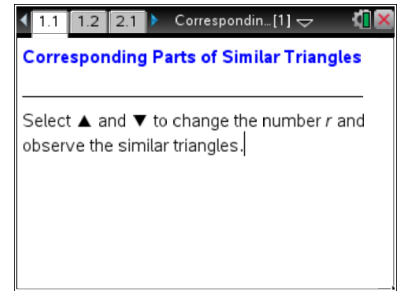




Open the TI-Nspire document

*Corresponding\_Parts\_of\_Similar\_Triangles.tns.*

This activity asks you to change the scale factor ( $r$ ) between similar triangles and move one of the similar triangles to find corresponding parts and establish relationships between them.



**Move to page 1.2.**

1. The triangles pictured are similar. Select  $\Delta$  and  $\nabla$  in the bottom left corner of the screen.
  - a. What happens to  $\triangle DET$  as the scale factor  $r$  changes?
  
  - b. What happens to  $\overline{AY}$  and  $\overline{DE}$  as  $r$  changes?
  
2. Use  $\Delta$  and  $\nabla$  to change  $r$ .
  - a. What is the relationship between the two triangles when  $r = 1$ ?
  
  - b. What is the relationship between the two triangles when  $0 < r < 1$ ?
  
  - c. What is the relationship between the two triangles when  $r > 1$ ?

**Move to page 2.1.**

3.
  - a. Move point  $S$  around the circle. What happens to  $\triangle DET$ ?
  
  - b. Move point  $C$ . What happens to  $\triangle DET$ ?



4. Move  $\triangle DET$  by dragging points  $S$  and  $C$ . Position  $\triangle DET$  on top of the other triangle so that a pair of corresponding angles match up (are coincidental).
- List the three pairs of corresponding angles.
  - List the three pairs of corresponding sides.
  - Write a similarity statement for the two triangles and justify your answer.

**Move to page 3.1.**

5. Change the value of  $r$  and drag copies of  $\triangle AMY$ . How many copies of  $\overline{AY}$  would it take to cover  $\overline{DE}$  when
- $r = 3$ ?
  - $r = 0.5$ ?
  - $r = 1.5$ ?
6. If  $\overline{AY}$  is 2 units,  $\overline{AM}$  is 4.25 units, and  $\overline{YM}$  is 3.25 units, what are the measures of  $\overline{ET}$ ,  $\overline{DE}$ , and  $\overline{DT}$  when
- $r = 1$ ?
  - $r = 0.75$ ?
  - $r = 4$ ?