

## More on Mars

### Purpose

The purpose of this activity is to reinforce spelling and decoding/logic skills, while gaining a better understanding of the geology/topography of Mars.

Students will be able to

1. Note various points of interest on the surface of Mars (Mars Word Scramble).
2. Decode Mars-related terms (Mars Word Scramble, Vowels in Space, Crack the Code).
3. Simulate the process by which the surface dust of Mars became reddish in color (Rusty Dust) and the process by which water might have resulted in some erosion on Mars' surface (Go with the Flow).

### Important Vocabulary/Key Terms (essential terms in bold)

Mars Exploration Rover (MER)	rock abrasion tool (RAT)	surface	<b>volcano</b>
<b>crater</b>	<b>water</b>	<b>gullies</b>	<b>spherules</b>
<b>vug</b>	dust	<b>rust</b>	geology
topography	map	terrain	<b>erosion</b>

### Mars Word Scramble (Spelling)

It can be difficult to figure out how to get from one place to another without a good set of directions or, even better, a good map! Scientists at NASA's Jet Propulsion Laboratory in California are guiding the Mars Exploration Rovers, giving directions in the form of software and individual commands, uploaded to the Rovers. It is a very time-consuming process. Can you imagine having to go through all of that whenever you need directions? Luckily, we can just ask someone for directions, or pull out a trusty map. When it comes time for a manned mission to Mars, it sure would be nice to have a map...thank goodness the Rovers are helping us make one!

Unscramble the following words to find out the names given to some of the features on the Red Planet, that might one day be on an official Mars map.

1. SARM (Mars)
2. OESTN LCOCIUN (Stone Council)
3. VGSUE RCTEAR (Gusev Crater)
4. VELBLINONE (Bonneville)
5. DRNAKAIODC (Adirondack)
6. YRPUHMHE (Humphrey)
7. GNAULA LOHWOL (Laguna Hollow)
8. RSOGISM LILH (Grissom Hill)
9. MKCTIKTICR (McKittrick)
10. LE NCAATPI (El Capitan)
11. PUEGLDUEU (Guadelupe)
12. SALT EHCNAC (Last Chance)
13. MULPSOY NMSO (Olympus Mons)
14. GBI NEDB (Big Bend)
15. CAMRAT (Tarmac)
16. BRTEOR E (Robert E)
17. IDMDEL NOUGDR (Middle Ground)
18. HIRLECA LSAFT (Charlie Flats)
19. REDEANUNC (Endurance)
20. AMDIIIREN ULAPMN (Meridiani Planum)

**Vowels in Space: a Closer Look at Mars** (Vowel recognition/Spelling)

Mars has been a planet of great interest for many years, especially because of images that show some of its features. MERs are furthering the study of the Martian landscape, and discovering new, exciting information every day. Fill in the missing vowels to find out what each word is. A couple of these are tricky—you might not have heard of them before!

s__rf__c__	v__lc__n__	cr__t__r	w__t__r
bl__b__rr__s	g__ll__s	sph__r__l__s	v__g
d__st	__r__n__x__d__	r__st	g__l__g__
t__p__gr__ph__	__tcr__pp__ng	t__rr__n	__r__s__n

<i>surface</i>	<i>volcano</i>	<i>crater</i>	<i>water</i>
<i>blueberries</i>	<i>gullies</i>	<i>spherules</i>	<i>vug</i>
<i>dust</i>	<i>iron oxide</i>	<i>rust</i>	<i>geology</i>
<i>topography</i>	<i>outcropping</i>	<i>terrain</i>	<i>erosion</i>

**Rusty Dust** (Geology/Chemistry)

Mars is often referred to as the Red Planet. It gets this nickname from the coloring of its terrain. The reason that the terrain of Mars is reddish in color is that there is a lot of iron oxide in it, which has made the planet rust! You can make your own version of the rusty dust that covers Mars, using the following recipe....

*MARTIAN SAND*

- You will need:
- 3 large pieces of steel wool
  - Sand
  - Water
  - Pie plate
  - Scissors
- What to do:
- 1.) Cut the steel wool into small pieces.
  - 2.) Fill the pie plate ½ full with sand.
  - 3.) Mix the small steel wool pieces into the sand.
  - 4.) Mix in one cup of water.
  - 5.) Let sit for a couple of days, after which, your mixture will resemble the dust on Mars!

*(This information was adapted from MARS by Steven L. Kipp, ©1998 by Capstone Press, page 22.)*

**Go with the Flow** (Geology/Topography)

To simulate water erosion as might have occurred on Mars, use blocks of salt, packed soil, or similar mass and a variety of watering cans (e.g. single-spout, rain-style...) and/or spray bottles. Expose the block to the same source of water every day for about a week, and observe the changes that occur. You can even use more than one kind of block, and compare the data.