

Anonymous: Content: Math; Triangles; Congruency Statements: 8th grade

Triangles	Assume	Infer	Analyze	Prioritize	Judge
Classifying by sides and angles	What can we assume when we classify triangles?	When reviewing the sides of a triangle, what can you infer about the angles of a triangle?	Analyze the effectiveness of classifying by only sides or angles.	Prioritize the characteristics of classifying triangles.	Justify why it's important to classify by both sides and angles.
Special Segments	Which special segment can you assume would be the most practical segment to use?	What could you infer about each of the special segments in a right triangle, (isosceles, scalene).	Analyze the helpfulness of starting with a perpendicular or bisector.	Prioritize the importance of special segments in solving triangles.	Judge the relationship between each segment.
Congruency Statements	What could you assume after determining a congruency statement?	What types of statements could you infer that would not prove triangle congruency?	Analyze when to use different congruency statements in a proof.	Prioritize the congruency statements, in right and non-right triangles, from easiest to most difficult to recognize.	Judge whether SSA is a congruency statement.
Right Triangle Congruency Statements	What assumption can you make about the hypotenuse in right triangle congruency statements?	What could you infer about the relationship between congruency statements and right triangle congruency statements?	Analyze the purpose of having right triangle congruency statements.		Judge why isosceles and scalene triangles do not have "specific" congruency statements.

<i>Solving for:</i> Area, Perimeter, Pythagorean Theorem, Pythagorean Triples, Trigonometry	What assumption could we make regarding the Pythagorean theorem and	What could you infer about the area of a triangle compared to the area of quadrilaterals	Analyze a formula to see how it was discovered.	Prioritize each way to solve for information in a triangle and why you would use the what when.	Judge the relationship between triangles and trigonometry
	Pythagorean triples?				
Empty cell for student response					

DIMENSIONS OF CURRICULUM:

Content: Math; Triangles; Congruency Statements

Process: Prioritize – Critical thinking

Product: Prioritize Graphic Organizer

Research: -

Differentiation: *Open Ended Prompt.***LEARNING OBJECTIVE:**

In their study of congruency statements, students will prioritize all statements from easiest to most difficult to recognize and will complete the “Prioritize” graphic organizer.

PLACEMENT IN UNIT: *(in bold)*

Introductory

Midway

Follow-up

INSTRUCTIONAL STRATEGY:

“Prioritize” – Graphic Organizer

INSTRUCTIONAL ACTIVITIES ~ THE TEACHER WILL... (Student’s will learn about right triangle congruency statements, they will already know the original triangle congruency statements and will have notes on all statement.)

1. Start class with notes for right triangle congruency statements. Have students help describe the drawing for each case. Make connections between SSS, SAS, ASA, and AAS and HL, HA, and LL.
2. Once students are comfortable with HL, HA, and LL provide the choice of graphic organizers between the worksheet or foldable, and have students individually complete the worksheet based upon all of the congruency statements. Students will prioritize all statements from easiest to most difficult to recognize and will complete the “Prioritize” graphic organizer.
3. Have student’s share out and I will make an informal observation on trouble areas so I can look up examples for warm up .

MODALITY PROVISIONS: *(in bold)*

Process delivery: **oral** pictorial/labels written kinesthetic **visual**
 Product delivery: **oral** pictorial/labels **written** kinesthetic visual

GROUPING ARRANGEMENTS: *(in bold.)*

Process delivery: **total group** small group **individual**
 Product delivery: **total group** small group **individual**

MATERIALS: Classroom materials**ASSESSMENT:** *(in bold)*

grades checking system rubric **observational**/anecdotal none

DIMENSIONS OF CURRICULUM:

Content: Math; Triangles; Classifying

Process: Analyze – Critical thinking

Product: Graphic Organizer

Research: -

Differentiation: *Resources make the difference.*

LEARNING OBJECTIVE:

In their study of classifying triangles, students will analyze the effectiveness of classifying by only sides or angles.

PLACEMENT IN UNIT: *(Circle one)*

Introductory

Midway

Follow-up

INSTRUCTIONAL STRATEGY:

“Analyze” – Graphic Organizer

INSTRUCTIONAL ACTIVITIES ~ THE TEACHER WILL...

1. Review how to classify triangles with students. Have student’s brainstorm all six cases.
2. Provide “Analyze” graphic organizer and have students complete each part. Students will analyze the effectiveness of classifying by only sides or angles. Encourage students to think about limitations of classifying by only sides or angles. (Differentiation opportunity: Encourage students to think about other figures that you would have if you classify by only sides or angles.)
2. Have each group of students write their conclusion on the board. The class will then take a few minutes to read and think about each conclusion. After a few minutes, or when the students all look like they have had a chance to read and process, ask for reactions to the conclusions. Ask students to brainstorm a list of observations.
3. Assign homework for the night.

