

Teacher Notes : **Bret J. Gensburg**; Alliance, Ohio:

 www.alliancemath.us

Subject: Math

Topic: SMART Compass:

Title: Using a Compass Feature on the SMART Board

Grade(s): 7-12

Cross-curricular link(s): Non-specific

Intended learning outcome(s)

- The learners will be able to Use a compass to create different constructions.

Recommended usage: Introduction/Main activity/Summary

Notes: To be used with the compass image *created by [Bret Gensburg](#)* , and can be found at the following link:

<http://www.ahs.stark.k12.oh.us/Math/Gensburg/SMARTBUGS.htm#Galleries>

Lesson Introduction:

This lesson is one of the newest creations that I have developed. For this lesson you will need to save the image of the “White Circle” to a gallery, or download my math three gallery from my website.

<http://www.ahs.stark.k12.oh.us/Math/Gensburg/SMARTBUGS.htm#Galleries>

Math three is a gallery dedicated to my students and one of my major philosophies of education: “If the students can play with it on their desks’, then I must be able to play with on the SMART Board.

Resources/Materials:

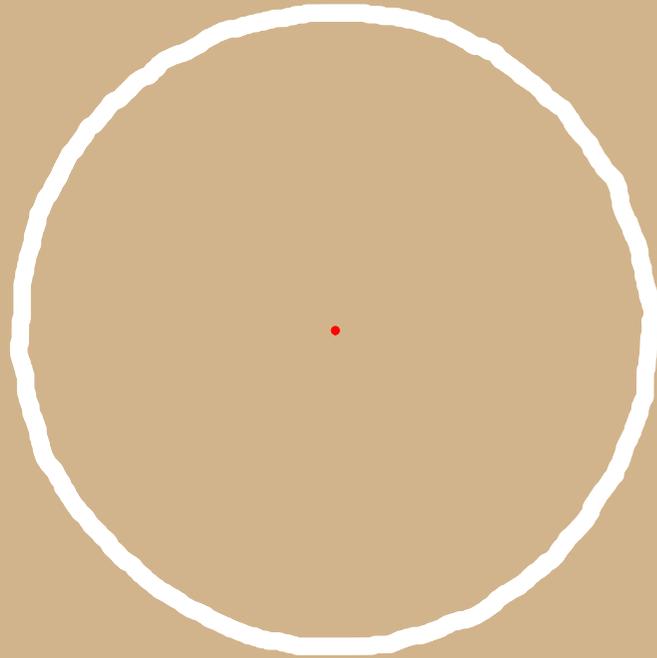
SMART Board Interactive White Board and SMART Notebook

Lesson Overview:

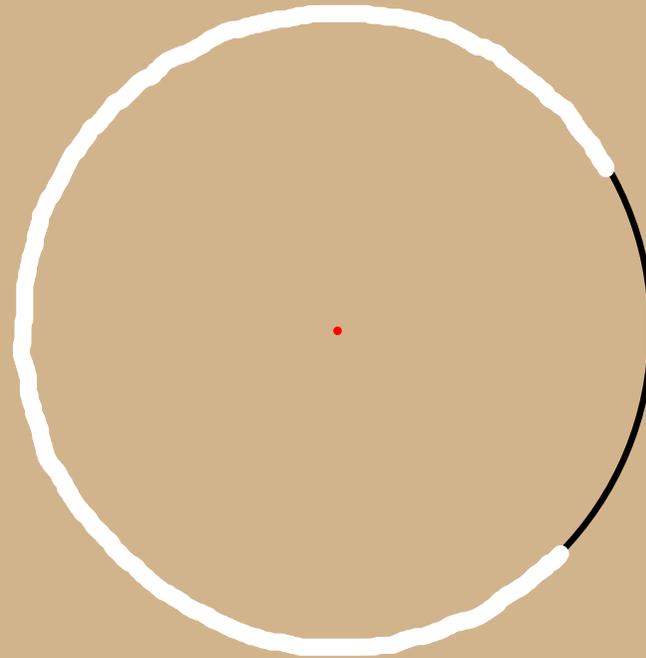
In the state of Ohio, there are math content standards. It was obvious that the SMART Board, through SMART Notebook, could handle every one of those content standards until it got to geometry constructions. This racked my brain. Finally it hit me. I created a circle with the ellipse feature and a 10 x 10 grid. I added a red dot for the center, removed the grid and grouped the circle and dot together. I then drew a thick white mark over the black circle, creating a white-out. Now, only the red dot shows if the background of my notebook file is white. I can then use the “erase” feature, “clone” feature, and “order” feature to show different sections of the circle, thus creating an arc like a compass. Now I can use this for any construction problem that I may need to teach, and if I change my background, I can change the white-out to the same color. Have Fun!

Activity:

To see the circle, I have changed the background opposite of white.



Using the eraser, I have erased, some of the white-out.



