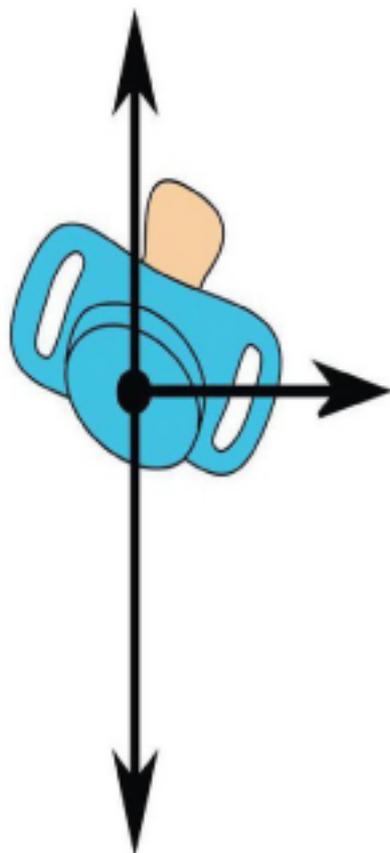


宝宝的 牛顿物理学

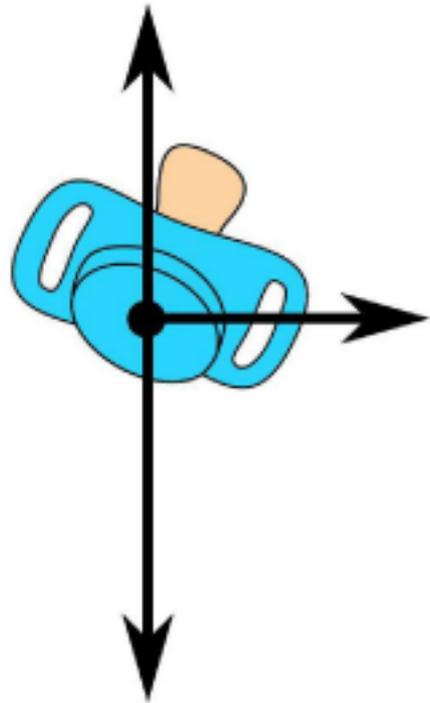
Newtonian Physics for Babies



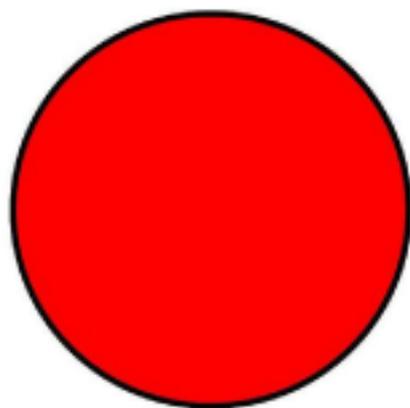
by Chris Ferrie

Edit by AD100

Newtonian Physics for Babies

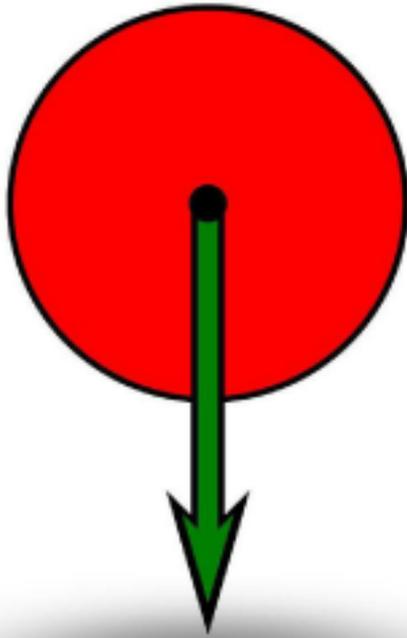


by Chris Ferrie



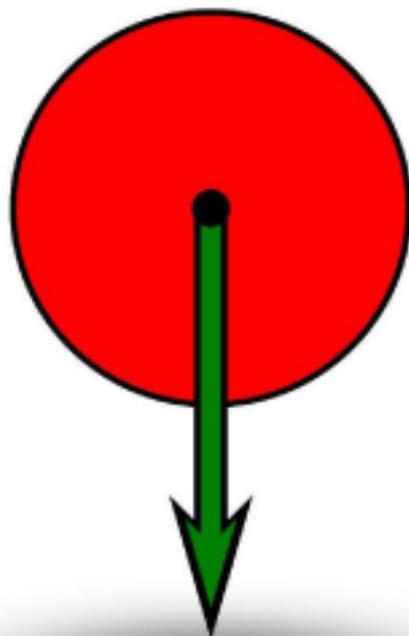
This is a ball.

