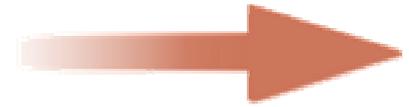


RED PLANET FILL-IN-THE-BLANKS GAME

Fill in the blanks with the words from the **WORD LIST!**



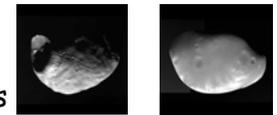
Mars is called the _____ Planet because its surface has a rusty color. It is the _____ planet from the Sun. The diameter of Mars is only about [half or twice] (circle one) the Earth's diameter even though Mars has Olympus Mons*, the largest _____ in the Solar System, on its surface.



Mars also has the largest canyon in the Solar System called _____. This canyon is as long as the distance between the east and west coasts of the U.S. In places, the canyon is as deep as the distance between Earth's surface and a jet airplane at cruising altitude (30,000 feet)!



Mars _____ on its axis at about the same rate as Earth, so the Martian day is also about 24 hours long. Mars takes about _____ Earth-years* to orbit the _____. So, if you were _____ years old on Earth [insert your age], then you would only be about _____ years old in Mars years [insert your own answer].



Mars has two small, odd-shaped moons called _____ and _____. They both _____ around Mars in only hours!

Mars is less massive than Earth so it has a [weaker or stronger] (circle one) gravitational field. If you weighed _____ pounds on Earth [insert your weight], then you would only weigh about 1/3rd of that on Mars (= _____ pounds). Of course, this doesn't mean there

RED PLANET FILL-IN-THE-BLANKS GAME

would be any less of you on Mars, but only that the Martian gravity* would pull down on you with 1/3rd the force. Just think how high you could jump!

Mars has a very thin _____ made up mostly of carbon dioxide*. It would be impossible to breathe on Mars without a special _____ to protect you.

The atmospheric pressure on Mars is the same as being 100,000 feet above Earth's surface!

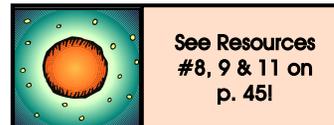
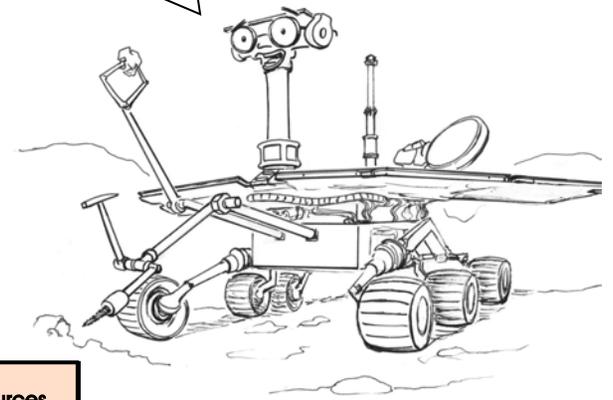
_____ is sending many new robotic missions to explore Mars' surface and atmosphere*. Right now, the Mars Global Surveyor mission in orbit around Mars is sending back the most remarkable images of Mars ever seen! In 2003, NASA sent two large robotic _____ to explore the Martian surface. Would you like to make the long and risky voyage to Mars one day?

WORD LIST

Cross out the words as you use them...

SPACESUIT **ORBIT**
TWO **PHOBOS** **ATMOSPHERE**
VOLCANO **NASA** **SUN**
ROTATES **4TH** **DEIMOS**
RED **VALLES MARINERIS** **ROVERS**

Read a cool poem about walking on Mars, on page 34!



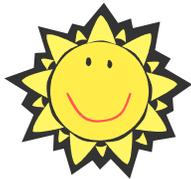
See Resources
#8, 9 & 11 on
p. 45!

REVEAL A SECRET MESSAGE ABOUT MARS!

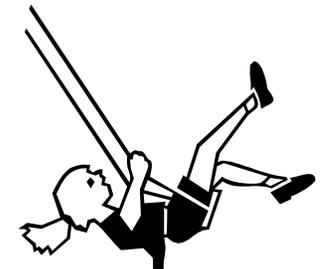
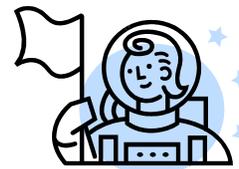
Use the key on the next page to fill in the blanks beneath each picture.



