GLITTERS: What attractive force holds water together?

but first:

plot the temperature of water with ice cubes.

need: a pint glass, timer, water, ice cubes, quick-read thermometer

time	temp.	note
0:00		add ice cubes
0:05		
0:10		
0:15		
0:20		
0:25		

Use the cold water for the Brownian Motion demo (below).

Brownian motion demo

1. two pint glasses filled with water: one cold, the other hot
2. drop some ink into the cold water. observe.
3. now drop some ink into the warm water. observe.

questions

1. what force is kicking the ink particles around?
2. what does temperature have to do with it?
3. is there anything special about the ink? (try cigarette smoke)
4. what does the heat do?
5. what kind of force is this? (mechanical, magnetic, electrostatic, gravitational, van der waals, or ???)
6. can you characterize the behaviors of both glasses *qualitatively?*

Segue: How do these observations aboiut molecules inform your thoughts about resonance?