这是一个球。



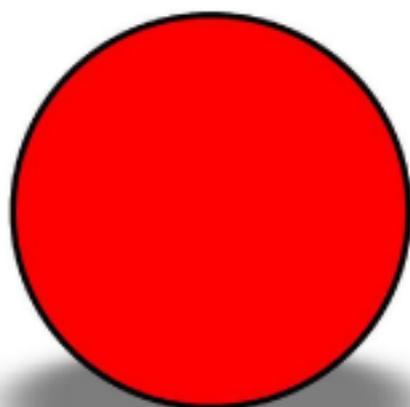
**This ball feels the
force of gravity.**

这个球感受到
地心引力。



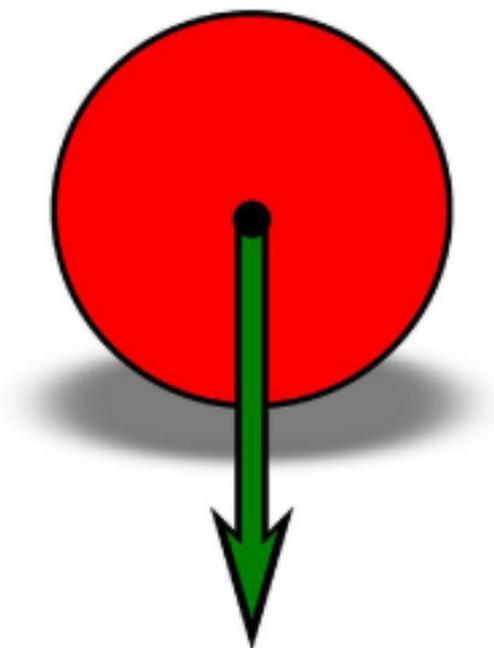
**The force of gravity
pulls the ball down.**

**地心引力
把球往下拉。**



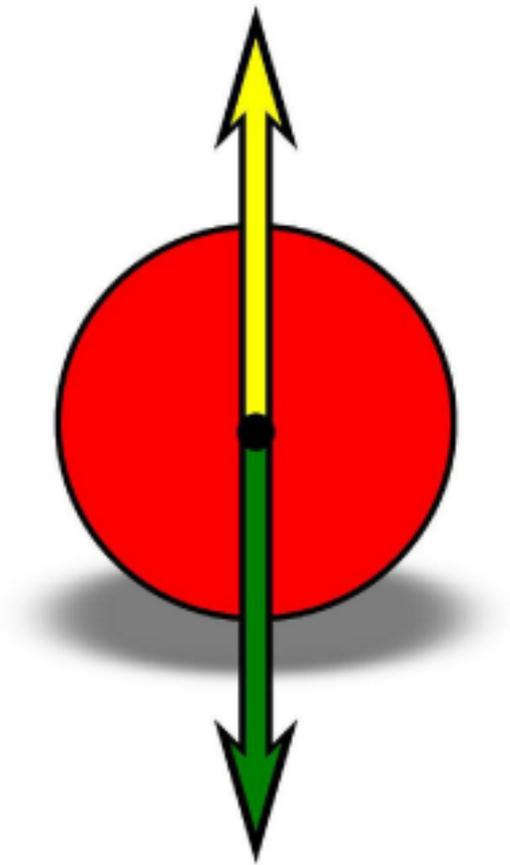
**This ball is on the
ground.**

这个球在
地面上。



**It still feels the
force of gravity.**

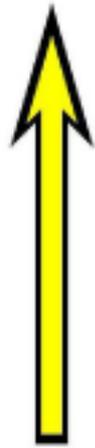
它仍然感受到
地心引力。



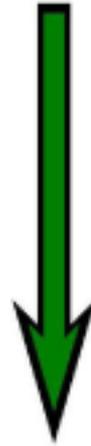
**But it also feels the
force of the ground.**

