation, evaporation, freezing

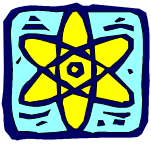


B. Say whether the events below are examples of melting, freezing, evaporation, condensation or sublimation:

- a. The ice cubes in my drink have disappeared.
- b. The puddles have all dried up.
- c. The mirror in the bathroom has misted up.
- d. The cold night has left ice on the roads.
- e. There seems to be smoke coming off the Iodine block.
- f. My ice cream has dripped down my shirt.
- g. There is steam coming off that hot water.
- h. My clothes are all dry now.

C. Say whether you need to add heat, or remove heat to make these things happen:

- a. Freeze water to make ice.
- b. Melt an ice cream.
- c. Boil some water.
- d. Change a gas into a liquid.
- e. Change a liquid into a solid.
- f. Change a solid into a gas.
- g. Dry off some clothes.



Elements, Mixtures and Compounds



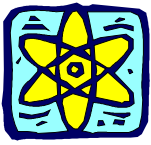
A. Link each particle or substance with the correct diagram and description. The first has been completed for you.

Particle/substance		Diagram		Description
An atom	•		•	• Two or more elements chemically combined
A molecule	•		•	• A charged particle
An ion	•		•	• A single particle (no charge)
An element	•		•	• A collection of atoms or molecules of the same kind
A compound	•		•	• 2 or more atoms chemically joined together
A mixture	•		•	• Different elements or compounds mixed together

B. Study the diagrams and decide which one each statement below is describing.

a 	b 	c 	d
e 	f 	g 	h

1. Atoms of a single element ____
2. Molecules of a single element ____
3. A mixture of 2 elements, both of which are made of atoms ____
4. A mixture of 2 elements, both of which are made of molecules ____
5. A mixture of 2 elements, one of which is made of atoms, the other molecules ____
6. A pure compound made of molecules ____
7. A pure compound made of ions ____
8. A mixture of 2 compounds ____



