

Prior Knowledge Activity 1



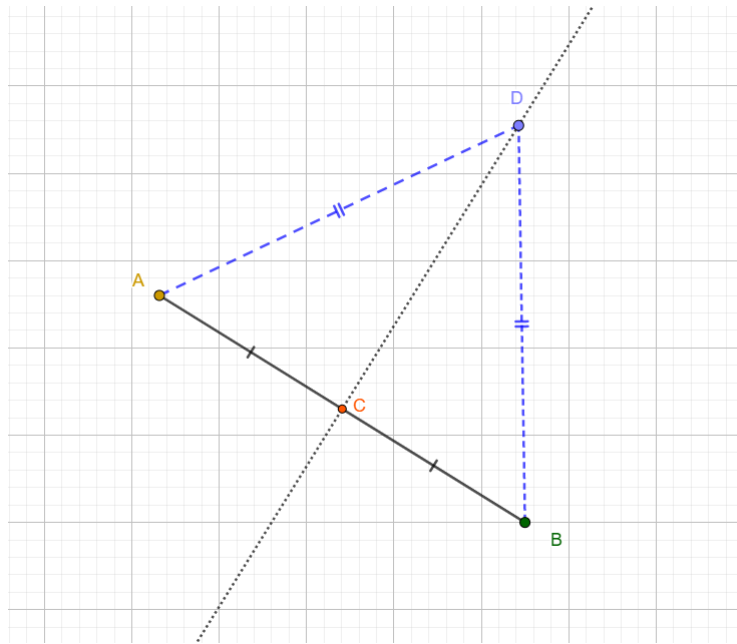
A Scout Troop has pitched two tents to sleep in and wish to build one fire.

Where is the fairest location for the fire?

Is there any other fair location for the fire?

What does a 'fair' location mean?

Prior Knowledge Activity 2



What does the point C represent?

Describe the relationship between the point C and the points A and B?

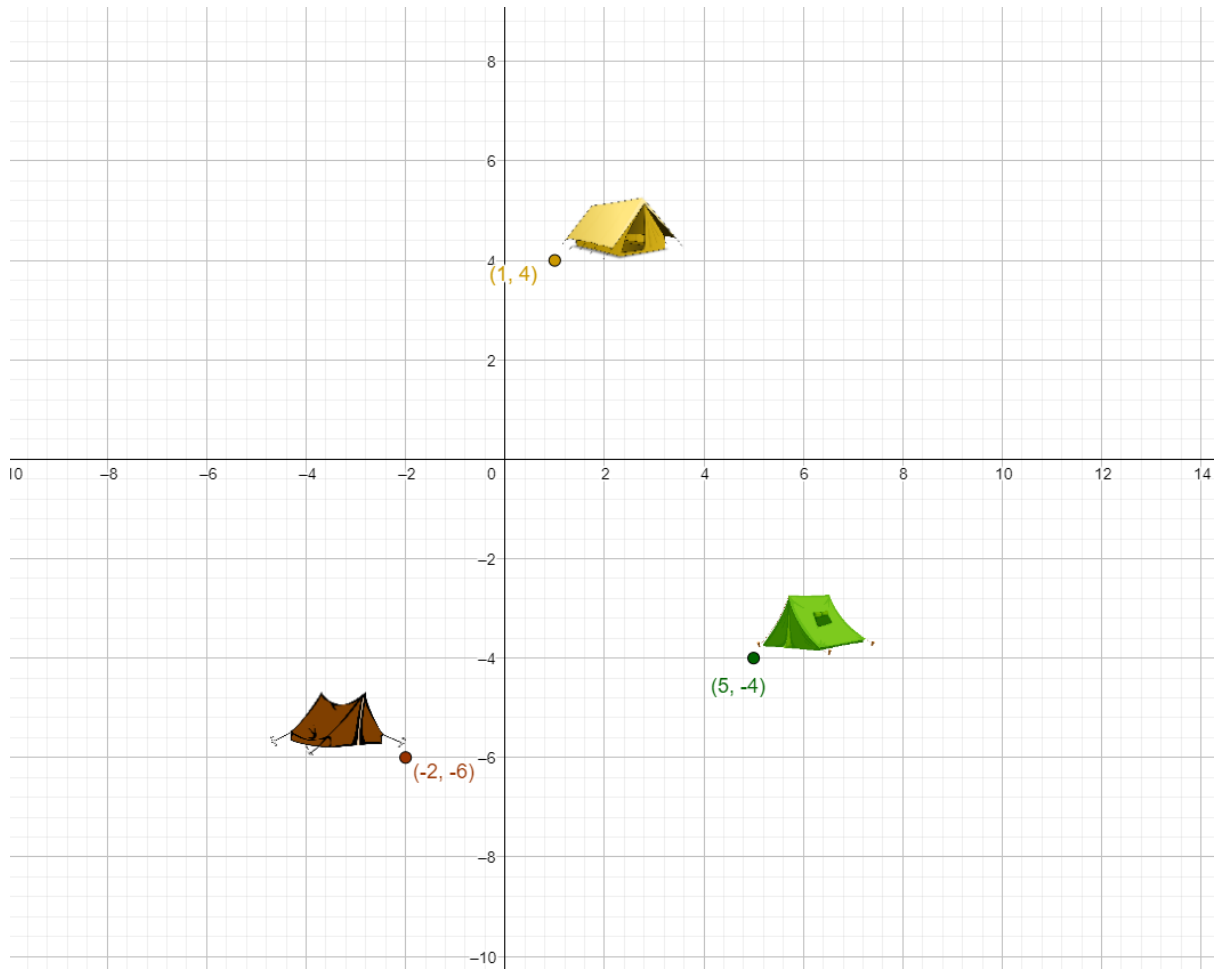
What does the point D represent?

Describe the relationship between the point D and the points A and B?

Describe the relationship between $[AB]$ and DC ?

What do we know about triangles ADC and DCB ?

Task: Extending the Learning



A Scout Troop has pitched three tents to sleep in and wish to build one fire. Where is the fairest location for the fire? Justify your answer.

Open the GeoGebra file: <https://www.geogebra.org/classic/s5s7q8ca>

Use the GeoGebra file to further investigate your rule. Record any additional observations or changes to your rule.

Student Reflection

Write down what new learning you encountered during this activity.
Write down any new terminology that you heard today. Provide a detailed description of each term listed.

Next Steps

Investigating the Circumcircle

Key learning: If we have three points, we can always find a circumcenter and we can always draw a circumcircle.

Sample Investigation: The troop wants to set up an additional tent. Without moving the original tents or the fire where could we place the extra tent?

Investigating Cyclic Quadrilaterals

Key learning: We can only draw a circle through the vertices of a quadrilateral if the bisectors of each side intersect at a point that is equidistant from each vertex.

Sample Investigation: Would this solution work if there were more than 3 tents?

Extensions:

Under what circumstances can you draw a circle around a polygon?

What is the relationship between the coordinates of the center of the circumcircle and the coordinates of any point on the circle?