



SSS, SAS, and ASA

Original lesson by Marisa Laks

Objective

In this lesson, you will explain how triangles are congruent using SSS, SAS, and ASA.

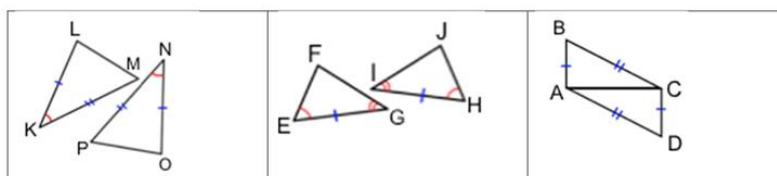
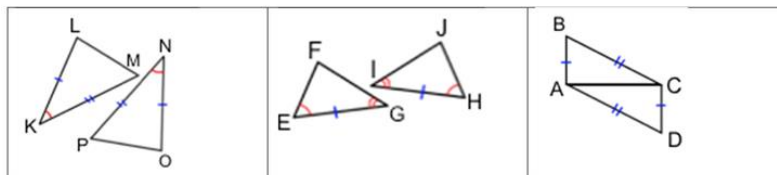
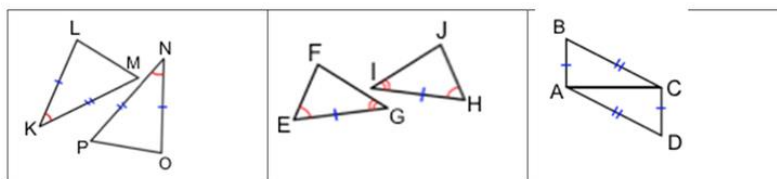
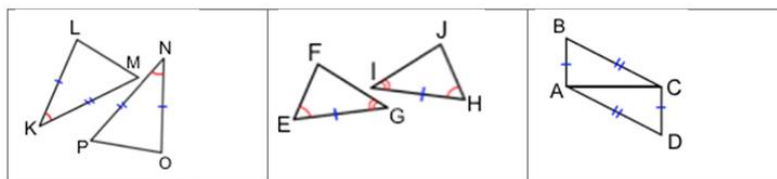
Big Idea

Students will create a graphic organiser to show the ways triangles are congruent.

Do Now

5 MINUTES

As the students walk in, I hand them a slip of paper with three diagrams. Students look at pairs of triangles and write congruency statements for each pair of triangles based on information shown in the diagrams. Examples of the slips of papers are below.





The pairs of triangles shown in the Do Now slips will be used later in the lesson to show how triangles are congruent by Side-Side-Side, Side-Angle-Side, and Angle-Side-Angle. When students finish writing their statements, they cut out the diagrams to use them for the graphic organisers they will be creating later in the lesson.

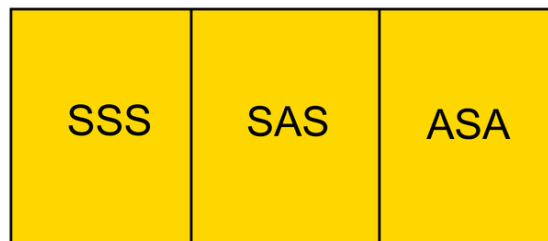
Mini-Lesson

20 MINUTES

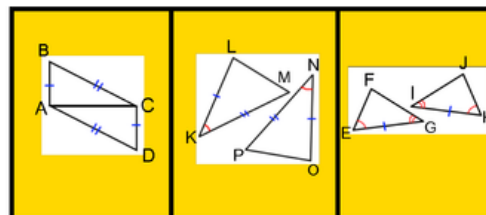
For the Mini-Lesson, students will create a Three-Tab Organiser. On the front of the organiser, students will write SSS on the first tab, SAS on the second tab, and ASA on the third tab. We discuss what the abbreviations stand for and then students identify which postulate can be used to prove the triangles from the Do Now are congruent. Students then glue the diagrams onto the back of the correct tab. (See the file SSS, SAS, and ASA Activity.)

