Mars

Easily observed characteristics -

- Seasonal surface variations
- Different surface markings
- An atmosphere
- Length of day = ____________
- Tilt = _______ degrees

Martians!!!!
But seriously, what is Mars really like? To find out you must explore it.

1976 - Viking I, II – orbiter, lander
1997 - Pathfinder lander and the Sojourner rover
2001 - Mars Odyssey - orbiter
2003 – Mars Express - orbiter
2004 – Opportunity – Spirit - rovers
2006 – Mars Reconnaissance Orbiter
2008 – Phoenix – lander
2012 – Curiosity - rover
2013 – Mars Orbiter Mission
2013 - MAVEN

Weather on Mars

Depends upon _______________
Mars’ _______ effects the weather

Near ____________ -
Summer in the Southern Hemisphere
Large day-night temperature variations
Winds → Global dust storms

Early June   Late July   Late September
Atmospheric Characteristics

Composition

- 95% ________
-  3% _______
- 0.15% _______
- 0.03% _______

Pressure is _______ Earth’s

The temperature like Antarctica, with some extremes.

Fogs, clouds

No liquid water on the surface – only gas or solid water

Internal Structure

Lower density than the Earth

Magnetic field is ____________________.
Happy Face Crater

Polar Ice Caps
- Water Ice
- Carbon Dioxide Ice

Tharsis Bulge
Vallis Marineris Region
Tharsis Bulge - Volcanos

2-3 times taller than Earth Volcanos

Olympus Mons
Valles Marineris

A rift (a crack) - not a water (erosion) feature
Images from Mars

River deltas? How can this be????

Surface Studies
Current Scientific Results

Water present today (ice)
More Earth-like in the past (liquid water)
Rocks - many volcanic in origin
Other rocks are sedimentary
No evidence for life
…yet

The Moons of Mars

Discovered by Asaph Hall in 1877
Most likely captured asteroids