



smith 	Topic/Objective CAPTER:	NAME:
	Mars	DATE
	WHO is the god of WAR	

Essential Question

Cue: Review: Thoughts: Main Idea	<p>NOTE Taking AREA:</p> <p>4th planet from the Sun and the second smallest planet (~4000 miles) in the Solar System, after Mercury.</p> <p>Named after the Roman god of war</p> <p>Mars is the last terrestrial planet (inner planet) with a thin atmosphere (see last page)</p> <p>Referred to as the "Red Planet" because of the fine-grained talcium powere soil the iron oxide (rust) prevalent on its surface gives it a reddish appearance. This very fine grained basaltic rock of dust can cause global Dust Storms.</p> <p>The rotational period (little longer than 24.6 hours) & seasonal cycles of Mars are likewise similar to those of Earth, as is the tilt (24°) that produces the seasons.</p> <p>Revolution: 687 days (about 2 earth years)</p> <p>Core is believed to be SOLID (Fe- Ni-S) due to the very weak magnetic field.</p> <p>Surface features</p> <ul style="list-style-type: none"> • Northern.Hemisphere is mostly smooth plans filed with basaltic lava fileds due to a large impact • Southern Hemisphere is mountains region <ul style="list-style-type: none"> ○ Walking from the South to the North would be walking down hill.
MARS	

NOTES CONTINUE ON OTHER SIDE

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NOTE Taking AREA:


Surface features

- **impact craters like the moon impact (more in the Southern Hemisphere)**
- **Volcanoes (Olympus Mons)**
- **Valleys (Valles Marineris)**
- **Deserts / flood plains gray basaltic lava fields**
- **Polar ice caps (Dry ice, water ice)**
- **Tharsis Bulge is a vast volcanic plateau centered near the equator in the western hemisphere of Mars**
- **Evidence of Avalanches**
- **Skylight holes on the surface that leads to underground lava tubes tunnels**
- **Barcons or gray basaltic horse-shaped sand dunes**
- **Or course evidence of water once excised.**

Olympus Mons, the largest (340 miles diameter) shield volcano and second-highest known mountain (15 miles) in the Solar System. NO plate tectonics kept this volcano in one place.

Valles Marineris, one of the largest canyons in the Solar System.
Stretch from California to New York—more than 3,000 miles (4,800 kilometers).
This Martian canyon is 200 miles (320 kilometers) at its widest and 4.3 miles (7 kilometers) at its deepest.
That's about 10 times the size of Earth's Grand Canyon.


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MARS	<i>Polar ice caps (Dry ice, water ice)</i> <ul style="list-style-type: none"> • Like Earth, Mars has ice capes that melt and grow with the season • In fact, 1/2 of the Atmosphere freezes out to coast the polar ice caps
	<i>Evidence of Avalanches</i> <ul style="list-style-type: none"> • Along mountain sides we have found evidence of Avalanches and river channels and dried up river beds
	<i>Dust storms and Dust devils</i> <ul style="list-style-type: none"> • Mars experiences global dust storms • Dust devils (small weak tornadoes) are very common on Mars
	<i>Skylight holes</i> <ul style="list-style-type: none"> • on the surface that leads to underground lava tubes tunnels • Great place to hide from the harsh weather
	Barcons or gray basaltic horse-shaped sand dunes

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NOTE Taking AREA:


Tharsis Bulge

- **Vast volcanic plateau centered near the equator in the western hemisphere of Mars.**
- Largest volcanoes in the Solar System, including the three enormous shield volcanoes Arsia Mons, Pavonis Mons, and Ascraeus Mons, which are collectively known as the **Tharsis Montes**.
- **Here are 4 of the largest volcanoes in the solar system.**

Or course evidence of water once excised

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MARS	

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NOTE Taking AREA:

The Mars rover *Curiosity*

In 2013, NASA's *Curiosity* rover discovered that Mars's soil contains between 1.5% and 3% water by mass (albeit attached to other compounds and thus not freely accessible).

Until the first successful Mars flyby in 1965 by *Mariner 4*, many speculated about the presence of liquid water on the planet's surface.

This was based on observed periodic variations in light and dark patches, particularly in the polar latitudes, which appeared to be seas and continents;

Long, dark striations were interpreted by some as irrigation channels for liquid water.

These straight line features were later explained as optical illusions, though geological evidence gathered by unmanned missions suggests that Mars once had large-scale water coverage on its surface at some earlier stage of its life.

There are ongoing investigations assessing the past habitability potential of Mars, as well as the possibility of extant life.

***In situ* investigations have been performed by the *Viking* landers, *Spirit* and *Opportunity* rovers, *Phoenix* lander, and *Curiosity* rover. Future astrobiology missions are planned, including the Mars 2020 and ExoMars rovers**

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