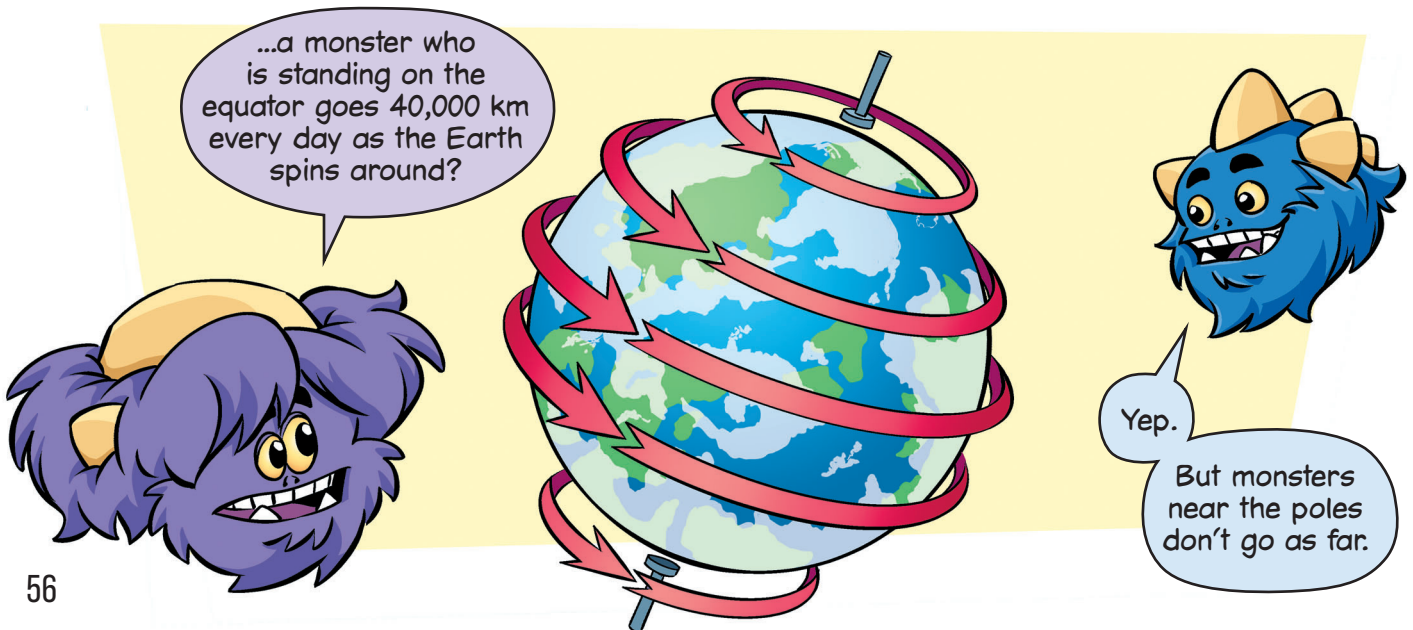