Changes of State LA



1. Place these 5 words in the correct places on the diagram.

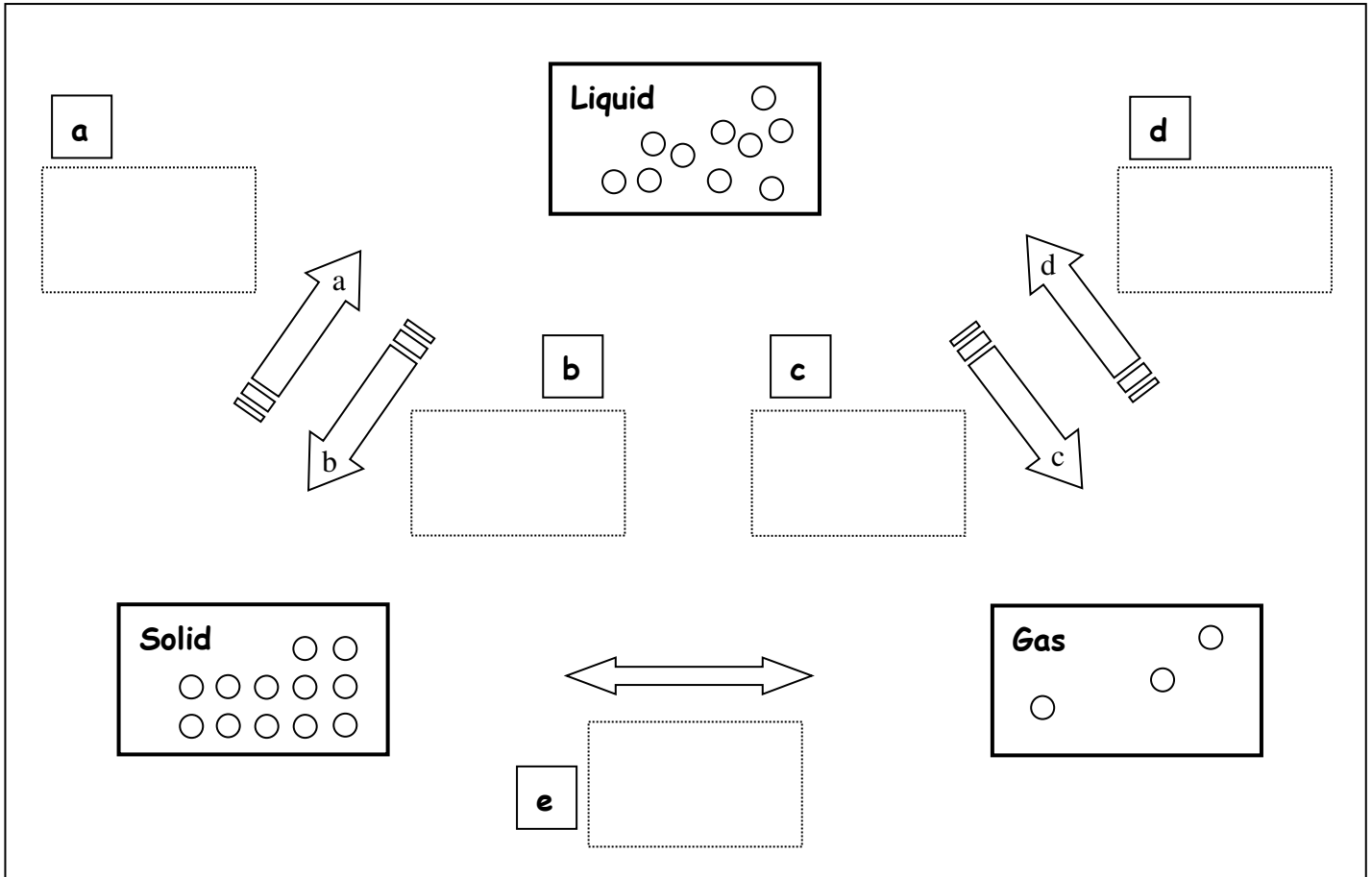
condensation

freezing

melting

sublimation

evaporation



2. Circle the correct spelling from each list:

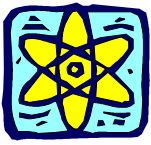
a.	evaparation	evaporation	evapporation	evaporasion
b.	condensasion	condennsation	condensetion	condensation
c.	frezzing	frezing	freezing	freezin
d.	melting	melttng	mellting	meelting
e.	sublimmation	sublimation	sublemation	sublimetion

3. Are these things examples of melting, freezing, evaporation or condensation? Circle the correct word.

a.	The ice cubes in my drink have disappeared	melting freezing evaporation condensation
b.	The mirror in the bathroom has misted up	melting freezing evaporation condensation
c.	The cold night has left ice on the roads	melting freezing evaporation condensation
d.	My ice cream has dripped down my shirt	melting freezing evaporation condensation
e.	There is steam coming off that hot water	melting freezing evaporation condensation
f.	My clothes are all dry now	melting freezing evaporation condensation

4. Do you need to add heat, or remove heat to make these things happen?

a.	Freeze water to make ice	Add heat	Remove heat
b.	Melt an ice cream	Add heat	Remove heat
c.	Boil some water	Add heat	Remove heat
d.	Dry off some clothes	Add heat	Remove heat
e.	Change a gas into a liquid	Add heat	Remove heat
f.	Change a liquid into a solid	Add heat	Remove heat
g.	Change a solid into a gas	Add heat	Remove heat



Elements, Mixtures and Compounds



A. Link each diagram with its description.

Diagram	Description
	<ul style="list-style-type: none">• Atom A single particle
	<ul style="list-style-type: none">• Molecule 1 particle made of 2 or more atoms
	<ul style="list-style-type: none">• Element A collection of atoms that are all the same
	<ul style="list-style-type: none">• Compound Two or more different elements joined together
	<ul style="list-style-type: none">• Mixture Different substances mixed together but not joined

B. Study the diagrams and decide which each statement below is describing.

a 	b 	c 	d
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1. Atoms of an element ____
2. Molecules of an element ____
3. A mixture of 2 elements, both of which are made of atoms ____
4. A pure compound made of molecules ____



Properties of Materials - Answers



1. Match up the descriptions on the left-hand side with their opposites on the right.

Hard	•	—————	•	Soft
Rigid	•		•	Flexible
Strong	•		•	Weak
Rough	•		•	Smooth
Shiny	•		•	Dull
Brittle	•		•	Tough
Transparent	•		•	Opaque
Waterproof	•		•	Absorbent
Electrical Conductor	•		•	Electrical Insulator
Thermal Conductor	•		•	Thermal Insulator

2. Identify the words from the lists above described here.

- a. Bendy = **Flexible**
- b. Will shatter easily = **Brittle**
- c. Will let light through = **Transparent**
- d. Not very reflective = **Dull**

