**Geometry in Construction UNIT 7 Lesson Plans**

**Day 150**

1) Classwork: Install Door Knobs & Miscellaneous Hardware

2) Classwork: Touch Up Paint

3) Classwork: Final Cleaning

**Day 151**

1) Lesson: Classifying Triangles

*Objective:* Students will explore the angle sum theorem and exterior angle theorem of triangles.

2) Lesson: Properties of Isosceles and Equilateral Triangles

3) Activity: Triangle Puzzle

4) Lesson: Applications of Isosceles and Equilateral Triangles

5) Activity: Students will apply knowledge of isosceles and equilateral triangles to making a cutting stand and roofing

[CCSS.MATH.CONTENT.HSG.CO.C.10](http://www.corestandards.org/Math/Content/HSG/CO/C/10/)

Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point*.

**Day 152**

1) Classwork: Install Door Knobs & Miscellaneous Hardware

2) Classwork: Touch Up Paint

3) Classwork: Final Cleaning

**Day 153**

1)Lesson: Identify & define congruent triangles

*Objective:* Students will determine if and what makes two triangles congruent

2) Activity: Students will use resources to determine if two triangles are congruent; students will create the definition of congruent triangles.

3) Activity: Student will name congruent parts of congruent figures; naming 6 parts of two congruent triangles that are congruent.

4) Activity: Students will be given parts of a triangle and will need to determine how many congruent triangles they can create using the given information

5) Congruent Triangles W.S.

[CCSS.MATH.CONTENT.HSG.CO.B.6](http://www.corestandards.org/Math/Content/HSG/CO/B/6/)

Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.

**Day 154**

1) Classwork: Install Door Knobs & Miscellaneous Hardware

2) Classwork: Touch Up Paint

3) Classwork: Final Cleaning

**Day 155**

1)Lesson: Using theorems to prove that two triangles are congruent

*Objective:* Students will prove that triangles are congruent using postulate and theorems

2) Activity: Students will use properties to determine if two triangles are congruent based on images and parts of a given triangle

3) Activity: Students will use limited measurements of various building designs to determine if the triangles within the build are congruent or not.

4) Assessment: Congruent Triangles Assessment

[CCSS.MATH.CONTENT.HSG.CO.B.6](http://www.corestandards.org/Math/Content/HSG/CO/B/6/)

Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.

[CCSS.MATH.CONTENT.HSG.CO.B.8](http://www.corestandards.org/Math/Content/HSG/CO/B/8/)

Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

**Day 156**

1) Classwork: Punch List

**Day 157**

1)Lesson: Proving two triangles are congruent

*Objective:* Students will prove two triangles are congruent by postulates and theorems.

2) Activity: Students will organize statements and reasons for a congruent triangles proofs using triangle postulates and theorems.

3) Activity: Proof corrections; students will find flaws and make corrections to triangle proofs

4) Classwork: Writing Proofs W.S.

[CCSS.MATH.CONTENT.HSG.CO.B.6](http://www.corestandards.org/Math/Content/HSG/CO/B/6/)

Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.

[CCSS.MATH.CONTENT.HSG.CO.B.8](http://www.corestandards.org/Math/Content/HSG/CO/B/8/)

Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

**Day 158**

1) Classwork: Punch List

**Day 159**

1) Activity: Fill in the Blank Proof Writing Activity

2) Activity: Students will write own proof of triangle congruent

3) Homework: Proof Writing Activity

[CCSS.MATH.CONTENT.HSG.CO.B.6](http://www.corestandards.org/Math/Content/HSG/CO/B/6/)

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Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

**Day 160**

1) Classwork: Punch List

**Day 161**

1)Lesson: Corresponding Parts of Congruent Triangles are Congruent

*Objective:* Students will use CPCTC to show that parts of congruent triangles are congruent

2) Activity: Students will solve applications of congruent triangles through proof and using CPCTC

3) Activity: Students will look at construction pictures and determine if they can prove angles and sides of a figure are congruent.

4) Classwork: Proofs with CPCTC

[CCSS.MATH.CONTENT.HSG.CO.B.8](http://www.corestandards.org/Math/Content/HSG/CO/B/8/)

Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

[CCSS.MATH.CONTENT.HSG.CO.B.7](http://www.corestandards.org/Math/Content/HSG/CO/B/7/)

Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

**Day 162**

1) Classwork: Punch List

**Day 163**

1) Assessment: Proving Triangles Congruent and Parts of Triangles Congruent

2) Coordinate Review: Students will review distance formula, slopes, and previous theorems

Coordinate Review: Students will review the distance formula. Investigate how to prove triangles congruent when the only information is the coordinates. Discuss looking for SSS, but less work if you can find vertical angles, right angles, parallel lines, linking parallel lines and right angles from slope.

3) Classwork: Coordinate Proofs of Triangles

[CCSS.MATH.CONTENT.HSG.CO.B.7](http://www.corestandards.org/Math/Content/HSG/CO/B/7/)

Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

**Day 164**

1) Classwork: Punch List

**Day 165**

1) Lesson: Parallelogram Proofs

*Objective:* Students will prove that a quadrilateral is a parallelogram

2) Activity: Students will be given different types of triangles and will determine how congruent triangles form different types of parallelograms

3) Activity: Students will be given different types of parallelograms and will determine what types of triangles they can be broken into; students will list which parts of the triangles are congruent based on knowledge of parallelograms

4) Classwork: Students will complete fill in the blank parallelogram proofs

[CCSS.MATH.CONTENT.HSG.CO.B.7](http://www.corestandards.org/Math/Content/HSG/CO/B/7/)

Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

[CCSS.MATH.CONTENT.HSG.CO.B.8](http://www.corestandards.org/Math/Content/HSG/CO/B/8/)

Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

[CCSS.MATH.CONTENT.HSG.CO.C.11](http://www.corestandards.org/Math/Content/HSG/CO/C/11/)

Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals*.

**Day 166**

1) Classwork: Punch List

**Day 167**

1) Lesson: Parallelogram Proofs

*Objective:* Students will prove that a quadrilateral is a parallelogram

2)

[CCSS.MATH.CONTENT.HSG.CO.B.7](http://www.corestandards.org/Math/Content/HSG/CO/B/7/)

Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

[CCSS.MATH.CONTENT.HSG.CO.B.8](http://www.corestandards.org/Math/Content/HSG/CO/B/8/)

Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

[CCSS.MATH.CONTENT.HSG.CO.C.11](http://www.corestandards.org/Math/Content/HSG/CO/C/11/)

Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals*.

**Day 168**

1) Classwork: Punch List

**Day 169**

1) Parallelogram Proofs Assessment

2) Review & Enrichment

**Day 170**

1) Classwork: Punch List

**Day 171**

1) Review & Enrich

**Day 172**

1) Classwork: Punch List

**Day 173**

1) Assessment: Students will be assessed on Unit 7 topics

2) Review for Final Exam

**Day 174**

1) Classwork: Punch List

**Day 175**

1) Review for Final Exam

**Day 176**

1) Classwork: Punch List

**Day 177**

1) Review for Final Exam

**Day 178**

1) Classwork: Punch List

**Day 179**

1) Final Exam

**Day 180**

1) Final Exam