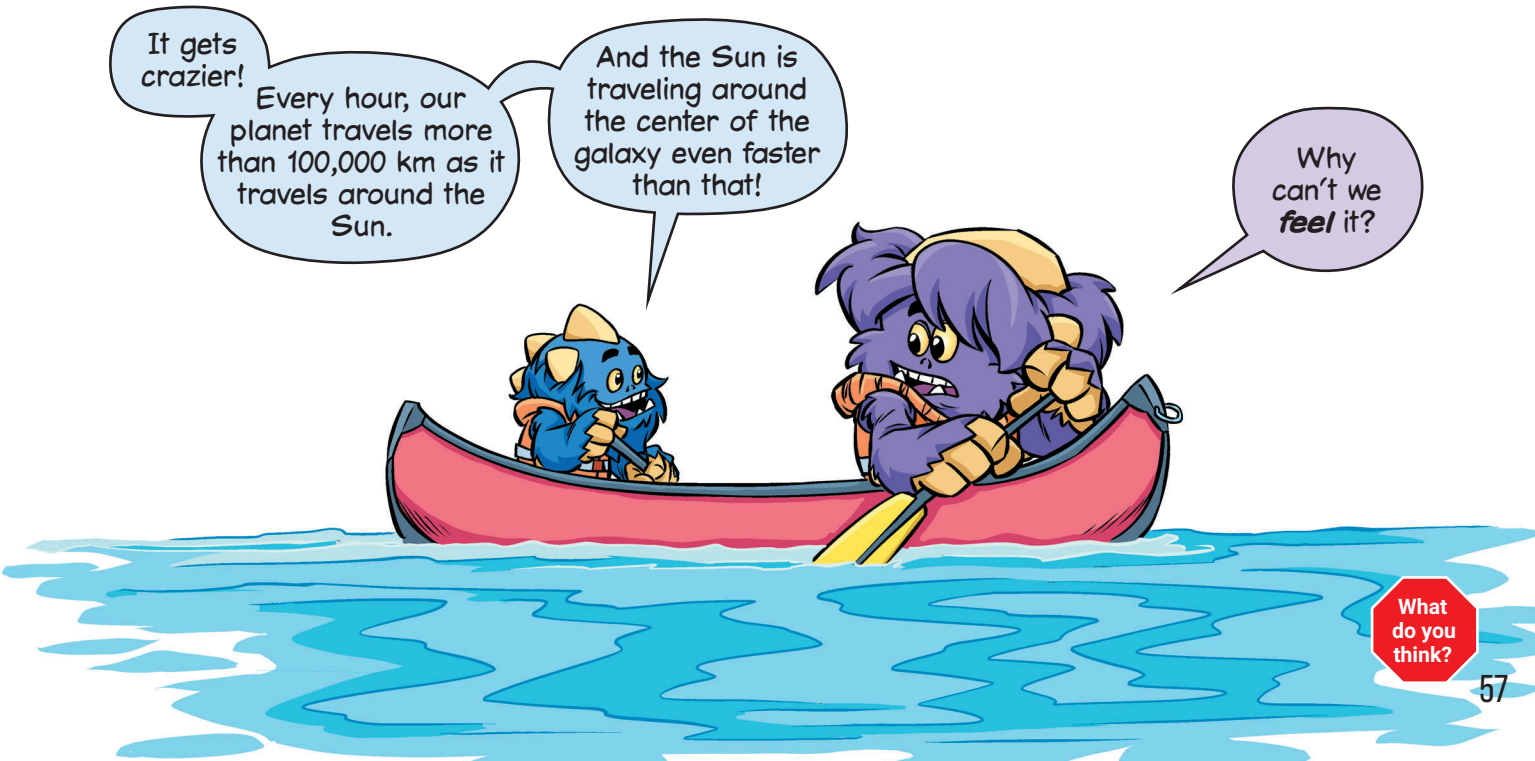




