

How Mother Nature Flowered the Fields of Earth and Mars



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RP BOOKS WASHINGTON
REAGENT PRESS

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Flowered the Fields of Earth and Mars

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Reagent Press

Published by Virtual Press, Inc.

Printed Book ISBN 1-57545-102-6

Teacher's Guide ISBN 1-57545-103-4

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SUGGESTED ANSWERS TO LITERATURE CIRCLE QUESTIONS

Use the questions and activities that follow to get more out of the experience of reading *How Mother Nature Flowered the Fields of Earth and Mars*.

PART I QUESTIONS AND ANSWERS

1. List the things that Mother Nature is looking for to help grow flowers on the Earth, and why she chooses the creatures she does for each task.

Mother Nature is looking for help in pollinating the flowers, getting water to them, and feeding them. The task of pollination is given to the bees because of their love for flowers, especially the marigolds and daisies. They are also small enough so that they can get to the smaller flowers. The beavers are selected because they are the engineers of the animal kingdom, and able to build dams across the streams to get the water to the flowers. The third task of tilling the soil to feed the flowers is given to the earthworms. As these creatures do not exist, Mother Nature changes a group of small snakes into earthworms..

2. Who is Bluefire? Why is she so important to Mother Nature?

Bluefire is the Supreme Queen Bee of all the Queen Bees in the world. Every bee in a beehive obeys their Queen Bee, and every Queen Bee obeys the Supreme Queen Bee. Mother Nature asks Bluefire to accept the task of pollinating the fields of the Earth, and patiently waits for her reply. At first, Bluefire did not want to the job. It was too much to do. As time went by, fewer flowers grew and the bees fought over the few there were. Bluefire finally agreed to help Mother Nature.

3. Why was Queen Bee Mytea leaving her new home? How did Captain Newminer save her from the wasps?

Mytea was going to visit her mother, Bluefire, to tell her that her bees were falling behind in their task to pollinate the flowers. They were working many hours every day, but could not complete the job. Captain Newminer and his soldiers escorted Queen Mytea on the trip. As they traveled, Mytea ordered Newminer to reduce his security in order to move faster. Although it appeared safe to do so, Captain Newminer did not agree, but he followed his Queen's orders. The wasps got close to their camp, and Newminer planned the Queen's escape. He assigned five guards to stay with Mytea, and led the rest of his troops to divert the wasps. They started low, then flew high in a northward direction. When the wasps followed, they went low again and rose in an easterly direction. Once again, the wasps followed. They did this for south and west. The wasps were thoroughly confused, when the bees took off again heading south and continued going in that direction. The wasps followed. When the wasps were out of sight, Mytea and the five guards rose and flew northward to Bluefire's hive.

4. Why did Slippery decide to help Mother Nature? What changes did Mother Nature make to the small snakes?

Slippery was a member of a group of small snakes that were being attacked by birds. Mother Nature noticed this and thought about how she could use these snakes to be her farmers. Slippery complained that other creatures were always attacking them, and when Mother Nature offered to give them a better life as her farmers, they accepted. She made changes enabling the snakes to live in the earth, and till the soil. She also made them smaller so that they can move around the roots of the flowers, and gave them a porous skin to absorb water and air. The snakes were also given a high sense of hearing to detect birds on the surface, and the ability to survive if cut in half by growing new parts. They became Earthworms.

5. Why did the beavers accept Mother Nature's offer to build dams?

Mother Nature needed to have dams built. Beavers were her engineers, and the only ones able to do this task. She told the lodge leader, Kayman that if he and the rest of the beavers helped her, they could build their lodges in the middle of the dam instead of along the shoreline. Kayman and the other beavers agreed because they would be safer living on the dam, where the bears and wolves could not attack them as easily.

6. Make a list of the words and phrases used in Part 1 of the story.

Word / Phrase	Meaning in the Story
Antennae	The two appendages, or feelers, on the head of the bee.
Drone	A male honeybee that performs no work.
Lodge	A dome shaped structure built by beaver.
Pollinate	A process of fertilization from one flower to another, carried out mainly by the bees.
Queen Bee	The female bee that rules the hive.
Stinger	The sharp pointed part of a bee that stings.
Waggle Dance	A movement the bee does to tell other bees where to find flowers.

PART 2 QUESTIONS AND ANSWERS

1. Why was Queen Gertee so upset at the Grand Council Meeting?

Queen Gertee had been complaining to the retiring Queen Mirelda about the problem she was having in the Ironore area. Gertee's bees were in trouble, and Mirelda did not think it was serious. When Mystar was crowned Supreme Bee, Gertee saw her chance to discuss the problem with her. Gertee's bees were getting holes in their wings, their feet were causing them pain, the flowers were being damaged, and things were not getting better. Gertee wanted help, but was not able to convince Supreme Queen Mirelda of her plight.

