Name: _____ Date: _____

Generating More Electricity – Using Gear Systems

PART A

1. One handle of the drill is a _ _ _ _ _ _ _ to a big metal wheel.
2. On the back of this wheel are some grooves and t _ _ _ _ .
3. A c _ _ on the drill shaft fits into the grooves on the big wheel.
4. As the big wheel rotates the drill shaft turns q _ _ _ _ _ _ .
5. There are 60 grooves on the big wheel and 15 on the cog. How many times does the drill shaft rotate when the big wheel rotates once?

PART B

1. When the lever is pressed the big white plastic wheel s _ _ _ _.
2. The teeth on the edge of the big plastic wheel turn a small c _ _ .
3. This rotates a gen _ _ _ _ _ _ very quickly.
4. Electrical energy is generated and this r _ _ _ _ _ _ _ _ a battery.
5. The battery powers the l _ _ _ _ on the torch.
6. There are about 120 teeth on the big wheel and 12 on the small cog. When the big wheel rotates once how many times will the small cog rotate?

PART C

1. When we pedal the bike we turn a large cog with teeth on the e_ _ _.
2. This large cog moves a looped metal c_ _ _ _.
3. Smaller cogs on the rear wheel begin to r _ _ _ _ _ as they are pushed by the chain.
4. The chain can be moved onto different cogs to make cycling e _ _ _ _ _.
5. The large front cog has 60 teeth. The smallest rear cog has 12 teeth. If you turn the front cog once, how many times will the rear wheel rotate?

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Generating More Electricity – Continued

PART D

1. When the cleaner is switched on the electric motor spins the metal p _ _ _ _ _ .
2. Then, a looped rubber belt begins to t _ _ _ the carpet brush.
3. The carpet brush c _ _ _ _ _ up dirt and this is sucked into the cleaner.
4. Think about it? Is the metal pulley spinning faster or slower than the carpet brush?

How can you use a gear system on your model wind turbine?

Challenge: Draw a diagram of the gear system to help you make it.