



Experiential education for young people promoting the natural world
and the betterment of human character.

Spring Semester Geometry

To be completed by the Student and their Geometry Teacher

Student's Name: _____ Semester attending OA: _____

Geometry Teacher's Name: _____

Geometry Teacher's Signature: _____

Phone Number: _____ Fax Number: _____

Email address: _____

To the teacher: The topics below are those usually offered in this course at OA. Please check the topics that align with your class and write in any additional topics needed under each unit. Specific examples and assessment questions are also very helpful and may be attached to this form. Thank you so much for your time! This will help us ensure a smooth transition for your student between our schools. *Prerequisite topics include solving and graphing linear equations, manipulating algebraic equations, finding slope, finding distance, finding midpoints, graphing on the coordinate plane, proof writing, proving lines parallel or perpendicular, classifying triangles, proving triangles congruent, identifying angle and segment relationships in triangles, and working with proportion and scale factors.*

Name of Course: _____

Textbook used for this course: _____ Edition: _____

Publisher: _____

Chapter 6: Proportions and Similarity

- Proportions and Ratios
- Similar Polygons – proving similarity, scale factor
- Similar triangles - AA, SSS, and SAS Similarity
- Parallel Lines and Proportional Parts
- Parts of Similar Triangles – proportional perimeters, corresponding bisectors etc.
- Translations - Reflexive, Symmetric, and Transitive
- Fractals and Self Similarity - iteration, recursive formulas
- Additional Topics Needed: _____

Chapter 7: Right Angles and Trigonometry

- Using Geometric Means to find Altitudes
- The Pythagorean Theorem
- Identifying Special Right Triangles
- Intro to Trigonometry - sin, cos, tan
- Solving Problems using Angles of Elevation and Depression
- The Law of Sines
- The Law of Cosines
- Additional Topics Needed: _____

Chapter 8: Quadrilaterals

- Formulas for Angle Sums in Polygons
- Angle and Segment Relationships in Parallelograms
- Tests for Parallelograms
- Rectangles
- Rhombi and Squares
- Trapezoids

- Coordinate Proof with Quadrilaterals
- Additional Topics Needed: _____

Chapter 9: Transformations

- Reflections
- Translations
- Rotations
- Tessellations - M. C. Escher
- Dilations – similarity transformation
- Additional Topics (*glide reflections, direct vs. indirect isometry, vectors, transformation with matrices*):

Chapter 10: Circles

- Circles - diameter, circumference
- Angle Measures and Arc Length
- Arc and Chord Relationships
- Inscribed Angles
- Tangents and Relationships of Tangent Segments
- Secants, Tangents, and Angle Measures
- Special Segments in a Circle – finding lengths of intersecting inscribed chords, secant segment product
- Equations of Circles
- Additional Topics Needed: _____

Chapter 11: Areas of Polygons and Circles

- Areas of Parallelograms
- Areas of Triangle, Trapezoids, and Rhombi
- Areas of Regular Polygons and Circles
- Areas of Irregular Figures
- Geometric Probability
- Additional Topics Needed: _____

Chapter 12: Surface Area

- Three Dimensional Figures – orthogonal drawing
- Nets and Surface Area
- Surface Area of Prisms
- Surface area of Cylinders
- Surface Areas of Pyramids
- Surface Areas of Cones
- Surface Areas of Spheres
- Additional Topics Needed: _____

Chapter 13: Volume

- Volume of Prisms and Cylinders
- Volumes of Pyramids and Cones
- Volumes of Spheres
- Congruent and Similar Solids
- Coordinates in Space – ordered triple, XYZ plane
- Additional Topics Needed: _____

Please return this form to our office AS SOON AS POSSIBLE. We are unable to guarantee any curriculum needs at OA without completed academic forms.

Form may be mailed to: The Outdoor Academy

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Faxed to: (828)884-2788 or Emailed to: admissions@enf.org