

### Claim Cards Key: Making the Attraction Real

Directions: Read each of the claims and determine from what you've learned whether the claim is correct or incorrect. Justify why each claim is correct or incorrect.

Claim: The stronger the attractions between the atoms or molecules, the more energy it will take to separate them.

**Correct** / Incorrect (circle one)

Justification: Applied energy is needed to overcome intermolecular forces. Therefore, strong IMFs need more applied energy than the attractive force to overcome them.

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Claim: As a temporary dipole is established in one molecule, it induces a dipole in all surrounding molecules.

**Correct** / Incorrect (circle one)

Justification: One induced dipole will create an induced dipole in the molecular next to it, and the process continues to all surrounding molecules.

Claim: Polar molecules only have induced dipoles.

Correct / **Incorrect** (circle one)

Justification: To be polar means there is a permanent dipole. Polar molecules can induce dipoles on nonpolar molecules, but not within the polar molecule.

Claim: Hydrogen bonds are stronger than dipole-dipole forces, despite not being a true bond.

**Correct** / Incorrect (circle one)

Justification: Hydrogen bonds are not bonds, but the strongest IMF.

Claim: London dispersion forces are present in all molecules and atoms.

**Correct** / Incorrect (circle one)

Justification: London dispersion forces exist within all molecules, since electron clouds can shift and have momentary dipoles at any time.