

Energy & Change strand

It's a Real Drag

Galileo thought about it , Newton formalized it while we are all affected by it and all experience it even if we are not aware of it in scientific terms.

WHAT is IT ?

More clues: 1. It caused people for hundreds of years to think that the natural state of motion is at rest because it makes moving things stop.

2. It allows you to get a grip.
3. It slows down orbiting satellites.
4. It wears out machinery.
5. It resists motion.
6. It keeps you on your feet.
7. It heats up the surface of supersonic aircraft.
8. It makes meteors burn up.
9. It wears out your shoes.

WHAT IS " IT "

Now let's find out about this thing.

1. How do we measure IT?

You are supplied with a block of wood and a spring balance(100 gram or one Newton)

What does it take to get your block moving?

How will you measure what it takes to get your block moving?

a) Measure & record the force in grams that it takes to get your block moving.

Record your results here below

Trial	Force in (grams)
1	
2	
3.	
4.	
5.	

Average = _____

b) Why is it good technique to take several measurements?

c) Measure & record the force needed to maintain a constant & steady motion.
(ie. constant speed)

Trial	Force (g)
1.	
2.	
3.	
4.	
5.	

Average = _____

d) Try to explain why one average is different from the other.

e) Describe how you measured the forces you have recorded above.

2. WHAT DETERMINES HOW BIG "IT" IS?

a) Try adding weights to your block & repeat part " c " above.

Trial	Force (g)
1.	
2.	
3.	
4.	
5.	

Average = _____

b) Try expressing what your results tell you.

c) Relate one real life experience or situation which reflects what you have just discovered.

d) Try different surface areas on your block.

AREA 1 = _____

AREA 2 = _____

AREA 3 = _____

Trial Force (g)

Trial Force (g)

Trial Force

1.
2.
3.
4.
5.

1.
2.
3.
4.
5.

1.
2.
3.
4.
5.

Average =

DOES SURFACE AREA AFFECT "IT" ?

TRY an EXPLANATION of your results.

e) Describe how you would test the effect of the nature of the surface.

3. DOES " IT " EXIST IN A VACUUM?

Would this result be the same on the moon? Give a reason. (You will need to think about this one since I could not acquire any last minute tickets on the space shuttle.)

4. Does " IT " exist without gravity?

In space far away from any planets or stars would your results be the same? Give reason for your answer.

SUMMARY OF YOUR RESULTS

What is " IT " ??? _____

What factors affect ITs size? _____

