

BICYCLE GEARING WORKSHEET

N/S/D

GENERAL TERMINOLOGY – Gears are devices (*machines*) that help us do useful work by moving the mass of our bodies over long distances in reduced time intervals with reasonable input forces. The level of the input force required is adjusted to acceptable levels via gearing.

In one of its simplest forms, gearing consists of an input gear and an output gear. Gearing for bicycles consist of such an arrangement.

Gear ratios (*for bicycles*) are determined by finding out how many times the output gear (*or rear tire*) turns for each turn of the input gear (*i.e. the pedals*). For automobiles, it's just the opposite – i.e. the gear ratio is the ratio of the number of turns of the input gear for each turn of the output (*rear axles*).

For either of the bicycles provided at the lab tables, determine how many different combinations of input to output gear couples can be achieved. Suggest a readily identifiable label for each (*i.e. inboard front gear to first inboard rear gear, etc.*) and include in the below boxes. Concurrent with this effort determine the gear ratio for each combination and also include in the boxes below.

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