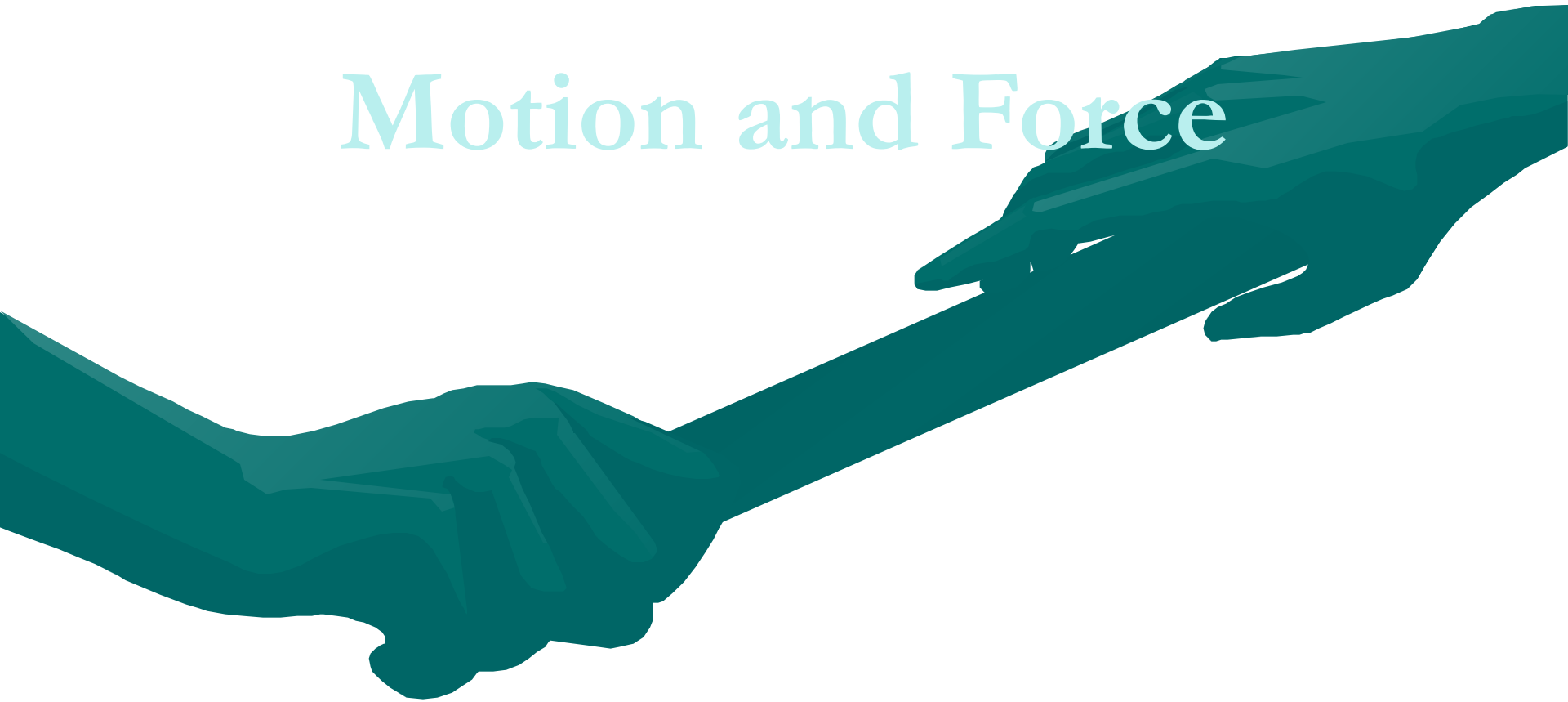
Motion and Force



Pre Assessment

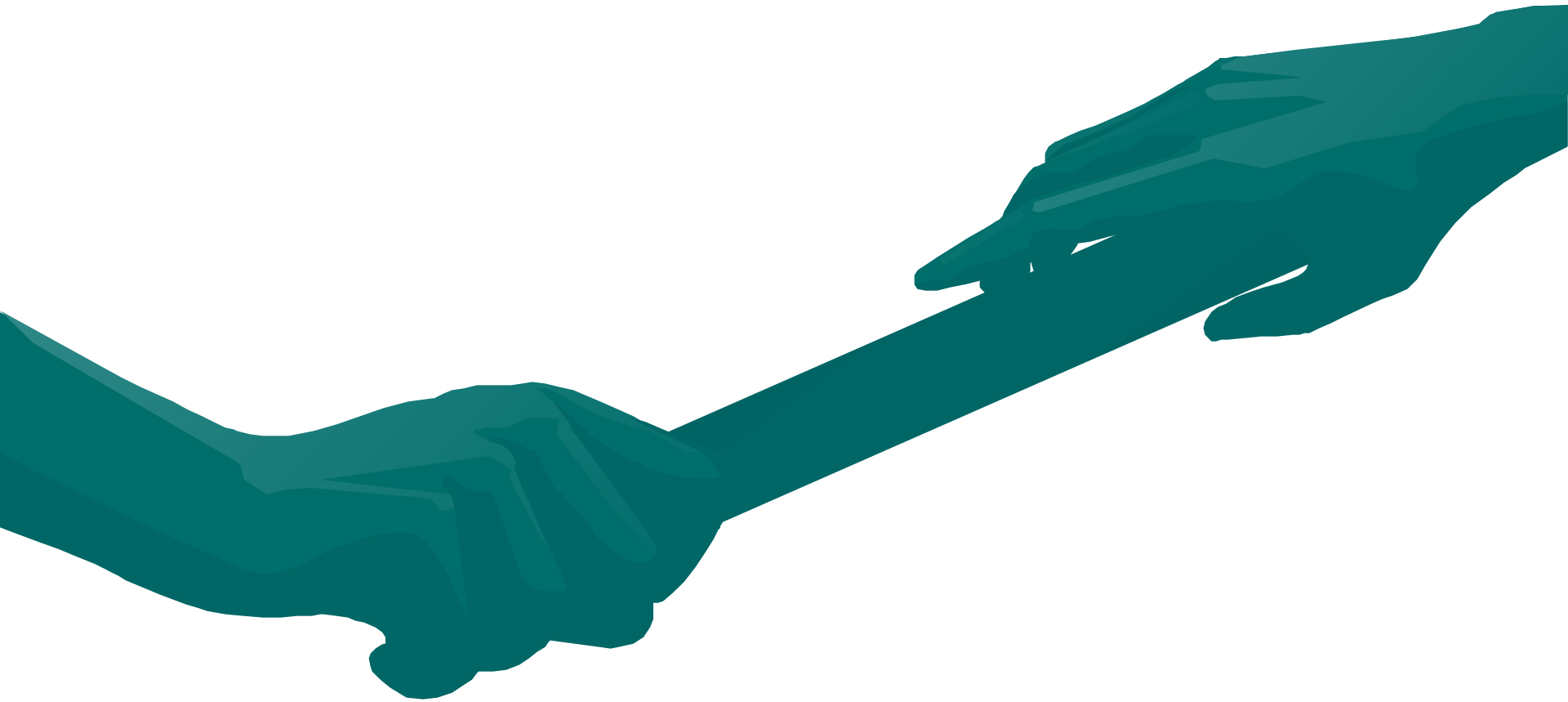
-
-
- e-assessment
- te on the test shee
- e when finished wi