2. What did Supreme Queen Mystar do about Queen Gertee's problem?

Mystar was upset that her mother kept this from her, and immediately put a team together to visit the Ironore area. Mystar led the group, guided by Gertee. As they got close to Ironore, Mytea noticed that the flowers were wilted, and told her chief scientist to investigate. The chief reported that the flowers had holes in the blooms, and that his feet burned when he landed. The team continued on to Gertee's area, only to find sickly workers. Mystar instructed Gertee to keep the workers away from the flowers until she finished her investigation. After collecting samples of the rainwater she started back to her hive.

3. What happened on the trip home? Did the group run into any problems?

After collecting the rainwater samples, the chief complained about his health and asked to be carried back on a stretcher. This slowed the group's progress, and they were afraid that the wasps in the area would attack them. The chief's assistants told Mystar that their leader was always complaining about his health, but was stronger and healthier than any of them. Mystar used an old trick of her mother's by giving the chief a sip of honey water, making him think it was a

magic potion. His recovery was immediate; however, the wasps found them and a plan was devised to escape. The chief relinquished most of the samples, which were used to spray on the advance party of wasps. As the wasps got wet, they fell to the ground and groaned in agony. When the larger body of wasps arrived, they went to investigate what was wrong and the bees took off. Diverting the wasp's attention and the bee's greater speed enabled Mystar and her team to escape.

4. Did the bee scientists find anything wrong with the water samples?

As hard as they tried, the chief and his team could not find out why the rainwater was bad. All they could determine was that it was bad. Mystar did the only thing she could; she sent Mother Nature a signal that she was needed.

5. Was Mother Nature able to find out what was wrong with the rainwater? How did she fix the problem?

Mother Nature came as soon as she heard Mystar's signal. This was the first contact her bees made with her since Bluefire's reign, so Mother Nature knew that it had to be very important. Mother Nature listened to Mystar, and then said that it looked like her clouds were raining down to Earth with acid in them. She told Mystar that she needed to visit the other members of the flowering team before anything could be done. After meeting with the beavers and earthworms, Mother Nature confirmed her suspicion that acid rain was the cause of the problem. The humans, in their desire to get creature comforts, built factories to produce cars, washing machines, and other material things. They burned low-grade fuel that contained the chemical sulfur, and when the smoke from the factories reached the clouds, sulfuric acid was formed. Mother Nature needed to give the humans a message that they had to stop polluting her clouds, which was harming her creatures. The message she sent was a shifting of the wind patterns to cause the acid rain to fall on the human cities. This produced the effect she

wanted. The humans were now hurting, and environmentalists demanded changes. Scrubbers were installed on the smokestacks, and fuel without high sulfur content was being used. The air and water were beginning to improve, and would continue to do so as long as the humans realize the environment is important.

6. Make a list of words and phrases used in Part 2 of the story.

Word / Phrase	Meaning in the Story
Acid Rain	Rainwater containing sulfuric acid, resulting from smoke combining with clouds.
Contaminate	Spoil, pollute an otherwise good item.
El Niño	Warm, weak ocean current causing atmospheric changes.
Jabber	Talk a lot.
La Niña	Cold, weak ocean current causing atmospheric changes.
Reign	A period of time in which a Queen rules.

PART 3 QUESTIONS AND ANSWERS

1. Why were the scientists looking for a place to live other than Earth to live? What place did they choose and why?

The Earth's population was increasing due to people living longer. Better diets and Medicine reduced the death rates of new borne, children and adults. Scientists were tasked by their governments to find solutions to the ever-increasing population. Space satellites orbiting the Earth were already being used, but a much bigger place was needed. Over the years the planets around the Sun were studied and it was determined that the planet Mars had water on its surface in the distant past. They were of the opinion that if water was there, it probably still exists, but is below the surface. As the presence of water is essential for life, the scientists led the effort to send spaceships to Mars and bring the water back to the surface and plan on colonizing the planet after it was terraformed.

2. How did Mother Nature get her flowering team to Mars?

Mother Nature wanted Mars to have flowers in all its fields, and the environment taken care of like it was on Earth. Her flowering team of bees, beavers and earthworms agreed to go to Mars and Mother Nature had to find a way to get them there. She had to have the humans at the space center to put her creatures on the spaceships, but she had not spoken to the humans for countless years because they had grown very distant from her. She decided to enter the dreams of the Loading Team members and convince them to place the boxes containing her creatures in the ships.

3. Were the members of the flowering team able to carry out their tasks to flower the fields of Mars? Was Mother Nature's help needed?

