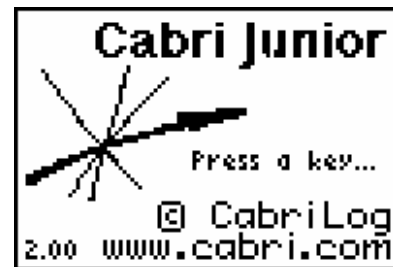ACTIVITY OVERVIEW:
In this activity we will
- Create an Ellipse with a Locus of points

Press [APPS]. Move down to the CabriJr APP and press [ENTER]. Press [ENTER], or any key, to begin using the application. Press [Y=] for the F1 menu and select **New**. (If asked to **Save changes?** press [◄][ENTER] to choose "No.")

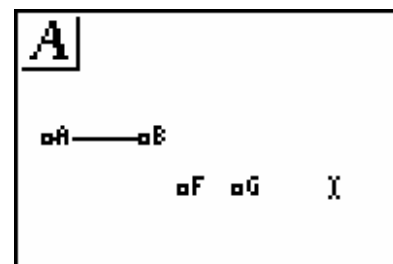Press [WINDOW] for F2, move down to **Segment** and press [ENTER]. Press [ENTER] to mark the first point of the segment. Move the cursor several times to the right and press [ENTER] to mark the second point. Label this segment $\overline{AB}$.
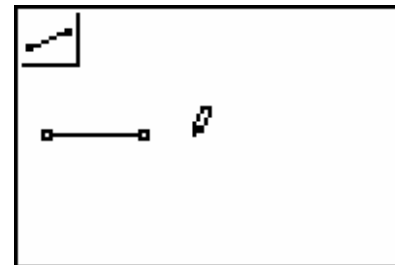
Label this segment $\overline{AB}$. Press [GRAPH] for F5, move up or down to **Alph-Num** and press [ENTER]. Move the cursor to the first endpoint and press [ENTER] then press [MATH] for **A** and press [ENTER]. Move the cursor to the second endpoint and press [ENTER] then press [APPS] for **B** and press [ENTER].
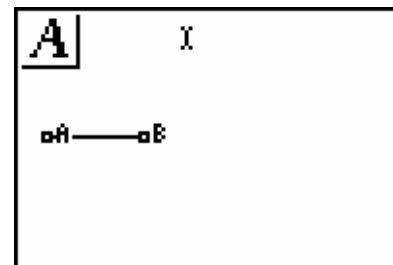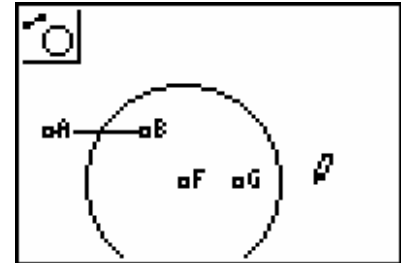
Press [WINDOW] for F2, move up or down to **Point** and press [ENTER]. Press [ENTER] to mark the first point. Move the cursor several times to the right and press [ENTER] to mark the second point. Label these points **F** and **G**.