THE LITTLE MONSTERS LIVE ON A PLANET THAT IS A LOT LIKE OURS. EARTH IS ABOUT 40,000 KM AROUND (ALMOST 25,000 MILES).





What do you think?



You don't feel how fast you're going for the same reason you don't feel the speed in a bus on the highway.

In a bus, you and everything in it are all going the same speed. If the bus is going 100 km per hour, so are you!

Oh, yeah.

It hardly feels any different from sitting in a bus that isn't moving at all.



Exactly. Especially if the road is smooth.

We don't feel speed. We feel **acceleration**.



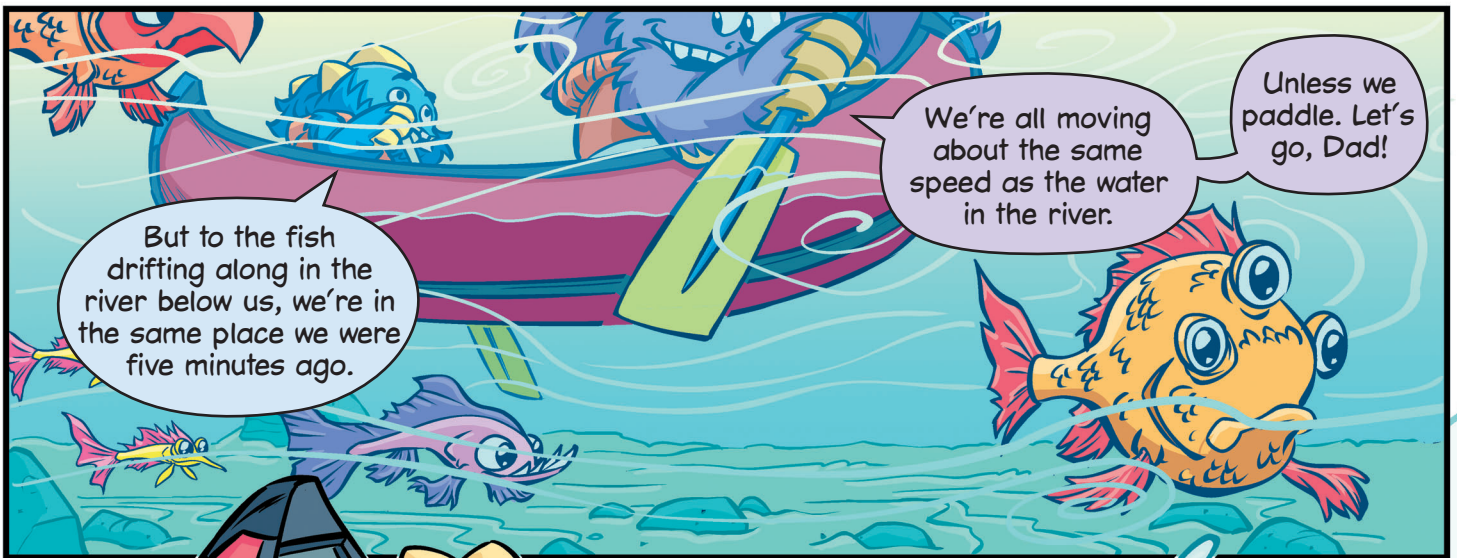
I see.

The planet is like a giant bus going around the Sun.

Since it isn't speeding up or slowing down, we don't notice how fast we're going.

But the planet does spin around. Shouldn't we feel **that**?

It takes a whole day just to turn around once, so the turn is too gentle to notice.



FEELING ACCELERATION

If you're in a car going a constant speed down a smooth road, you won't feel the motion. You might feel vibrations from the engine or road, but if you close your eyes, you can't feel the car pushing you forward. It feels the same as if the car were stopped.

You do feel it when the driver speeds up, slows down, or turns. These types of motion are acceleration, and when the car accelerates, you can feel it!

PRACTICE:

Answer the questions below about what you feel when you are in a car that is accelerating.

- 1 You are in a car at a traffic light that turns green. The driver steps on the gas and the car speeds up quickly. What do you feel?

- Your body presses back against the seat
- Your body presses forward against the seat belt
- None of the above



- 2 You are in a car headed toward a traffic light that turns red. The driver steps on the brake and the car slows to a stop. What do you feel?

- Your body presses back against the seat
- Your body presses forward against the seat belt
- None of the above



DISCUSSION:

- 3 When do you feel the acceleration in a car the most: when the driver slams on the gas, or when the driver slams on the brakes? Why?



PRACTICE:

You may have ridden in a bus, a plane, or on a hilly road like the one below. If you've never been in one of these situations, try to think of a similar experience that will help you answer the questions below.

4 Lisa stands on a bus as it moves through the city. She holds a rail to keep her balance. When is it *easiest* for Lisa to keep her balance?

- While the bus speeds up from a stop
- While the bus makes a quick turn
- While the driver hits the brakes
- While the bus keeps a fast speed



5 On flights, there are times when staff and passengers can walk freely around the plane. When do you think is it easiest to walk around in a plane?

- While the plane speeds up on the runway
- While the plane gains speed after takeoff
- While the plane flies at top speed
- While the plane brakes after landing



6 How would it feel to ride in a car on the road below at a constant speed? Does a car on this road accelerate even if its speed doesn't change? Explain.

