

## Sailing Away

ID: 11064

Time required  
15 minutes


## Activity Overview

*In this activity, students will explore AAA and SSS relationships in triangles to support understanding of the concepts of triangle similarity and congruence.*

## Topic: Triangles &amp; Congruence

- *Corresponding Angles and Sides*
- *Similarity (AAA) and Congruence (SSS)*

## Teacher Preparation and Notes

- *Load the SailingAwayfile onto student handhelds. Instruct students to use ctrl +  to move to the next page within the document.*
- ***To download the student TI-Nspire document (.tns file) and student worksheet, go to [education.ti.com/exchange](http://education.ti.com/exchange) and enter “11064” in the keyword search box.***

## Associated Materials

- *SailingAway\_Student.doc*
- *SailingAway.tns*

## Suggested Related Activities

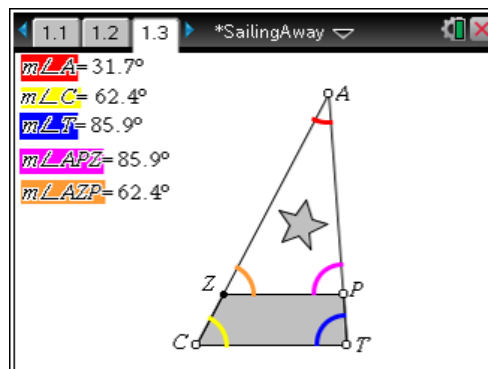
*To download any activity listed, go to [education.ti.com/exchange](http://education.ti.com/exchange) and enter the number in the keyword search box.*

- *Congruent Triangles (TI-Nspire technology) — 8516*

### Exploring angle measures

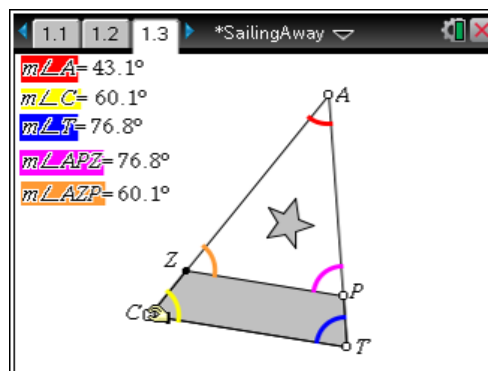
On page 1.3, students will see a model of a boat sail. The measures of the angles have already been calculated for them.

If you choose to have students measure the angles themselves, delete the measures before sending out the .tns file. Then they can use the **Angle** tool from the Measurement menu, selecting the three points that make up the angle.



By dragging points A, C, or T, students should see that corresponding angles are congruent.

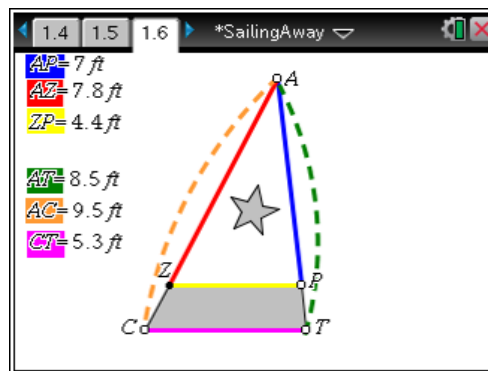
Dragging point P will change the size of  $\triangle ZAP$  only. Students should see that the corresponding angles remain congruent. Segment ZP can be placed over top of segment CT.



### Exploring side lengths

Then students are to move to page 1.6, where they will see the same sail. This time the side lengths have already been measured for the students.

If you choose to have students measure the sides, delete the measures before sending out the file. Then they can use the **Length** tool from the Measurement menu, selecting the two points that make up the side.



After dragging points A, C, or T, students should see that the corresponding side lengths are different. The only time that the side lengths are the same is when segment ZP is over top of segment CT.

Students should make the conjecture that when the corresponding angles but not the side lengths are congruent/equal then the two triangles are similar. Explain to students about the Angle-Angle (AA) Similarity Postulate.

When the corresponding angles and the side lengths are congruent/equal then the two triangles are congruent. Explain to students about the Side-Side-Side (SSS) Congruence Postulate.