- **See the previous page's images now on the white background**

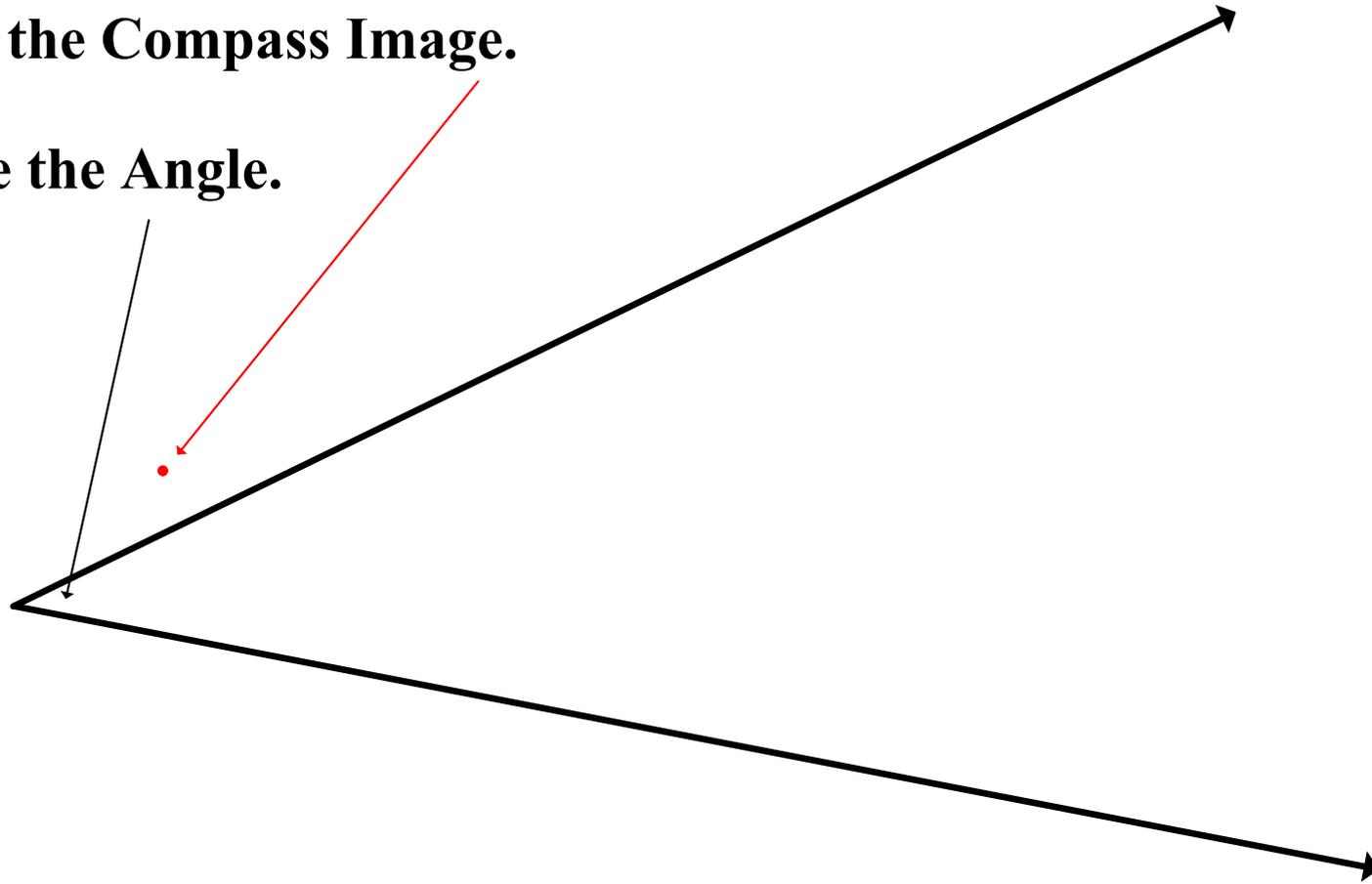
Using the eraser, I have erased, some of the white-out.



- **Angle Bisector:**

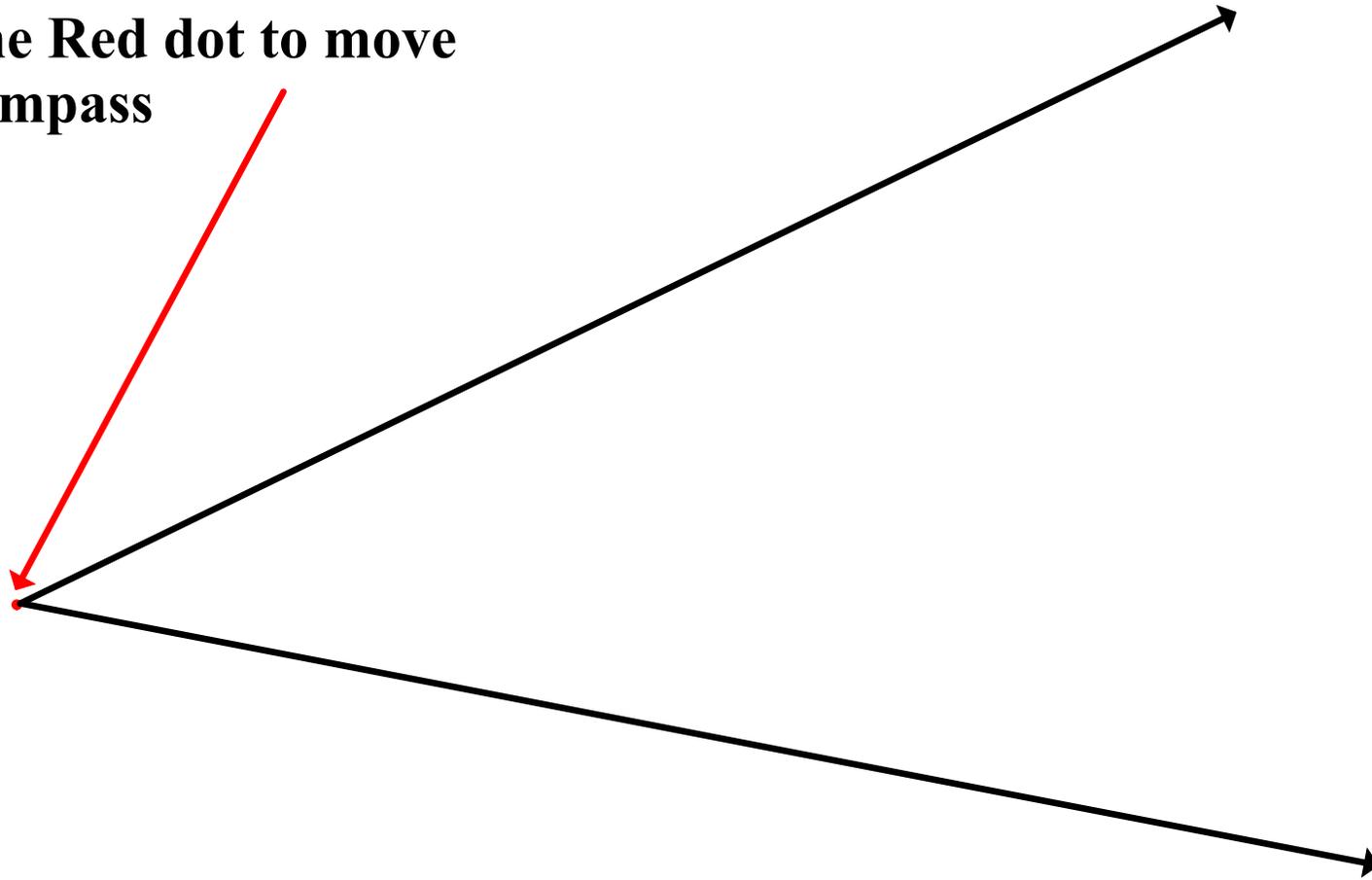
Insert the Compass Image.

