Clicker Questions for *Sugar and Salt Solutions*

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COURSE:

Introductory / Preparatory College Chemistry

When salt (NaCl) dissolves in water, …

	it will produce…	Because…
A	$[NaCl]^+$ molecules	It transfers electrons to the water.
B	Na^+ and Cl^- ions	Electrons are transferred from Na atoms to Cl atoms
C	Na^+ and Cl^- ions	The ions in the salt separate
D	H^+ and OH^- ions	It forces water to break into H^+ and OH^- ions
E	More than one of the above	

Sodium chloride is solid at room temperature: $NaCl_{(s)}$

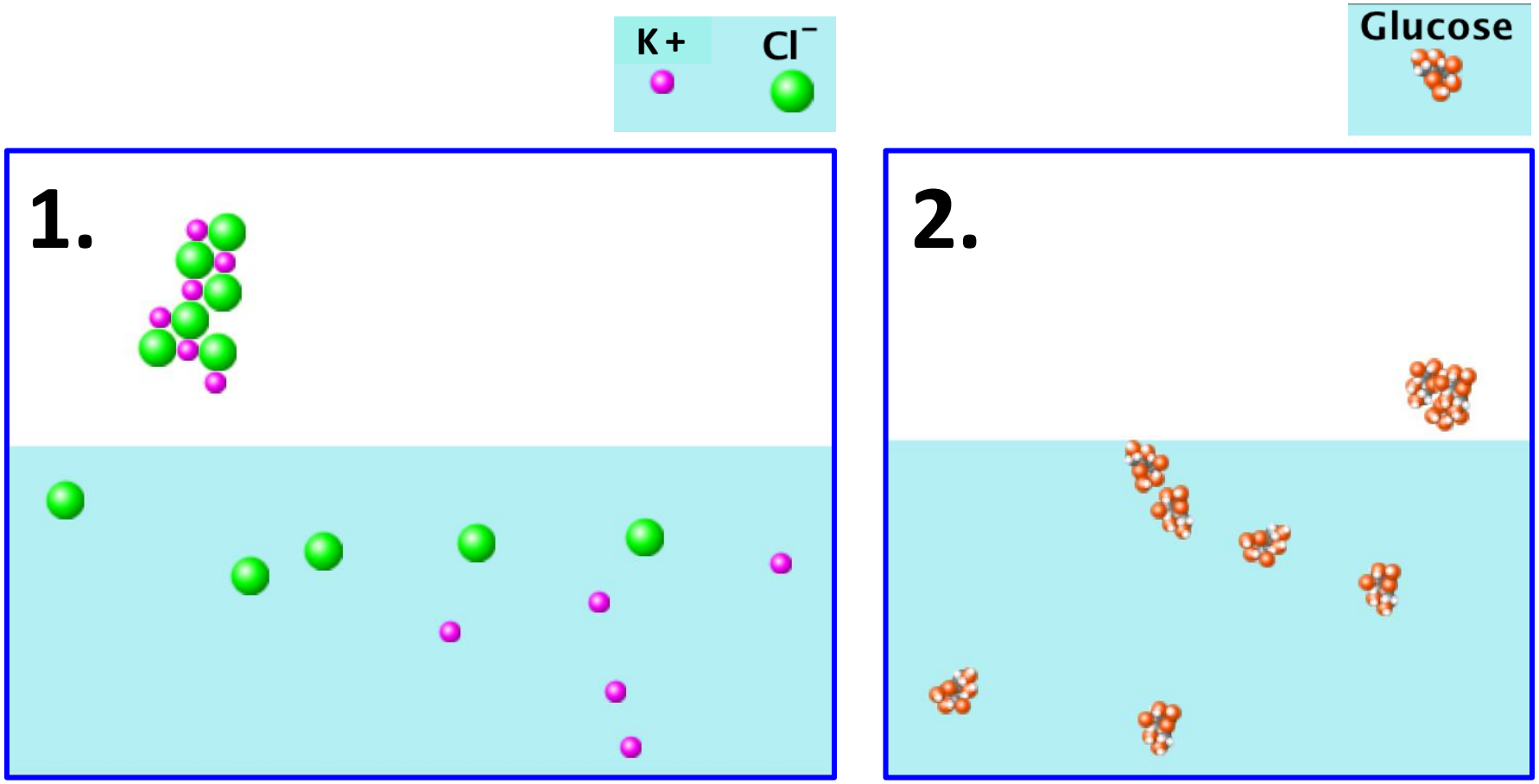
Will *melted* sodium chloride $NaCl_{(l)}$ conduct electricity?

