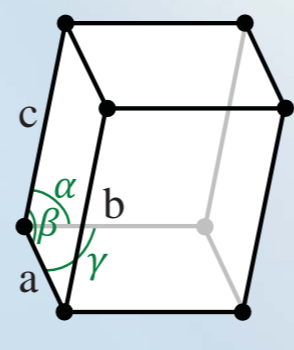
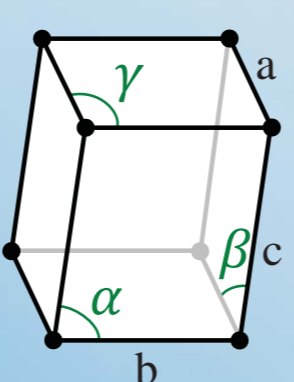
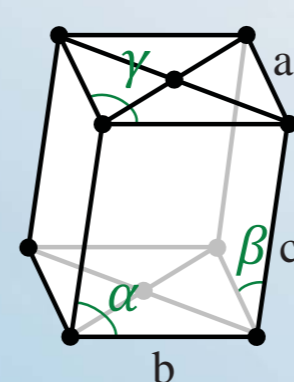
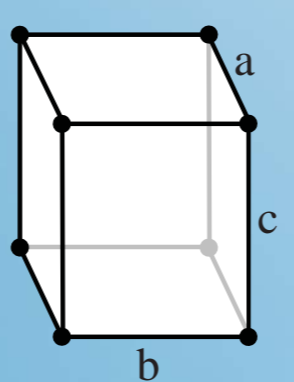
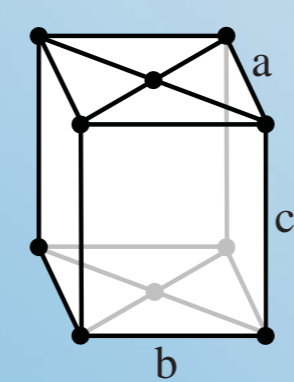
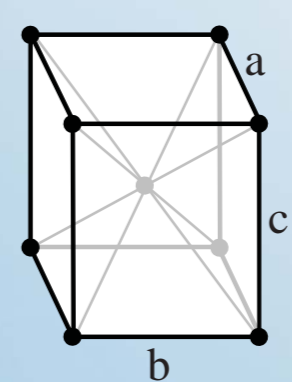
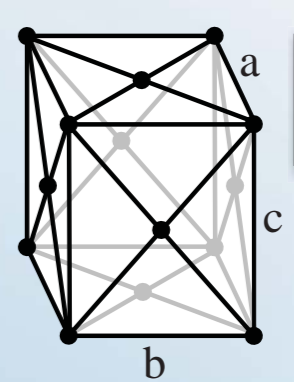
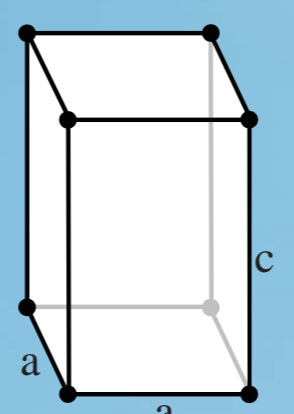
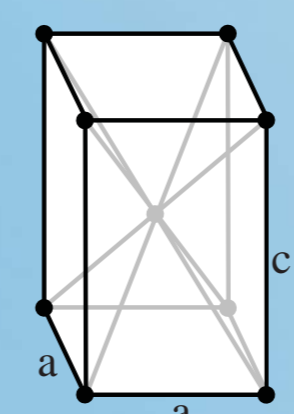
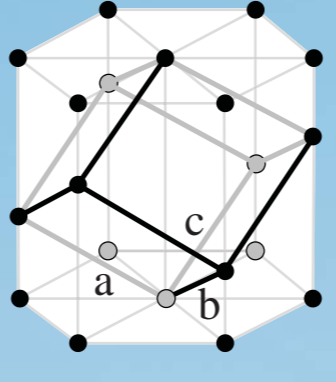
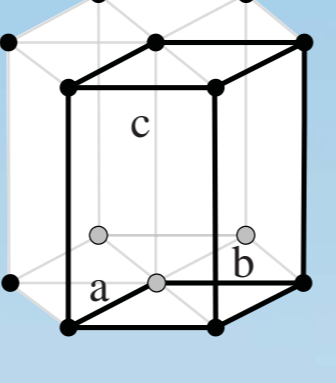
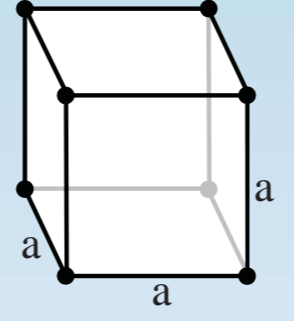
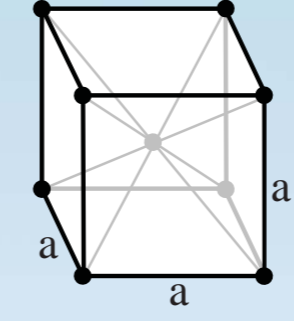
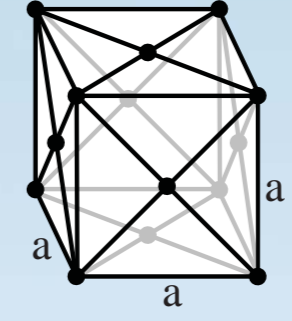