Create the Angle.



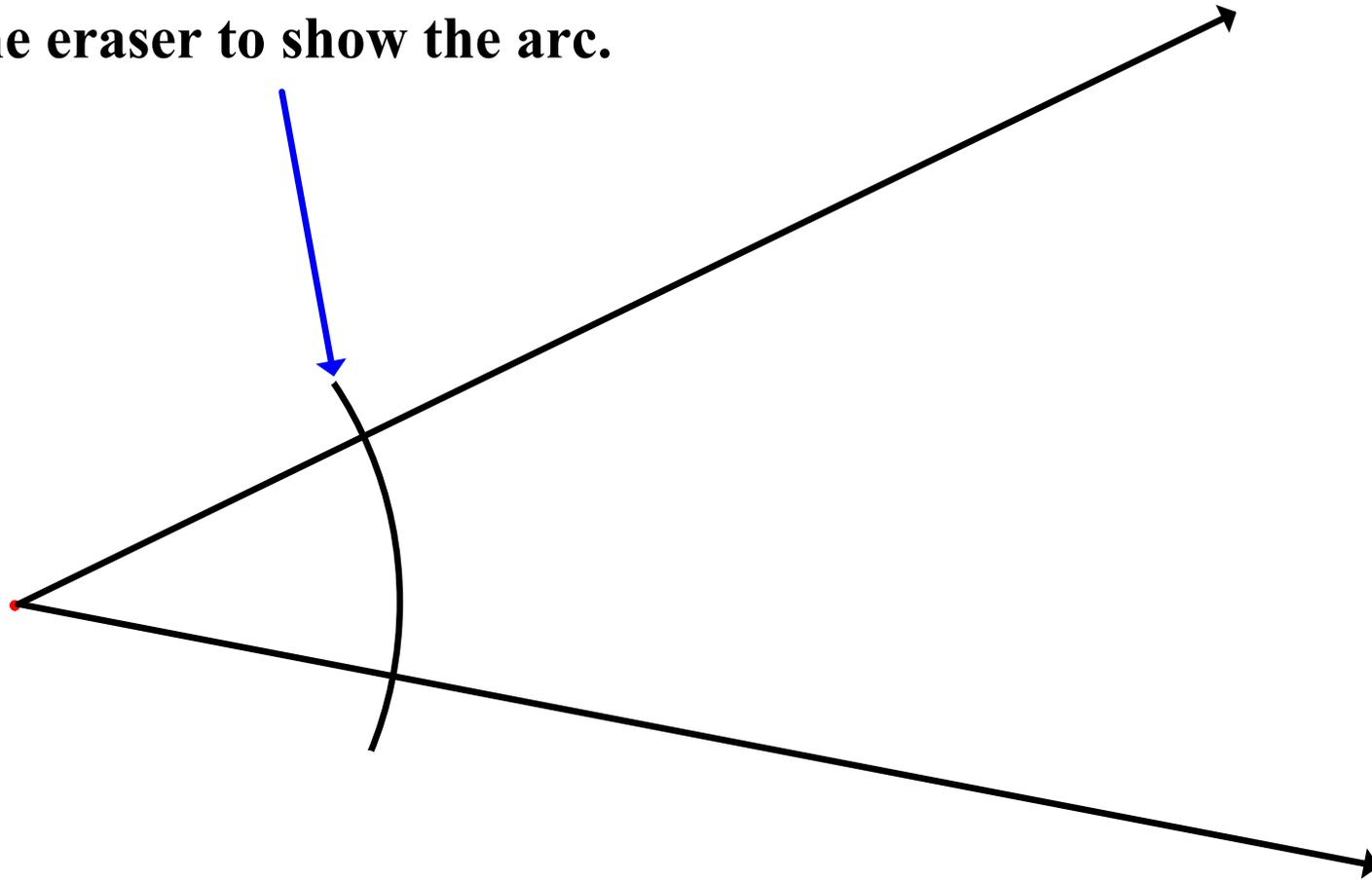
- **Angle Bisector:**

**Use the Red dot to move
the compass**