test.

Toolkit-Title Page

-
-
-
- Then [illegible] minutes [illegible] put some [illegible] work/decorations on the [illegible]
- Then read the article [illegible]

Learning Targets



Textbook Scavenger Hunt

Use the thin blue textbooks, titled <u>Motion, Forces, and Energy</u> to complete the following questions on a half sheet of notebook paper.

-
-
- pictures, diagrams,
- at is the titl
- on
- <u>Describe</u> at least 2 ways yo
  uestion 4.

When you are finished, make sure your heading is on the paper and place it neatly and nicely in the middle of the table.

Toolkit

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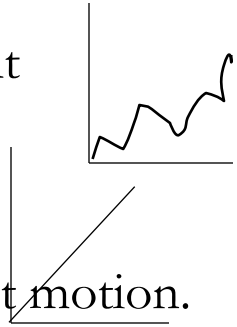
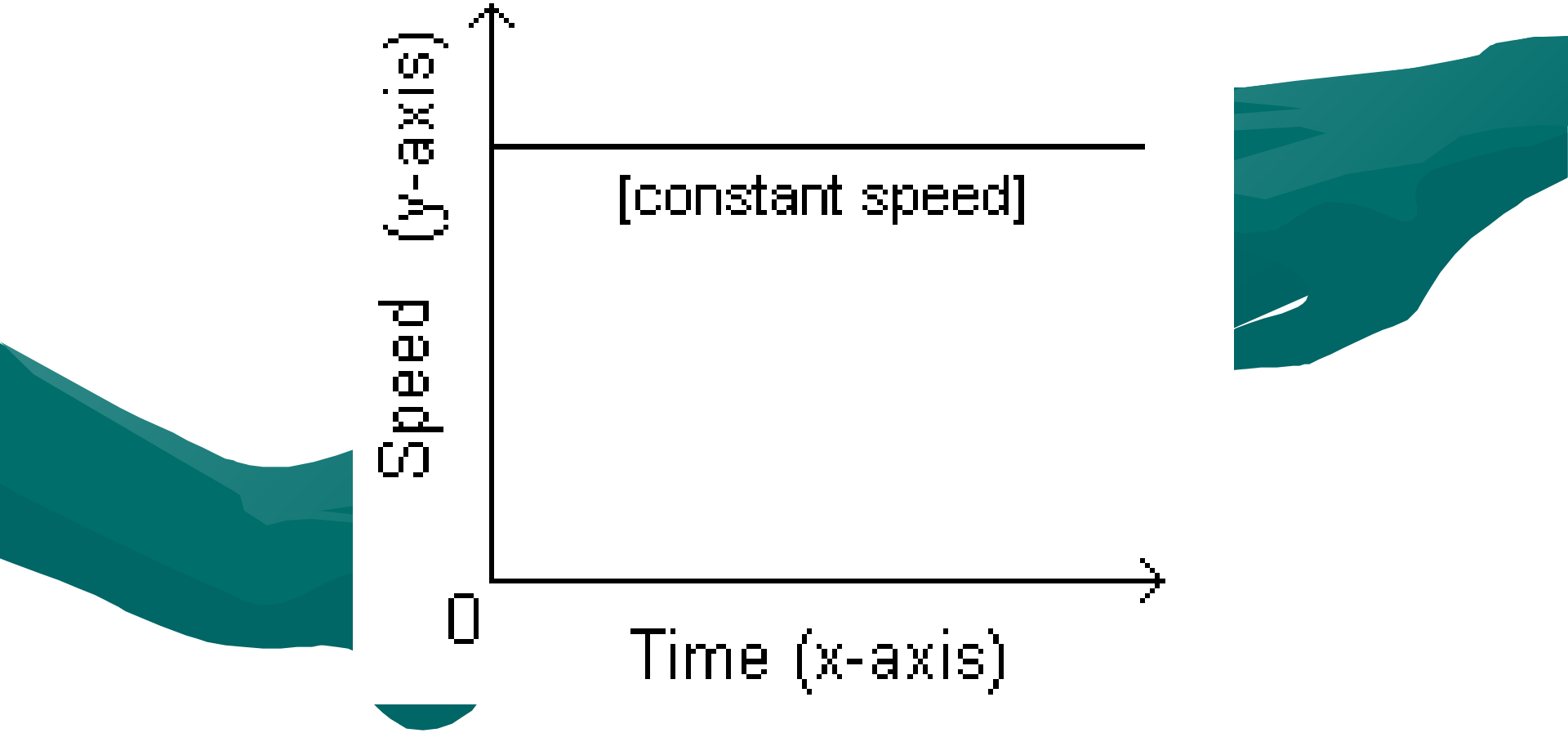
- F
  Chapter 1 in the thin blue textbooks
- er the fi