The flowering team was assigned to only one field to grow flowers, and if successful, go to all the fields. As it turned out, they all had problems. The bees got lost most of the time, and had a hard time finding the way back to their hives. The beavers could not build watertight dams with the brush that grew on Mars, and the marsworms could not chew the hard soil to cultivate the flowers. They were failing, and needed Mother Nature's help, so Queen Bee Mytar sent a signal to her. She answered their call, and after listening to the problems, told them why they were not able to flower the fields of Mars. Mars, unlike Earth, did not have an iron core and could not produce magnetic lines of force. These invisible lines enabled compasses to work and were also used by creatures such as salmon and bees to find their way on Earth. Without the magnetic lines to guide them, they would get lost so she would give the bees a signaling capability to solve their problem. As for the beavers, trees were needed to build the watertight dams. Since trees could not grow on Mars, the beavers needed another material. Rocks were the only material available, so Mother Nature solved their problem by hardening their teeth to cut stone. Likewise, she gave the marsworms hardened teeth to grind-up the rocky soil. With these changes, the flowering team succeeded in flowering the first field, and moved to the other fields as planned.

4. Was Mother Nature concerned about the humans going to other planets in the universe? How was she able to ensure that her flowering team would always travel with the humans?

Mother Nature wanted the humans to be her caretakers on every planet they went to, and looked to them to care for all the creatures there. She was aware of the failings of the humans, and wanted to instill in them the need to work together by having the flowering team on the spaceships. When the leaders of

the major countries met on Mars, she secretly gathered them together to show what happened on Mars a long time ago. The leaders saw the remnants of a powerful civilization that crumbled because of greed and lack of appreciation of the environment. As a result, these leaders agreed to work in harmony with the environment, and guaranteed that the future leaders would honor the agreement.

5. Make a list of words and phrases used in Part 3 of the story.

Word / Phrase	Meaning in Story
Asteroid	A celestial body up to several hundred miles that orbits between Mars and Jupiter.
Atmosphere	A gaseous mass surrounding a celestial body.
Magnetic Lines of Force	Invisible energy field surrounding a celestial body, causing a compass to align with the lines.
Newton's Crater	A crater on Mars caused by impact with an asteroid.
Terraformed	Making an inhabitable planet habitable.

SUGGESTED ACTIVITIES

1. Break into several groups and discuss the affects of pollution on the Earth. Write about the long-range impact on the human race and the creatures of the Earth.

Students can discuss how water and air pollution affects the health of all living things, plants, animals, and humans. They can also talk about the possible damage to the genes and the possibility of mutation.

2. Ask the group about the changes Mother Nature made to the small snakes. Call on a few students to discuss the possibility of this happening, and canvas the group for opinions.

Darwin has proved the concept of creatures changing to survive in their changing surroundings. Examples exist all around us; tortoises in the Galapagos Island, rabbits in Alaska that change the color of their fur to match the surrounding terrain, and frogs that freeze solid in Winter and revive in the Spring.

3. Divide the group into teams of three, and have them list the planets of our solar system that they believe humans can live on.

Other than Earth and Mars, humans cannot exist on any of the other planets in our solar system. Mercury is too close to the Sun and is unbearably hot. Venus, the second planet, is also hot and contains an atmosphere of sulfuric acid. Jupiter and Saturn are gaseous planets, and have no solid surfaces. The remaining planets, Uranus, Neptune, and Pluto, are so far from the Sun that terraforming them would be impossible.

BUILDING VOCABULARY

Grade Level: 2-5

- 1. Students will define terms related to the environment and give examples.**
- 2. By outlining other areas that the Earth or creatures of the Earth are in danger, the students will understand why mankind has to protect the Earth and its creatures.**

Background

Before mankind appeared on the Earth, the natural forces that controlled the environment were: wind, rain, earthquakes, volcanic eruptions, and other acts of nature caused. Mankind changed this when he built factories to produce things for more comfort. As mankind began living in greater comfort, the Earth and the other creatures began to suffer. Things got very bad before people called "Environmentalists" caused mankind to begin changing how they treated the Earth and its creatures.

PART I VOCABULARY, ACTIVITIES, AND QUESTIONS

Vocabulary

Write the following terms on the board and have the students define them.

Antennae

Drones

Fertilize

Irrigate

Lodge

Mankind

Pollen

Supreme

Activities

Students to list and describe the things that Mother Nature is able to do and why she chose the creatures she did to help her.

1. Divide the students into three groups. Have one person be the record keeper, to write down and organize information generated by the group. Have another person be the timekeeper, to pace the group so it stays within the allotted time frame for completing the task. Have a third person be the presenter, to report the group's results to the rest of the class.
2. Go over the contents of Part 1 for 30 minutes, then, instruct students, as a group, to generate ideas how other creatures could help Mother Nature.