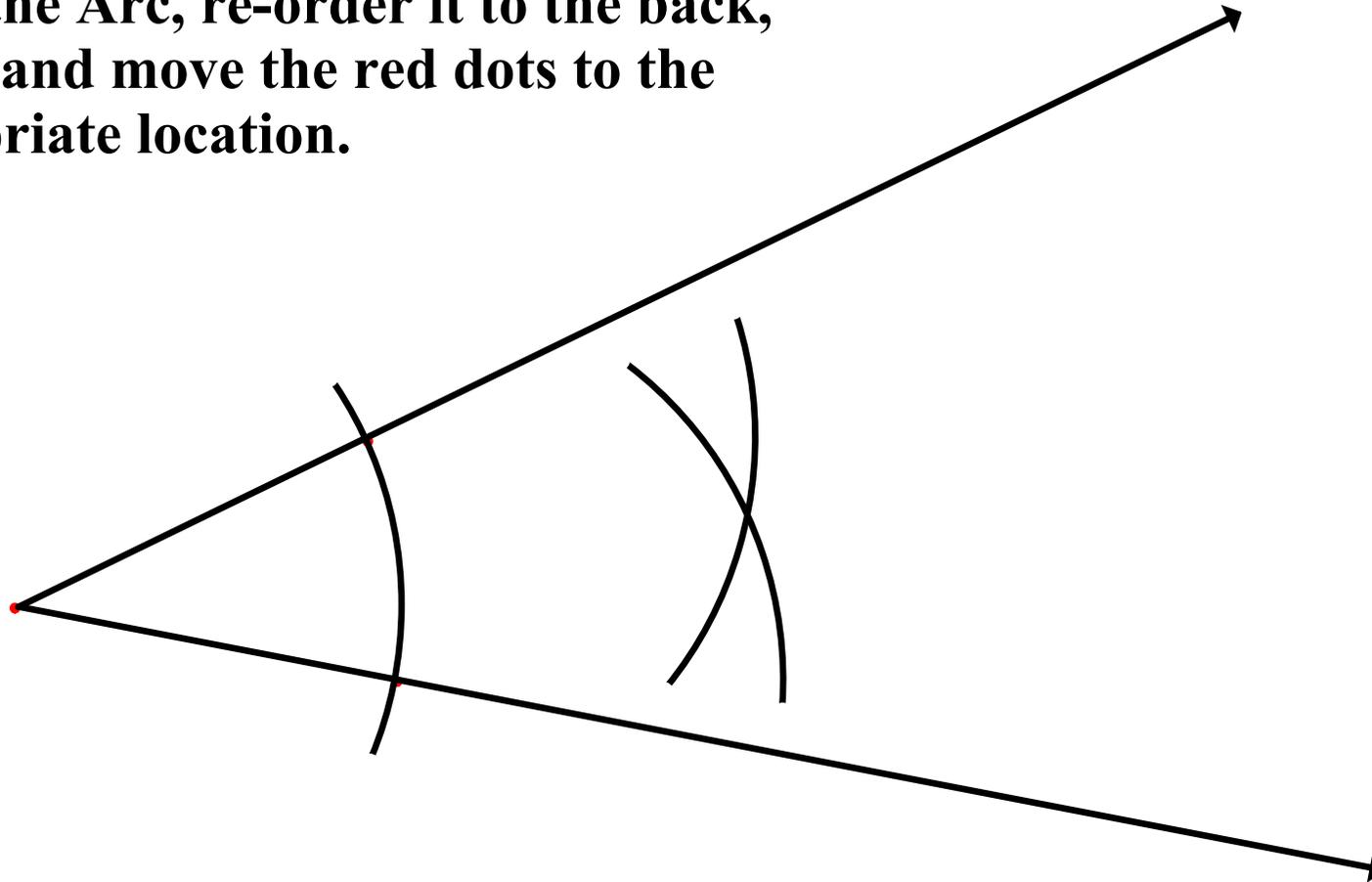
- **Angle Bisector:**

Use the eraser to show the arc.