**但它同时感受到
地面支持力。**

The force of the ground



equals

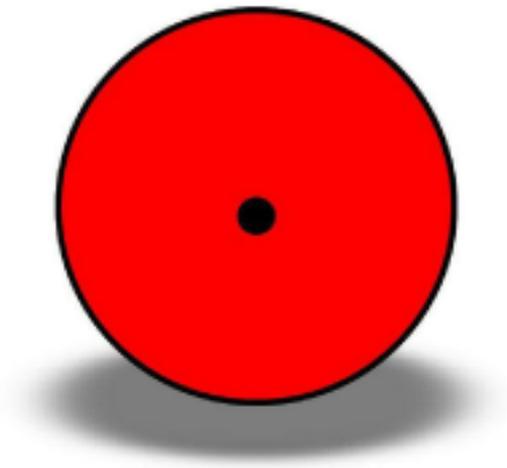


the force of gravity.

地面支持力

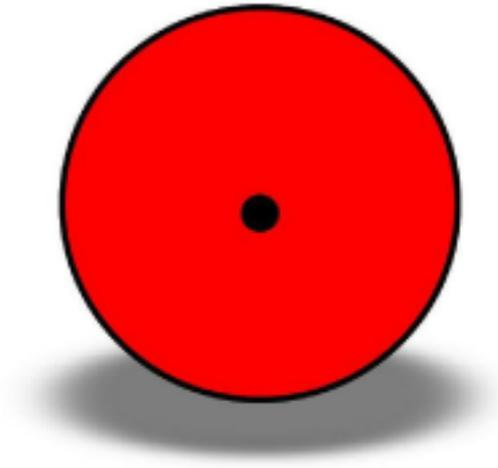
等于

地心引力



**The net force on
the ball is zero.**

在球上的
合力是零。



**It does not change
its motion.**

**球没有改变
它的运动。**

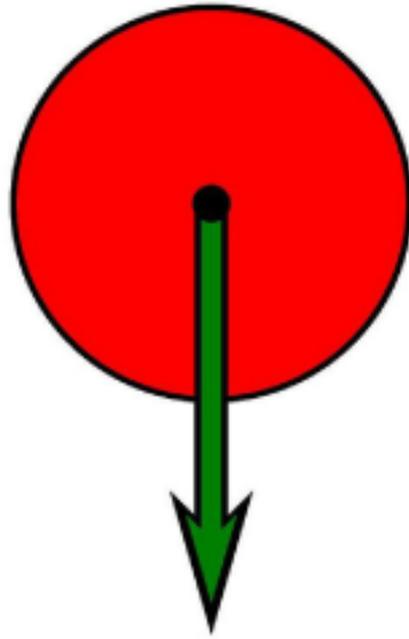
Newton's first law

1

If an object has zero net force, it does not change its motion.