MOTION And an example of Frame of Reference
SPEED Instantaneous, Average, and Constant
VELOCITY Accelerate and Decelerate
MOMENTUM And Conservation of Momentum

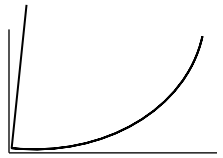
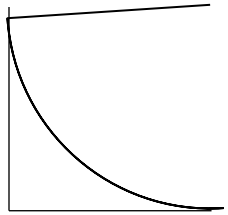
Under the 4 flipper-Motion Vocab

MOTION And an example of Frame of Reference	**The change in position in a certain amount of time.** Example of Frame of Reference: When you are driving in the car with your family they don't seem to be moving because you are moving at the same rate, but if you look out the window you all are definitely moving!
SPEED Instantaneous, Average, and Constant	**The rate at which an object moves.** S=D/t Speed= $\frac{\text{Distance}}{\text{time}}$ Instantaneous Speed: Speed in a specific instant Average Speed: Avg of instantaneous speeds throughout motion. Constant Speed: Speed at same rate throughout motion. 

What real life situation is happening?



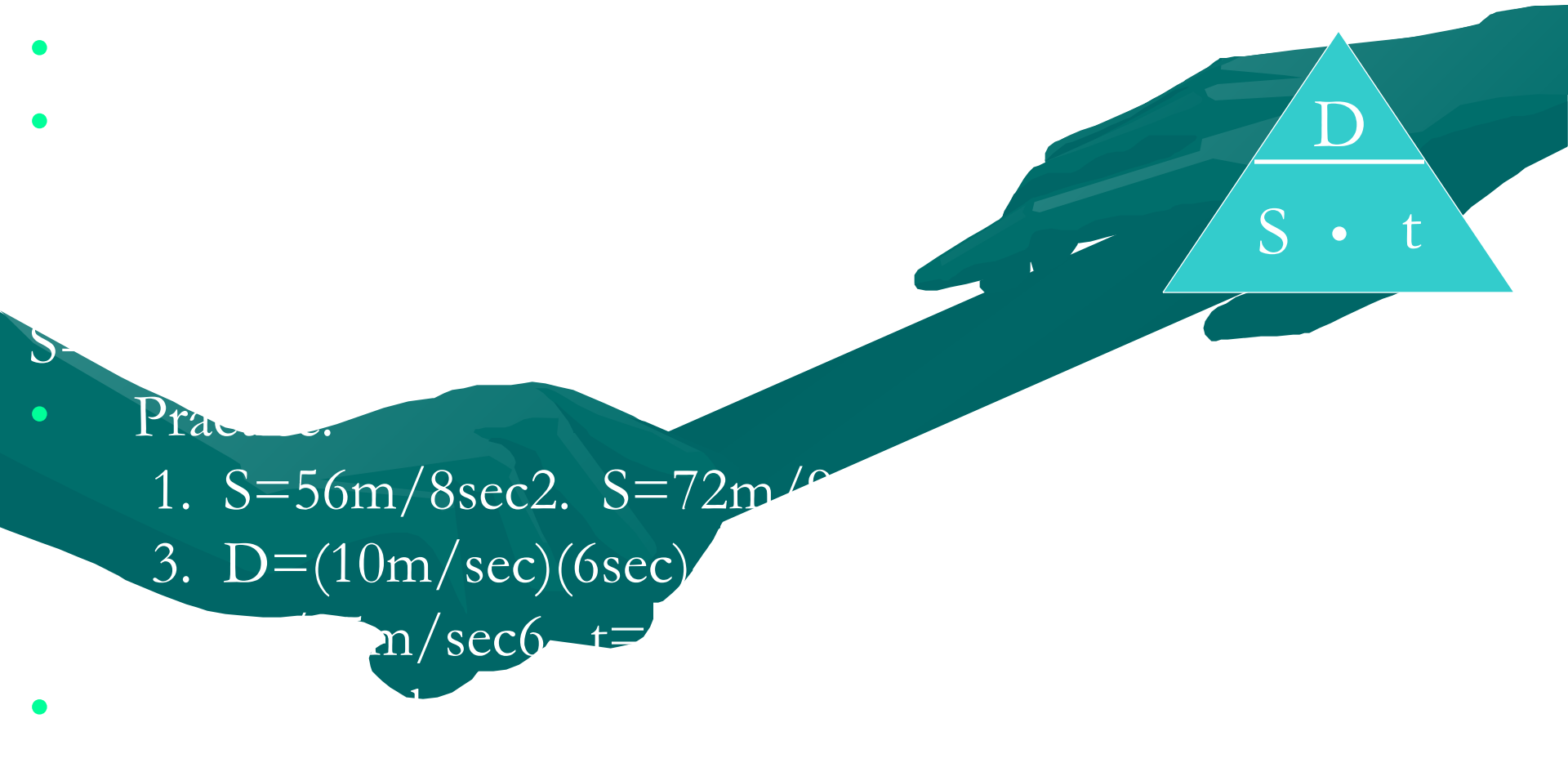
Under the 4 flipper-Motion Vocab

VELOCITY Accelerate and Decelerate	**Speed in a specific direction.**  <u>Acceleration:</u> Increase in velocity A= Final Velocity-Original Velocity/Time  <u>Deceleration:</u> Decrease in velocity A= Final Velocity-Original Velocity/Time
MOMENTUM And Conservation of Momentum	**The amount of continued motion an object has relating to mass and velocity, "stopping power."** p=mv Momentum = mass x velocity <u>Conservation of Momentum</u>: Momentum never goes away, it is just transferred. Pool Balls 

Speed (Scalar)

Complete this on the next page in your toolkit.

