PASSPORT TO SPACE

Exploring Mars

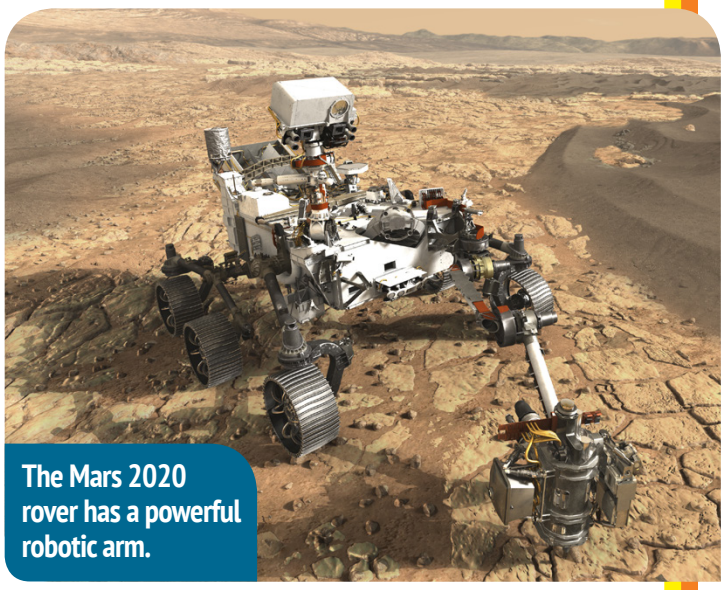
What's it really like on the red planet? With the help of cutting-edge robots, we'll find out soon!

Is there life on Mars? Could people actually live there one day? These are questions that America's space program, called NASA, wants to answer. It's been 50 years since an astronaut walked on the moon. Now NASA is eager to get back there, and to send robots all the way to Mars to explore.

In 2020, Mars and Earth will be **orbiting** close to one another, like they do every couple of years, and several countries are planning to send **rovers** to find out more about the Red Planet, named for the rusty red dust on its surface. (Sometimes the dust blows into the planet's **atmosphere**, making the sky look pink!) It's a big trip: The U.S. rover, called Mars 2020, will **launch** in July 2020, but won't land on Mars until February 2021!

What A Rover Looks Like

Mars 2020 is about the size of a car at 10 feet long, nine feet wide, and seven feet tall. This rover is tough, which is important. (An older spacecraft got its **probe** stuck while trying to burrow into Martian soil for samples.) It has six rugged wheels, each with its own motor, to take it over Mars's rough, dry surface, which is covered with craters and old volcanoes. It also has the most powerful **robotic arm** ever built for a rover. This adaptable arm can withstand the extreme temperature changes and heavy dust on Mars.



The Mars 2020 rover has a powerful robotic arm.

The rover's assortment of instruments includes a drill at the end of its robotic arm to dig for soil samples that astronauts will collect and bring back to Earth; an advanced camera system; **sensors** to test temperature, wind speed, and direction; and a high-tech X ray tool to analyze the chemical makeup of rocks at a fine scale.

What's Next?

While NASA is getting ready to launch Mars 2020, it is also testing and preparing its newest spacecraft, called Orion, to take humans to the moon and to Mars. But that won't happen until sometime in the 2030s. First, we need to learn much more about this mysterious planet. If its **hostile** environment can support people, maybe one day when you're older you'll be able to visit Mars!