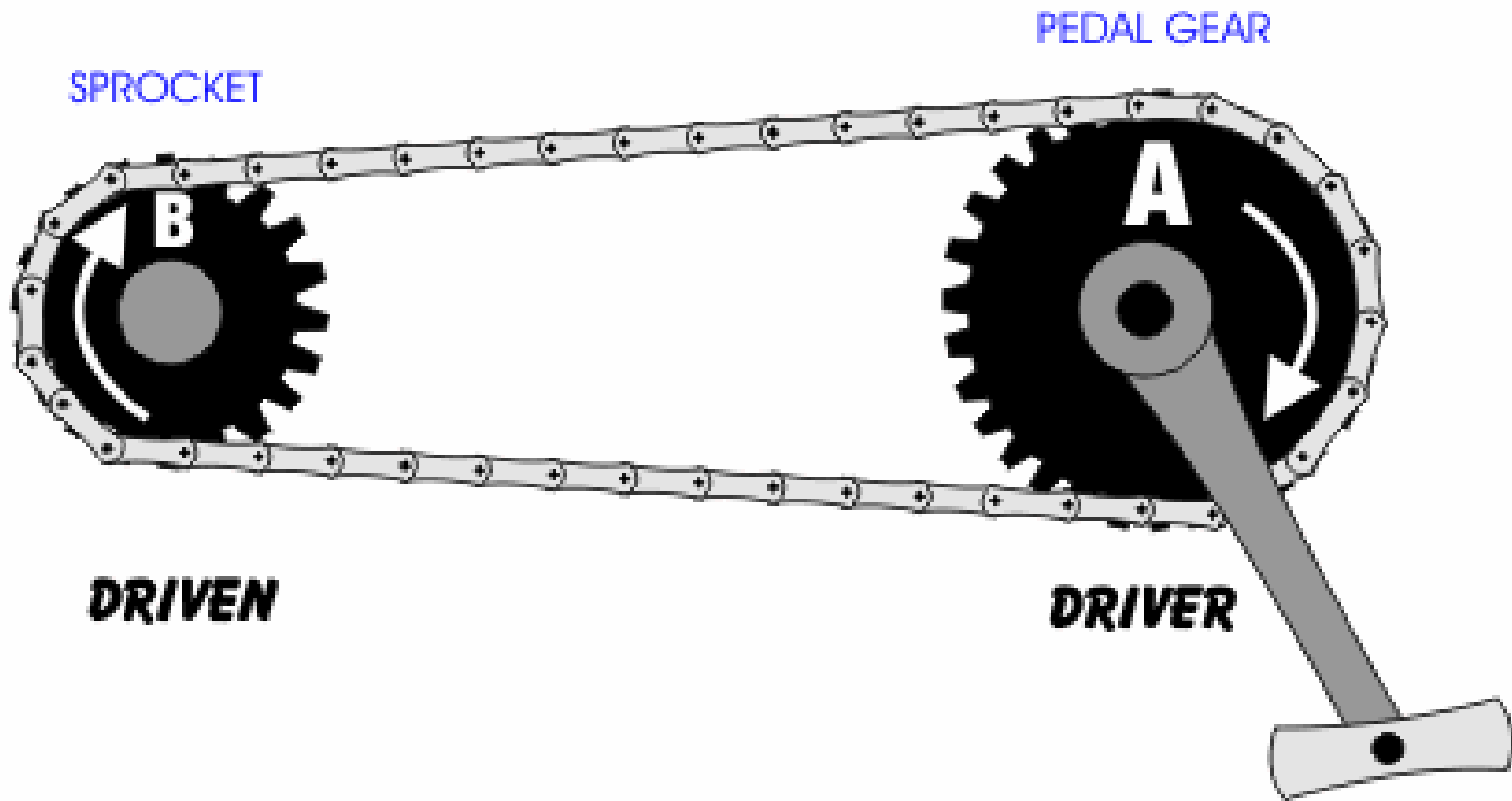


Gear Theory

- Regardless of what you do you will only ever have two main types of gears:
- Driving Gears and Driven Gears
- Driving Gears are connected directly to the power source and transfer the power to the Driven Gears.
- Driven Gears are in contact with the Driving Gears and either increase the torque or increase the speed.



How to determine Gear Ratio

- To calculate gear ratio you must always use the following formula:
- Number of Teeth on the Driver Gear divided by the Number of Teeth on the Driven Gear.
- Example 1: If the driven gear has 8 teeth and the driving gear has 41 teeth, the ratio is said to be 5.13:1

$$41 \div 8 = 5.13$$

How Gear Ratio Affects Output

- If a gear ratio has a number numerically larger than 1 at the front of the ratio, you have a gear reduction. Example 4 : 1
- A gear reduction means that the speed of the output gear is X times slower than the input gear.
- At the same time a gear reduction means that the output torque will be increase by X times over the input torque.