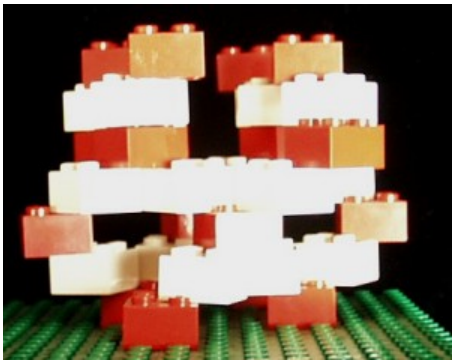
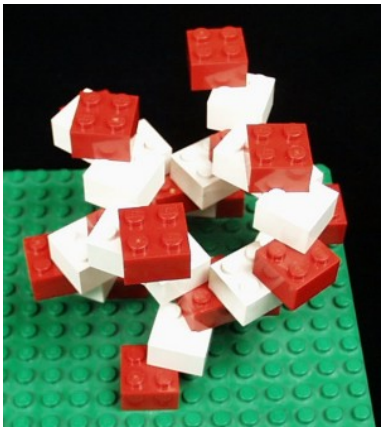


red = Si white = O

Quartz (whole atoms)



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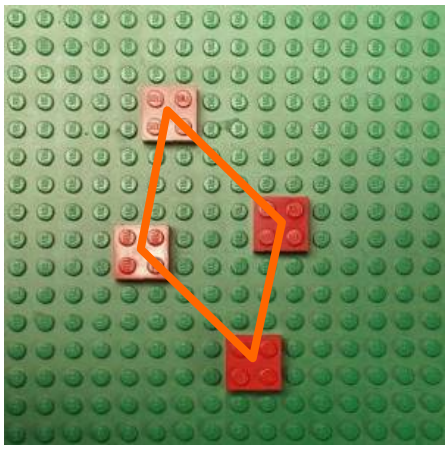

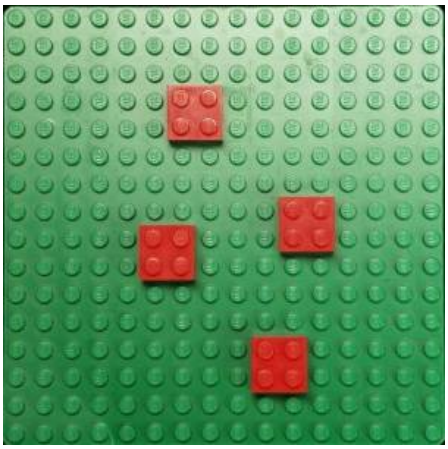

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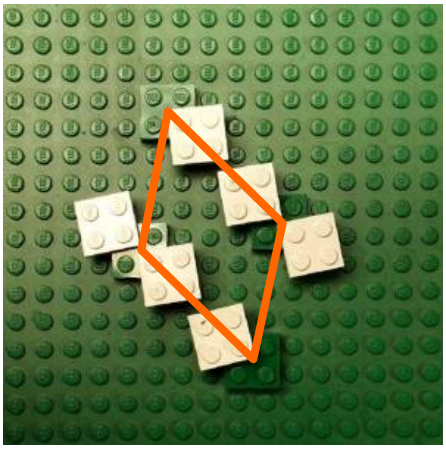

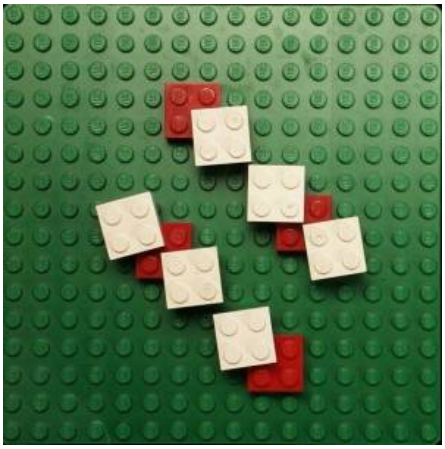

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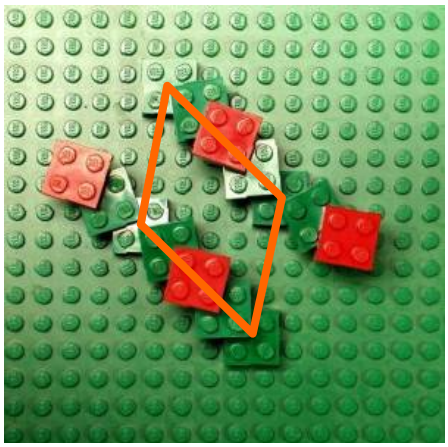