-
-
-
-
- S=
- Pra
  1. S=56m/8sec2. S=72m/
  3. D=(10m/sec)(6sec)
     m/sec6 t=
-



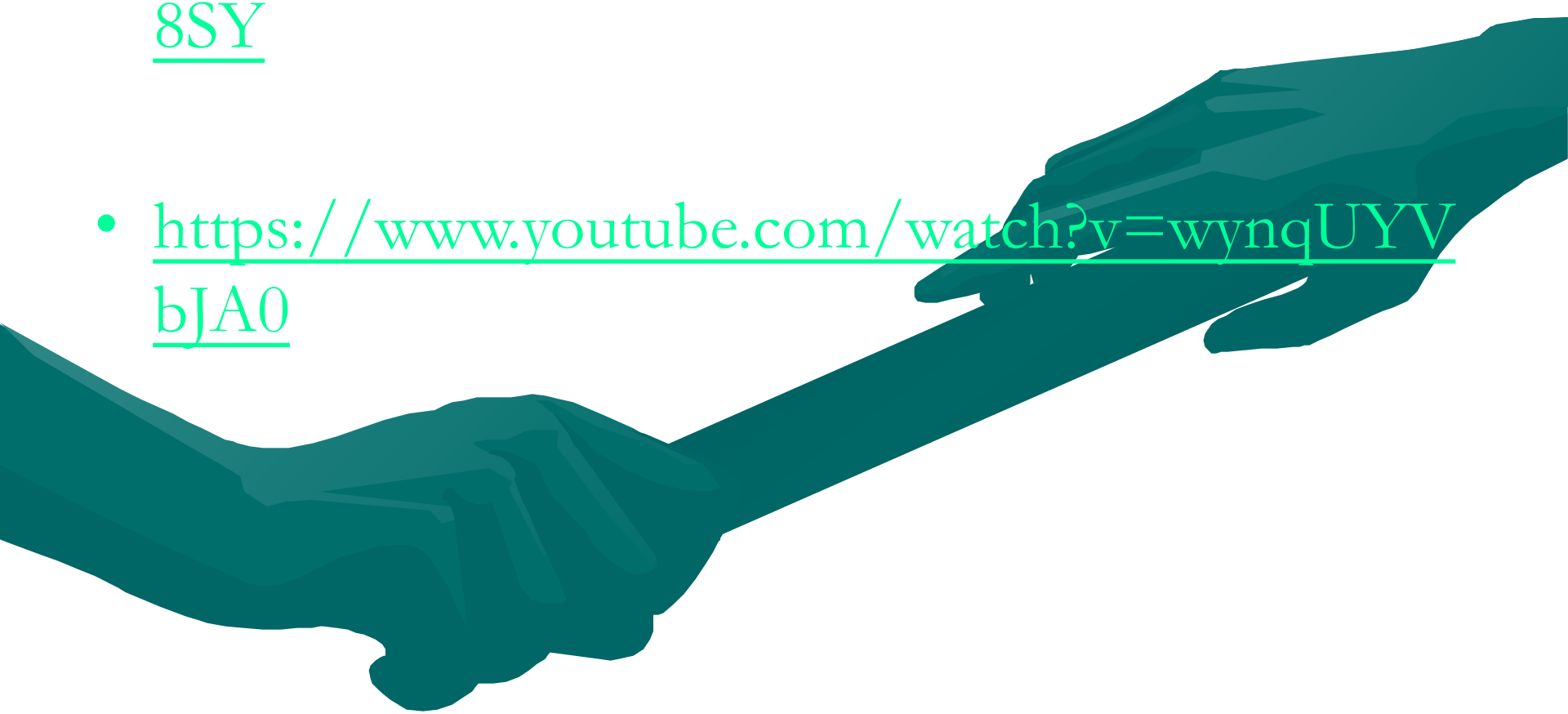
Velocity (Vector)

Complete this on the next page in your toolkit.

-
-
  -
-
  - ite directions.
- Pra
1. A race car is going 150 km/h
km/hr east. What is the
er raft i

Review of Speed and Velocity

- https://www.youtube.com/watch?v=aRBkbVaS8SY
- https://www.youtube.com/watch?v=wynqUYVbJA0



Acceleration and Deceleration

Complete this on the next page in your toolkit.

-
-
-
1. A = [illegible]m/sec - 70m/sec / 15se[illegible]
2. Deceleration = 25m/se[illegible]

- [illegible]ple[illegible]

Final Acceleration and Deceleration

Complete this on the next page in your toolkit.

