

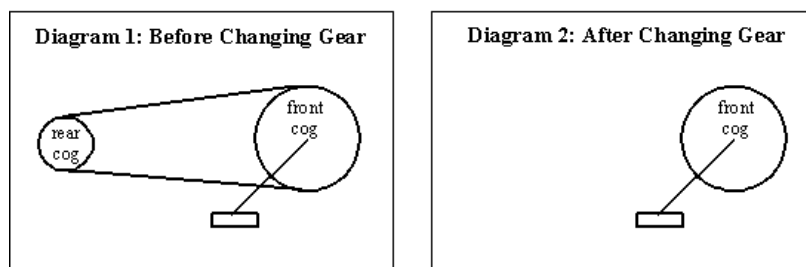
Bike race

Jill has entered a bike race. She knows that to go fast she needs to reduce the weight of her bike before the race, and use a higher gear during the race.

a) Using the idea of friction, explain how making the bike lighter would help Jill go faster in the race.

b) Diagram 1 shows the gear size before Jill changed gear. When Jill changes gear only the rear cog changes.

In Diagram 2, draw the size of a rear cog that will allow Jill to pedal at the same speed but move faster.



c) How does using a higher gear help Jill to go faster?