Students continue working on their graphic organisers by writing definitions of the postulates. For example, "If all sides in one triangle are congruent to all sides in another triangle, the triangles are congruent." They then use their congruence statements from the Do Now to describe how the triangles are congruent. The definition and description can be written on the bottom sections of the organiser.

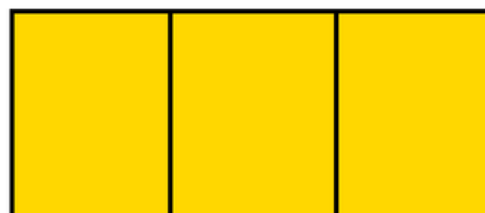
Front



Top
(Diagrams
and
Statements)



Bottom
(Definitions)





Activity

10 MINUTES

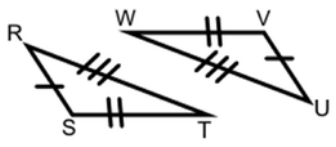
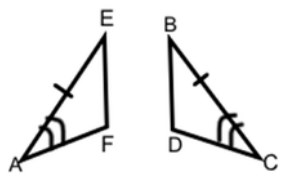
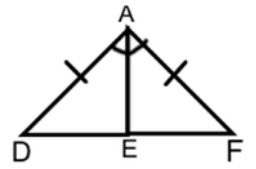
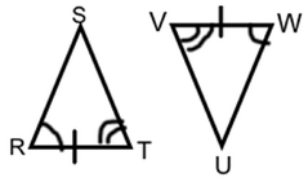
Students work individually to decide if there is enough information to prove four pairs of triangles on a worksheet are congruent to each other. If there is enough information, students state the postulate that proves the triangles are congruent. If there isn't enough information, students identify what would need to be congruent and state the postulate that proves the triangles are congruent. Students can use their graphic organisers to help them answer the questions.

After about 7 minutes, we go over their answers. There can be different answers for questions 2 and 3. The triangles in question 2 can be made congruent by SAS or ASA depending on the information given. For question 3, some students may recognize that segment AE is in both triangles and is congruent to itself, and therefore the triangles are congruent by SAS. Other students may identify that more information is needed and show that angle D is congruent to angle F, which proves the triangles are congruent by ASA.

SSS, SAS, and ASA

Is there enough information to prove the triangles are congruent?

- If so, state the postulate that proves the triangles congruent.
- If not, state the information needed to prove the triangles are congruent and the postulate that would prove it.

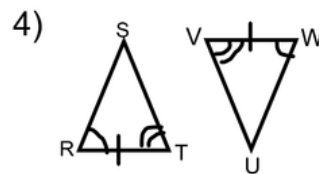
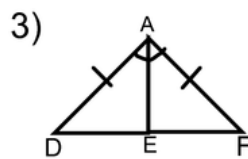
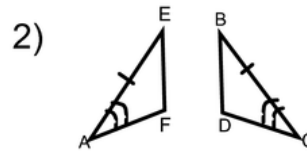
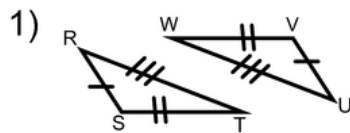
<p>1.</p> 	<p>2.</p> 
<p>3.</p> 	<p>4.</p> 



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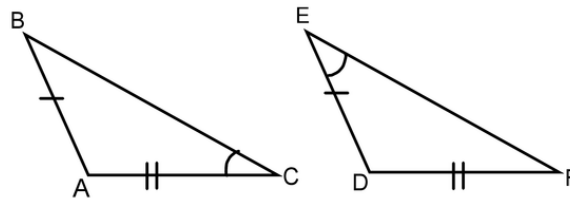
Summary

10 MINUTES

When students think about why Side Side Angle doesn't work, they often figure out the SSA can be called Angle Side Side. Sometimes this realisation helps students to remember that triangles cannot be proved congruent using SSA.

SSA?

Explain why two triangle cannot be proved congruent if they have two corresponding sides and an angle not included between the two sides congruent to each other.



Acknowledgement

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<https://teaching.betterlesson.com/lesson/505426/sss-sas-and-asa>