_____ is _____ because of rust - the iron oxide in the _____.



_____ shines on planet Mars. From _____ we see it bright as _____!



If you should visit _____ one day, you'll need a _____ to run and _____.

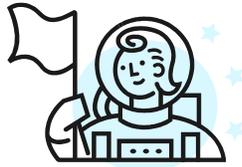
USE THIS KEY TO DECODE THE SECRET MESSAGE



= EARTH



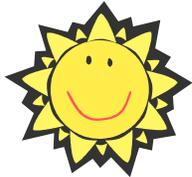
= MARS



= SUIT



= DUST



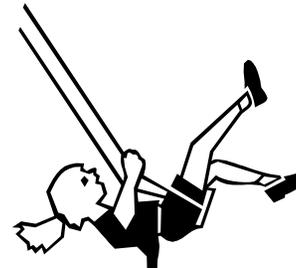
= SUNLIGHT



= RED



= STARS



= PLAY

JAMIE ON MARS

by Preston Dyches

Jamie lives in the American southwest — a land of red rocks and desert sand. He hears at school that Mars will be especially bright in the night sky during the next month or so and decides to lead his family on an excursion to view it. Jamie cannot help but let his imagination run free with the dream of visiting the Red Planet one day...

Jamie took a deep breath and stepped out onto the dusty red plain. Finally the day was here. At last Jamie was old enough to go outside the habitat in a spacesuit! Before today he always had to stay inside the rover when his parents took him for trips on the surface of Mars. But not today, no way!

Jamie's mom and dad were right behind him, but they stayed a few steps behind so he could explore on his own. All he could see in front of him was the barren and beautiful red planet he loved. And now he could reach out and touch it with his own gloves.

The family lived at Marsbase with about two hundred other people. Most were scientists and engineers, and some had families with kids. Jamie's parents were geologists, which meant they studied rocks and soil to learn more about the history of Mars. Jamie hoped to be a geologist too.

What to do first? They were just going for a short hike around the base so that Jamie could get used to his suit. He tried a jump, and sailed up a few feet into the air. His boots landed with a crunch on the cold dry soil. This was fun!

Jamie made his way over to a big rock and pulled out his microscope to examine it in detail. He could see tiny grains

stuck together. Mom and dad said this was a kind of rock that formed in water, long ago in Mars' past. The planet they lived on was cold and dry now, but early in its history it may have had liquid water on its surface.

