



CHECK IT OUT

1

On the table are three cans:

1,559 Beans in Space
1,559 Beans on the Moon
and
1,559 Beans on Earth



WHAT TO DO

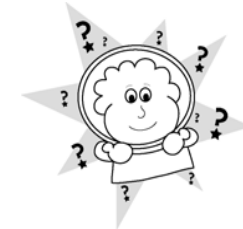
Put the **Earth** can in your **left** hand and the **Moon** can in your **right** hand.

Now, put the **Moon** can down and pick up the **Space** Can.

Which one **WEIGHS** more?
Do they both have the same **MASS**? (That's the same amount of stuff - or number of beans).

Would 1,559 beans - or anything else- on Earth **WEIGH** the same as 1,559 beans in space or on the Moon?

Would 1,559 beans - or anything else - have the same **MASS** on Earth as 1,559 beans in space or on the Moon?



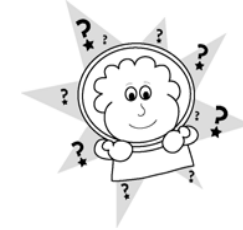
WHAT TO ASK...



CHECK IT OUT



WHAT TO DO



WHAT TO ASK...

2

The Microgravity astronauts experience in Space affects human muscles...a *lot!*

With an **Earth** can in one hand and a **Moon** can in the other hand, lift the cans up and down 20 times.

Repeat this with the **Earth** and **space** cans.

Which gave your muscles more of a workout?

The Earth can?
The Moon can?
The space can?



CHECK IT OUT

3

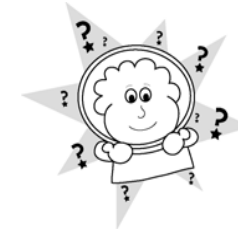
Your muscles didn't have to work hard at all to lift the *Space* can. It was easier than lifting the Earth or Moon cans.

Even though the Earth can had the same *MASS*, it was heavier because Earth's *GRAVITY* was pulling on it, and your muscles had to work harder to lift it!



WHAT TO DO

Answer this question...



WHAT TO ASK...

If your muscles aren't having to do much work *at all* in space (because you are in microgravity conditions),

will they become weaker or stronger?



CHECK IT OUT

4

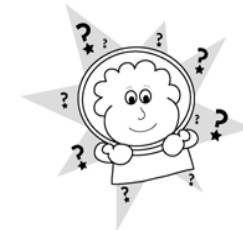
In space, where there is no gravity for your muscles to pull against, your muscles become **WEAKER**.

On the Moon, which has about $\frac{1}{6}$ the pull of gravity that Earth has, your muscles get a little bit of a work out.



WHAT TO DO

Answer this question...



WHAT TO ASK...

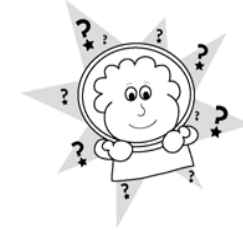
What do you think astronauts can do in space to keep their muscles strong?



CHECK IT OUT



WHAT TO DO



WHAT TO ASK...

5

Astronauts work out almost 2 hours every day while they are in space and *even then, they still* lose muscle mass.

Although you are on Earth, if you don't use your muscles enough, you will lose muscle mass, too!

Answer this question...

What do you think you can do *on Earth* to keep your muscles strong?