3. Have each group's presenter share their ideas with the rest of the class. Invite reactions, and write them on the blackboard. After all groups have presented, discuss any differences.
4. Through discussion, link the students' own experiences with brainstorming ideas.

Possible Questions To Ask

1. **The first engineers and builders on Earth were the _____.**
 - A. Beavers
 - B. The earthworms.
 - C. The bees.
 - D. Grizzly bears

Answer A is correct. The first engineers and builders on Earth were the beavers.

2. **Which of the following is not true?**
 - A. Mother Nature needed the bees to pollinate the flowers.
 - B. Mother Nature needed bears to eat the beavers.
 - C. Mother Nature needed the earthworms to till the soil.
 - D. Mother Nature needed beavers to build the dams.

Answer B is not true. Mother Nature did not need the bears to eat the beavers.

3. **Who were the greatest enemies of the bees?**

The wasps were the greatest enemies of the bees.

PART 2 VOCABULARY, ACTIVITIES, AND QUESTIONS

Vocabulary

Write the following terms on the board and have the students define them.

Contaminate

Erupt

El Niño

Environment

Formula

Inaugurate

Jabber

La Niña

Legend

Reign

Traditional

Activities

Students to list and describe how acid rain affects plants and creatures, and what other things damage the environment.

1. Divide the students into three groups. Have one person be the record keeper, to write down and organize information generated by the group. Have another person be the timekeeper, to pace the group so it stays within the allotted time frame for completing the task. Have a third person be the presenter, to report the group's results to the rest of the class.

2. Go over the contents of Part 2 for 30 minutes, then instruct students, as a group, to generate ideas about other forms of pollution.
3. Have each group's presenter share their ideas with the rest of the class. Invite reactions, and write them on the blackboard. After all groups have presented, discuss any differences.
4. Through discussion, link the students' own experiences with brainstorming ideas.

Possible Questions To Ask

1. Why had rainwater gone bad?

- A. The bees were mixing it with honey
- B. Mother Nature made it contaminated.
- C. The humans' factories were polluting it.
- D. The beavers had taken baths in it.

Answer C is correct. The rainwater went bad because the humans' factories were polluting it.

2. Mother Nature made the humans see the damage they caused to the Earth by ____.

- A. Drying up all the water in the world.
- B. Striking the factories with lightning.
- C. Showing them the fish dying from the polluted waters.
- D. Destroying the farmers' machinery.

Answer C is correct. Mother Nature made the humans see the damage they caused to the Earth by showing them the fish dying from the polluted waters.

3. What was Queen Mystar's secret potion that cured the chief made of?

- A. River water.
- B. Honey water.
- C. Rainwater.
- D. Tea.

Answer B is correct. Queen Mystar's secret potion that cured the chief was made of honey water.

PART 3 VOCABULARY, ACTIVITIES, AND QUESTIONS

Vocabulary

Write the following terms on the board and have the students define them.

Artificial

Asteroid

Atmosphere

Exploration

Gnawing

Gullies

Gusher

Magnetic lines of force

Newton's Crater

Pressurized

Planet

Stabilized

Tweaked

Activities

Students to list the reasons why the scientists chose Mars to live on instead of another planet, and how they were able to make Mars habitable.

1. Divide the students into three groups. Have one person be the record keeper, to write down and organize information generated by the group. Have another person be the timekeeper, to pace the group so it stays within the allotted time

frame for completing the task. Have a third person be the presenter, to report the group's results to the rest of the class.

2. Go over the contents of Part 3 for 30 minutes, then instruct students, as a group, to generate ideas about living on Mars and other planets in the universe.
3. Have each group's presenter share their ideas with the rest of the class. Invite reactions, and write them on the blackboard. After all groups have presented, discuss any differences.
4. Through discussion, link the students' own experiences with brainstorming ideas.

Possible Questions To Ask

1. What planet stands for the God of War?

- A. Earth.
- B. Mars.
- C. Jupiter.
- D. The Sun

Answer B is correct. In Roman mythology, Mars is the god of war and the father of Romulus, the founder of Rome. In Greek mythology, Ares is the god of war.

2. On Mars, an asteroid had created _____ when it hit the planet.

- A. Newton's Crater.
- B. England.
- C. Mount Rushmore.
- D. Figs Crater.

Answer A is correct. On Mars, an asteroid had created Newton's Crater when it hit the planet.

3. Most of the atmosphere on Mars is _____.

A. Air

B. Oxygen.

C. Carbon dioxide.

D. Nitrogen

Answer C is correct. Most of the atmosphere on Mars is carbon dioxide.