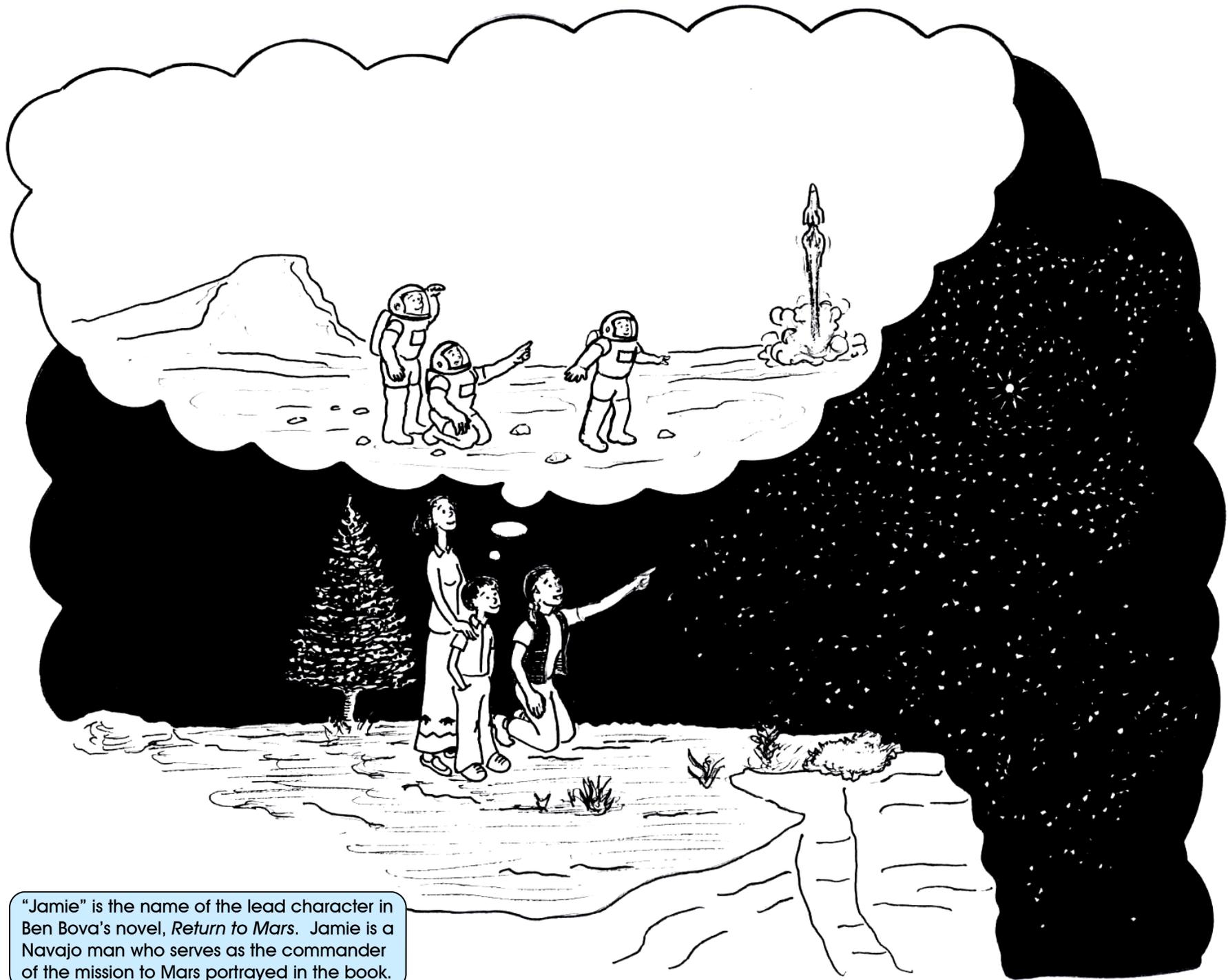
Just then, the Martian family felt a low rumble through their boots. Startled, Jamie looked to his parents for an answer. "What's going on?" His dad pointed to the sky just above a nearby ridge. Jamie turned his gaze in time to spot a plume of fire rising into the butterscotch-colored sky. Atop the flame was a gleaming white rocket. "Heading for the space station on the moon, Phobos?" Jamie asked as he stared at the rocket and its pillar of white smoke.

"What was that Jamie?" His mom's voice was loud and clear, but it wasn't coming through the earphones in his helmet. "Jamie? Did you say something about photos? It's kind of dark for that, don't you think?"

Suddenly he realized that he was not on Mars, not really anyway. But he had been there in his imagination and seen that it was a real place. It was a whole world, with its own rocks and mountains and valleys and weather. No people lived there yet, but maybe someday.

He and his parents stood on the mesa gazing at the sky for a long time that evening, but one bright red gem held Jamie's fascination. Mars. It was as real as could be. And he would never again look at it in the same way.





“Jamie” is the name of the lead character in Ben Bova’s novel, *Return to Mars*. Jamie is a Navajo man who serves as the commander of the mission to Mars portrayed in the book.

WE'LL WALK ON MARS

by Cheri Morrow

A planet red, reflecting light
We see with our own eyes tonight.
Another world – we call it Mars –
Appears to wander through the stars.

Those stars might be too far away,
But we could visit Mars one day.
It's fourth in orbit 'round the Sun –
Another place to walk and run.

We'll journey 'round the Martian sphere –
It's half the distance we'd go here –
On Earth we'd travel twice as far
To come back 'round to where we are.

The Martian air – so cold and thin –
With nowhere near the oxygen
To let us breathe without spacesuits,
Complete with helmets, gloves, and boots.