Press ZOOM for F3, move up or down to **Compass** and press ENTER. Move the cursor to one endpoint of the segment and press ENTER to mark the first endpoint. Move the cursor to the second endpoint and press ENTER to mark the second endpoint. This will create a dotted circle with radius equal the length of the segment.
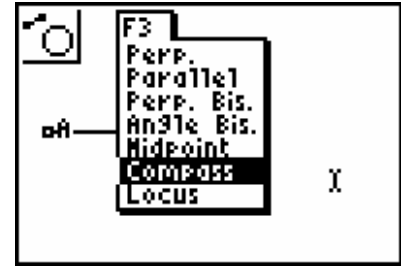
Move the cursor to one of the points not on the segment and press ENTER to mark the point as the center of a circle with radius equal to the length of the segment. (Make sure points **F** and **G** are inside of the circle.)
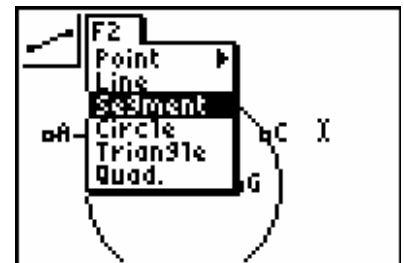
Press WINDOW for F2, move up or down to **Point,** ▶, and ▼ then press ENTER for **Point on.**
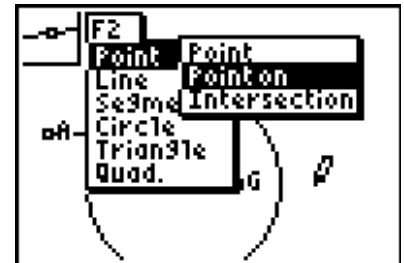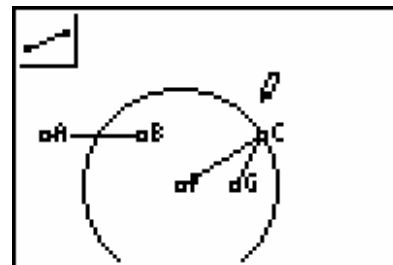
Move the cursor to the circle and press ENTER to select a random point on the circle. Label this point **C.**
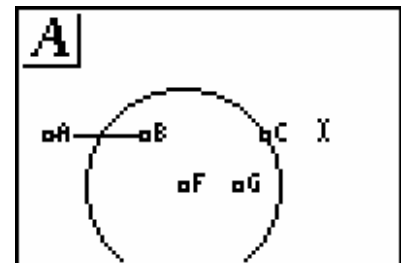
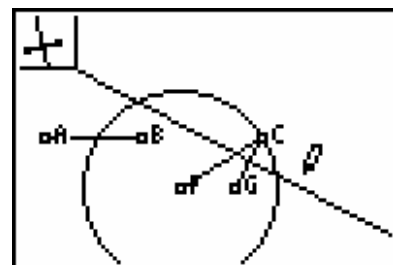Press WINDOW for F2, move up or down to **Segment** and press ENTER.

Move the cursor to create segments $\overline{FC}$ and $\overline{GC}$ by pressing ENTER at each endpoint.
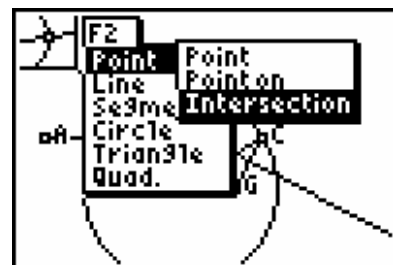
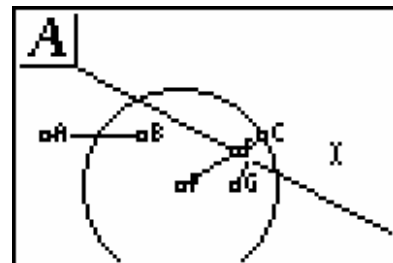Press ZOOM for F3, move up or down to **Perp. Bis.** and press ENTER.

Move the cursor to segment $\overline{GC}$ and press ENTER when segment $\overline{GC}$ is "dancing". The perpendicular bisector of $\overline{GC}$ will be created.
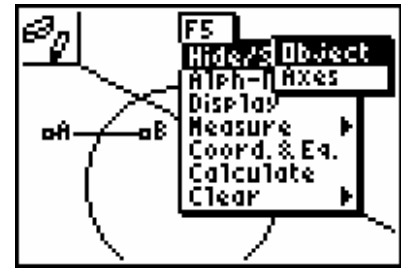
Press WINDOW for F2, move up or down to **Point,** ▶**,** and scroll down to **Intersection** and press ENTER.

Move the cursor until segment $\overline{GC}$ and the perpendicular bisector are blinking and press ENTER. Name this point **P**.