- **Angle Bisector:**

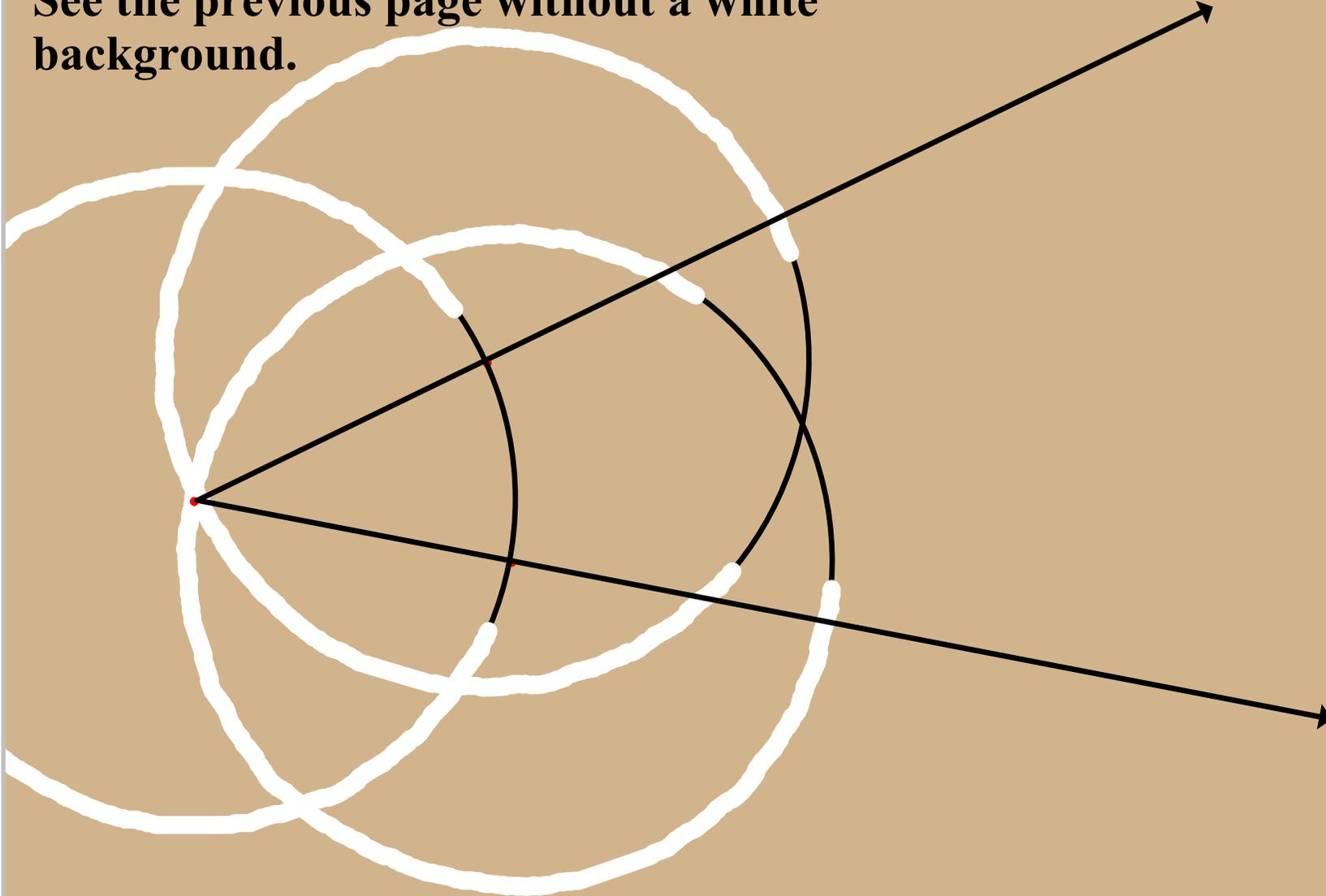
Clone the Arc, re-order it to the back, rotate, and move the red dots to the appropriate location.



Hint: Both commands can be done through the drop down arrow.

- **Angle Bisector:**

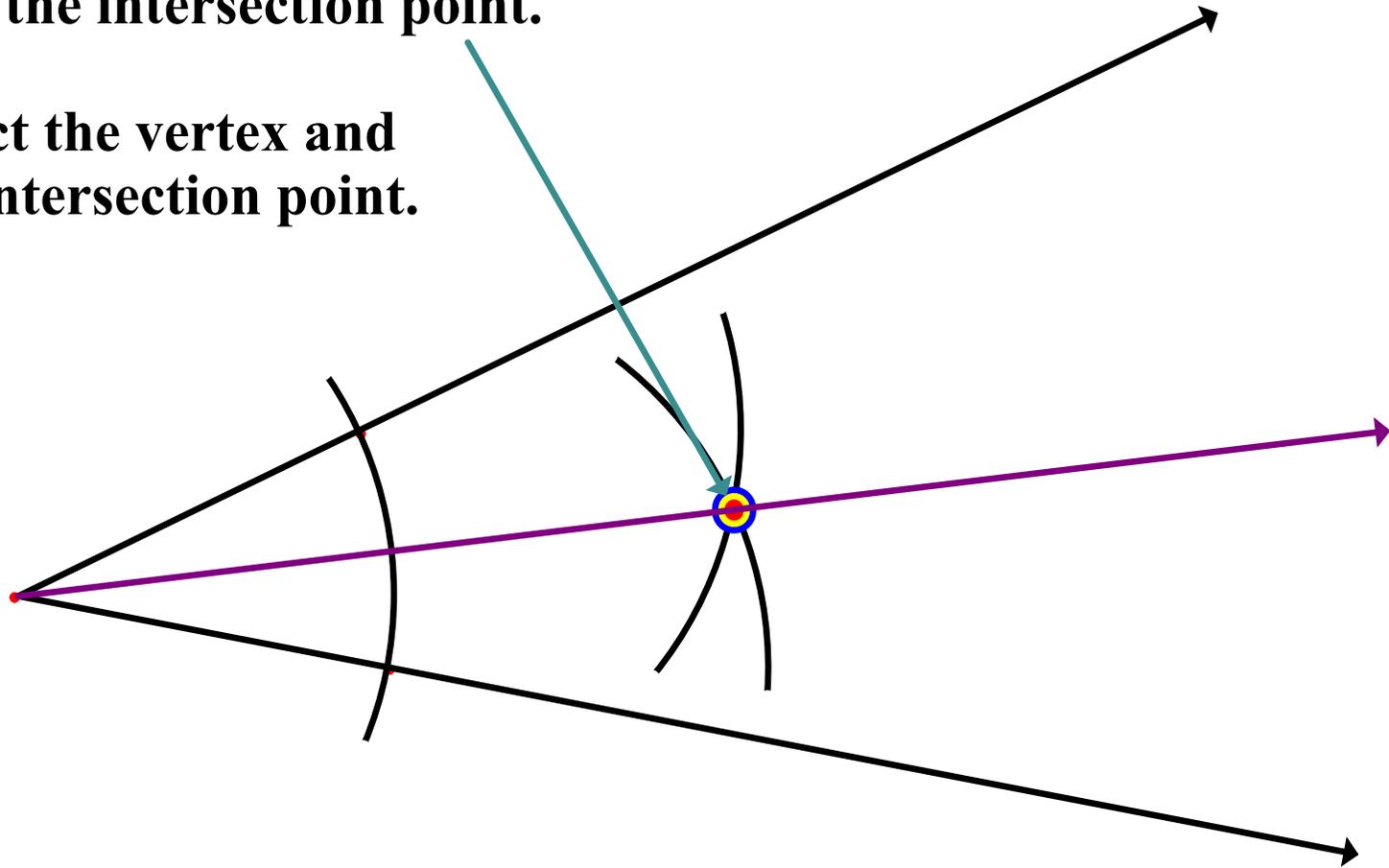
See the previous page without a white background.



