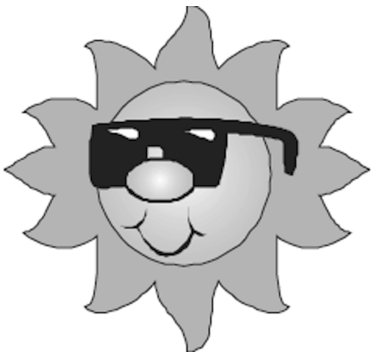
Mars Calendar Project

Overview:

Students should be placed into groups of four or five and asked to create a calendar to represent time on Mars. Students will be given a handout that contains some information about how Martian "time" differs from Earth "time" and will be asked to create a calendar that represents these differences.

National Science Education Standards:

Standard A: Understanding about scientific inquiry
Standard D: Earth in the Solar System



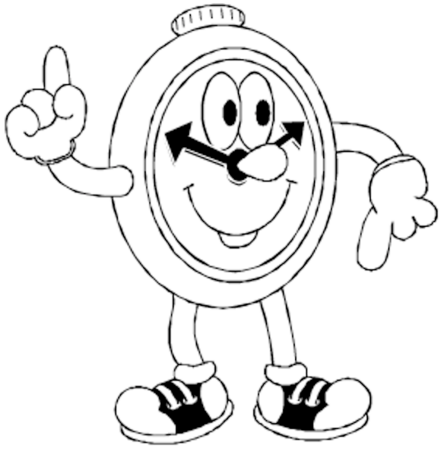
Exploration:

1. Distribute handouts to each group and discuss the ideas with them. It is important to remember how each of these ideas affect how we tell time on Earth. It is up to the students to decide if these same principles will work for Martian time, and come up with a way to incorporate them.

Mars Facts:

1. Mars has a rotation rate such that one day or sol (Martian day) equals 24.6 hours or 24 hours, 37 minutes.
2. Mars orbits the Sun in 687 Earth days.
3. Mars tilts towards the Sun at an angle of 25 degrees. Earth has a similar tilt of 23.5 degrees. This tilt causes seasons on both planets.
4. Mars has two moons. Phobos travels around the planet twice in one sol. Deimos travels around Mars once a sol.

2. From this information, the groups will design the Martian calendar. It is important to take into account such questions as:
   - Are you going to have days/weeks/months for your calendar?
   - If you have weeks, how many days will you have per week? What will the names of the days of the week be?
   - If you have months, how many days will you have per month? What will the names of the months be?
   - When will your New Year occur?
   - Will "leap years" be necessary? How will you handle the leap years? Into which month/months will you put the extra days?
   - Do you think it will be necessary to coordinate with Earth holidays?
   - When is your "zero year" to be determined? We have established AD on Earth.
   - How did you come up with the names? Are they random or do they have meaning?



3. Have the students take some time to brainstorm these ideas and then offer them some avenues to create their Martian calendar.
    - For K - 5, a creative project would be to draw a calendar for one Martian year.
    - For 6 - 12, a creative project would be a paper or Powerpoint presentation that describes their calendar in full detail. Research on the orgins of Earth's calendars would be appropriate prior to the start of the Martian calendars.
4. Have the student teams present their project to the rest of the class.

Evaluation:

You can evaluate the finished projects, participation within the team, and/or the presentation.

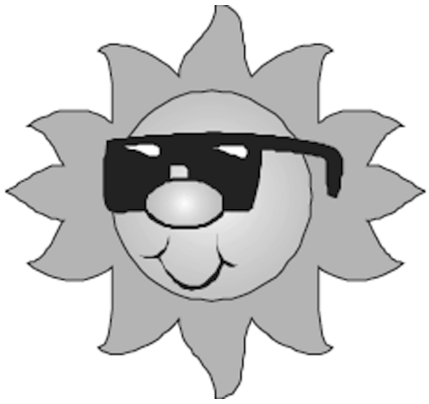
Credits: Space Studies 200 class at University of North Dakota's Mars Calendar Project.
http://sirius.aero.und.edu/~rkramer/200/
Adapted by: ASU Mars K - 12 Education Prgram, Tempe, AZ.

Mars Calendar Project

Overview:

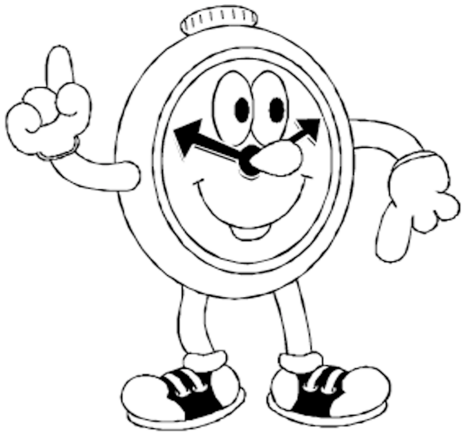
We are starting a human colony on Mars and we need to design a calendar for the colony. Below are some important Mars Facts that will help you with this project. It will also help you to ask yourself some of the questions listed below before you start.

Mars Facts:



1. Mars has a rotation rate such that one day or sol (Martian day) equals 24.6 hours or 24 hours, 37 minutes.
2. Mars orbits the Sun in 687 Earth days or 670 Martian sols.
3. Mars tilts towards the Sun at an angle of 25 degrees. Earth has a similar tilt of 23.5 degrees. This tilt causes seasons on both planets.
4. Mars has two moons. Phobos travels around the planet twice in one sol. Deimos travels around Mars once a sol.

It is important to take into account questions such as:



- Are you going to have days/weeks/months for your calendar?
- If if you have weeks, how many days will you have per week? What will the names of the days of the week be?
- If you have months, how many days will you have per month? What will the names of the months be?
- When will your New Year occur?
- Will "leap years" be necessary? How will you handle the leap years? Into which month/months will you put the extra days?
- Do you think it will be necessary to coordinate with Earth holidays?
- When is your "zero year" to be determined? We have established AD (zero year) on Earth.
- How did you come up with the names? Are they random or do they have meaning?
- Be prepared to present your project to the class and describe what you have designed.