Module 1.3: Simple Behaviors

The learners will be able to:
- Summarize concepts about center of gravity, friction, and gears
- Differentiate speed from torque
- Discern which between speed and torque is more applicable in a given task

A. GEARS
- A rotating machine part having cut teeth, or cogs, which mesh with another toothed part to transmit force.

TYPES OF GEARS

B. SPEED VS. TORQUE
- Geared devices can change the speed, torque, and direction of a power source.
  SPEED – how fast or slow is the gear rotating
  TORQUE – how powerful is the gear rotating

Fig. 1

DRIVER GEAR – any size of the gear that is connected directly to the smart motor.

FOLLOWER GEAR – any size of the gear that is connected or is meshing with the driver gear.
C. GEAR SYSTEM

1. GEAR UP SYSTEM

Bigger driver drives a small follower making the robot moves fast but it is weak.

2. GEAR DOWN SYSTEM

Smaller driver drives a big follower making the robot moves slowly but it is powerful.
Complete the table below based on the gear system.

<table>
<thead>
<tr>
<th></th>
<th>GEAR UP</th>
<th>GEAR DOWN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Torque (power)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Identify the needed information below based on the given figures.

Driver Gear size:
Follower Gear size:
Gear System:

Figure A

Driver Gear size:
Follower Gear size:
Gear System:

Figure B