

Follow one pedal push

How a Bike Chain Works

Name _____

Date _____



Little Wonderer studied the bike resting on its mat. The pedals sat far from the back wheel. “How does one push reach all that way?” A chain joined them. It was a loop of small metal pieces called links. Big pointed along the loop, from the front sprocket to the back.



Each link joined the next with a tiny pin. The links could turn at these joints, so the chain bent around a wheel without stretching like rubber. That toothed wheel was a sprocket. Its teeth fitted between the chain’s rollers. The hooked-together shapes kept the chain from slipping as it pulled.



With the bike completely still, Little counted teeth. The big front sprocket, called the chainring, turned with the pedals. Its teeth pulled the top of the chain toward the front. The moving chain pulled the back sprocket’s teeth. While pedaling forward, that sprocket drove the back wheel. Turning became pulling, then turning again.

chain	a loop of joined links that carries a pull
link	one small piece in a chain
pin	a tiny rod that joins neighboring links
sprocket	a wheel with teeth that fit a chain
teeth	the points around a sprocket that engage the chain
pedal	the part your foot pushes to turn the front sprocket
gear	a choice of sprockets that changes effort and wheel turns
pull	a force that draws something toward it
turn	to move around a center
wheel	the round part that rolls the bike along

Follow one pedal push

How a Bike Chain Works

Name _____

Date _____



At the table, Big turned a cardboard wheel by its middle. A loop of beads sat in notches around its edge. As the big wheel turned, it pulled the bead loop. The loop turned a smaller wheel. Little followed one bead around. Each part passed the motion to the next.



The notebook showed 32 teeth in front and 16 at the back. One pedal turn moved the chain past 32 teeth: enough for two back-wheel turns. A big front and small back suit faster riding. A small front and big back make pedaling easier uphill. These choices are called gears.



Little's helmet was snug for a gentle ride beside Big. The chain carried each pedal pull to the back wheel. A drill bit's spiral carries chips; a bike chain carries a pull. Turning shapes could do different jobs. "Where else could a loop carry motion?" Little wondered.

1. Why can the chain bend around a sprocket without stretching like rubber?
2. How do teeth and links help a pedal push reach the back wheel?
3. Why does a back sprocket with 16 teeth turn twice when a front sprocket with 32 teeth turns once?

Your turn

Write one command sentence for studying a still sprocket.

Example: Count the teeth on the big sprocket, then draw the chain hugging it.