A. Yes

B. No

C. It depends

Which box shows an electrolyte dissolving in water?



a. Box 1

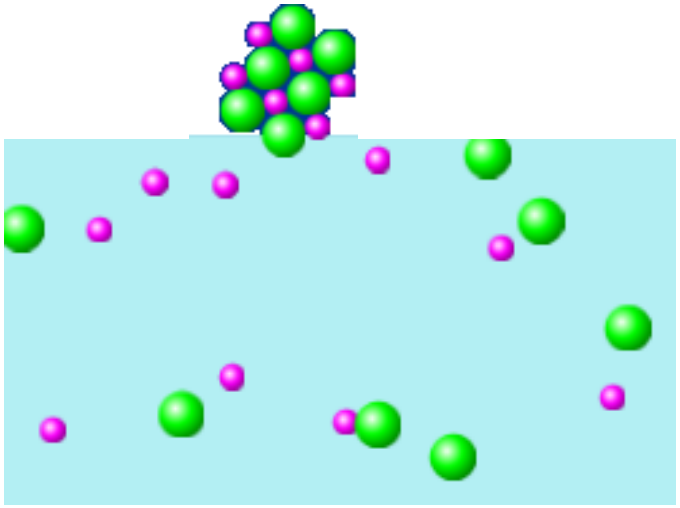
b. Box 2

c. Both

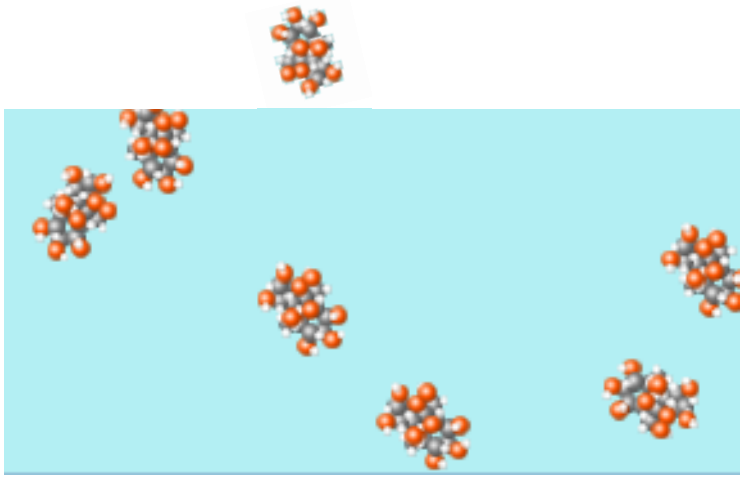
d. Neither

If the atom-scale view of a compound in water looks like the picture on the right (II.), you might categorize the compound as…

I.



II.

