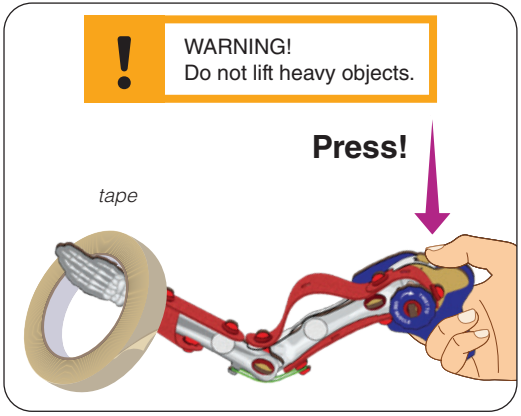
WORKING THE MUSCLE

WHAT TO DO:

1. Hold the Mechanical Arm in your hand and press the trigger.
2. Look around and pick up items that are easy to hook onto the arm (e.g., a keychain, tape, headphones, a clothes hanger, or an ID card strap).
3. Now press trigger and see the difference in the force required.
4. Note down what you pick up along with its weight. Write down whether it is easy or difficult to pick the object up.



S.NO	NAME OF OBJECT	WEIGHT OF OBJECT	EASY/DIFFICULT TO LIFT?
1.			
2.			
3.			
4.			
5.			

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I CONCLUDE:

1. When I don't lift any objects with the arm, it is _____ to press the trigger because the muscles are doing less work. (easy/difficult)
2. When I lift an object with the arm, it is _____ to press the trigger because the muscles are doing more work. (easy/difficult)
3. The amount of force required to lift the object _____ if the weight of the object ____. (increases/decreases)

Answers: 1. easy 2. difficult 3. increases; increases

WHAT'S GOING ON?

Lifting heavy objects is harder because they need more force. Our muscles have to work more and use extra energy to lift them. That's why pressing the trigger feels tougher with heavier objects.The bigger the load, the harder our muscles have to work to move it.

HEALTHY HABIT!

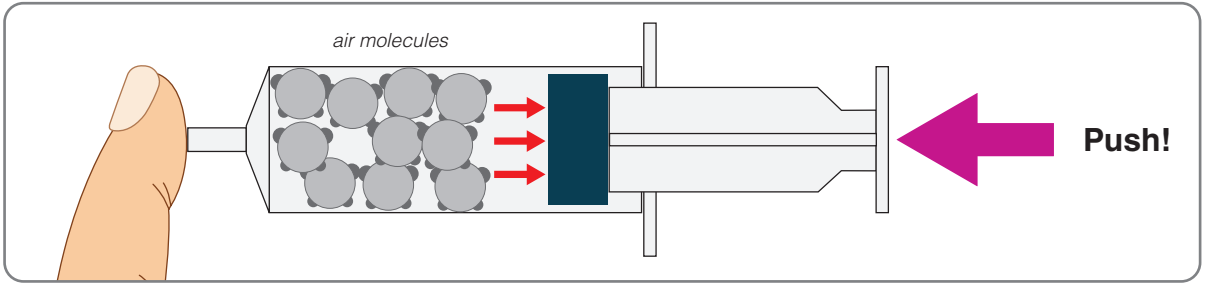
Do regular exercise to make your muscles strong, so lifting and moving things becomes easier. Strong muscles mean a stronger and healthier you!



FEEL THE PRESSURE!

WHAT TO DO:

- Take a syringe and pull the plunger back.
- Now, cover the tip of the syringe with your finger and try to push the plunger in.



