

# **Geometry Unit Plan 2018-19**

| Dates                     | Unit                      | Topics  | Project                           | Days |
|---------------------------|---------------------------|---|-----------------------------------|------|
| 9/5 - 9/21                | 1a. Tools of Geometry     | Definitions, measuring segments and angles, addition postulates, compass use                      | Euclid's 1st Construction         | 10   |
| 9/24 - 10/5               | 1b. Angle Pairs           | Supplementary, complementary, vertical, bisectors, constructions                                  | Further constructions             | 10   |
| 10/9 - 10/26              | 2. Geometric calculations | Midpoint, distance; Area, perimeter; Proof: Induction, logic                                      | Bisector constructions            | 9    |
| 10/29 - 11/8<br>Trimester | 2b. Transversals          | Transversals, parallel, perpendiculars, constructions   | Triangle centers, binder          | 9    |
| 11/11 - 11/30             | 3. Analytic Geometry      | Triangle internal, external angles; Line equations, slope, parallel, perpendiculars; translations |                                   | 11   |
| 11/26 - 12/13             | 4. Congruent Triangles    | Congruence theorems, transformations, overlapping triangles, trig                                 | Geometry software                 | 10   |
| 12/17 - 12/21             | 5. Intensives week        | Transformation, medians, analytic geometry, volume, angle sums                                    |                                   | 11   |
| 1/2 - 1/18<br>Regents     | 6. Similarity             | Dilation, triangle similarity theorems, ratios, trigonometry; constructions                       | Mock Regents                      | 12   |
| 1/28 - 2/7                | 7. Algebra Review         | Point-slope, linear equations, radicals, algebra practice   | Geogebra transformation, centroid | 15   |
| 2/8 - 3/1                 | 7. Circles                | Circle equations, completing the square, radicals, algebra practice                               | Geogebra transformation, centroid | 15   |
| 3/4 - 3/22                | 8. Transformations        | Similarity applications, symmetry, composition, properties  | Triangle dilation situations      | 13   |
| 3/25 - 4/18<br>Mock Apr2  | 9. Circles                | Tangents, chords, inscribed angles, angle measures, lengths; dilation review                      | Power laws                        | 10   |
| 4/29 - 5/10               | 10. Area and volume       | Multi-step situations, unit conversions, polygon formulas, perimeter, arcs, sectors               | Capstone: Lamp design             | 12   |
| 5/13 - 5/24               | 11. Quadrilaterals        | Angle sums, parallelograms, properties, proof   | Word fluency                      | 9    |
| 5/28 - 6/14               | 13. Review                |   |                                   | 10   |

165 instructional days

**Geometry Student Projects 2018-19**

| Date | Progression            | Unit                  | Project                   | Description   | Format                         |
|------|------------------------|-----------------------|---------------------------|---|--------------------------------|
| 9/18 | Classical construction | 1a. Tools of Geometry | Euclid's 1st Construction | Equilateral triangle, introduction to the use of compass and straightedge | paper and pencil, with heading |

### Geometry Concepts & Skills Progression

| Topic               | 6                           | 7   | 8 Common Core     | 9 Algebra   | 10 Geometry      | 11+12 IB Math   |
|---------------------|-----------------------------|---|-------------------|-------------|------------------|---|
| Length              |                             | Segment addition, perimeter, area, volume |                   |             | Distance formula | $A_{triangle} = \frac{1}{2}b \sin \theta$ , Area as integration |
| Angles              |                             | Vertical, supplementary, complementary    |                   | Axes scales |                  |   |
| Graphing            |                             | 4-quadrant $(x, y)$ plane                 |                   |             |                  |   |
| Objects             | Triangle, square, rectangle | Triangle internal sum                     |                   |             |                  |   |
| Transformations     |                             | Ratios, scale factor                      | Dilation on graph |             |                  |   |
| Algebraic equations |                             | Find $x$ situations                       |                   |             |                  |   |
| Proof               |                             |   |                   |             |                  |   |