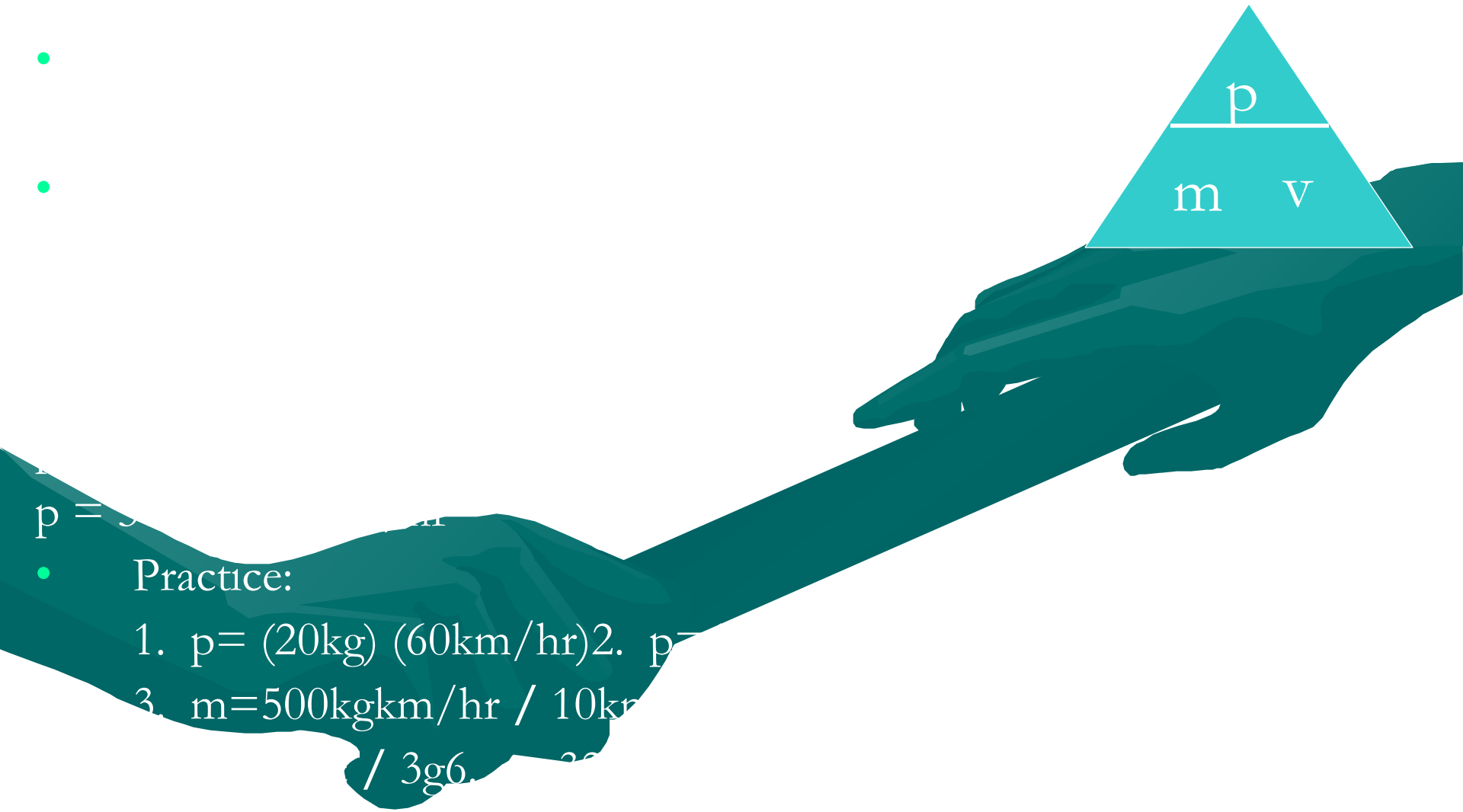
-
-
- after ... after 6 sec? (Don... forget to calculate the speed for velocity 1st!)
- ... they both hit the ... celerate

(m)	(sec)
0	0
.5	1
2	2
9	

Momentum

Complete this on the next page in your toolkit.

-
-
-



p =

- Practice:

