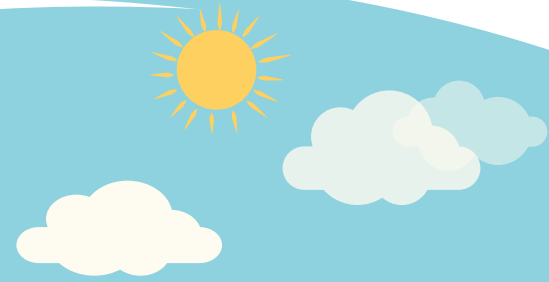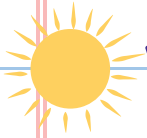# Summer Learning

Geometry

The Thinkwell summer learning series takes an entire year's worth of learning materials and makes it available throughout the summer so that your kids can recall what they've learned, catch up on what they haven't, and get prepared for the year ahead.

WHAT YOU'LL GET AND HOW IT WORKS:

- Students get individual logins and work at their own pace.

- Lessons are presented in a sequential order, in small, manageable chunks.

- Students can skip through the content or repeat lessons as many times as they need.

- Practice exercises and tests are automatically graded with step-by-step answer feedback.

- The courses are entirely web-based – no software to download, no CDs and nothing more to purchase.

8-WEEK PLAN FOR GEOMETRY

- Week 1 - Fundamentals of Geometry & Reasoning and Writing Geometric Proofs

- Week 2 - Parallel and Perpendicular Lines

- Week 3 - Triangle Congruence

- Week 4 - Properties and Attributes of Triangles

- Week 5 - Polygons and Quadrilaterals

- Week 6 - Similarity & Right Triangles and Trigonometry

- Week 7 - Perimeter, Circumference, and Area & Spatial Reasoning

- Week 8 - Circles & Transformational Geometry

Geometry

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8-WEEK SUMMER LESSON PLAN FOR GEOMETRY

WEEK 1 - CHAPTERS 1 FUNDAMENTALS OF GEOMETRY & 2 REASONING AND WRITING GEOMETRIC PROOFS

Chapter 1 Pre-Test

> **FAST-TRACK IDEA!**
> TAKE THE PRE-TEST LIKE A DIAGNOSTIC AND ONLY VIEW THE TOPICS YOU NEED TO BASED ON THE QUESTIONS YOU MISSED!

1.1 Points, Lines, Planes, and Angles
- 1.1.1 Understanding Points, Lines, and Planes
- 1.1.2 Measuring and Constructing Segments
- 1.1.3 Measuring and Constructing Angles
- 1.1.4 Pairs of Angles

1.2 Coordinate and Transformation Tools
- 1.2.1 Using Formulas in Geometry
- 1.2.2 Midpoint and Distance in the Coordinate Plane
- 1.2.3 Transformations in the Coordinate Plane
- Chapter 1 Test

Chapter 2 Pre-Test

2.1 Inductive and Deductive Reasoning
- 2.1.1 Using Inductive Reasoning to Make Conjectures
- 2.1.2 Conditional Statements
- 2.1.3 Using Deductive Reasoning to Verify Conjectures
- 2.1.4 Biconditional Statements and Definitions

2.2 Mathematical Proof
- 2.2.1 Algebraic Proof
- 2.2.2 Geometric Proof
- 2.2.3 Flowchart and Paragraph Proofs
- Chapter 2 Test

WEEK 2 - CHAPTER 3 PARALLEL AND PERPENDICULAR LINES

Chapter 3 Pre-Test

3.1 Lines with Transversals
- 3.1.1 Planes, Lines, and Angles
- 3.1.2 Angles, Parallel Lines, and Transversals
- 3.1.3 Proving that Lines are Parallel
- 3.1.4 Properties of Perpendicular Lines

3.2 Slope and the Equation of a Line
- 3.2.1 Finding the Slope Given Two Points
- 3.2.2 Slope-Intercept Form
- 3.2.3 Point-Slope Form
- 3.2.4 Slopes of Parallel and Perpendicular Lines
- Chapter 3 Test