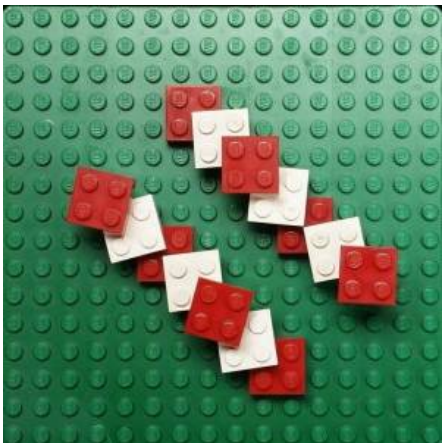

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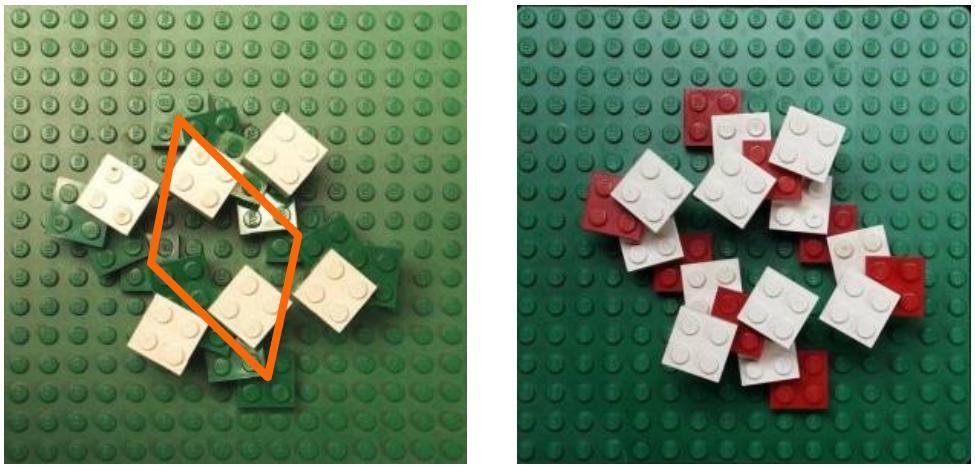

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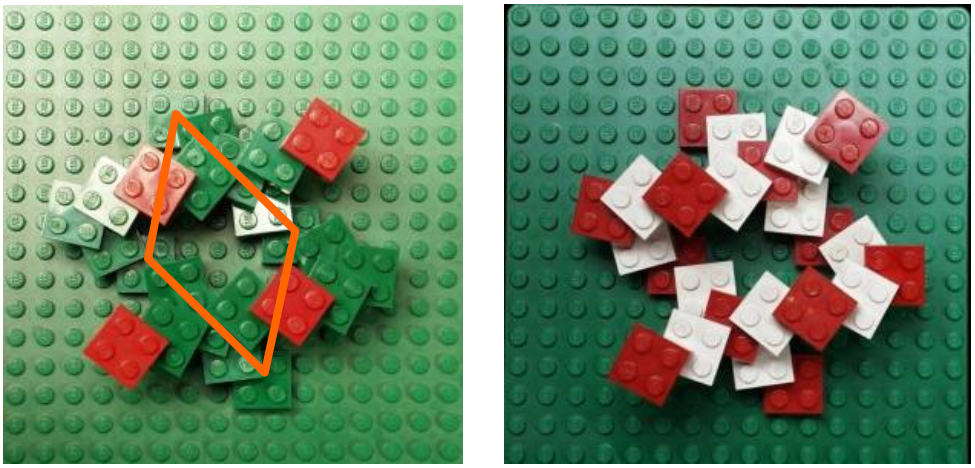

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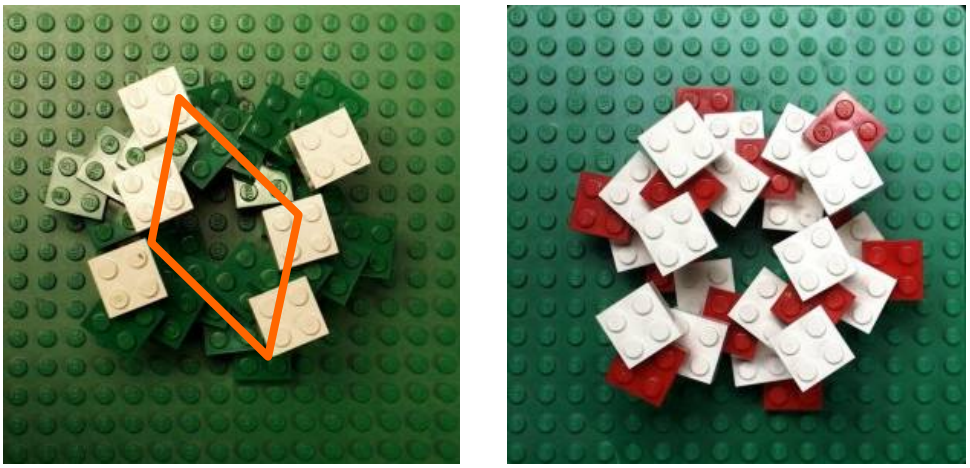
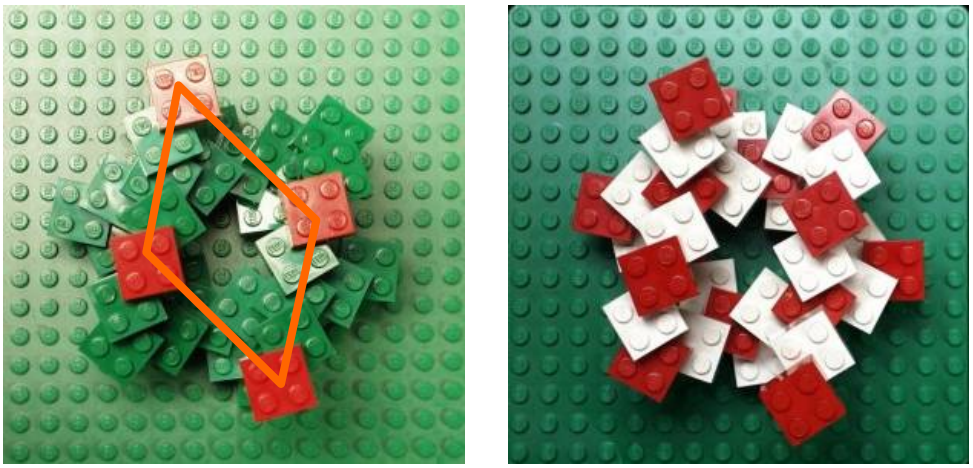
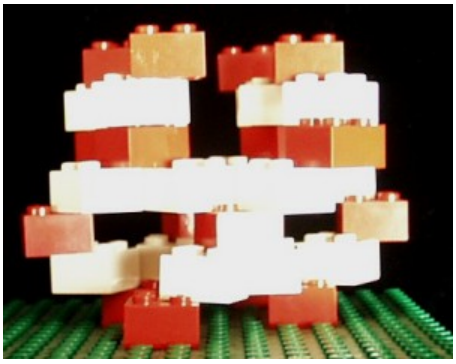


