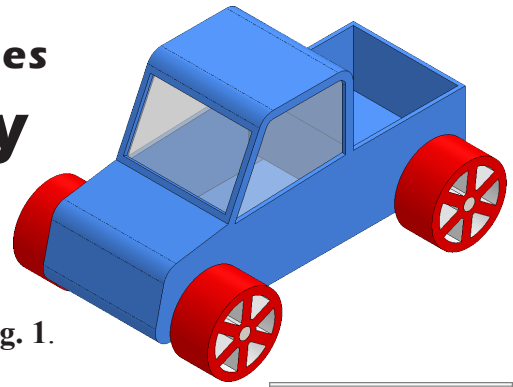


# Simple Machines Assembly



## A. Insert Body, Axles and Wheels.

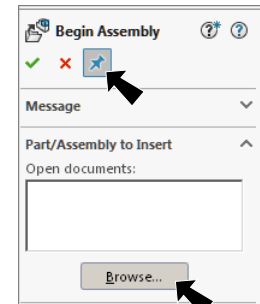
Step 1. Click File Menu > New, click **Assembly** and OK.

Step 2. Click **Keep Visible**  in the Property Manager, **Fig. 1**.

Step 3. Click **Browse** in the Property Manager, **Fig. 1**.

Step 4. Select your **BODY** file and click Open.


Step 5. Click OK  in the Property Manager. This will place the Body origin at the assembly origin and fix the position of the Body so that it cannot move. This fixed component should have a **(f)** before its name in the Feature Manager  **(f) BODY<1>**.

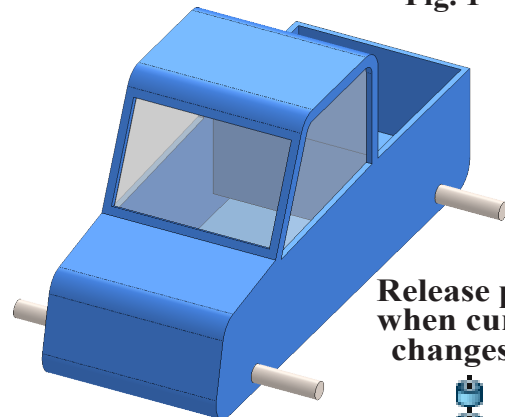


**Fig. 1**

Step 6. Click **Browse** in the Property Manager, **Fig. 1**.

Step 7. Select your **AXLE** file and click Open.


Step 8. Position **Axle near Front Axle hole**, **Fig. 2**. When Axle snaps into place and cursor changes to indicate a Concentric mate , click to release Axle.



Release part when cursor changes to





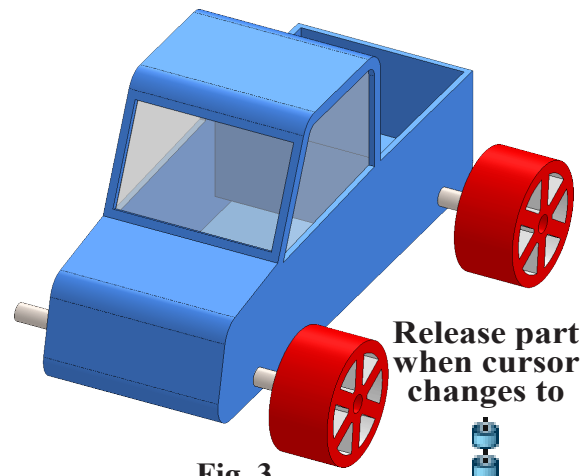
**Fig. 2**

Step 9. Position **Axle near Rear Axle hole**, **Fig. 2**. When Axle snaps into place and cursor changes to indicate a Concentric mate , click to release Axle.

Step 10. Click **Browse** in the Property Manager.

Step 11. Select your **WHEEL** file and click Open.

Step 12. Position **Wheel over Front Axle**, **Fig. 3**. When Wheel snaps into place and cursor changes to indicate a Concentric mate , click to release Wheel. Click Add/Finish Mate  **Fig. 4**.



Release part when cursor changes to




**Fig. 3**


Step 13. Place **WHEEL** at Rear Axle, **Fig. 3**.



**Fig. 4**

Step 14. Rotate view to view **right side of Assembly**, **Fig. 5**. To rotate, hold down middle mouse button (wheel) and drag.

Step 15. Place Wheels on right side Axles, **Fig. 5**. Release Wheel when cursor changes to indicate a Concentric mate .

Step 16. Click OK  in the Property Manager when done.

