

## Instructions

Welcome, Super Scientist! Let's explore the amazing world of forces. Read each question carefully. For Part 1, circle the best answer. For Part 2, write your answers in the spaces provided. Good luck!

### Part 1: Quick Questions

*Circle the best answer for each question.*

1. What is the invisible force that pulls everything down to the ground?
  - A. Magnetism
  - B. Gravity
  - C. Wind
  
2. What is a push or a pull?
  - A. A force
  - B. A sound
  - C. An idea
  
3. Which of these has the most **mass**?
  - A. A feather
  - B. An empty plastic bottle
  - C. A big rock
  
4. An apple falling from a tree is a perfect example of:
  - A. Floating
  - B. Pushing
  - C. Gravity
  
5. Where would you **weigh** less than on Earth?
  - A. On the Sun
  - B. On the Moon
  - C. Deep in the ocean
  
6. **Mass** is the amount of \_\_\_\_\_ in an object.

- A. Air
- B. Stuff (matter)
- C. Gravity

7. Kicking a ball is an example of a:

- A. Pull
- B. Push
- C. Twist

8. What do we use to measure weight?

- A. A ruler
- B. A measuring cup
- C. A weighing scale

9. Opening a door by pulling the handle is a:

- A. Pull force
- B. Push force
- C. No force

10. Your mass on the Moon is \_\_\_\_\_ your mass on Earth.

- A. more than
- B. less than
- C. the same as

Read the sentences below. Are they **True** or **False**? Circle your answer.

- 11. Gravity is a force that pushes things up into the sky. **True / False**
- 12. A force can change the shape of an object, like squishing play-doh. **True / False**
- 13. A cat has more mass than an elephant. **True / False**
- 14. Weight is a measure of the pull of gravity on an object. **True / False**
- 15. You need a force to make a toy car start moving. **True / False**

Fill in the blanks with the correct word from the box below.

<b>gravity</b>	<b>weight</b>	<b>push</b>	<b>mass</b>	<b>force</b>
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16. To close a drawer, you need to give it a \_\_\_\_\_.

17. The amount of "stuff" or matter in an object is called its \_\_\_\_\_.
18. The special force that keeps your feet on the ground is \_\_\_\_\_.
19. Your \_\_\_\_\_ would change if you went to a planet with less gravity.
20. A push or a pull is known as a \_\_\_\_\_.

## Part 2: Thinking Time!

*Write your answer in the space below each question.*

1. What is a force? Give one example of a push and one example of a pull.

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2. In your own words, what is gravity?

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3. Why does a ball you throw up in the air always come back down?

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4. What is the main difference between mass and weight?

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5. If you are riding a scooter and want to go faster, what kind of force do you use with your feet?

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6. Imagine you are an astronaut on the Moon. Would it be easier or harder to jump really high? Why?

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7. Name two things that a force can do to an object.

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8. Why does a heavy school bag feel heavier than an empty one?

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9. If an object has a very large mass, does it have a strong or weak pull of gravity?

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10. Think about two forces you have used today. What were they?

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## Answer Key

### Part 1: Quick Questions

1. B. Gravity
2. A. A force
3. C. A big rock
4. C. Gravity
5. B. On the Moon
6. B. Stuff (matter)
7. B. Push
8. C. A weighing scale
9. A. Pull force
10. C. the same as
11. False
12. True
13. False
14. True
15. True
16. push
17. mass
18. gravity
19. weight
20. force

### Part 2: Thinking Time! (Sample Answers)

1. A force is a push or a pull. Pushing a toy car is a push. Pulling a wagon is a pull.
2. Gravity is a force that pulls objects toward each other. Earth's gravity pulls everything down to the ground.
3. The ball comes back down because of Earth's gravity pulling on it.
4. Mass is how much stuff is in an object, and it never changes. Weight is how hard gravity pulls on that object, so it can change if you go to another planet.
5. You use a pushing force with your feet against the ground.
6. It would be easier to jump high on the Moon because the Moon's gravity is much weaker than Earth's, so it doesn't pull you down as hard.
7. A force can make an object start moving, stop moving, change direction, or change shape. (Any two are correct).
8. A heavy school bag has more mass (more books and stuff inside), so the force of gravity pulls down on it more, making it feel heavier.
9. It has a strong pull of gravity. (Like the Sun or Jupiter).

10. (Answers will vary). Example: I used a push force to push my chair in. I used a pull force to open the refrigerator door.