The Martian land – so dry and bare –
We won't find liquid water there:
No plants, no creepy-crawly things,
No life with fins nor legs nor wings.

So some will say to search down deep
Where maybe bits of water seep
And microscopic things alive
May have the gumption to survive.

We'll see a canyon – deep and vast –
That tells of Mars' mysterious past:
This valley's length would be at least
The U-S-A from west to east!

We'll climb a huge volcano dome;
The long and gentle slopes we'll roam,
With cliffs around the base so high –
As high as earthly jet planes fly!

We'll hike along a crater's rim
Until the light of day grows dim,
And think about the rock that hit
Whose impact made this giant pit.

Then maybe we'll return to Earth,
Or maybe we will give new birth
To life on Mars like you and me,
So Earthlings would then Martians be.



Write your own poem or use
these words to create a song
about Mars!

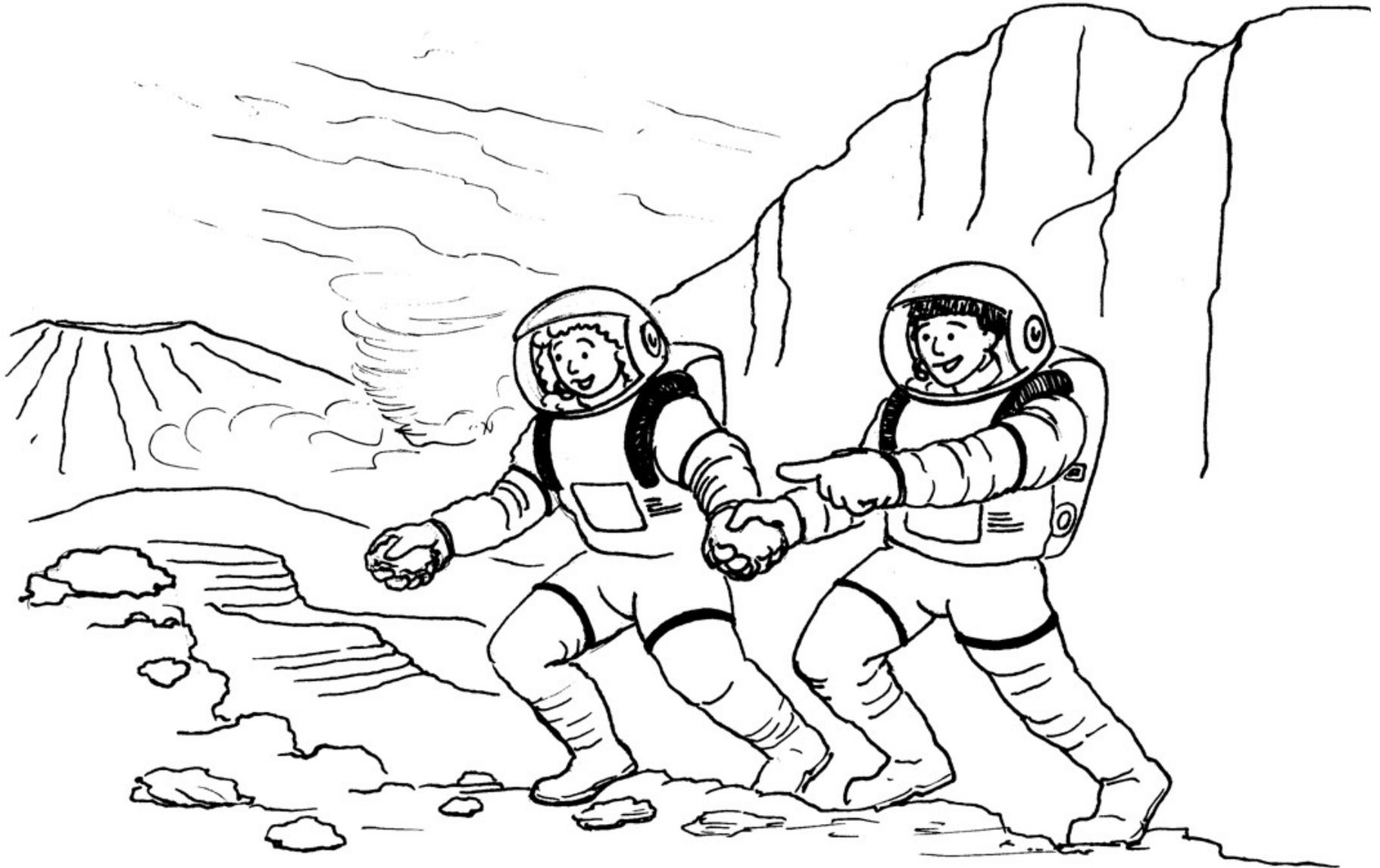
Poem © 2003 Cheri Morrow. Used with permission.



