Constructions

Geometric Constructions ... **Animated!**

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| Compass | "Construction" in [Geometry](http://www.mathsisfun.com/geometry/index.html) means to draw shapes, angles or lines accurately.  These constructions use only compass, straightedge (i.e. ruler) and a pencil.  This is the "pure" form of geometric construction - no numbers involved! | straightedge |
| straightedge | | |

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| Learn these two first, they are used a lot: | |
| [Line Bisector](http://www.mathsisfun.com/geometry/construct-linebisect.html) | [Line Bisector](http://www.mathsisfun.com/geometry/construct-linebisect.html) |
| [Angle Bisector](http://www.mathsisfun.com/geometry/construct-anglebisect.html) | [Angle Bisector](http://www.mathsisfun.com/geometry/construct-anglebisect.html) |
| And it is useful to know how to do 30°, 45° and 60° angles. You can use the angle bisector method (above) to create other angles, such as 15°, etc: | |
| [30 Degree Angle](http://www.mathsisfun.com/geometry/construct-30degree.html) | [30 Degree Angle](http://www.mathsisfun.com/geometry/construct-30degree.html) |
| [45 Degree Angle](http://www.mathsisfun.com/geometry/construct-45degree.html) | [45 Degree Angle](http://www.mathsisfun.com/geometry/construct-45degree.html) |
| [60 Degree Angle](http://www.mathsisfun.com/geometry/construct-60degree.html) | [60 Degree Angle](http://www.mathsisfun.com/geometry/construct-60degree.html) |
| [Equilateral Triangle](http://www.mathsisfun.com/geometry/construct-equitriangle.html) | [Equilateral Triangle](http://www.mathsisfun.com/geometry/construct-equitriangle.html) |
| Points and Lines: | |
| [Perpendicular to a Point on a Line](http://www.mathsisfun.com/geometry/construct-perponline.html) | [Perpendicular to a Point on a Line](http://www.mathsisfun.com/geometry/construct-perponline.html) |
| [Perpendicular to a Point NOT on a Line](http://www.mathsisfun.com/geometry/construct-perpnotline.html) | [Perpendicular to a Point NOT on a Line](http://www.mathsisfun.com/geometry/construct-perpnotline.html) |
| [Parallel Line through a Point](http://www.mathsisfun.com/geometry/construct-paranotline.html) | [Parallel Line through a Point](http://www.mathsisfun.com/geometry/construct-paranotline.html) |
| [Same (Congruent) Angle](http://www.mathsisfun.com/geometry/construct-anglesame.html) | [Same (Congruent) Angle](http://www.mathsisfun.com/geometry/construct-anglesame.html) |
| [Cut a line into N segments](http://www.mathsisfun.com/geometry/construct-segment3.html) | [Cut a line into N segments](http://www.mathsisfun.com/geometry/construct-segment3.html) |
| Circles: | |
| [Center of a Circle](http://www.mathsisfun.com/geometry/construct-circlecenter.html) | [Center of a Circle](http://www.mathsisfun.com/geometry/construct-circlecenter.html) |
| [Point to Tangents on a Circle](http://www.mathsisfun.com/geometry/construct-circletangent.html) | [Point to Tangents on a Circle](http://www.mathsisfun.com/geometry/construct-circletangent.html) |
| [Inscribe a Circle in a Triangle](http://www.mathsisfun.com/geometry/construct-triangleinscribe.html) | [Inscribe a Circle in a Triangle](http://www.mathsisfun.com/geometry/construct-triangleinscribe.html) |
| [Circumscribe a Circle on a Triangle](http://www.mathsisfun.com/geometry/construct-trianglecircum.html) | [Circumscribe a Circle on a Triangle](http://www.mathsisfun.com/geometry/construct-trianglecircum.html) |
| [Circle touching 3 Points](http://www.mathsisfun.com/geometry/construct-circle3pts.html) | [Circle touching 3 Points](http://www.mathsisfun.com/geometry/construct-circle3pts.html) |
| And for the "Master Class", a Pentagon | |
| [Pentagon](http://www.mathsisfun.com/geometry/construct-pentagon.html) | [Pentagon](http://www.mathsisfun.com/geometry/construct-pentagon.html) |