Press $\boxed{\text{GRAPH}}$ for F5, move up or down to **Hide/Show** and press $\boxed{\triangleright}\boxed{\text{ENTER}}$ to hide an object.

Move the cursor until segment $\overline{\text{GC}}$ is "dancing" and press $\boxed{\text{ENTER}}$. Move the cursor until the perpendicular bisector is "dancing" and press $\boxed{\text{ENTER}}$. Move the cursor until $\overline{\text{FC}}$ is "dancing" and press $\boxed{\text{ENTER}}$. Both segments and your perpendicular line should be hidden.
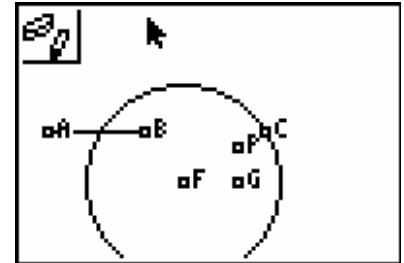
Move the cursor until point **F** is "dancing" and press $\boxed{\text{ENTER}}$. Move the cursor until point **G** is dancing and press $\boxed{\text{ENTER}}$. Both points should now be hidden. Move the cursor until the label **F** is underlined and press $\boxed{\text{ENTER}}$. Move the cursor until the label **G** is underlined and press $\boxed{\text{ENTER}}$. Both labels should now be hidden.
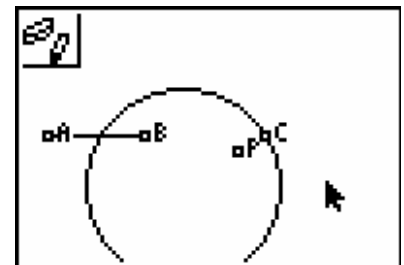
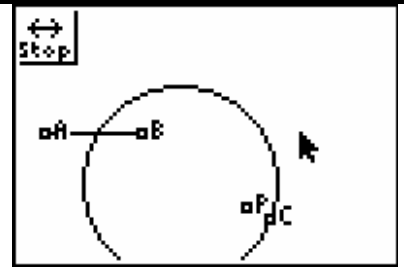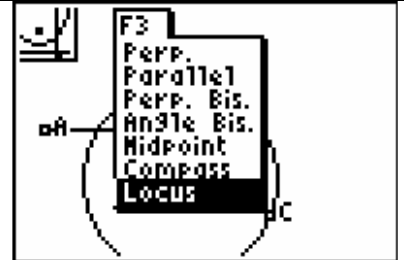Press $\boxed{\text{Y=}}$ for the F1 menu and select **Animate**.
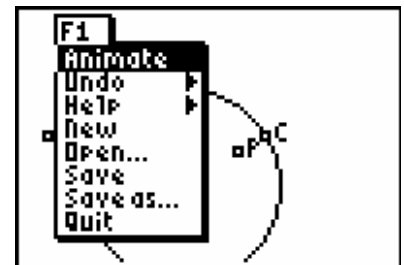
Move the cursor over point **C** and the cursor will become $\leftrightarrow$ and press $\boxed{\text{ENTER}}$. Point **C** and **P** should be moving.
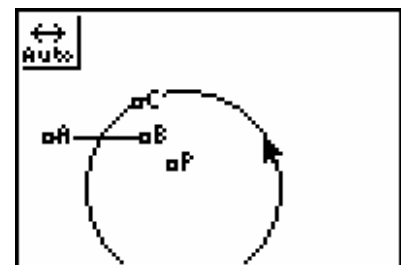
Press [2nd] and press [ENTER] to stop the animation when point **C** is visible.

Press [ZOOM] for the F3 menu and move up or down to select **Locus** and press [ENTER].

Move the cursor over point **P** and the cursor will become a filled in arrow then press [ENTER]. Move the cursor to point **C** and the cursor will become ↔ press [ENTER].