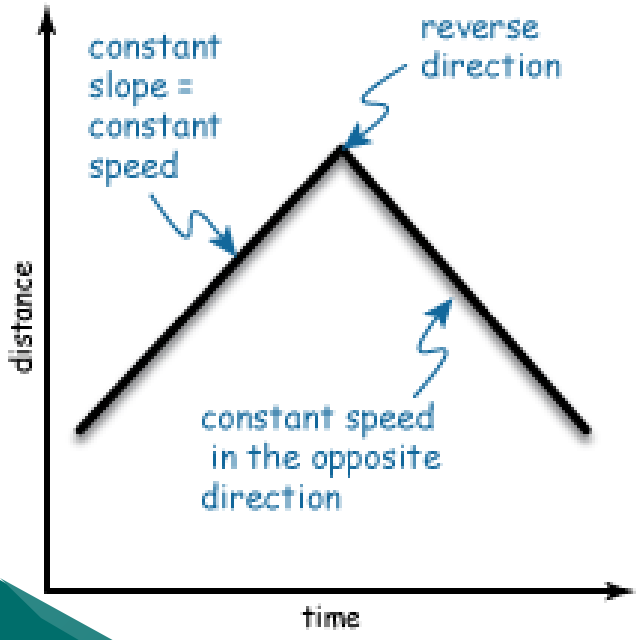
  1. p= (20kg) (60km/hr)2. p=

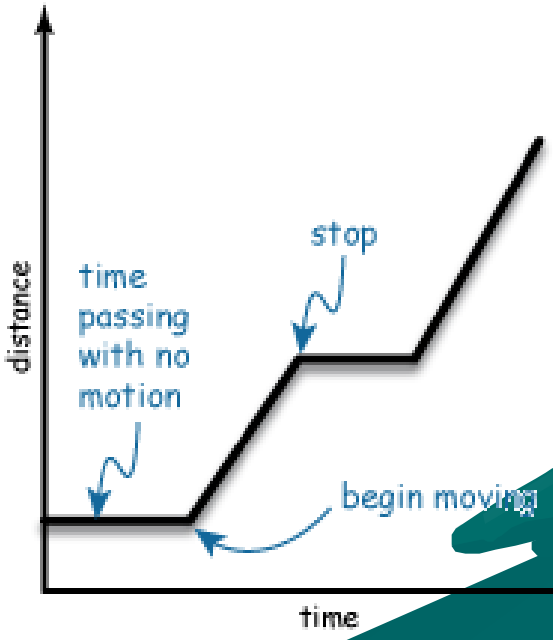
  3. m=500kgkm/hr / 10kg

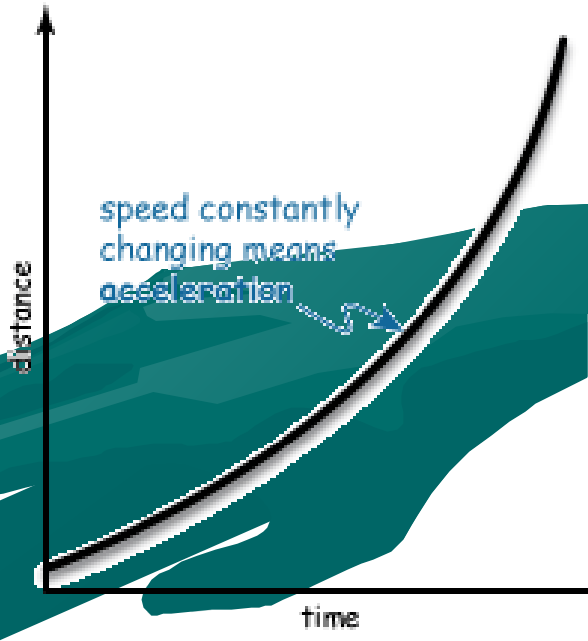
  / 3g6.

-

What do these graphs show?







http://www.drcruzan.com/Speed.html

Videos

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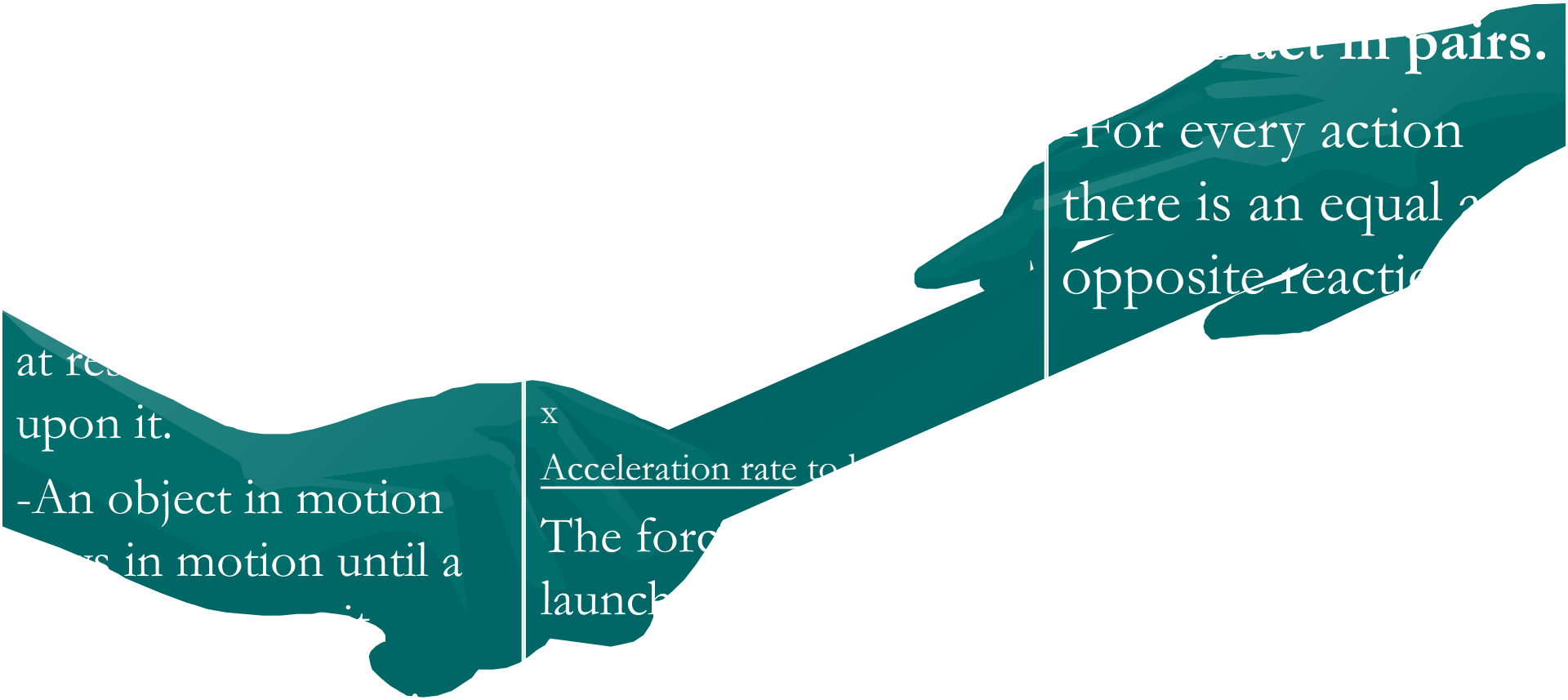
-

Newton's Laws of Motion
(Tri-fold in toolkit)



Force Vocab (4 Flipper)

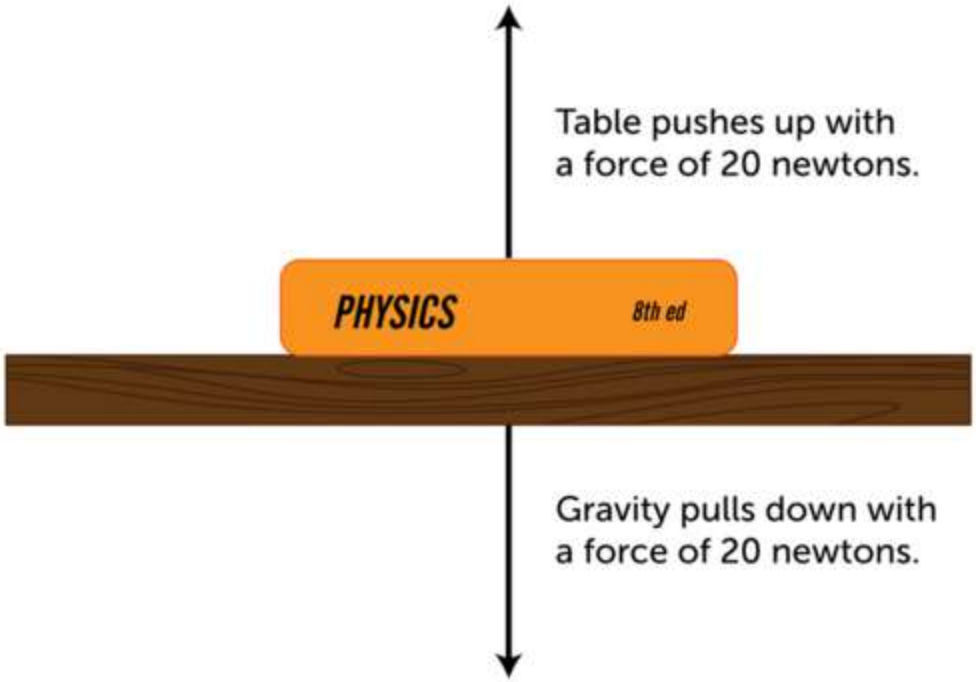
-
-
-
- Le[illegible] and write them under the flipper.