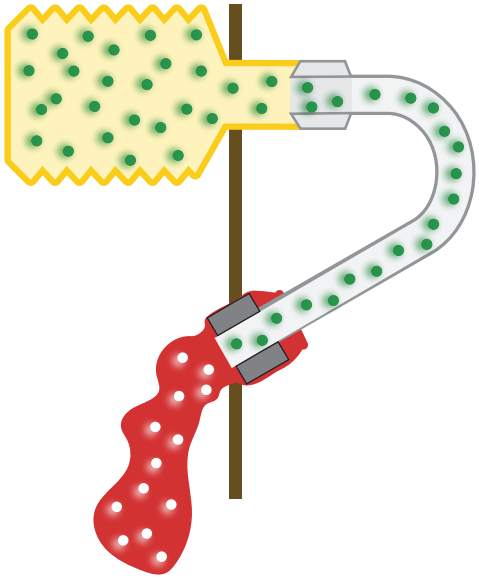
CONCLUSION:

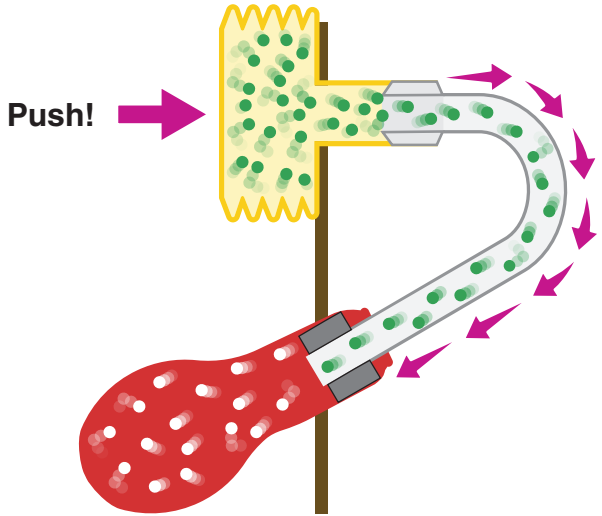
It feels hard to push the plunger because the air trapped inside is pushing back. This push is called Air Pressure! Air is made up of air molecules, which are always pushing against their surroundings.

Air always moves from where it is more crowded (high pressure) to where it is less crowded (low pressure), just like a ball rolling down a slope.

OBSERVE IN THE MODEL!

When you press the pump, the space inside it becomes smaller and the air pressure increases. Air rushes into the balloon, where the air pressure is lower. Because the balloon is stretchy, it fills up and expands!





BREATHE DEEPLY!

WHAT TO DO:

Put one hand on your belly and take a deep breath in.

I OBSERVE:

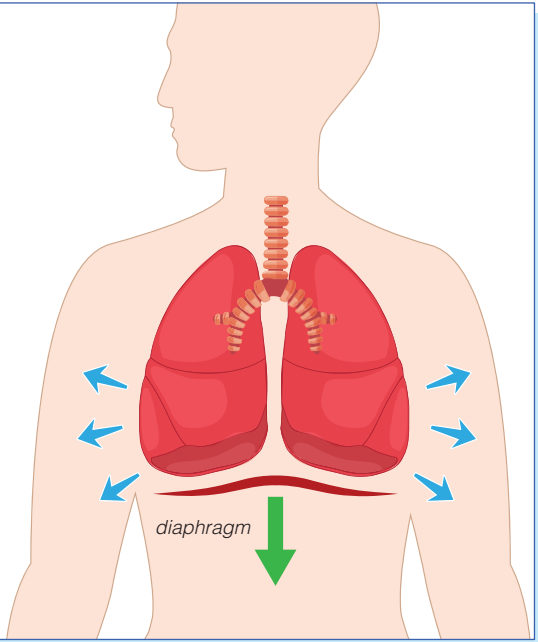
1. When I breathe in, my belly _____. (expands/contracts)
2. When I breathe out, my belly _____. (expands/contracts)

Answers: 1. expands, 2. contracts

WHATS GOING ON?

Your lungs get pulled down by a special breathing muscle called the diaphragm and your belly gently expands. This makes more space in your lungs, lowering the air pressure inside. Air from outside rushes in to fill your lungs—this is called inhalation.

When you breathe from your chest, your shoulders move, but your lungs don't fill up completely. Belly breathing fills your lungs with more air and helps your body feel stronger.

