

**Teacher's Guide**  
**Activity One**  
**Learning Component Names**

**Concept**

Students will learn that there are many different components in the Lego Dacta kits and that they can be assembled in many different ways.

More specifically, they will learn that:

- there are several different types of gears (wheel, crown, rack and worm)
- some gears are circular in shape while others are flat
- wheel and rack gears have teeth-like structures along their outer edge
- other components can be fitted to the gears

**Investigation**

Students need some time to become familiar with new materials. Through hands-on activities, they will explore the characteristics of the Lego Dacta components and learn how they can be assembled. They will learn the names of the Lego pieces and be able to recognize and ask for them by name when completing exploration and invention activities.

The Lego Dacta kits come with diagrams that show various types of devices. The students have to infer how they are constructed based on the diagrams. Some of the diagrams show fairly complex machines. Some show simple structures that work by themselves or are part of more complex devices.

**Materials**

- parts sheet
- at least two of each three different-sized wheel gears (8 tooth, 16 tooth, 24 tooth)
- at least one crown gear
- at least one worm gear
- various length axle rods
- beams, blocks
- axle extendors, bushings, connector pegs
- pulley wheels
- plates, bricks

**Directions**

1. Distribute a package containing the materials listed above.
2. Give the students a few minutes to examine the materials and to explore how they can be assembled.
3. Have students make sketches of how the parts can be assembled. These sketches will help them in later activities.
4. Allow time for students to demonstrate some of their constructions.