- **Angle Bisector:**

Create the intersection point.

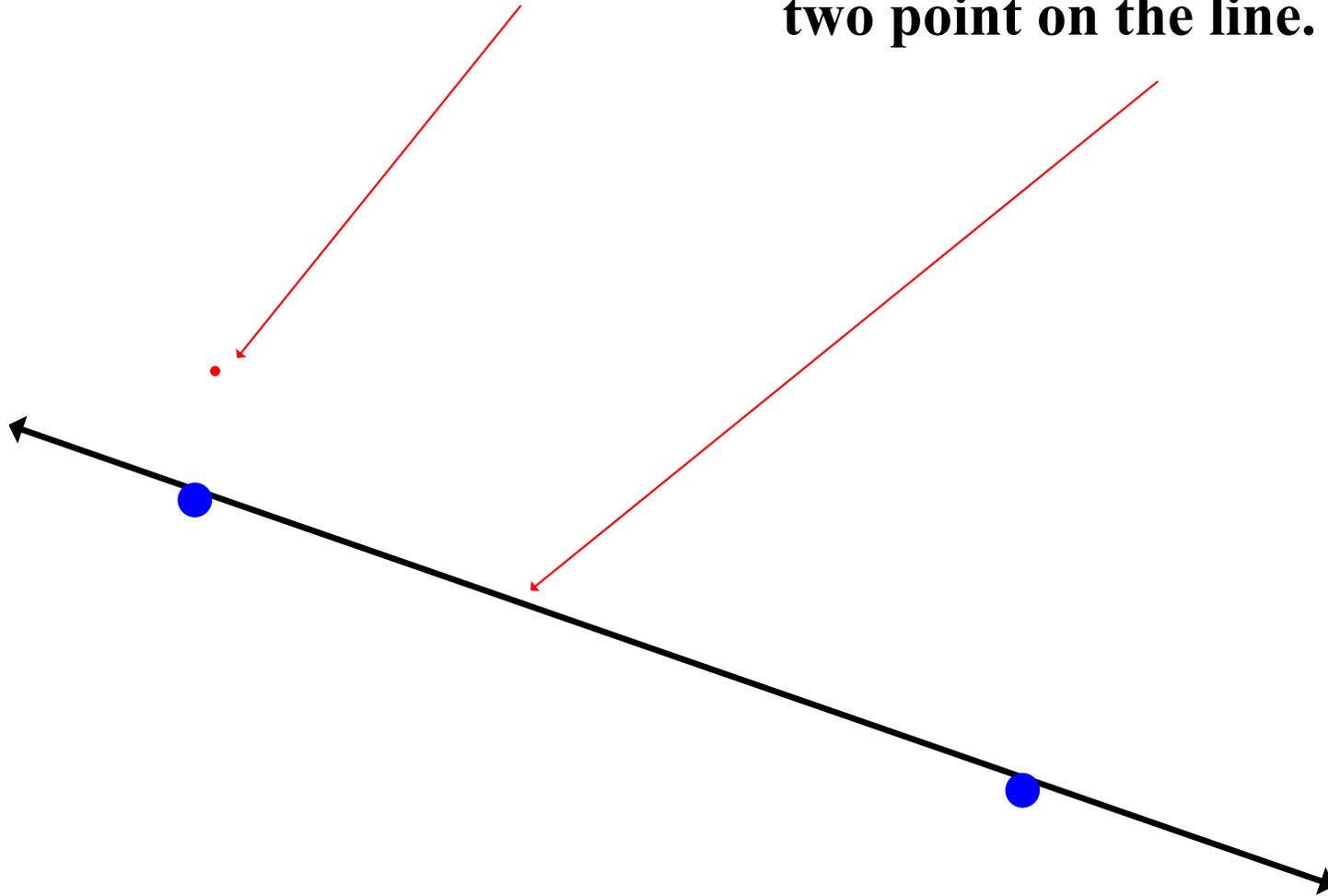
**Connect the vertex and
the intersection point.**



- **Perpendicular Lines:**

Insert the Compass Image.