3. Use words from the lists to describe each of these materials

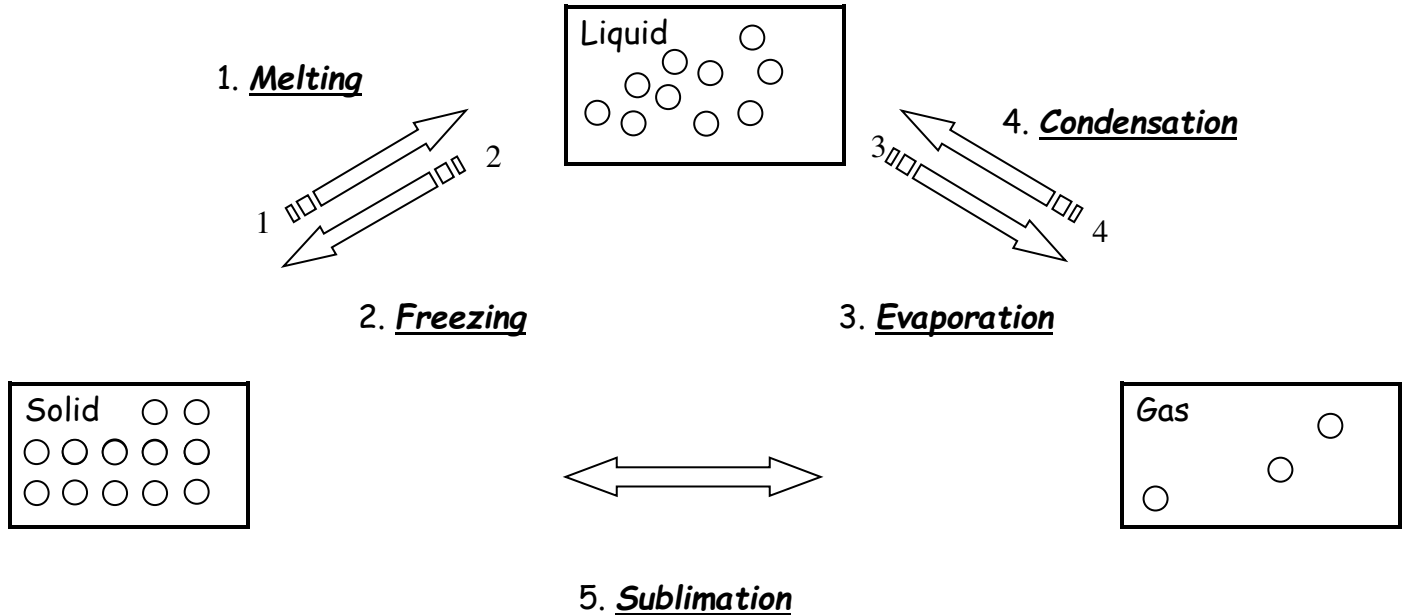
- j. Wood = **Hard. Rigid. Tough. Waterproof. Opaque. Insulator (both).**
- k. Glass = **Hard. Rigid. Smooth. Brittle. Waterproof. Transparent.**
- l. Wool = **Soft. Flexible. Absorbent. Opaque.**
- m. Aluminium foil = **Flexible. Smooth. Shiny. Conductor (both).**
- n. Plastic = **Hard. Rigid. Smooth. Tough. Waterproof. Insulator (both).**
- o. Tissue = **Soft. Flexible. Absorbent. Weak. Opaque.**
- p. Leather = **Soft. Flexible. Tough. Opaque.**
- q. Paper = **Flexible. Absorbent. Opaque.**
- r. Diamond = **Hard. Rigid. Shiny. Tough. Strong. Transparent.**



Changes of State - Answers



B. Choose words from this list to complete the spaces below:

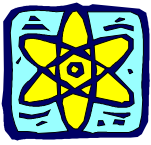


B. Say whether the events below are examples of melting, freezing, evaporation, condensation or sublimation:

- The ice cubes in my drink have disappeared. Melting
- The puddles have all dried up. Evaporation
- The mirror in the bathroom has misted up. Condensation
- The cold night has left ice on the roads. Freezing
- There seems to be smoke coming off the Iodine block. Sublimation
- My ice cream has dripped down my shirt. Melting
- There is steam coming off that hot water. Evaporation
- My clothes are all dry now. Evaporation

C. Say whether you need to add heat, or remove heat to make these things happen:

- Freeze water to make ice. **Remove heat**
- Melt an ice cream. **Add heat**
- Boil some water. **Add heat**
- Change a gas into a liquid. **Remove heat**
- Change a liquid into a solid. **Remove heat**
- Change a solid into a gas. **Add heat**
- Dry off some clothes. **Add heat**