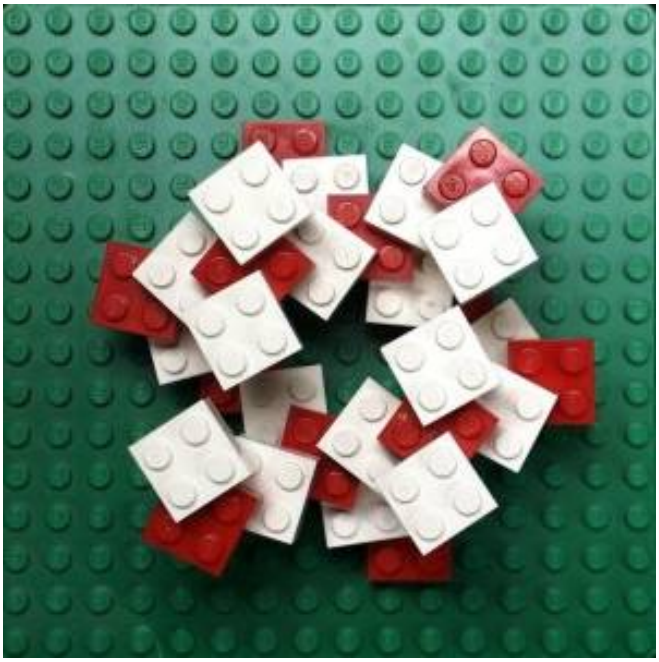
Z=
0,**1**



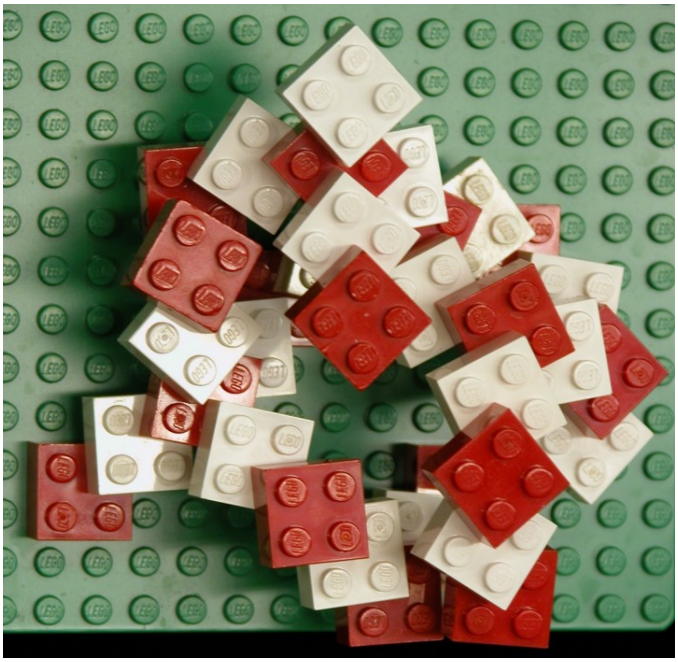
Crystalline vs. Amorphous Quartz (whole atoms)



red = Si white = O



Crystalline



Amorphous

Note in both structures that the rules for bonding are the same: each Si atom is attached to four O atoms and each O atom is attached to two Si atoms. However, the atoms are organized in three-dimensional patterns in the crystalline phase. In the amorphous (glassy) phase, that order is not present. The atoms in the amorphous phase show a liquid-like disorder, yet they do not move about and the material is a solid.