Your Weight on Other Planets

Weight on a world = your Earth weight × the gravity number. Calculate it!

Name: _____ Date: _____

Remember: your *mass* never changes, but your *weight* depends on the gravity of the world you stand on.

1. Practice with an example kid (80 lb on Earth)

World	Gravity (Earth = 1)	Weight (lb)
Moon	0.17	
Mars	0.38	
Venus	0.90	
Jupiter	2.53	
Neptune	1.14	

2. Now use your own weight

My weight on Earth: _____ **lb**

World	Gravity	My weight there (lb)
Moon	0.17	
Mercury	0.38	
Mars	0.38	
Saturn	1.07	
Jupiter	2.53	

3. Think about it

1. On which of these worlds would you weigh the **least**? Why?

2. Astronauts on the space station float. Does that mean there is no gravity there? Explain.

3. If you can jump 1 foot high on Earth, about how high could you jump on the Moon?

(T) (F) Your mass changes when you travel to Mars.

(T) (F) Saturn has more gravity than Mars.

Answer key

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1. **Part 1** (80 lb): Moon 80 × 0.17 = 13.6 lb · Mars 80 × 0.38 = 30.4 lb · Venus 80 × 0.90 = 72 lb · Jupiter 80 × 2.53 = 202.4 lb · Neptune 80 × 1.14 = 91.2 lb.
2. **Part 2:** multiply the child's own weight by each gravity number. Check with a calculator. Moon and Mercury/Mars will always give the smallest numbers, Jupiter the biggest.
3. **Part 3:** (a) The Moon (gravity 0.17), because it has the least mass of these worlds. (b) No. Gravity is still about 90% as strong; astronauts float because they are in free fall around the Earth. (c) About 6 feet (1 ÷ 0.17 ≈ 6).
4. **True/False:** first is False (mass never changes; only weight does); second is True (1.07 compared with 0.38).

Keep exploring

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