牛顿第一定律

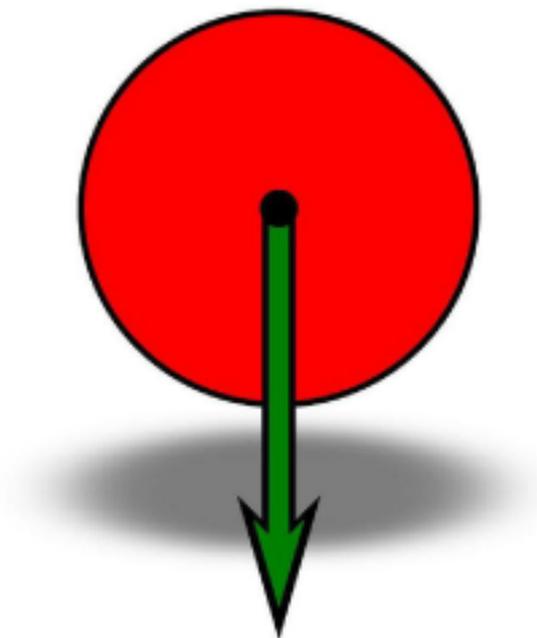
如果一个物体有零合力，它不会改变它的运动。



**This ball does have
a net force.**

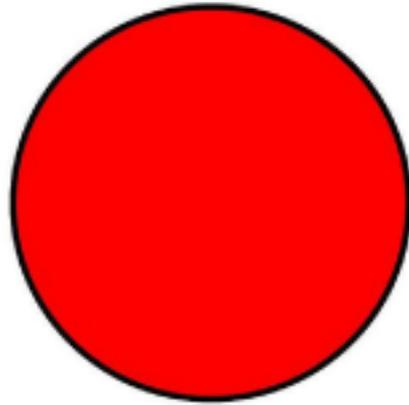
球 受到一个合力

**It does change its
motion.**



It accelerates.

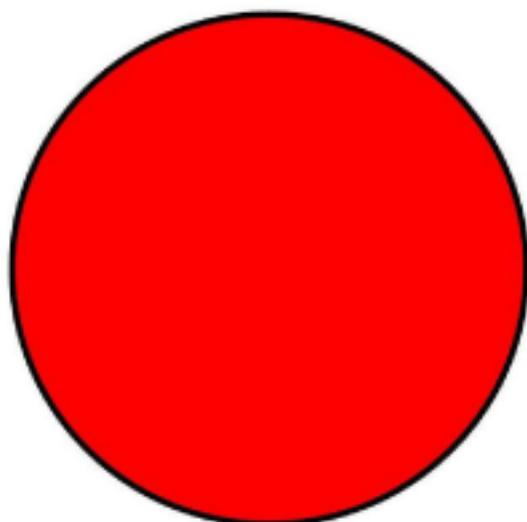
球改变它的运动，
它在加速。



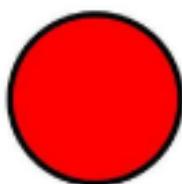
This ball has *mass*.

这个球有质量。

More mass.



Less mass.



质量更大。

质量更小。

Newton's second law

2

**The net force is equal to
mass times acceleration.**

**牛顿第二定律
合力等于
质量乘以加速度。**

Force

=

mass X acceleration

The net **force** is equal to
mass times acceleration.

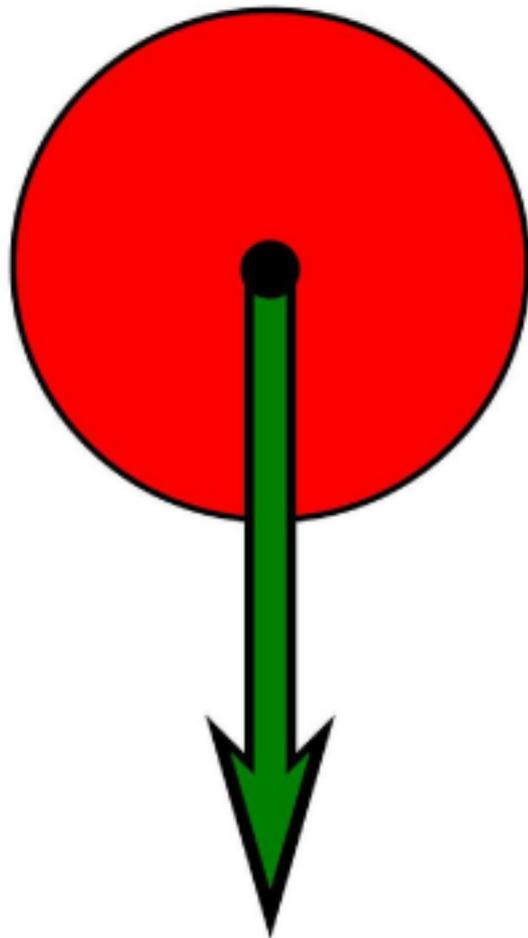
力
=

质量 X 加速度

合力等于

质量乘以加速度。

More mass,

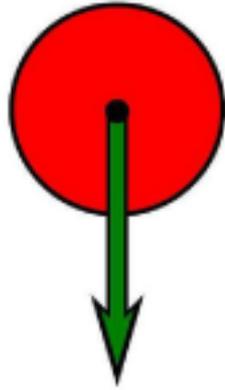


more force.

质量越大，

力越大。

Less mass,



less force.

