It should take about 5 minutes to create each lab station. To build the main base for all the lab stations, follow the figures below. If you plan to do lab stations you will need a base for each station. If you plan to have students work in groups or individually, you can have the groups or the individual students build their own bases or, you can build the bases for the students. Building the bases in advance will save time during your class period. You can build the bases and then glue them together so that students are just able to take apart the pieces that need to be changed.

Follow the pictures to create the bases you will need:

Figure 1A  Figure 1B  Figure 1C

Figure 1D  Figure 1E
• Once the base is complete, the following gears and cranks are added to create different machines.
• Students can answer questions associated with each machine to practice data collection, creating tables, graphing and slopes of linear functions.
Use the following pages to create the four different lab stations needed for the lab day.

- Each lab station should take between 5 and 10 minutes to build (depending how easily you can follow the pictures).
- Each lab station starts from the base (Figure 1A-1G).

From figure 1G add:
- 2, 8 tooth gears
- 1, round red block
- 1, yellow 2x8 plate
- 1 axle long enough to hold everything together (#6 axle-medium length)

Add:
- 1, 8 tooth gear
- 1, #6 axle (medium length)
- 1, large crank with handle
Use the following pages to create the four different lab stations needed for the lab day.

- Each lab station should take between 5 and 10 minutes to build (depending how easily you can follow the pictures).
- Each lab station starts from the base (Figure 1A-1G).

**LAB STATION TWO**

From figure 1G add:
- 2, 8 tooth gears
- 1, round red block
- 1, yellow 2x8 plate
- 1 axle long enough to hold everything together (#6 axle-medium length)

Add:
- 1, 24 tooth gear
- 1, #6 axle (medium length)
- 1, large crank with handle
Use the following pages to create the four different lab stations needed for the lab day.

- Each lab station should take between 5 and 10 minutes to build (depending how easily you can follow the pictures).
- Each lab station starts from the base (Figure 1A-1G).

From figure 1G add:
2, 8 tooth gears
1, round red block
1, yellow 2x8 plate
1 axle long enough to hold everything together (#6 axle-medium length)

Add:
1, 40 tooth gear
1, #6 axle (medium length)
1, large crank with handle
Use the following pages to create the four different lab stations needed for the lab day.

- Each lab station should take between 5 and 10 minutes to build (depending how easily you can follow the pictures).
- Each lab station starts from the base (Figure 1A-1G).

From figure 1G add:
2, 8 tooth gears
1, round red block
1, yellow 2x8 plate
1 axle long enough to hold everything together (#6 axle-medium length)

Add:
1, 24 tooth gear
1, 8 tooth gear
1, 40 tooth gear
1, large crank with handle
1, axle through middle gear.