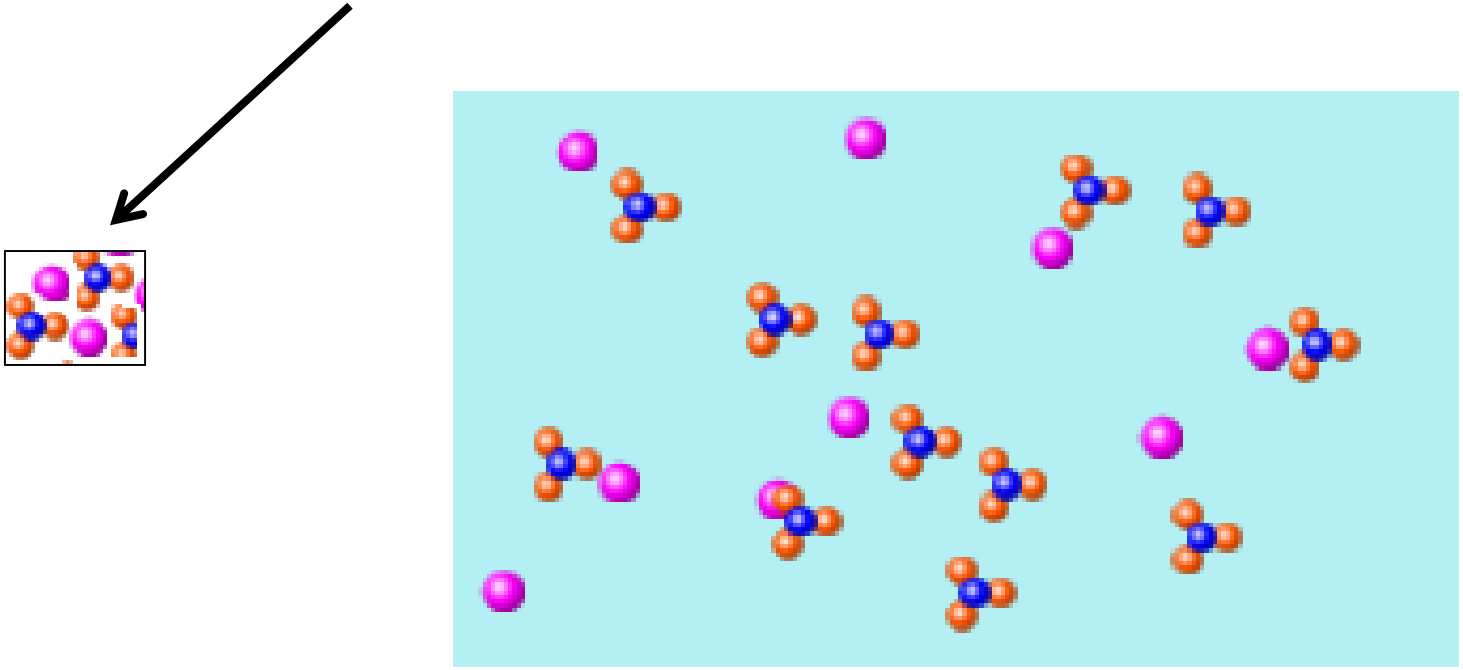


a. Ionic

b. Molecular

c. Neither

What kind of bonding is in this compound **before** it goes into the water?



a. Ionic b. Covalent c. Both d. Neither

Which compound is ionic?

A. CO
B. MgF_2
C. Al_2O_3
D. Both CO and MgF_2
E. Both MgF_2 and Al_2O_3

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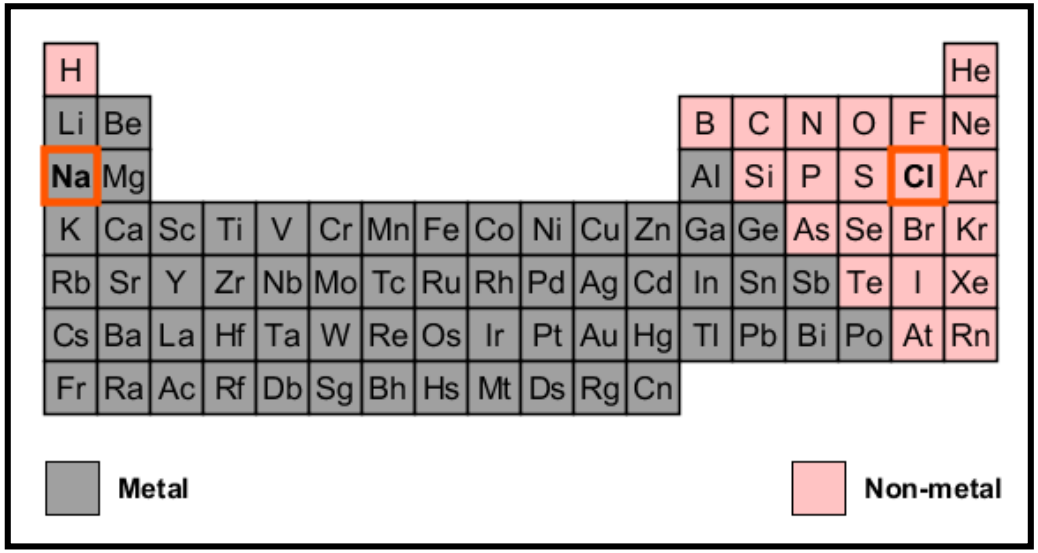
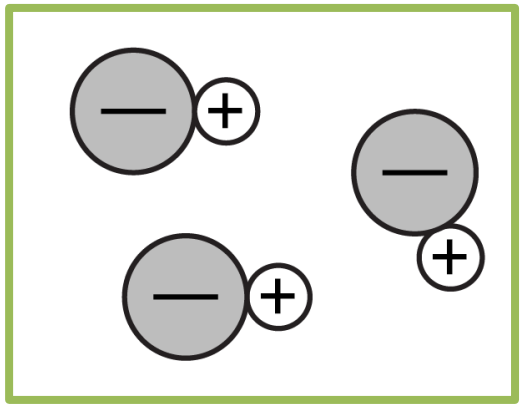
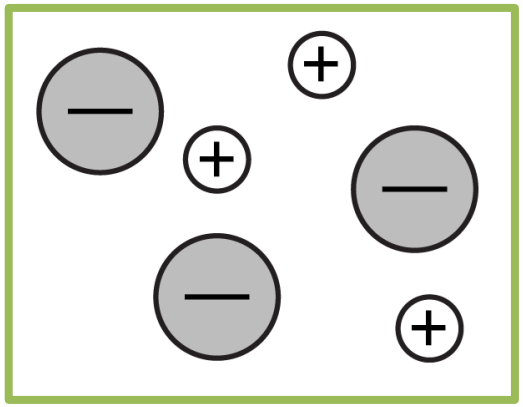
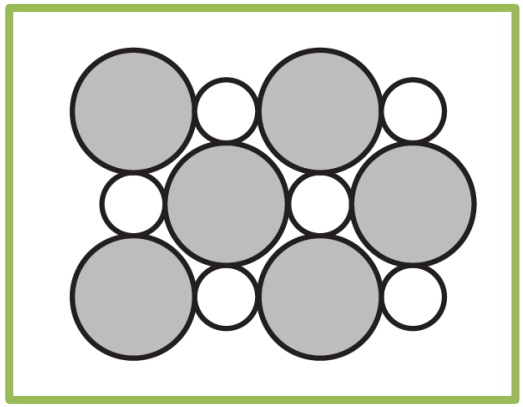