质量越小，

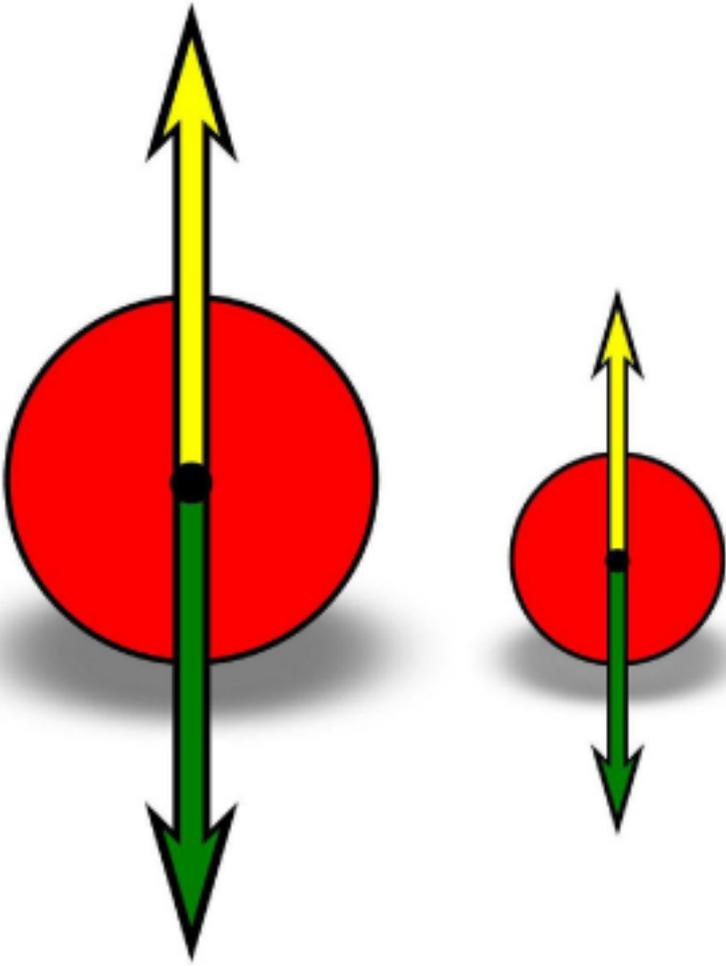
力越小。

The force of the

ground

always

equals



the force of gravity.

