

SCENE: PEDAL POWER

Setting: Hamza and Cooper are sitting in the school cafeteria discussing some new equipment they saw in P.E. class the previous period. Olivia walks up and joins them.

Hamza: I hate them.

Cooper: I think they're great! Perfect for me to work out for my triathlon.

Olivia: What are you guys arguing about?

Hamza: Those stupid exercise bikes they just put in the gym.

Olivia: So Hamza, you're not into cardio fitness?

Hamza: P.E. is for sports! What does fitness have to do with it?

Cooper: Well, I think it has everything to do with it. The bikes are there to get more students into shape. Not everyone is into sports like you are.

Olivia: I haven't seen this equipment yet. Is it new?

Cooper: Yeah, Coach Thompson said they were supposed to come in at the beginning of the year, but since she wanted the kind that doesn't plug in, they took longer to get here from the factory, I guess.

Hamza: Wait, they have to plug in somehow. They need some way to get **current**. Didn't you see that they have a digital readout and a place to **charge** your phone? That's the only cool thing about them!

Cooper: That's just it! The **power** it takes to light the display comes from spinning the pedals around.

Olivia: You mean there's a **generator** inside the bike that turns motion into electricity?

Cooper: Right.

Hamza: That's ridiculous. You can't create electricity just by spinning something around.

Olivia: I have one word to say to you, Hamza...

Hamza: Yeah?

Olivia: Windmill.

Hamza: Oh, yeah.

Cooper: She so got you, dude.

Hamza: But a windmill is huge! Bike pedals can't do what windmills do.

Olivia: True. Bike pedals can **charge** your phone and light up the display, but wind turbines can put out a megawatt. That's enough to **power** 500 houses!

Hamza: Mega what?

Cooper: Watt. Not what.

Hamza: What?

Olivia and Cooper: WATT!

Cooper: You know what a watt is. Ms. Q went over that last week.

Hamza: Oh, *watt!* Like with light bulbs. Why didn't you just say so? I remember that from when we made **generators** in science class. That was kind of fun.

Olivia: Right, and remember how Ms. Q wouldn't tell us why we needed that cardboard tube from the toilet paper rolls?

Cooper: Hamza didn't listen and brought a full roll to school! (*They laugh.*)

Hamza: I forgot about that part. I did get a lot of weird looks on the way to school that day.

Olivia: ANYWAY, so windmills have a bigger version of **generators** that **transform** kinetic wind energy to electrical energy.

Cooper: That's like the **transformation** from the kinetic energy of pedaling to electrical energy on those COOL bikes that Hamza hates.

Hamza: Okay, I guess I don't *hate* them... In fact, maybe if we sat on those bikes in all our classes instead of sitting at desks that we could supply **power** to the whole school.

Olivia: Hmmm.... Very cool idea, but do you really think we could sustain that long term? Seems like we'd get tired.

Cooper: We'd definitely have to **fuel** up with a good breakfast and the occasional energy bar. But I'm trying to picture myself learning algebra on a bike. I don't know if I could concentrate.

Hamza: (*more excited*) But think of all the energy we would **conserve!** Plus, if we got solar cells and windmills on the roof we'd be like *Rockin' Renewable Middle School* baby!

Olivia: Fun ideas, Ham, but I say we reduce our use of electricity instead of going crazy with all that stuff. We can start with light bulbs.

Hamza: Booooring!

Cooper: No, it's true. We already have the technology to make more light using less electricity. They're called energy-**efficient** lights. They cost more, but they last longer and use less **power**. Hamza, you might even be able to light one up with the watts you create pedaling one of those COOL new bikes in P.E.

Hamza: Not so cool.

Olivia and Cooper: Cool!

Hamza: Okay. Maybe a little cool.

