

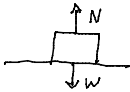
Newton's 3rd Law

If A pushes on B, B pushes on A
with

- same type of force
- same magnitude of force
- in the opposite direction

"force pairs" or "twins"

e.g.



What is the twin of the normal force?

- A) weight of the block
- ☒ B) normal force on the table
- C) both
- D) neither

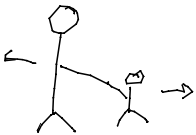
twins always act on different objects
twin of N above is

N is "table pushes up on block"
twin is "block pushes down on table"

W is "earth pulls down on block"
twin is "block pulls up on Earth"

Which is larger?

- A) force of Earth on block
- B) force of block on Earth
- ☒ C) Both the same N3L

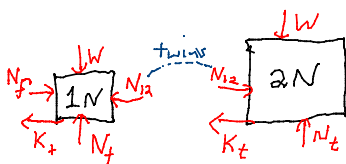
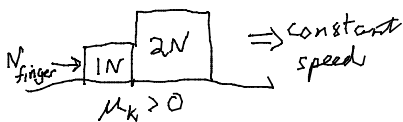


I exert the
same force on
him as he
exerts on me

What we see (effect) is the acceleration
not the force

$$a = \frac{F}{m}$$

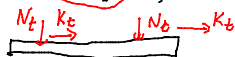
I have larger mass so
I have smaller acceleration.



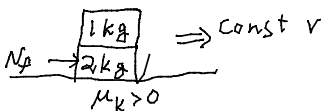
How many forces are acting on the 1N block? A) 1 B) 2 C) 3 D) 4 E) 5 F) 6

What is net force on the table due to the blocks?

A) \downarrow B) \rightarrow C) \searrow D) \swarrow E) \uparrow F) \leftarrow



e.g.



Is there a frictional force on 1kg block?

A) No

B) Yes, $S \rightarrow$

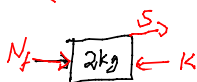
C) Yes, $S \leftarrow$

D) " $K \rightarrow$

E) " $K \leftarrow$

What if it's slowing down?

horiz. forces



$\Leftarrow a$

$\Leftarrow F_{\text{net}}$

$$S = (1kg)a$$

but if this is $> \mu_s N_{12}$

then S breaks

& 1kg block flies off