Force
Gravity
Friction
Buoyancy

Force Vocab (4 Flipper)

Force	**A push or a pull (no suction just change in pressure)** Measured in Newtons F=ma Force = mass x acceleration $1N=1kg1m/sec^2$
Gravity	**The force of attraction between any 2 objects, relative to their masses and distance.** Increase mass=Increase gravity Increase distance=Decrease in gravity Object and Earth=$9.8m/sec^2$
Friction	**The resistant force between two moving objects.**
Buoyancy	**The ability of an object to float in a liquid, caused by the liquid's upward force.** Archimedes' Principle: relationship between buoyancy and weight, if a boat only displaces a small amount of water than the upward force of the water will keep it afloat even if the mass and density is greater than the liquid.

Balanced and Unbalanced Forces

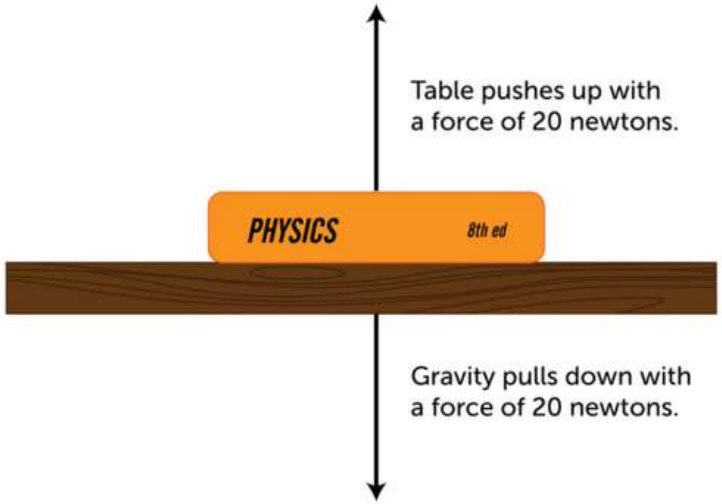


hen the forces are
nbalanced, there
mov

this concept yourself…

Net Force

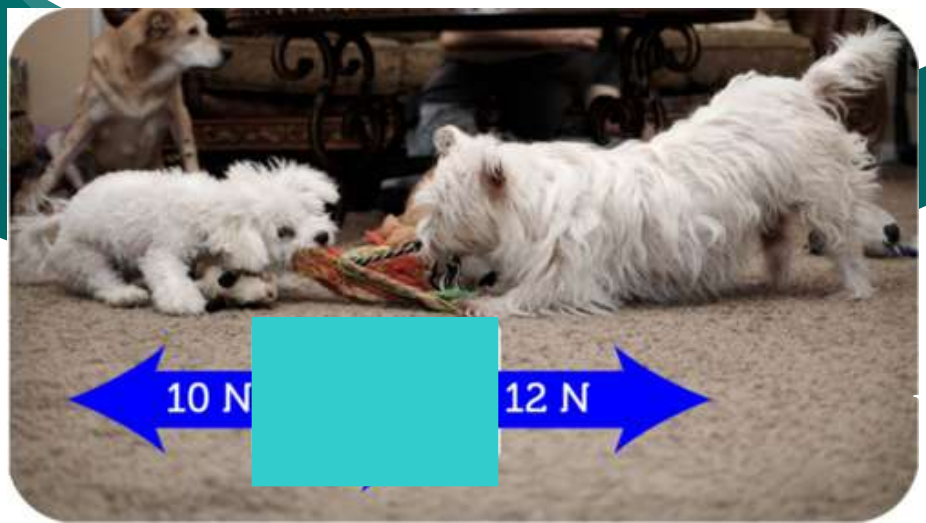
-
-



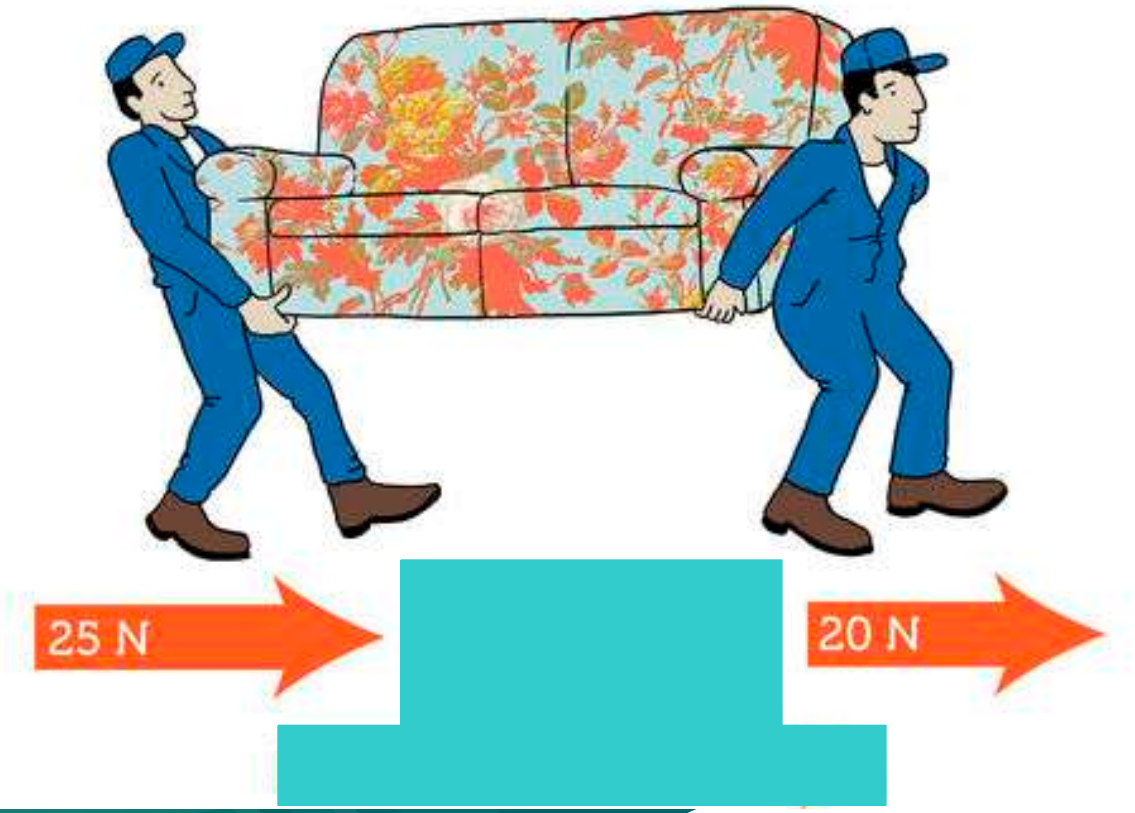
Unbalanced

or No Motio

10N



Net Force



25N+20N=45N

No M

Using what you've learned!

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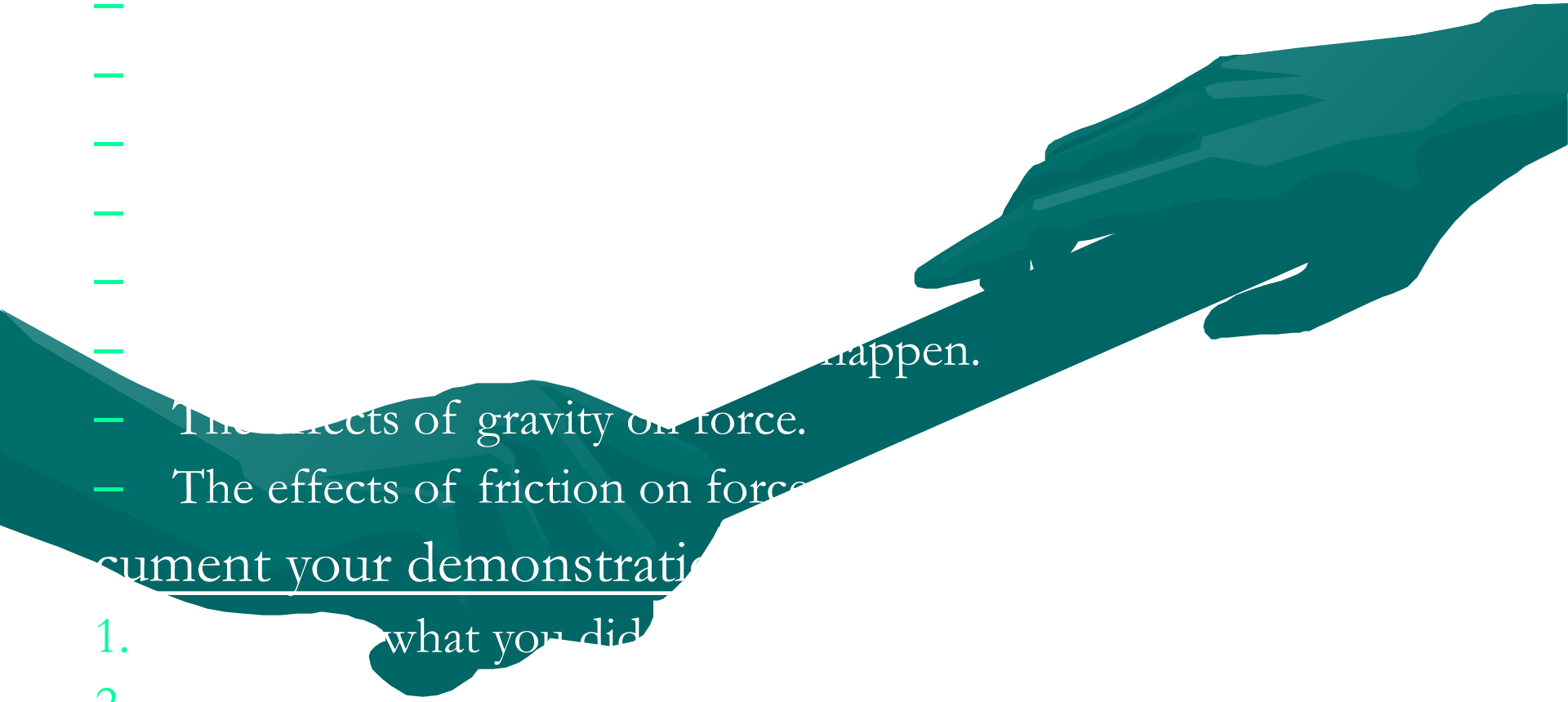
- The effects of gravity on force.
- The effects of friction on force

cument your demonstrati

1. what you did
2.



NEXT WEEK…

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