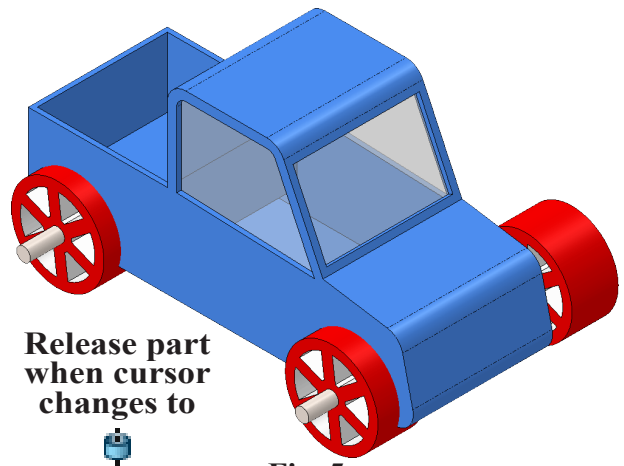



Fig. 5

## B. Save as "TRUCK ASSEMBLY".

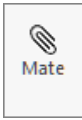
Step 1. Click File Menu > Save As.

Step 2. Key-in **TRUCK ASSEMBLY** for the filename and press ENTER.

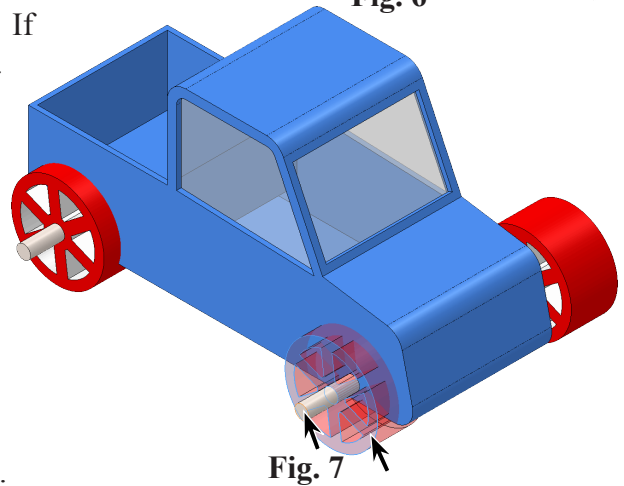
## C. Mate: Wheels and Axles.

Step 1. Click **Filter Faces**  (X) on the **Selection Filter toolbar** at the bottom of the display, **Fig. 6**. If necessary, use **F5** key to display the toolbar.



Step 2. Click **Mate**  on the Assembly toolbar.

Step 3. Click **side face Front Wheel** and **end face of Front Axle**, **Fig. 7**.

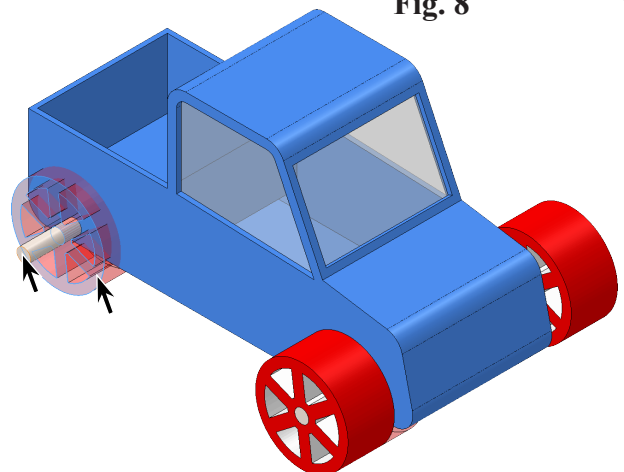


Step 4. Click **Add/Finish Mate**  in Mate pop-up toolbar to add a **Coincident** mate, **Fig. 8**.

Step 5. Click **side face Rear Wheel** and **end face of Rear Axle**, **Fig. 9**.



Step 6. Click **Add/Finish Mate**  in Mate pop-up toolbar to add a **Coincident** mate.



Step 7. Click **Trimetric**  on the Standard Views toolbar.

Step 8. Mate the **side face of Wheels** to **end face of Axles**, **Fig. 10** and **Fig. 11**.

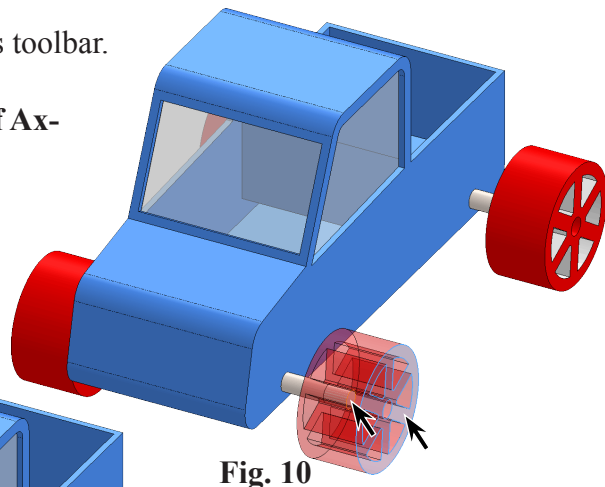



Fig. 10

Step 9. Click **Filter Faces**  (X) to turn **OFF** on the **Selection Filter** toolbar at the bottom of the display, **Fig. 12**. If necessary, use **F5** key to display the toolbar.