Lattice Systems

The distribution of the 14 Bravais lattice types into 7 lattice systems is given in the following table:

The 7 lattice systems	The 14 Bravais Lattices			
triclinic	 <div style="border: 1px solid black; padding: 2px; display: inline-block;"> $a \neq b \neq c$ $\alpha, \beta, \gamma \neq 90^\circ$ </div>			
monoclinic	simple	base-centered	<div style="border: 1px solid black; padding: 2px; display: inline-block;"> $\beta \neq 90^\circ$ $\alpha, \gamma = 90^\circ$ $a \neq b \neq c$ </div>	
				
orthorhombic	simple	base-centered	body-centered	face-centered
				
	<div style="border: 1px solid black; padding: 2px; display: inline-block;"> $a \neq b \neq c$ $\alpha = \beta = \gamma = 90^\circ$ </div>			
tetragonal	simple	body-centered	<div style="border: 1px solid black; padding: 2px; display: inline-block;"> $a = b \neq c$ $\alpha = \beta = \gamma = 90^\circ$ </div>	
				
trigonal	 <div style="border: 1px solid black; padding: 2px; display: inline-block;"> $a = b = c$ $\alpha = \beta = \gamma \neq 90^\circ$ </div>			
hexagonal	 <div style="border: 1px solid black; padding: 2px; display: inline-block;"> $a = b \neq c$ $\alpha, \beta = 90^\circ; \gamma = 120^\circ$ </div>			
cubic	simple	body-centered	face-centered	<div style="border: 1px solid black; padding: 2px; display: inline-block;"> $a = b = c$ $\alpha = \beta = \gamma = 90^\circ$ </div>
				

*Triclinic by Original PNGs by DrBob, traced in Inkscape by User:Stannered - Crystal structure. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Triclinic.svg#/media/File:Triclinic.svg> | *Monoclinic by Original PNGs by Daniel Mayer, traced in Inkscape by User:Stannered - Crystal structure. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Monoclinic.svg#/media/File:Monoclinic.svg> | *Monoclinic base-centered by Original PNGs by DrBob, traced in Inkscape by User:Stannered - Crystal structure. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Monoclinic-base-centered.svg#/media/File:Monoclinic-base-centered.svg> | *Orthorhombic by Original PNGs by Daniel Mayer, traced in Inkscape by User:Stannered - Crystal structure. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Orthorhombic-base-centered.svg#/media/File:Orthorhombic-base-centered.svg> | *Orthorhombic body-centered by Original PNGs by DrBob, traced in Inkscape by User:Stannered - Crystal structure. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Orthorhombic-body-centered.svg#/media/File:Orthorhombic-body-centered.svg> | *Orthorhombic face-centered by Original PNGs by User:Rocha, traced in Inkscape by User:Stannered - Crystal structure. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Orthorhombic-face-centered.svg#/media/File:Orthorhombic-face-centered.svg> | *Tetragonal by Original PNGs by Daniel Mayer, traced in Inkscape by User:Stannered - Crystal structure. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Tetragonal.svg#/media/File:Tetragonal.svg> | *Tetragonal body-centered by Original PNGs by User:Rocha, traced in Inkscape by User:Stannered - Crystal structure. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Tetragonal-body-centered.svg#/media/File:Tetragonal-body-centered.svg> | *Cubic by Original PNGs by Daniel Mayer, traced in Inkscape by User:Stannered - donated work. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Cubic.svg#/media/File:Cubic.svg> | *Cubic body-centered by Original PNGs by Daniel Mayer, DrBob, traced in Inkscape by User:Stannered - Crystal structure. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Cubic-body-centered.svg#/media/File:Cubic-body-centered.svg> | *Cubic face-centered by Original PNGs by Daniel Mayer and DrBob, traced in Inkscape by User:Stannered - Cubic, face-centered.pngLattice face centered cubic.svg. Licensed under CC BY-SA 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Cubic-face-centered.svg#/media/File:Cubic-face-centered.svg>

In geometry and crystallography, a Bravais lattice is a category of symmetry groups for translational symmetry in three directions, or correspondingly, a category of translation lattices.

Such symmetry groups consist of translations by vectors of the form

$$\mathbf{R} = n_1\mathbf{a}_1 + n_2\mathbf{a}_2 + n_3\mathbf{a}_3,$$

where $n_1, n_2,$ and n_3 are integers and $\mathbf{a}_1, \mathbf{a}_2,$ and \mathbf{a}_3 are three non-coplanar vectors, called primitive vectors.

These lattices are classified by space group of the translation lattice itself; there are 14 Bravais lattices in three dimensions; each can apply in one lattice system only. They represent the maximum symmetry a structure with the translational symmetry concerned can have. For convenience a Bravais lattice is depicted by a unit cell which is a factor 1, 2, 3 or 4 larger than the primitive cell.

Depending on the symmetry of a crystal or other pattern, the fundamental domain is again smaller, up to a factor 48.