

Name _____

The First Martian? - Student Worksheet



Mars



Earth

Mars is slightly more than half the size of Earth. It is a rocky planet and its surface has signs that liquid water once flowed across it. This suggests that, like Earth, this planet may once have supported an atmosphere and possibly life. Indeed there may still be life if liquid water is trapped within the soil.

Read the questions below before viewing the linked TED talk.

Visit

https://www.ted.com/talks/nagin_cox_what_time_is_it_on_mars

Mars Time



When you are trying to contact someone on the other side of Australia or on the other side of Earth, you have to consider what is the difference in time between here and there. A lunchtime call from here will wake a caller in the UK at 4am. If you call a shop in Sydney at 4pm in the afternoon WA time it is liable to have closed one or two

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hours ago.

If we are communicating with another planet on another orbit it becomes even more difficult because our days are of different lengths.

How long is one day (one rotation) on Earth? _____

How long is one day (one rotation) on Mars? _____

Rovers need to shut down at night. Why? _____

Why does Nagin need to know when it is night on Mars? _____

If it is nightfall at 5.00pm (Earth time) on the first day, at what time will night fall happen on Mars the second day? _____

What does Nagin use to remind her about local time on Mars?



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Mars Language

The engineers had to invent a new language for Mars time so they could all mean the same thing.

What name did the spacecraft engineers give for a day on Mars

Why do you think that they gave it this name? _____

What word is used for today on Mars? _____

Why do you think they used this word? _____

Why do you think that the "rover" people developed different words from the space probe people?



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Helping the Mind Cheat the Body

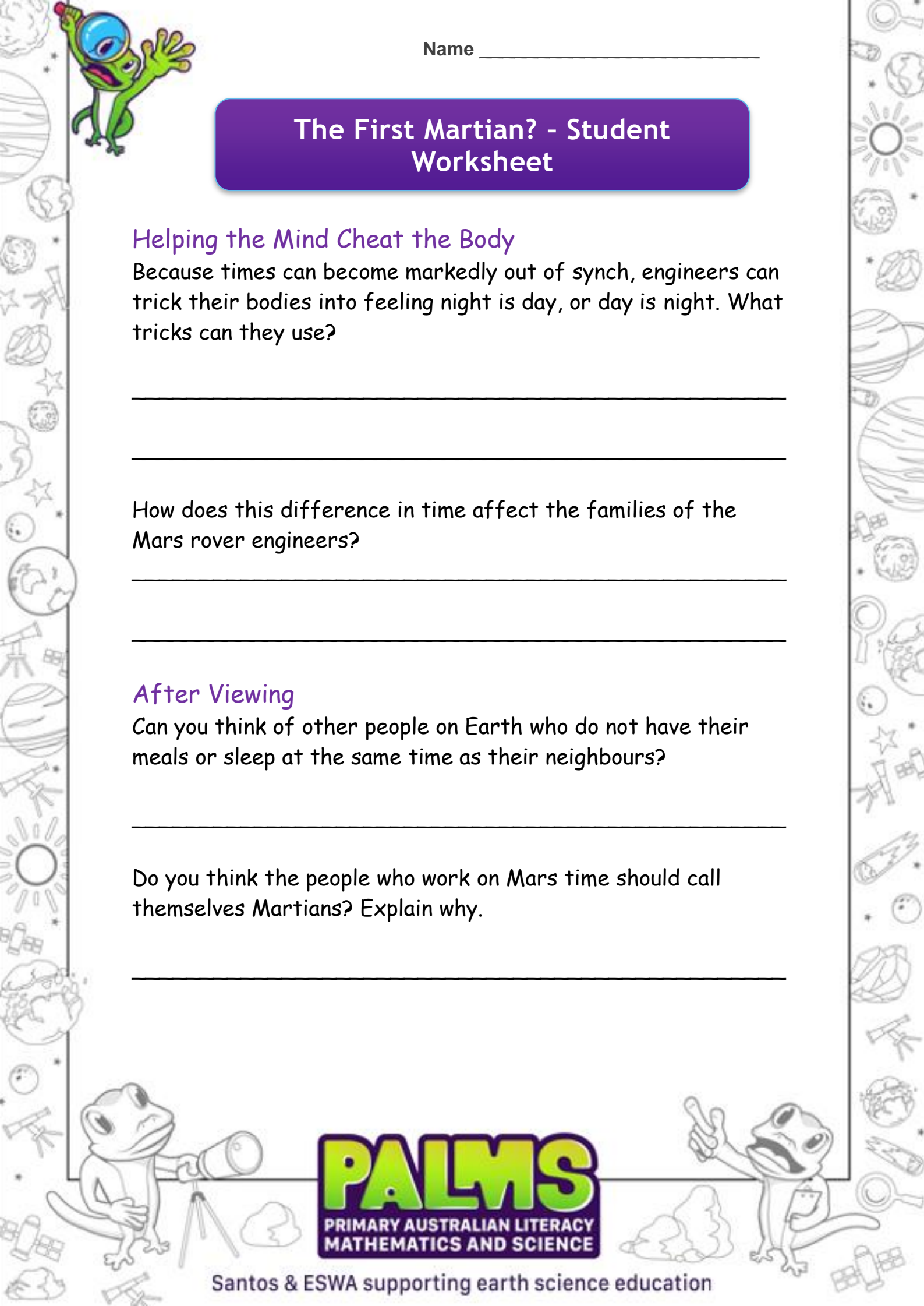
Because times can become markedly out of synch, engineers can trick their bodies into feeling night is day, or day is night. What tricks can they use?

How does this difference in time affect the families of the Mars rover engineers?

After Viewing

Can you think of other people on Earth who do not have their meals or sleep at the same time as their neighbours?

Do you think the people who work on Mars time should call themselves Martians? Explain why.



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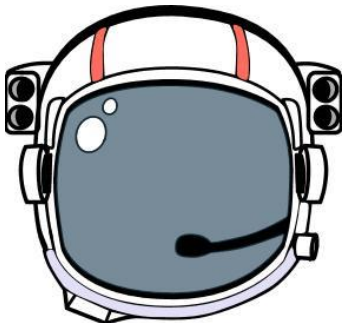
STEM Careers

We talk of how we need to study STEM subjects in school to be able to get an interesting job later.

What does STEM stand for? _____

Does Nagin use STEM every day in her work? _____

Did you think this was an interesting talk? Explain your answer.



Some of you may have seen the movie "The Martian" about an Astronaut who is stranded on Mars and how he has to "Science" his way out of his predicament until he is rescued. One factor wasn't explored however, the difference in time between the day and night of the astronaut based on Mars and the rescuers on Earth.



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Extension for Experts



Jupiter is more than eleven times the size of Earth.

1 day on Jupiter lasts 9 hours and 56 Earth minutes.

If you start with daybreak on both planets being at 6am Earth time on Saturday, after 3 Jupiter days, what will the day and time on Earth?

