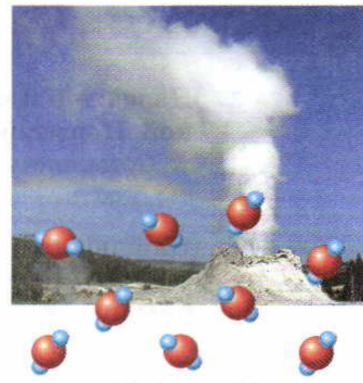
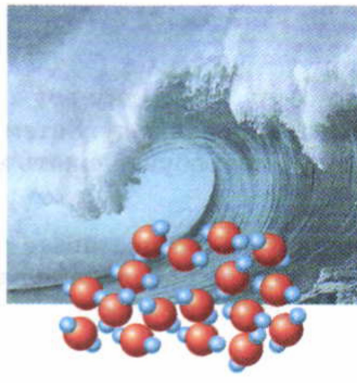
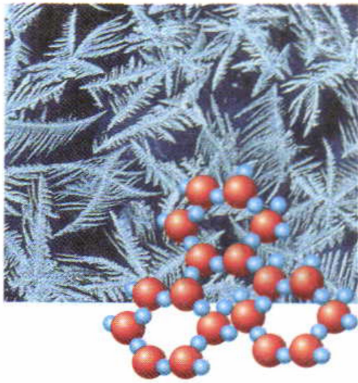
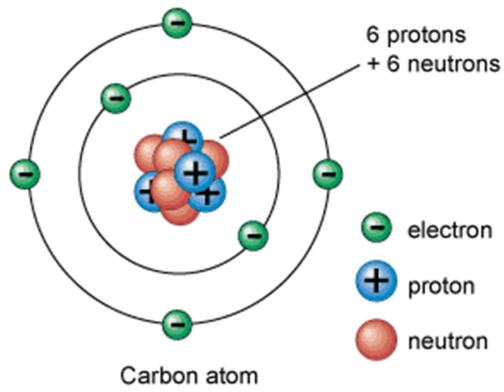


*How do atoms and molecules form things around us.*



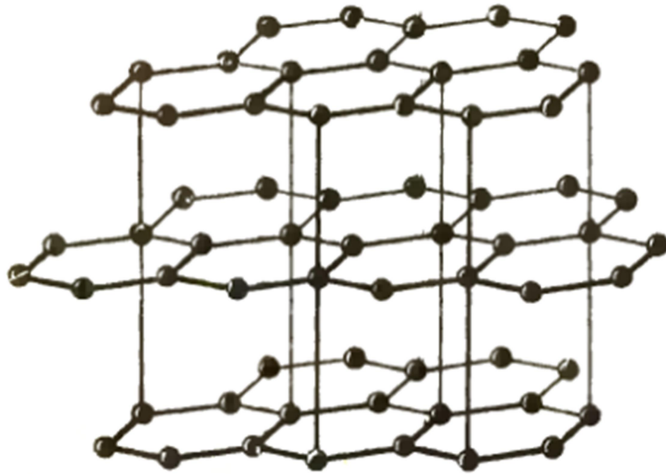
Carbon:



These atoms make Diamond....



And the same atoms make Graphite....



**Homework experiment. Grow crystals at home.**

*With permission of your parents only!!!*

*Prepare a clear glass with a pencil across the top and a string with a knot (or few knots) at the end, see picture on the left. Take Epsom salt (Epsom salt is magnesium sulfate  $MgSO_4$ , it is sold everywhere, say in Target). Note – you also may try to do the same with  $NaCl$  – regular food salt. Make hot water and add approximately as much salt by volume, as you have water. Keep adding and stirring. If salt no longer dissolves – filter the solution through coffee filter into a clear glass which you prepared above. Add food colorings if you like. Make sure that when you put the pencil back after pouring solution, the string goes inside the fluid and hangs well below the surface. Let this construction stay for few days somewhere where your pets or siblings cannot knock it down. Observe crystals – bring them to us to next class (without water of course!) if they look good! If they are very pretty, put a thin layer of mom's clear nail polish on them – it will protect them from absorbing moisture from the air and becoming not-clear.*



**Homework problem. Soda bottle .**

*Try to compress a full closed plastic bottle with water or some other fluid. Then remove water and close the cap again. Compress the bottle with air instead of water. Can you explain why compressing water is harder?*