TI-*nspire*™

Similar Figures Discovery Activity

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Activity overview

In this activity students will explore similar triangles and set up ratios to discover properties of similar triangles.

Concepts

- Similar triangles
- Corresponding angles and lengths
- Scale factor
- Ratios

Teacher preparation

This activity is designed for a high school geometry classroom. It can be used while teaching similar triangles.

- The angle measures of similar triangles are congruent.
- The ratios of corresponding sides in similar triangles are congruent.
- The ratio of perimeters of similar triangles is proportional.
- The screenshots on pages 1-4 demonstrate expected student results. Refer to the screenshots on page 4 for preview of the student TI-Nspire document(.tns file)

Classroom management tips

- This activity is designed to be student-centered with the teacher acting as facilitator, while students work cooperatively. Use the following pages as a framework as to how this activity will progress.
- The student worksheet GeoAct_SimDiscAct_worksheet_EN helps guide students through the activity and provides a place for students to record their answers and observations.

TI-Nspire Applications

Calculator, Graphs & Geometry (G&G), Lists & Spreadsheets, and Notes
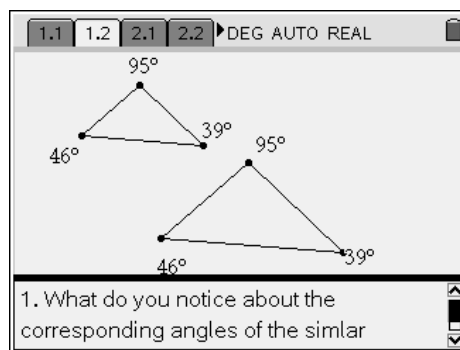
Step-by-step directions
Problem 1 – Angles of similar triangles

On page 1.2 students will make a conjecture about corresponding angles of similar triangles. Students will grab a vertex of the smaller (original) triangle to help them.

NOTE: To grab move the cursor using the NavPad to where the open hand appears over a vertex. Next hold the ⓧ button down until the hand closes.

Students should the drag the vertex of the triangle to change the angle measures. They can then answer the three questions on their worksheet.

NOTE: To tab between split screens press ⓒtrl ⓣab.

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Problem 2 – Side lengths of similar triangles

On page 2.1 students will make a conjecture about corresponding sides of similar triangles. Students should measure the side lengths of both triangles using the **Measurement** tool **(Menu>Measurement>Length)**

NOTE: To measure a length, press ⓧ twice to select the endpoints of each side length.

On page 2.2 students will enter their side lengths into the Spreadsheet and answer the three questions on the split screen.
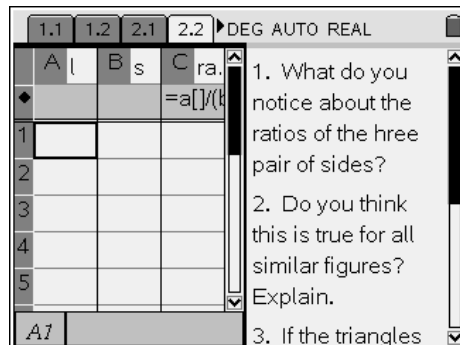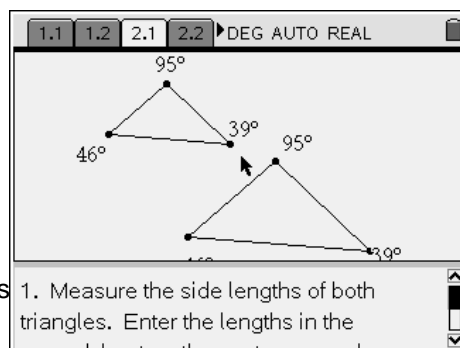
Problem 3 – Perimeters of similar triangles

On page 3.1 students will make a conjecture about the ratio of the perimeters of similar triangles. The students will use the **Measurement** tool **(Menu>Measurement>Length)**.
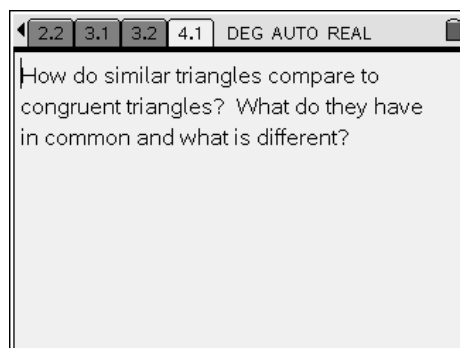
NOTE: Perimeter can be measured by moving the cursor over the figure until it blinks and press the ⓧ button.

On page 3.2 students may use the calculator page to help them with any calculations. Then they are to answer questions #1 and 2 from the split screen on their worksheet.
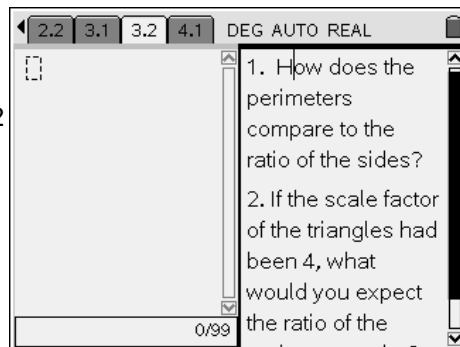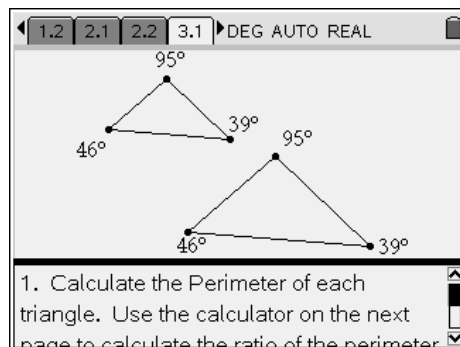
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Problem 4 – Summary

On page 4.1 is a question to help students summarize what they learned as a quick assessment to demonstrate understanding.

| 2.2 | 3.1 | 3.2 | 4.1 | DEG AUTO REAL

How do similar triangles compare to congruent triangles? What do they have in common and what is different?

Student TI-Nspire Document
Geo_similarfiguredishoveryact_EN.tns