



Name:

Period:

THE MARTIAN

GUIDED VIEWING

As you watch the film, find examples of each of the following scientific concepts below. Write a sentence for each one. Examples can come from events that happen in the film, things discussed by the characters, or even simple visuals shown in passing.

ONE Example of Newton’s First Law

An object at rest stays at rest and an object in motion stays in motion unless acted upon by an unbalanced force.

1)

TWO Examples of Newton’s Third Law

For every action force, there is an equal and opposite reaction force.

1)

2)

ONE Example of Chemistry in action.

Examples should include a brief explanation of the reaction as well as the name of at least one chemical involved.

1)

Character Key

Match the image of each character with their name. Images are in the order of appearance. Names are listed in alphabetical order.

1. ____



2. ____



3. ____



4. ____



5. ____



6. ____



7. ____



8. ____



9. ____



10. ____



11. ____



12. ____



13. ____



A. Alex Vogel
Navigator/Chemist

F. Mark Watney
Botanist

K. Rick Martinez
Pilot

B. Annie Montrose
Media Relations

G. Melissa Lewis
Commander/Geologist

L. Teddy Sanders
Director of NASA

C. Beth Johanssen
Computer Systems

H. Mindy Park
Satellite Comms

M. Vincent Kapoor
Director of Mars Missions

D. Bruce Ng
Director of the JPL

I. Mitch Henderson
Hermes Flight Director

E. Chris Beck
Flight Surgeon

J. Rich Purnell
Astrodynamics



VIEWING QUESTIONS

Answer the following questions as you watch the movie. Questions are in order.

1. What planet does the movie begin on?
2. What event causes the astronauts to abort the mission?
3. What does the pilot do to keep the MAV upright after it tips past 13 degrees?
4. When Mark Watney makes his first video log-entry, what mission day (SOL #) is it?
5. According to Watney, the earliest that another manned mission could rescue him is in four years. How long is his habitat, or “Hab” designed to last?
6. In order to survive, Watney needs to grow food.
 - a. What does he decide to grow?
 - b. Where does he grow it and how?
 - c. What does he mix into the soil to provide the needed bacteria?
7. What happened when Watney tried to make water?
8. How does NASA figure out that Watney is alive?
9. According to Watney, if he does not use his heater in the rover he will be “slowly killed by the laws of _____.” (Fill in the blank.)



10. How does Watney solve the heat problem in the rover?
11. What does Watney use to reestablish communication with NASA?
12. What happened to the crops when the airlock exploded?
13. How does Watney seal the hole caused by the airlock explosion?
14. What happens to the rocket that is carrying Watney's extra food?
15. What country offers to help NASA get food to Watney?
16. NASA has a secret meeting that they code name the "Council of _____." (Fill in the blank.)
17. What does the crew of the Hermes decide to do to help Watney?
18. From a legal standpoint, Mars counts as "international waters." Watney is going to commandeer the Ares 4 lander which makes him by definition what?
19. What does Watney have to remove from the MAV in order to get it light enough to launch at the speeds that he needs?
20. What does the Hermes crew use to slow down the ship?



ESSAY:

Use all of the following space to answer the essay question. Be sure to answer all parts of the question.

The Martian is all about solving problems using science and whatever materials we have present to us. Think about a time when you had to use some ingenuity to fix something that was broken. How did the object break? What challenges did you face in fixing the object? How did you overcome these challenges? Did your fix work? Why or why not? How did you feel when the object broke? How did you feel after fixing it? What did you learn from the experience?

KEY

CHARACTER KEY:

1. F 2. K 3. A 4. C
5. E 6. G 7. L 8. M
9. H 10. B 11. I 12. D
13. J

GUIDED VIEWING:

1. What planet does the movie begin on?
a. Mars
2. What event causes the astronauts to abort the mission?
a. A sand storm strikes their landing site.
3. What does the pilot do to keep the MAV upright after it tips past 13 degrees?
a. Launching rockets on the nose cone.
4. When Mark Watney makes his first video log-entry, what mission day (SOL #) is it?
a. SOL 19
5. According to Watney, the earliest that another manned mission could rescue him is in four years. How long is his habitat, or “Hab” designed to last?
a. 31 days
6. In order to survive, Watney needs to grow food.
 - a. What does he decide to grow?
i. Potatoes
 - b. Where does he grow it and how?
i. In the Hab, by carting dirt in.
 - c. What does he mix into the soil to provide the needed bacteria?
i. Human feces.
7. What happened when Watney tried to make water?
a. He caused an explosion.
8. How does NASA figure out that Watney is alive?
a. Satellite imaging.

9. According to Watney, if he does not use his heater in the rover he will be “slowly killed by the laws of _____.” (Fill in the blank.)
 - a. **Thermodynamics**
10. How does Watney solve the heat problem in the rover?
 - a. **He digs up the box of plutonium and puts it in the rover.**
11. What does Watney use to reestablish communication with NASA?
 - a. **The Pathfinder Probe**
12. What happened to the crops when the airlock exploded?
 - a. **They died from exposure to mars is atmosphere.**
13. How does Watney seal the hole caused by the airlock explosion?
 - a. **He covers it with plastic and duck tape.**
14. What happens to the rocket that is carrying Watney's extra food?
 - a. **It explodes on takeoff.**
15. What country offers to help NASA get food to Watney?
 - a. **China**
16. NASA has a secret meeting that they code name the "Council of _____." (Fill in the blank.)
 - a. **Elrond**
17. What does the crew of the Hermes decide to do to help Watney?
 - a. **Slingshot around Earth and travel back to pick him up.**
18. From a legal standpoint, Mars counts as "international waters." Watney is going to commandeer the Ares 4 lander which makes by definition what?
 - a. **A space pirate.**
19. What does Watney have to remove from the MAV in order to get it light enough to launch at the speeds that he needs?
 - a. **Nose cone, windows, life support, etc...**
20. What does the Hermes crew use to slow down the ship?
 - a. **A bomb hooked to the lighting panel.**