

What Can My Rover Do?

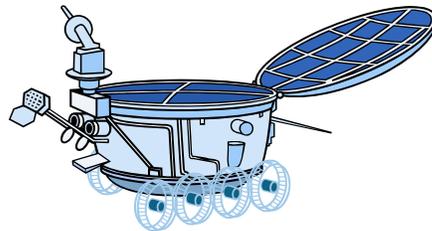
The Mars Exploration Rover (MER) robots are the largest rovers to ever successfully land on another planet. NASA designed the MER robots to act as robotic geologists. The instruments packed into the rovers are primarily designed to look at the rocks and minerals to tell us more about their composition and how they formed. Here are some of the instruments that help the MER rovers in their mission:

- Cameras that let them take color, stereoscopic (3D) images of the landscape
- Thermal-emission spectrometers that give measurements about how hot surfaces are
- Three pairs of black-and-white cameras on the front, back and mast of the rover to help the robot see its surroundings and navigate around obstacles
- Rock Abrasion Tools - or RATs - mounted on a small arm, to bore into a rock to collect samples
- Magnifying cameras, mounted on the same arm as the drill, so that scientists can see the rock up close
- Mass spectrometers that determine the compositions of minerals in rocks
- Magnets to attract iron-bearing sand particles. The particles stick to the magnets and scientists look at them with the cameras or analyze them with the spectrometers.

Now it is your turn! You have designed a rover and experimented with its capabilities. Add instruments to your rover. These items will make the rover capable of doing many things to help explore a planet!

What You Need:

- ✦ Various craft items
- ✦ Tape
- ✦ Glue



What To Do:

- ✦ Using the various craft items available, design instruments that can be placed on your rover to help in its mission. Be sure to determine what each instrument is supposed to do!
- ✦ Using tape or glue, place the items on your rover.

Parent Prompts:

Where will the rover be working?

What is the rover's mission—what science is it doing?

What instruments does it need to do its job?