地面支持力

始终等于

地心引力

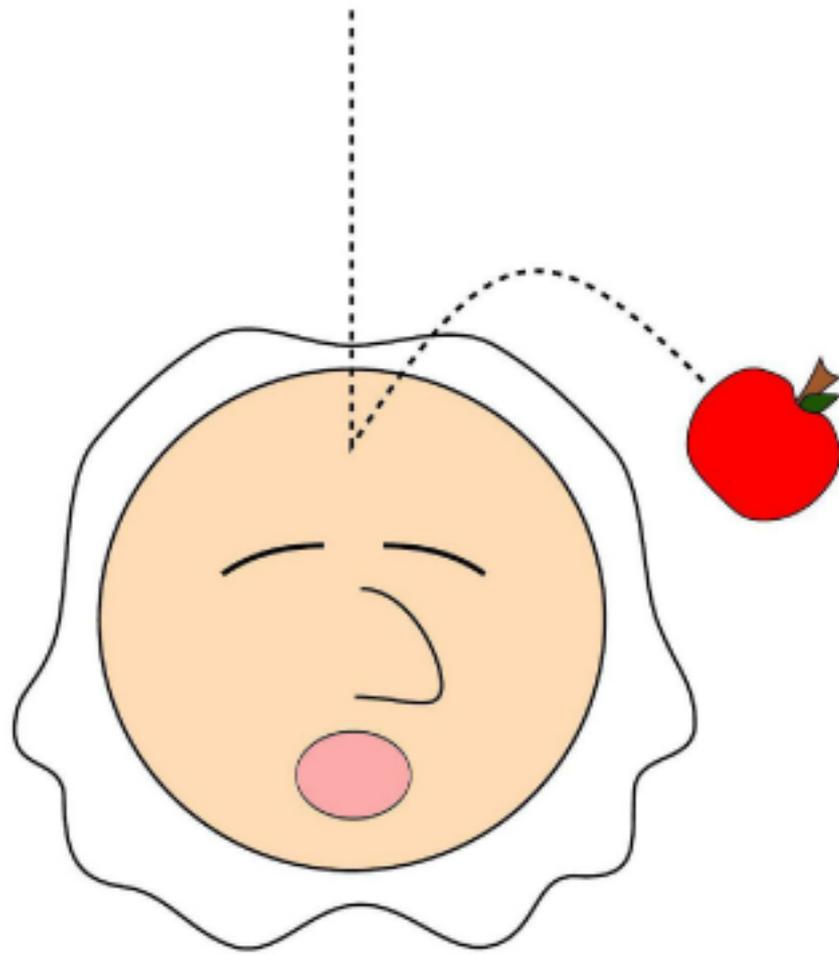
Newton's third law

3

For every force, there is an equal force in the opposite direction.

