

Connecting Dynamic Geometry and Analytical Geometry

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Algebra supplies stimulation to geometric constructions. Here are my favorite examples:

1. Ruler-Compass construction hidden behind algebraic expression – discovering the construction of the hyperbola

(<http://steiner.math.nthu.edu.tw/chuan/gc98/gc12/gc12.html>)

2. Ruler-Compass construction of the tangent based on algebraic expression

(<http://steiner.math.nthu.edu.tw/disk6/atcm-02/tangent.pdf>)

3. Ruler-Compass construction of the osculating circle based on algebraic expression

(<http://sylvester.math.nthu.edu.tw/d3/thesis-2003/d263/327/index.html>)

4. Right names lead to straight thinking – from the general case to the degenerate cases

(<http://steiner.math.nthu.edu.tw/disk3/gc-02/conics/index.html>)

5. Polynomial Interpolation – from the spreadsheet to dynamic geometry

(<http://steiner.math.nthu.edu.tw/disk6/97exp/exp8.html>,

<http://steiner.math.nthu.edu.tw/chuan/gc14/gc-14.html>)

6. 3D Curve Projected into a Parabola, a Parabola and a Circle – a demo originated from a Calculus exercise

(<http://sylvester.math.nthu.edu.tw/d2/atcm-2006/cir-par-par.html>)