Elements, Mixtures and Compounds - Answers



A. Link each particle or substance with the correct diagram and description. The first has been completed for you.

Particle/substance	Diagram	Description
An atom		Two or more elements chemically combined
A molecule		A charged particle
An ion		A single particle (no charge)
An element		A collection of atoms or molecules of the same kind
A compound		2 or more atoms chemically joined together
A mixture		Different elements or compounds mixed together

B. Study the diagrams and decide which one each statement below is describing.

a 	b 	c 	d
e 	f 	g 	h

1. Atoms of a single element = **h**
2. Molecules of a single element = **e**
3. A mixture of 2 elements, both of which are made of atoms = **c**
4. A mixture of 2 elements, both of which are made of molecules = **b**
5. A mixture of 2 elements, one of which is made of atoms, the other molecules = **f**
6. A pure compound made of molecules = **a**
7. A pure compound made of ions = **g**
8. A mixture of 2 compounds = **d**



Changes of State Answers

LA



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- a. Melting
- b. Freezing
- c. Evaporation
- d. Condensation
- e. Sublimation

2. Correct spellings indicated

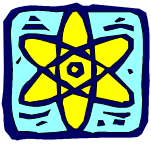
a.	evaparation	<u>evaporation</u>	evapporation	evaporasion
b.	condensasion	condennsation	condensetion	<u>condensation</u>
c.	frezzing	frezing	<u>freezing</u>	freezin
d.	<u>melting</u>	meltting	mellting	meelting
e.	sublimmation	<u>sublimation</u>	sublemation	sublimetion

3. Correct words shown.

a.	The ice cubes in my drink have disappeared	melting
b.	The mirror in the bathroom has misted up	condensation
c.	The cold night has left ice on the roads	freezing
d.	My ice cream has dripped down my shirt	melting
e.	There is steam coming off that hot water	evaporation
f.	My clothes are all dry now	evaporation

4. Do you need to add heat, or remove heat to make these things happen?

a.	Freeze water to make ice	Remove heat
b.	Melt an ice cream	Add heat
c.	Boil some water	Add heat
d.	Dry off some clothes	Add heat
e.	Change a gas into a liquid	Remove heat
f.	Change a liquid into a solid	Remove heat
g.	Change a solid into a gas	Add heat



Elements Answers

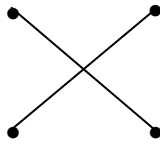
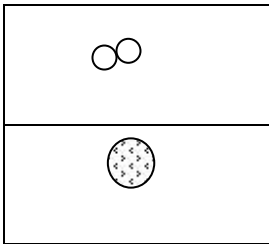
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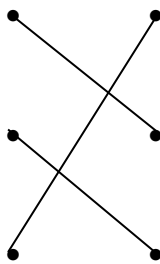
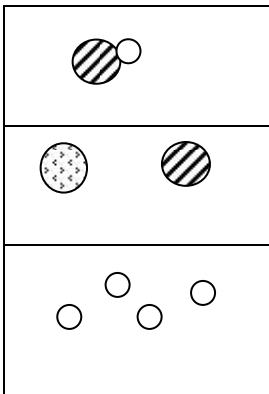
A.

Diagram

Description

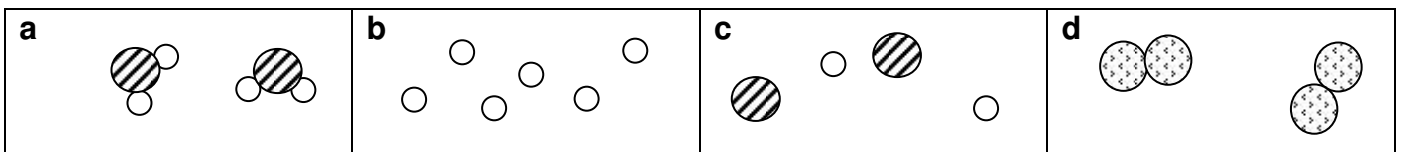


Atom A single particle
Molecule 1 particle made of 2 or more atoms



Element A collection of atoms that are all the same
Compound Two or more different elements joined together
Mixture Different substances mixed together but not joined

B.



1. Atoms of an element **b**
2. Molecules of an element **d**
3. A mixture of 2 elements, both of which are made of atoms **c**
4. A pure compound made of molecules **a**