MODALITY PROVISIONS: *(Circle one or more for each.)*

Process delivery:	<u>oral</u>	pictorial/labels	written	kinesthetic	<u>visual</u>
Product delivery:	<u>oral</u>	<u>pictorial/labels</u>	written	kinesthetic	visual

GROUPING ARRANGEMENTS: *(Circle one or more for each.)*

Process delivery:	total group	small group	individual
Product delivery:	total group	small group	individual

MATERIALS: Classroom materials

ASSESSMENT:

grades checking system rubric observational/anecdotal none

Triangles	Brainstorming	Connecting	Creating	Elaborating
Classifying – by sides and angles	Brainstorm other shapes that are classified by sides and/or sides.	How are classifying triangles like ice cream flavors?	Create a standing object using four of the six triangles.	Elaborating on the facts that classify triangles.
Special Segments	Brainstorm uses for special segments.	In what ways are special segments like a fish, a farm, a fence post, and you?	Create a fifth special segment and its' uses.	Elaborate on the angles of the triangle and how it affects special segments.
Congruency Statements	Brainstorm how to prove triangles are congruent without congruency statements.	Connect congruency statements to a pet, the ocean, a paintbrush, and you.	Design different uses for congruency statements.	Elaborate on the relationships of congruent and/or proportionate triangles.
Right Triangle Congruency Statements	Generate reasons for right triangle congruency statements.	Generate connections of right triangle congruency statements to characters in your favorite T.V. show.	Create a hopscotch pattern for right triangle congruency statements.	Elaborate on the uses of right triangle congruency statements.
<i>Solving for:</i> Area, Perimeter, Pythagorean Theorem, Pythagorean Triples, Trigonometry	Brainstorm relationships between the Pythagorean Theorem and Pythagorean Triples.	Connect triangle formulas to musketeers, Maine, scary movies, and you.	Design a visual for remembering Area, Perimeter, Pythagorean Theorem, Pythagorean Triples, or Trigonometry	Elaborate the meaning of SOH CAH TOA.

DIMENSIONS OF CURRICULUM:

Content: Math; Triangles; Congruency Statements

Process: Create – Creative thinking

Product: A visual

Research: -

Differentiation: Open ended prompt

LEARNING OBJECTIVE:

In their study of triangles, students will design a visual for remembering how to find area, perimeter, lengths of sides via the Pythagorean theorem, Pythagorean triples, and trigonometry and will present their ideas in a poster.

PLACEMENT IN UNIT: *(in bold)*

Introductory

Midway**or****Follow-up****INSTRUCTIONAL STRATEGY:**

“Create” – Graphic Organizer

INSTRUCTIONAL ACTIVITIES ~ THE TEACHER WILL...

(Student’s will have a good to strong understanding prior to this lesson.)

1. This lesson could be a midway to solidify the concepts after learning the concept or a review before a test. While area, perimeter, and Pythagorean topics may be easier, trigonometry tends to need more practice as it is a brand new topic to these students.
2. Provide students with the “create” graphic organizer. Walk them through the listing of conditions for their creation.
3. Provide 5 - 8 minutes for students and their partner to brain-draw their ideas. Share out ideas to check for clarity and whether or not the student needs guidance. When students are in a good place have them choose their favorite design. They may list their materials and start the construction.
4. Students may continue through each of the items at their own pace. Students do not need to test the visuals, as they should be personal to their own learning.
5. Provide the rest of class time. (Class is usually 45 minutes.)

MODALITY PROVISIONS: *(in bold)*Process delivery: **oral** pictorial/labels **written** kinesthetic **visual**Product delivery: oral pictorial/labels written kinesthetic **visual****GROUPING ARRANGEMENTS:** *(Circle one or more for each.)*Process delivery: **total group** **small group** individualProduct delivery: total group **small group** individual**MATERIALS:** Classroom materials, laptops, poster board/paper**ASSESSMENT:****grades** checking system rubric observational/anecdotal none

DIMENSIONS OF CURRICULUM:

Content: Math; Triangles; Special Segments

Process: Elaborate – Creative thinking

Product: Mini book

Research: -

Differentiation: *Open ended prompt*

LEARNING OBJECTIVE:

In their study of special segments, students will review different triangles and different angles to elaborate on the effects the special segments have within each setting and will present their ideas through a mini book that include clear drawings.

PLACEMENT IN UNIT: *(in bold)*

Introductory

Midway

Follow-up

INSTRUCTIONAL STRATEGY:

“Elaborate” – Graphic Organizer

INSTRUCTIONAL ACTIVITIES ~ THE TEACHER WILL...

(This would follow after the introductory class on special segments.)

1. Review each triangle and the special segments to make sure students understand how each are formed and where they are on the triangles.
2. Demonstrate activity using an isosceles triangle and discuss how changing an angle forms another triangle such as an equilateral triangle.
3. Walk students through the graphic organizer with the center of the wheel being a special segment. Have students list different effects. The final part of the wheel combines the first two parts. Student’s may write observations, drawings, sentences, theorems, etc., that would help form the new idea. Each idea that they find they will make a page in the mini book.
4. Review how to make a mini book out of construction paper and printer paper. Show them where the book stapler, construction paper, and printer paper is in the room. Demonstrate previously made mini books and show expectations on what each page will look like. Mention that this is meant to be hand-drawn but going above and beyond in some way such as typing, adding color, superb neatness is always a plus!
5. Provide in-class time for students to work individually on their mini books, 30 – 35 minutes depending upon the reviewing that the students need. This may turn into homework and due the next day.
6. Have the class decide which segment changed the most often. Collect the mini books and make sure the students understood how the special segments change within the different triangles.

MODALITY PROVISIONS: *(Circle one or more for each.)*

Process delivery:	oral	pictorial/labels	written	kinesthetic	visual
Product delivery:	oral	pictorial/labels	written	kinesthetic	visual

GROUPING ARRANGEMENTS: *(Circle one or more for each.)*

Process delivery:	total group	small group	individual
Product delivery:	total group	small group	individual

MATERIALS: Classroom materials

ASSESSMENT:

grades checking system rubric observational/anecdotal none