Step 10. Next, **Mate the Front Plane of the Rear Wheels** so Rear Wheels will spin together. Then later, we will need only one motor to turn both Rear Wheels. Your Wheels might be numbered differently, so be sure to **Mate Rear Wheels Front Planes**.

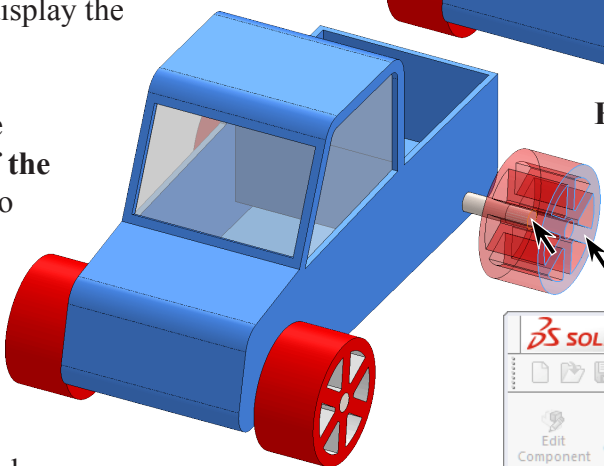




Fig. 11




Fig. 12

Step 11. Expand the flyout Feature Manager design tree (click ) in the top left corner of the graphics area. Then, expand **WHEEL2** and click **Front Plane**, **Fig. 13** and **Fig. 14**.

Step 12. Expand **WHEEL4** and click **Front Plane**, **Fig. 13**.

Step 13. Click **Add/Finish Mate**  in **Mate** pop-up toolbar to add a **Coincident** mate.

Step 14. Click **OK**  in the **Property Manager**.

Step 15. **Save.**  
Use **Ctrl-S**.

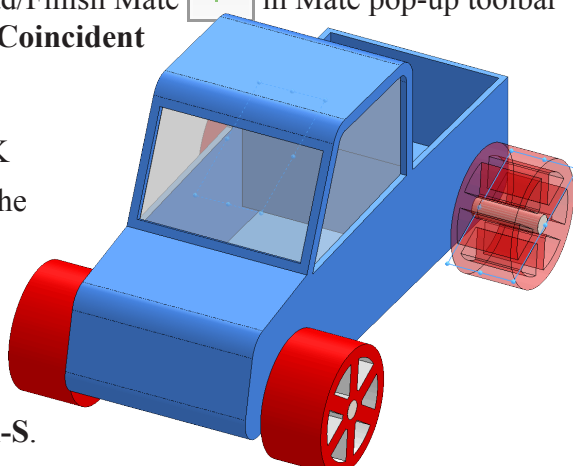


Fig. 14

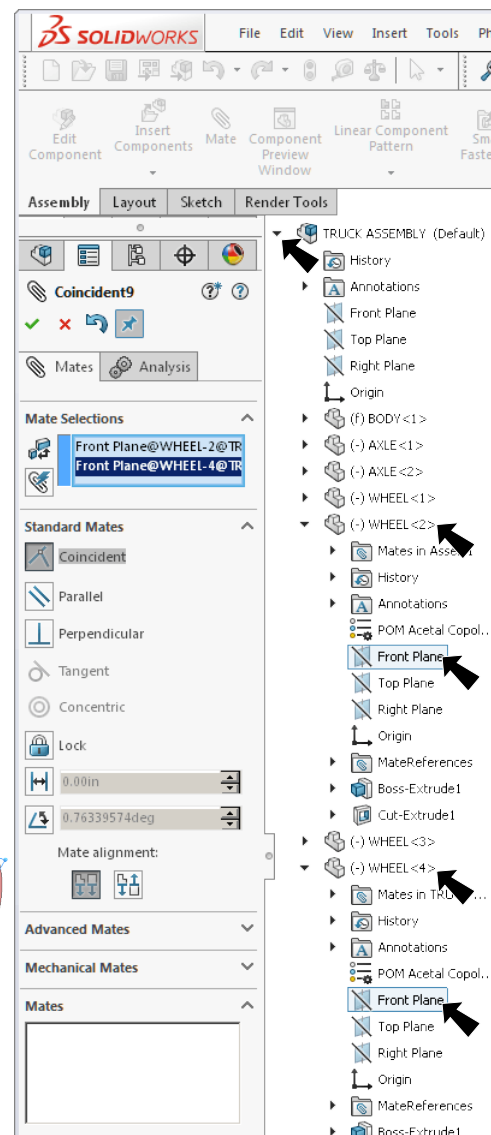


Fig. 13