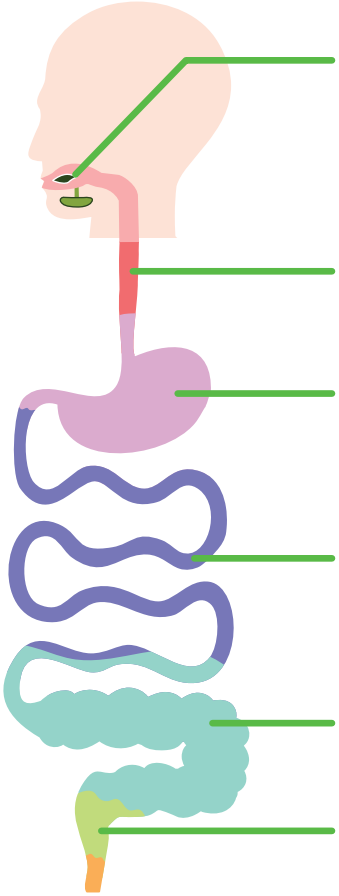


HEALTHY HABIT!

Practice deep belly breathing for a few minutes every day—like before sleeping or after playing. It helps your body relax, gives your brain more oxygen, and even makes you feel more calmer and focused!



DIGESTION TIMELINE



Stage 1: Mouth, takes 30–60 seconds

Food is chewed and softened by saliva.

Stage 2: Esophagus, takes 5–8 seconds

Food slides down into the stomach by peristalsis.

Stage 3: Stomach, takes 2–6 hours

Food is churned into a mushy mix called chyme.

Stage 4: Small intestine, takes 3–5 hours

Nutrients from the food are absorbed into the blood.

Stage 5: Large intestine, takes 4–72 hours

Waste (poop) starts to form.

Stage 6: Rectum

Waste (poop) is stored before it is expelled through the anus.

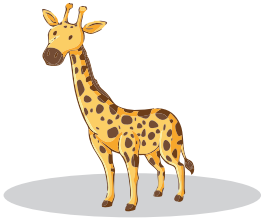
FUN ACTIVITY!

Calculate the maximum time food can spend inside your body. Write your answer in the box below!

Answers: 83 hours 1 minute and 8 seconds

FUN FACT!

If you stretched out all the parts of your digestive system, from your mouth to your anus, it would be about 7 meters (or 23 feet) long, which is slightly taller than an adult giraffe!



QUIZ TIME!

PART 1: THE MUSCULOSKELETAL SYSTEM

1. A stack of _____ make up the spine which supports your body and helps you move.

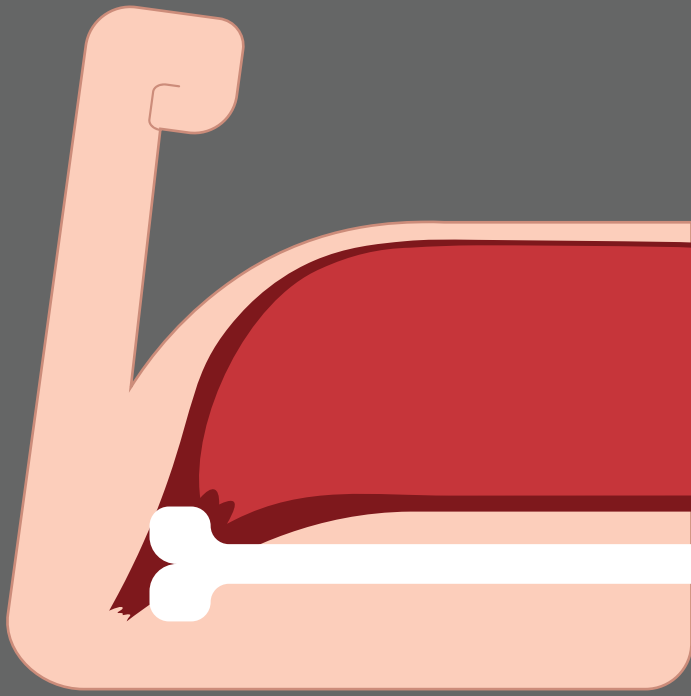
- [ ] a) 2 asymmetric lungs
- [ ] b) 7 curved bones
- [ ] c) 33 vertebrae
- [ ] d) 25 muscles

