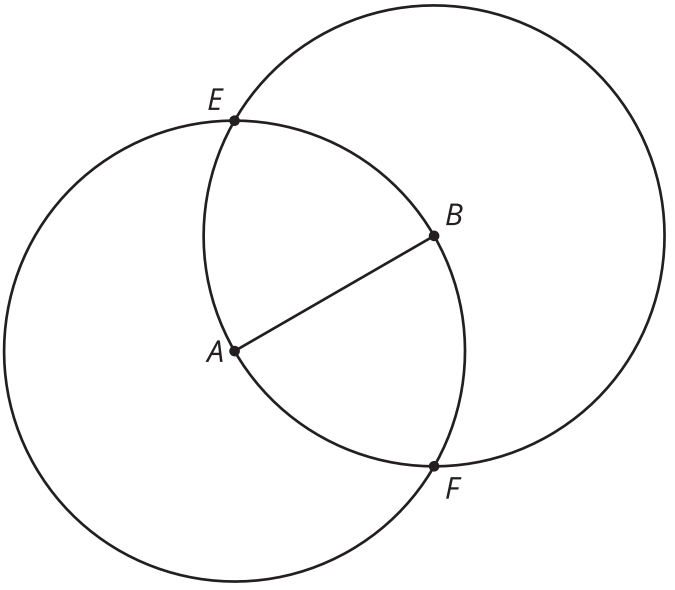
Unit 1 Lesson 5: Construction Techniques 3: Perpendicular Lines and Angle Bisectors

1 Two Circles (Warm up)

Student Task Statement

Points A and B are each at the centers of circles of radius AB.

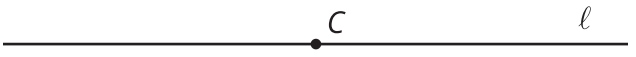


1. Compare the distance EA to the distance EB. Be prepared to explain your reasoning.
2. Compare the distance FA to the distance FB. Be prepared to explain your reasoning.
3. Draw line EF and write a conjecture about its relationship with segment AB.

2 Make It Right

Student Task Statement

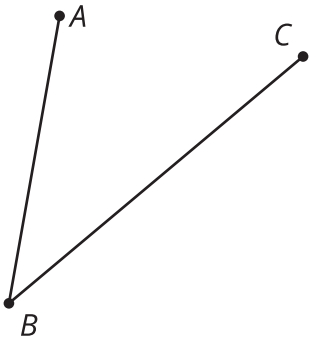
Here is a line ℓ with a point labeled C. Use straightedge and compass moves to construct a line perpendicular to ℓ that goes through C.



3 Bisect This

Student Task Statement

Here is an angle:



1. Estimate the location of a point D so that angle ABD is approximately congruent to angle CBD.
2. Use compass and straightedge moves to create a ray that divides angle CBA into 2 congruent angles. How close is the ray to going through your point D?
3. Take turns with your partner, drawing and bisecting other angles.
    a. For each angle that you draw, explain to your partner how each straightedge and compass move helps you to bisect it.

    b. For each angle that your partner draws, listen carefully to their explanation. If you disagree, discuss your thinking and work to reach an agreement.

Images for Activity Synthesis