

# Weight in Space

**What is the challenge?** Discover how much you would weigh on every planet in our solar system.



**What you need:**

- Calculator
- Pencil
- Paper with chart
- Bathroom scale

**What to do:**

- Weigh yourself on your bathroom scale. This will provide you with your weight on Earth.
- Copy the chart on the right onto your paper.
- Begin by dividing your weight by 10 (the effect of gravity on Earth) to find your mass on Earth.
  - $Weight \div 10 = mass\ on\ Earth$
- Use your mass to complete the rest of the multiplication problems in the table.



**EXPLORATION  
PLACE**

THE SEDGWICK COUNTY SCIENCE AND DISCOVERY CENTER

## Notes for adults:

- Make sure your learner solves for their mass first, as this is the number, they will use to find their weight on all the other planets.
- For younger learners, you may need to help them copy the chart, in some cases, printing the chart may be easier.

## STEM connection:

- Weight is a measure of gravity's impact on an object. Mass is a measure of how much matter makes up something.
- It is important for scientists to consider gravity's impact when planning space travel.

## Take it further:

- Calculate how much a pet or an object found in your home would weigh on other planets using the same method.

| <b>Planet</b>  | <b>Your Mass on Earth</b> | <b>X</b> | <b>Gravity</b> | <b>=</b> | <b>Weight</b> |
|----------------|---------------------------|----------|----------------|----------|---------------|
| <b>Mercury</b> |                           | <b>X</b> | <b>3.7</b>     | <b>=</b> |               |
| <b>Venus</b>   |                           | <b>X</b> | <b>8.8</b>     | <b>=</b> |               |
| <b>Mars</b>    |                           | <b>X</b> | <b>3.7</b>     | <b>=</b> |               |
| <b>Jupiter</b> |                           | <b>X</b> | <b>24.7</b>    | <b>=</b> |               |
| <b>Saturn</b>  |                           | <b>X</b> | <b>10.5</b>    | <b>=</b> |               |
| <b>Uranus</b>  |                           | <b>X</b> | <b>9</b>       | <b>=</b> |               |
| <b>Neptune</b> |                           | <b>X</b> | <b>11.7</b>    | <b>=</b> |               |