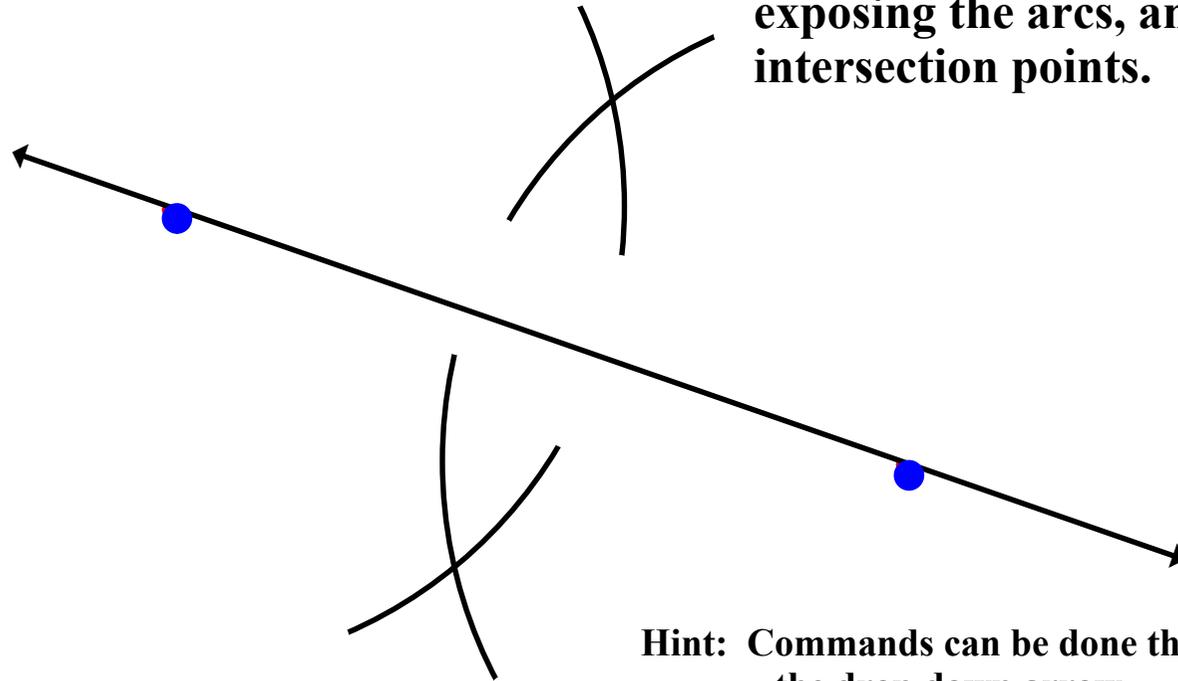
Create a line, and choose two point on the line.



- **Perpendicular Lines:**

Move the compass, resize to be larger than half the distance of the two points, clone it, re-order the second to the back, move it.

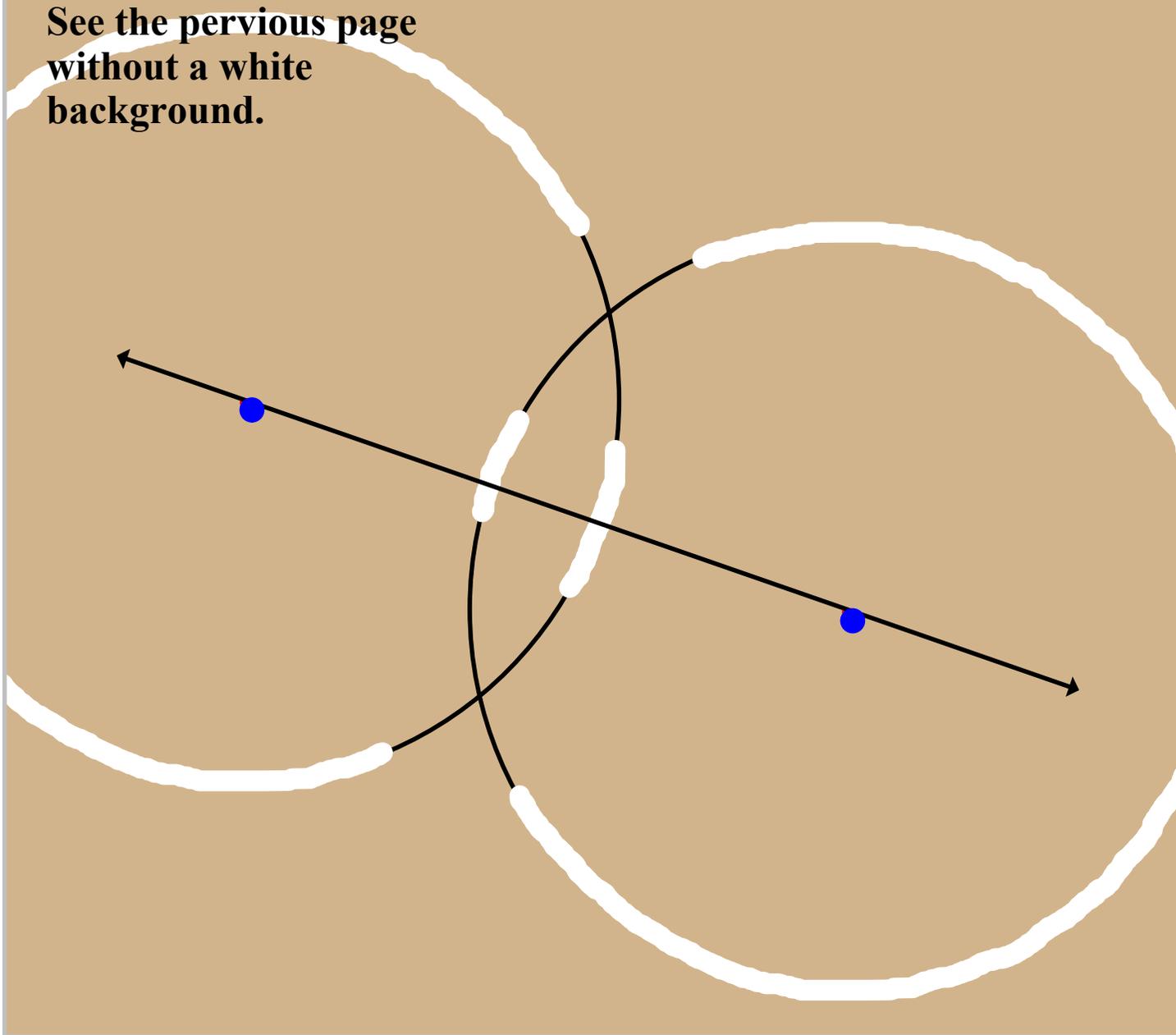
Erase the white-out, exposing the arcs, and intersection points.