For a cool Mars
website,
see Resource
#5 on p. 45!

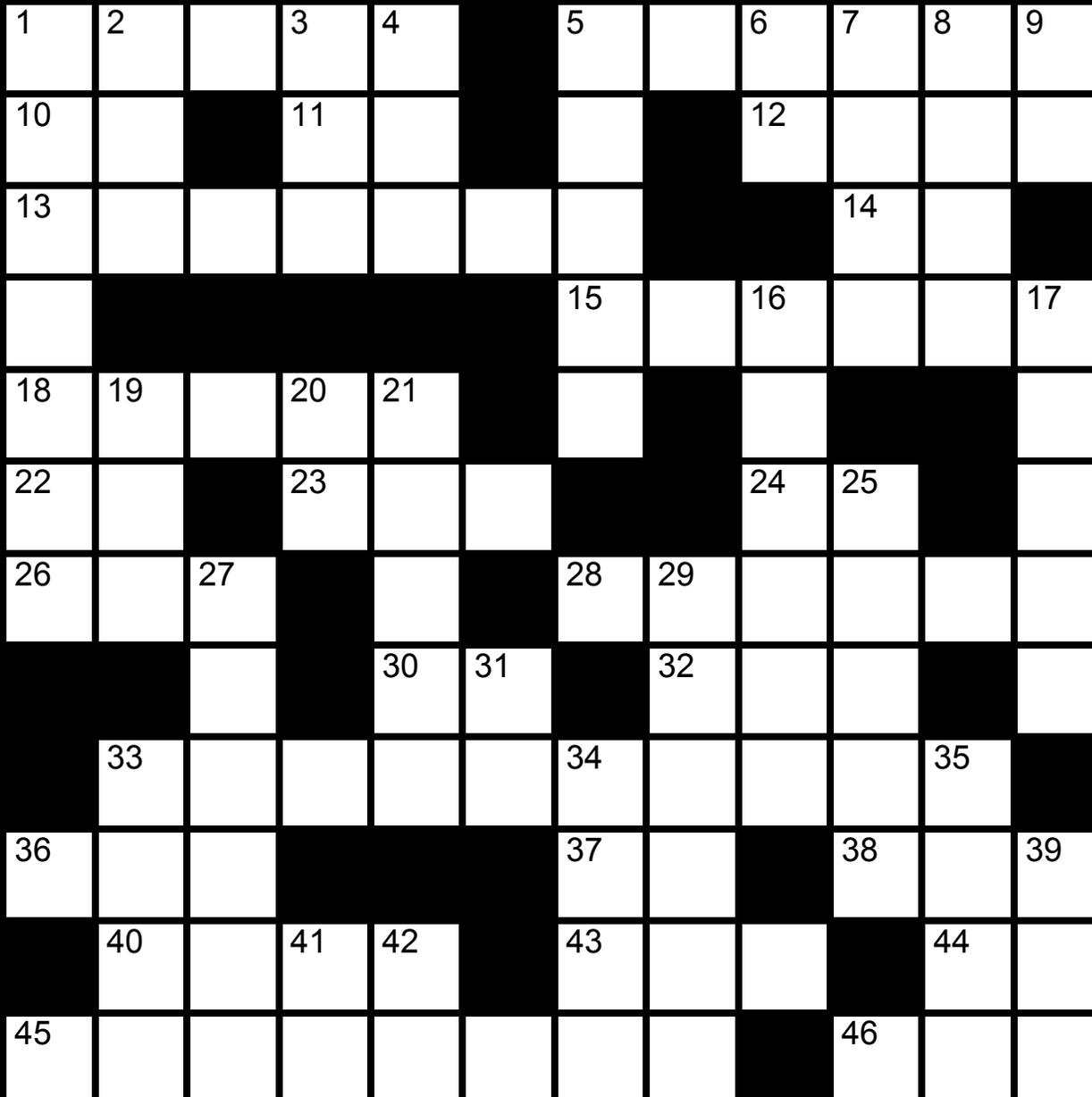
COLOR US!