2. Ribcage is made up of _____ of curved bones which protect the heart and lungs.

- [ ] a) 12 pairs
- [ ] b) 9 pairs
- [ ] c) 3 pairs
- [ ] d) 7 pairs

3. Where are your triceps located?

- [ ] a) Front of lower arm
- [ ] b) Behind of the heart
- [ ] c) Back of upper arm
- [ ] d) Underneath the stomach





4. Which muscle is responsible for bending the elbow to move the lower arm upwards?

- [ ] a) Triceps muscles
- [ ] b) Biceps muscles
- [ ] c) Deltoid muscles
- [ ] d) Stomach muscles

5. The deltoid muscle is found on your:

- [ ] a) shoulder
- [ ] b) ribcage
- [ ] c) lungs
- [ ] d) liver

6. The radius and ulna are bones in your:

- [ ] a) skull
- [ ] b) spine
- [ ] c) trachea
- [ ] d) forearm

Answers: 1-c, 2-a, 3-c, 4-b, 5-a, 6-d

PART 2: THE DIGESTIVE SYSTEM

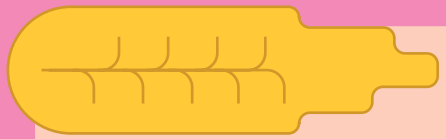
1. Wave-like movements inside the esophagus are called _____.

- [ ] a) Peristalsis
- [ ] b) Chyme
- [ ] c) Insulin
- [ ] d) Bile



2. Which organ is responsible for absorbing most nutrients?

- [ ] a) Large intestine
- [ ] b) Small intestine
- [ ] c) Stomach
- [ ] d) Liver



3. What does the esophagus do?

- [ ] a) Absorbs water and mineral
- [ ] b) Digests fats by releasing bile juice
- [ ] c) Sends food from the mouth to the stomach
- [ ] d) Stores waste before it gets expelled

4. Which organ releases digestive enzymes to break down food?

- ☐ a) Pancreas
- ☐ b) Large intestine
- ☐ c) Gall bladder
- ☐ d) Rectum

5. Which organ stores bile juice before releasing it to help digest fats?

- ☐ a) Liver
- ☐ b) Pancreas
- ☐ c) Gall bladder
- ☐ d) Stomach

6. From which part of the digestive system does the waste leave the body?

- ☐ a) Small intestine
- ☐ b) Stomach
- ☐ c) Esophagus
- ☐ d) Anus

Answers: 1-a, 2-b, 3-c, 4-a, 5-c, 6-d

PART 3: THE RESPIRATORY SYSTEM

1. Which organ helps you breathe?

- [ ] a) Heart
- [ ] b) Stomach
- [ ] c) Lungs
- [ ] d) Liver

2. Which gas do the lungs absorb when we breathe?

- [ ] a) Carbon dioxide
- [ ] b) Oxygen
- [ ] c) Helium
- [ ] d) Nitrogen

3. What is trachea also called?

- [ ] a) Food pipe
- [ ] b) Bronchi
- [ ] c) Esophagus
- [ ] d) Windpipe

4. What are bronchi?

- [ ] a) Muscles that help in breathing
- [ ] b) Small air sacs inside the lungs
- [ ] c) Two air tubes branching from the trachea
- [ ] d) Bones in the lungs

5. What are bronchioles?

- [ ] a) A muscular sac that produces hydrochloric acid
- [ ] b) Muscles of the heart
- [ ] c) Bones in the lungs
- [ ] d) Smaller branches of the bronchi inside the lungs

6. What is the 'exchange' that takes place in the alveoli of the lungs?

- [ ] a) Oxygen goes into the blood.
- [ ] b) Oxygen comes out of the blood.
- [ ] c) Carbon dioxide goes into the blood.
- [ ] d) Water comes out of the blood.

Answers: 1-c, 2-b, 3-d, 4-c, 5-d, 6-a