Hint: Commands can be done through the drop down arrow.

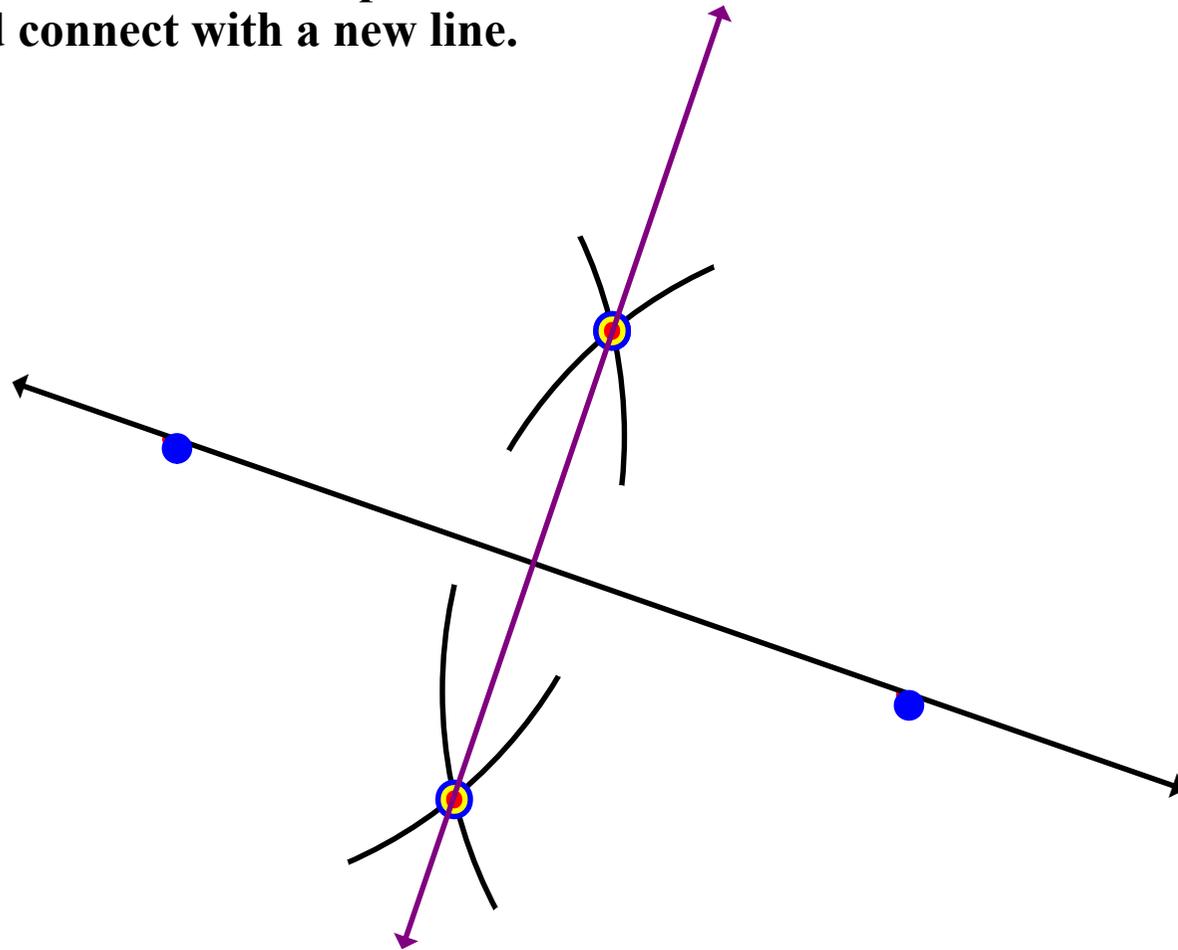
- **Perpendicular Lines:**

**See the pervious page
without a white
background.**



- **Perpendicular Lines:**

**Plot the intersection points
and connect with a new line.**



- **Perpendicular Lines:**

Check with Protractor.