What colors would you see on Mars? Check out the color pictures in this Guide, look for clues on pages 32, 39 and 41 or go online to find you own images of the RED Planet!



MARS CROSSWORD PUZZLE

by Cheri Morrow



Word Bank

USE THESE WORDS FOR SOME OF YOUR ANSWERS

DRY DUST TRUTH STORM

ORBIT SPACE ROVER

WATER CRATER CANYON

PLANET ARIZONA SHADOW

DUNE ICE AGE ROTATION

PATHFINDER ASCEND

across

1. On Earth, a _____ may bring rain, thunder, and lightning. On Mars, it may bring fast winds full of dust — a dust _____.
5. A moon casts a _____ on a planet during a solar eclipse.
10. Abbreviation for "each".
11. The innermost moon of Jupiter. Also the most volcanically active body in the Solar System.
12. Sand _____ or _____ buggy.
13. This US state is home to the Grand Canyon. On Mars, the base of **Olympus Mons** - the largest volcano in the Solar System is as large as this state.
14. South Carolina (abbreviation).
15. If a rock from outer space hits a planet or moon, it makes a _____.
18. The Moon is in _____ around Earth. **Phobos** and **Deimos** are moons in _____ around Mars.
22. Opposite of "yes".
23. The Martian land is _____ and bare. We won't find liquid water there.
24. Clockwise (abbreviation).
26. A tiny taste of a drink.
28. Every 100,000 years or so, Earth has an _____ when much of the planet is covered with ice and snow.
30. _____ be or not to be. That is the question.
32. _____ s in your pants.
33. The name of the spacecraft that landed on Mars and provided a base for the **Sojourner** rover. Also, one who discovers a way through unexplored regions.
36. Plural of man.
37. New York (abbreviation).
38. Mars is sometimes called the _____ Planet because of its rusty color.
40. Southeast Planetarium Association (abbreviation).
43. It weighs a _____! (2,000 pounds).
44. Just _____ it!
45. Earth rotates once around in 24 hours. Mars has almost exactly the same length of day. So, Earth and Mars have almost exactly the same rate of _____.
46. Cloudiness close to the ground. It can exist on Mars too!

down

1. Both Earth and Mars have these. On Earth they last 3 months each: summer, fall, winter, spring. On Mars they last 6 months each.
2. Black, gooey stuff used to help pave roads.
3. French for rice.
4. What a cow says.
5. _____ exploration is what we're doing when we send missions to Mars.
6. Short for advertisement.
7. Mars has lots of reddish _____ that is like powder.
8. _____ upon a time...
9. I, me, mine. _____, us, ours.
16. Opposite of descend.
17. One of these robotic Mars trucks is named **Spirit**. Another _____ is called **Opportunity**. **Pathfinder's** _____ was named for Sojourner Truth, a woman who worked to free slaves and further women's rights.
19. French for "king".
20. Short for "identification".
21. **Sojourner** _____ is the name of the woman who worked to free slaves in America and for whom the Pathfinder rover was named. OR Opposite of a lie.
25. We won't find liquid _____ on the surface of Mars. It would freeze or evaporate quickly because of the cold, thin atmosphere.
27. Mars is the Red _____.
29. The largest _____ in the Solar System is on Mars. It is called **Valles Marineris**, and it would stretch all the way across the USA if it were on Earth. The Grand _____ is in Arizona.
31. The Wizard _____ Oz.
33. Mexican money.
34. Caterpillars change _____ butterflies.
35. Do again.
39. A pet with four legs and a bark.
41. Short for papa.
42. Look _____ me!

Crossword puzzles rock!