A metal combined with a non-metal make an "ionic compound".

How many of these pictures correctly depict the all of the features of solid NaCl?

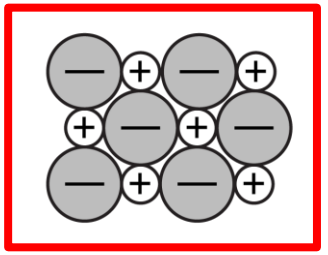






a. Zero b. 1 c. 2 d. 3

A correct (and complete) 2D representation of solid NaCl.



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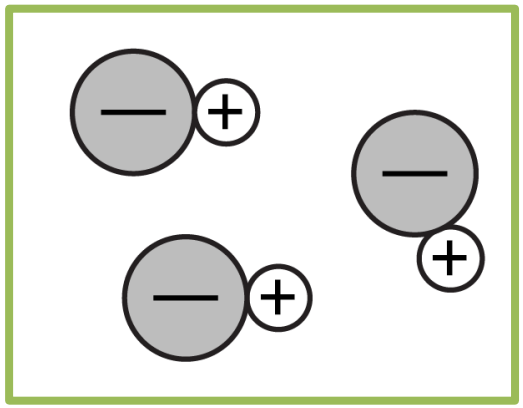
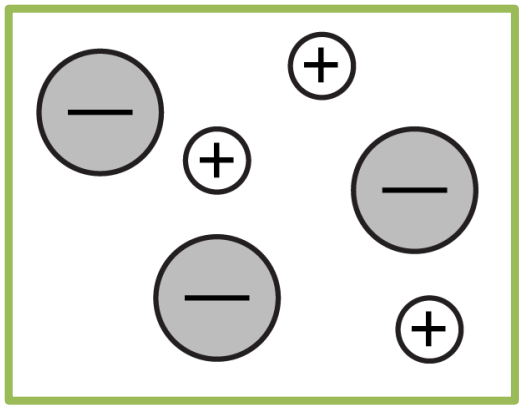
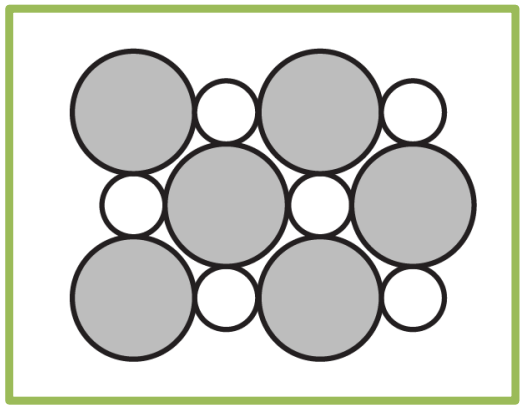


Incorrect – solid NaCl doesn't form discrete molecules.



Incorrect – solid NaCl does not dissociate (until we dissolve it in water)



Incorrect, unless we define the circles as ions – solid NaCl does form an extended lattice like this, but it is made of charged ions even when it's a solid.

a. Zero

b. 1

c. 2

d. 3

Conductivity pairs

Which of these solutions will have higher conductivity?

A	B	C
Potassium chloride in water	Glucose ($C_6H_{12}O_6$) in water	Not enough information

Conductivity pairs

Which of these solutions will have higher conductivity?

A	B	C
Potassium chloride in water	A different solution of potassium chloride in water	Not enough information

Conductivity pairs

Which of these solutions will have higher conductivity?

A	B	C
0.1 M $KCl_{(aq)}$	0.2 M $KCl_{(aq)}$	Not enough information

Conductivity pairs

Which of these solutions will have higher conductivity?

A	B	C
0.1 M $KCl_{(aq)}$	0.1 M $CaCl_{2\,(aq)}$	Not enough information

Conductivity pairs

Which of these solutions will have higher conductivity?

A	B	C
0.1 M $KCl_{(aq)}$	0.1 M solution of a weak acid HA in water	Not enough information