牛顿第三定律

对于任何一个力，总存在一个大小相等方向相反的力。



**Now you know
Newton's laws.**

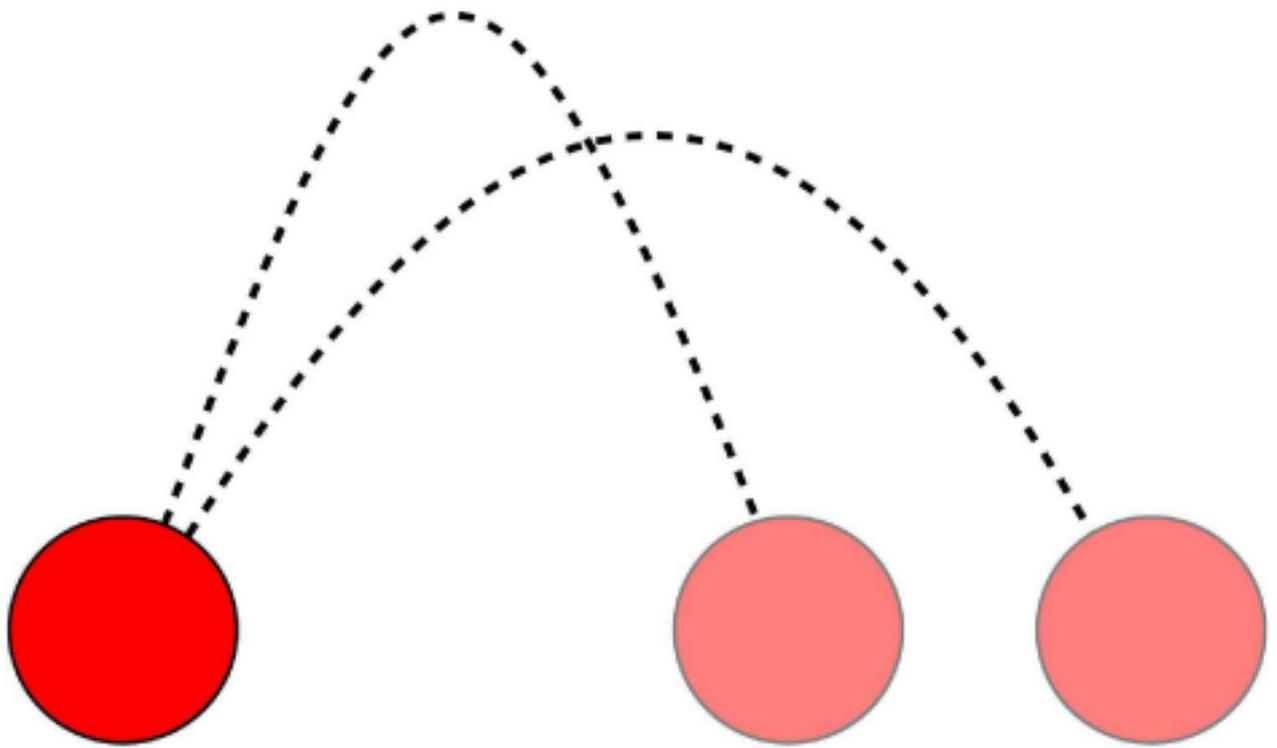
现在你已经知道
牛顿定律。

**With Newton's
three laws,**

1 2 3

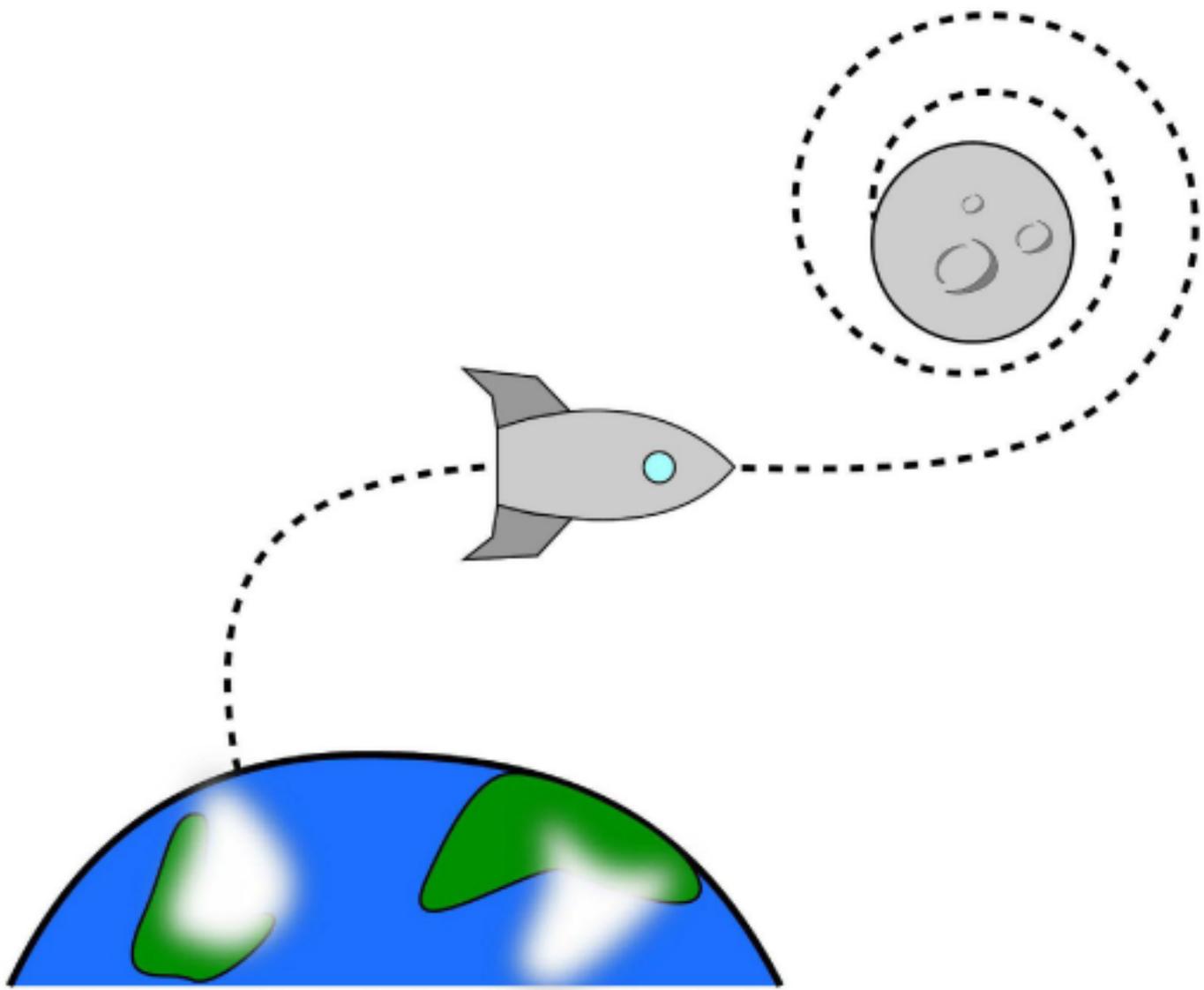
**you can do many
cool things!**

**运用牛顿三大定律，
你能做许多很酷的事
情！**



**You can predict where
your ball will land.**

**你能预测你的球会
在哪里落地。**



**Or even go to
the moon.**

**或者甚至能预测
如何去月球。**