Name: _____ Date: _____

Living on a Clock That Runs Forty Minutes Late

Circle group

A day is the time a planet takes to spin around once. On Earth, that is about twenty-four hours. Mars spins at nearly the same speed, but its day is a bit longer. It is about forty minutes longer than ours. Scientists call a Mars day a sol.

Forty minutes may not sound like much. But for the teams who work with rovers on Mars, it changes how they live. A rover needs sunlight. It works in the Mars day and rests at night. The team on Earth wants to send it directions in the Mars morning. So their own day has to move to match.

Each Earth day, the Mars morning starts about forty minutes later by an Earth clock. So the team starts work forty minutes later each day. After a week or two, they go to work in the middle of the night. After about a month, they are back to a normal morning, and it starts again.

Some teams wore watches that showed Mars time. They covered their windows so they could sleep in the daytime. It was tiring, but they could see the rover's pictures as soon as they came in.

Questions

1. What is a Mars day called?

_____

_____

2. How much longer is a Mars day than an Earth day?

_____

_____

3. Why does a rover rest at night?

_____

_____

4. Why did team members start work later each day?

_____

_____

5. Why might team members cover their windows?

_____

_____

6. What did some teams wear to follow Mars time?

_____

_____

Words to know

sol: one day on the planet Mars
rover: a robot vehicle that explores another world
directions: instructions that tell someone what to do or where to go

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Living on a Clock That Runs Forty Minutes Late

Triangle group

A day is the time it takes a planet to spin around once. On Earth, that is about twenty-four hours. Mars spins at nearly the same speed, but its day is a little longer, about forty minutes longer than ours. Scientists call a Mars day a sol.

A difference of forty minutes may not sound like much. Yet for the teams who work with rovers on Mars, it changes how they live. A rover uses sunlight, so it works while it is day on Mars and rests at night. The team on Earth wants to send it directions in the Mars morning, so their own day has to move to match.

Each Earth day, the Mars morning begins about forty minutes later on an Earth clock. So the team members start work forty minutes later each day. After a week or two, they are going to work in the middle of the night. After about a month, they are back around to a normal morning, and then they begin the cycle again.

Some teams wore special watches that showed Mars time. They also covered their windows so that they could sleep while the sun was shining outside. It was tiring, but it let them check the rover's pictures as soon as they arrived. Working on another planet's clock is a hard job, and the people who do it are very dedicated.

Questions

1. What is a Mars day called?

_____

_____

2. How much longer is a Mars day than an Earth day?

_____

_____

3. Why does a rover rest at night?

_____

_____

4. Why did team members start work later each day?

_____

_____

5. Why might team members cover their windows?

_____

_____

6. What did some teams wear to follow Mars time?

_____

_____

Words to know

sol: one day on the planet Mars
rover: a robot vehicle that explores another world
directions: instructions that tell someone what to do or where to go
cycle: a set of events that repeat in the same order
dedicated: working very hard because you care

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Living on a Clock That Runs Forty Minutes Late

Square group

A day is the amount of time it takes a planet to rotate completely once. On Earth, that interval is about twenty-four hours. Mars rotates at nearly the same rate, but its day is somewhat longer, lasting about forty minutes more than ours. Scientists have given a Mars day its own name, the sol.

A difference of forty minutes may not sound significant. Yet for the teams who operate rovers on Mars, it transforms the way they live. A rover depends on sunlight, so it works during the Martian day and rests through the night. The team on Earth wants to transmit instructions in the Martian morning, which means that their own daily schedule has to shift to match.

With each Earth day that passes, the Martian morning begins about forty minutes later on an Earth clock. Consequently, the team members start work forty minutes later every day. After a week or two, they are reporting for duty in the middle of the night. After roughly a month, they have circled back to an ordinary morning, and then the cycle begins all over again.

Some teams wore special watches that displayed Mars time, and they covered their windows so that they could sleep while the sun was blazing outside. It was exhausting, but it allowed them to examine the rover's pictures the moment they arrived. Working on another planet's clock is a demanding job, and the people who do it are extraordinarily dedicated.

Questions

1. What is a Mars day called?

_____

_____

2. How much longer is a Mars day than an Earth day?

_____

_____

3. Why does a rover rest through the night?

_____

_____

4. Why did team members begin work later every day?

_____

_____

5. Why might team members cover their windows?

_____

_____

6. What did some teams wear to follow Mars time?

_____

_____

Words to know

sol: one day on the planet Mars
rover: a robot vehicle that explores another world
cycle: a set of events that repeat in the same order
dedicated: working very hard because you care

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Living on a Clock That Runs Forty Minutes Late

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Living on a Clock That Runs Forty Minutes Late

Easier · 197 words · Flesch-Kincaid grade 3

1. A sol.
2. About forty minutes longer.
3. It needs sunlight, so it works only in the Mars day.
4. They wanted to send directions in the Mars morning, which came forty minutes later each Earth day.
5. So they could sleep while the sun was out.
6. Watches that showed Mars time.

Triangle: Living on a Clock That Runs Forty Minutes Late

This passage · 232 words · Flesch-Kincaid grade 5.3

1. A sol.
2. About forty minutes longer.
3. It uses sunlight, so it works only while it is day on Mars.
4. They wanted to send directions in the Mars morning, which came forty minutes later each Earth day.
5. So they could sleep while the sun was shining outside.
6. Special watches that showed Mars time.

Square: Living on a Clock That Runs Forty Minutes Late

Harder · 244 words · Flesch-Kincaid grade 8.1

1. A sol.
2. About forty minutes longer.
3. It depends on sunlight, so it works only during the Martian day.
4. They wanted to transmit instructions in the Martian morning, which arrived forty minutes later each Earth day.
5. So that they could sleep while the sun was blazing outside.
6. Special watches that displayed Mars time.