WEEK 3 - CHAPTER 4 TRIANGLE CONGRUENCE

Chapter 4 Pre-Test

4.1 Triangles and Congruence
- 4.1.1 Classifying Triangles
- 4.1.2 Angle Relationships in Triangles
- 4.1.3 Congruent Triangles

4.2 Proving Triangle Congruence
- 4.2.1 Triangle Congruence: SSS and SAS
- 4.2.2 Triangle Congruence: ASA, AAS, and HL
- 4.2.3 Triangle Congruence: CPCTC
- 4.2.4 Introduction to Coordinate Proof
- 4.2.5 Isosceles and Equilateral Triangles
- Chapter 4 Test

WEEK 4 - CHAPTER 5 PROPERTIES AND ATTRIBUTES OF TRIANGLES

Chapter 5 Pre-Test

5.1 Segments in Triangles
- 5.1.1 Perpendicular and Angle Bisector Theorems
- 5.1.2 Medians, Altitudes, and Midsegments in Triangles

5.2 Relationships in Triangles
- 5.2.1 Indirect Proof and Inequalities in One Triangle
- 5.2.2 Inequalities in Two Triangles
- 5.2.3 The Pythagorean Theorem
- 5.2.4 Applying Special Right Triangles
- Chapter 5 Test

Practice Midterm & Midterm Exam

Geometry

8-WEEK SUMMER LESSON PLAN FOR GEOMETRY

WEEK 5 – CHAPTER 6 POLYGONS AND QUADRILATERALS

Chapter 6 Pre-Test
6.1 Polygons and Parallelograms
    6.1.1   Properties and Attributes of Polygons
    6.1.2   Properties of Parallelograms
    6.1.3   Conditions for Parallelograms

6.2 Other Special Quadrilaterals
    6.2.1   Properties of Special Parallelograms
    6.2.2   Conditions for Special Parallelograms
    6.2.3   Properties of Kites and Trapezoids
    Chapter 6 Test

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WEEK 6 – CHAPTERS 7 SIMILARITY & 8 RIGHT TRIANGLES AND TRIGONOMETRY

Chapters 7 & 8 Pre-Test
7.1 Similarity Relationships
    7.1.1   Ratio and Proportion
    7.1.2   Ratios in Similar Polygons
    7.1.3   Triangle Similarity: AA, SSS, and SAS

8.1 Trigonometric Ratios
    8.1.1   Similarity in Right Triangles
    8.1.2   Trigonometric Ratios
    8.1.3   Solving Right Triangles
    Chapters 7 & 8 Test

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WEEK 7 – CHAPTERS 9 EXTENDING PERIMETER, CIRCUMFERENCE, AND AREA & 10 SPATIAL REASONING

Chapters 9 & 10 Pre-Test
9.1 Developing Geometric Formulas
    9.1.1   Developing Formulas for Triangles and
            Quadrilaterals
    9.1.2   Developing Formulas for Circles and Regular
            Polygons

10.1 Surface Area and Volume
    10.1.1   Surface Area of Prisms and Cylinders
    10.1.2   Surface Area of Pyramids and Cones
    10.1.3   Volume of Prisms and Cylinders
    Chapters 9 & 10 Test

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WEEK 8 – CHAPTERS 9 EXTENDING PERIMETER, CIRCUMFERENCE, AND AREA & 10 SPATIAL REASONING

Chapters 11 & 12 Pre-Test
11.1 Lines and Arcs in Circles
    11.1.1   Lines That Intersect Circles
    11.1.2   Arcs and Chords

12.1 Congruence Transformations
    12.1.1   Reflections
    12.1.2   Translations
    12.1.3   Rotations
    Chapters 11 & 12 Test

    Practice Final Exam & Final Exam

NEED HELP? That's what we're here for.
Contact Thinkwell technical support!
Support @thinkwell.com