

Biology 90166 v2 Describe the functioning of human digestive & skeletomuscular systems

Skeletomuscular system cards

Test yourself / test me cards

Cover answer – bottom 1/3; Read question / notes / diagram at top – give an answer & check it.

Make 3 piles as you go..... Know this..... Nearly knew this..... No idea at all!

Work your way through each pile moving cards from pile to pile until the “know this” pile grows!! Then from time to time, run through the whole set.... You will be surprised how fast you learn them.



<p><u>Role of Skeleton</u> Surrounds delicate organs - brain, heart, lungs, spinal cord, giving —</p>
<p>protection</p>

<p><u>Role of Skeleton</u> Surrounds delicate organs - brain, heart, lungs, spinal cord, giving —</p>

Fold over and glue – or cut off and glue to the back to make a “flip card”

<p>protection</p>

OR make flip cards

Pages 2-9 are blank for your completion

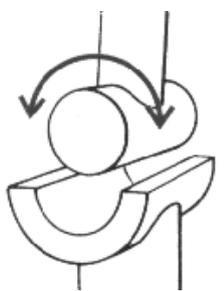
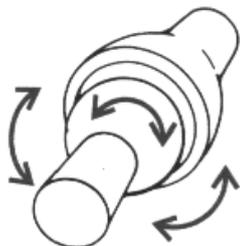
OR

Pages 10-17 have suggested answers

Page 18 is a blank so you can made additional cards

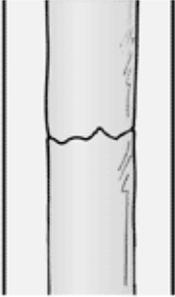
<u>Role of Skeleton</u> Organs held in place. Lets us stand upright - provides the body with ____	<u>Role of Skeleton</u> Provides anchorage for muscles, bones act as levers, to bring about ____	<u>Role of Skeleton</u> Surrounds delicate organs - brain, heart, lungs, spinal cord, giving ____	<u>Role of Skeleton</u> Store of calcium and phosphates
<u>Role of Skeleton</u> Red bone marrow of many bones makes ____ ____	Hard living tissue with blood supply and nerves, capable of healing itself	Cells arranged in circles around blood vessels and nerves, making a "web" are ____	Collagen and calcium phosphate and calcium carbonate make the bone ____
The skeleton of the embryo and then foetus is made of ____	Bones grown in length at regions called ____ ____	As bones grow _____ is replaced by _____	Word that means cartilage is turned to bone
Bones are linked to other bones by ____ Flexible strong bundles of fibres	Muscles are joined to bones <i>across a joint</i> , by ____	Contractions of muscles bring about _____ of limbs	Muscles can only c_____

Muscles work in a _____ p. _____	An example of an antagonistic pair of muscles in the arm are ___ & ___	An example of an antagonistic pair of muscles in the leg are ___ & ___	Muscles that straighten a limb are called _____ muscles
Muscles that bend a limb are called _____ muscles	Place where tendon of muscle is anchored to a <i>fixed point</i> on the skeleton	Place where tendon of muscle is anchored to a bone that will move	In an antagonistic pair of muscles, one _____ as the other one _____
Muscle type under our control eg we move arm to pick up school bag	Muscle type NOT under conscious control eg walls of blood vessels, intestines, eyes stomach	Involuntary muscle found in the walls of heart that contracts rhythmically	<u>Classification of bones</u> Long and cylindrical eg Femur, ulna
<u>Classification of bones</u> Short squarish bones eg carpals and tarsals	<u>Classification of bones</u> Ribs, sternum, scapula, & bones of the skull	<u>Classification of bones</u> Vertebrae, & hip bones	Name for the place where 2 or more bones meet

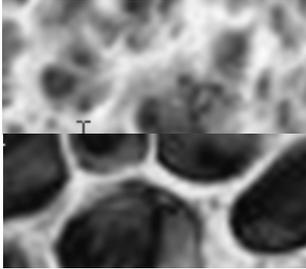
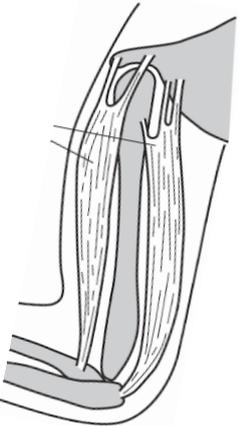
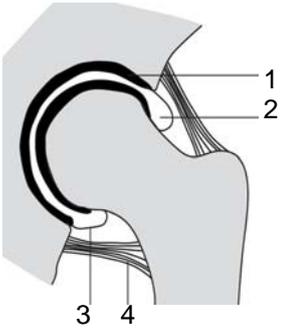
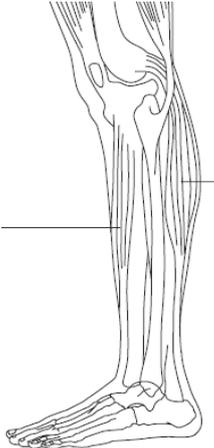
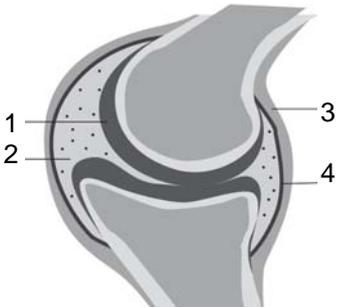
Tough outer covering of the bone	Contains yellow marrow; is centre of diaphysis	Bone that is spongy and contains red marrow	Growth plate near head of bone
Membrane which contains and produces the synovial fluid	Special name for the cartilage at the ends of bones	Smooth slippery surface to stop ends of bones from jarring and scraping	Fluid that lubricates a synovial joint, reducing friction
		Flexible, strong joints allowing movement in many directions eg hip	Joint with movement limited to rotation eg between atlas and the axis (neck)
Examples of ball & socket joints	Joints allowing movement similar to an opening/closing door	Examples of hinge joints	Type of bone cell that destroys bone

Type of bone cell that makes new bone	Name for process where old bone is broken down and replaced with new bone	<u>Fractures</u> Bone breaks cleanly; Little damage to surrounding tissues	Joint allowing the twisting movement of the radius and ulna against the upper arm
<u>Fractures</u> Broken bone penetrates skin - risk of infection	<u>Fractures</u> Bone breaks into fragments	<u>Fractures</u> Young flexible bone breaks incompletely - bone cracked only on one side	Methods of realigning broken bones
<u>Steps of bone repair</u> 1. Blood filled swelling at site of fracture (a ____)	<u>Steps of bone repair</u> 2. Haematoma replaced & splinted by a ____	<u>Steps of bone repair</u> 3. Cartilage callus is replaced by ____ ____	<u>Steps of bone repair</u> 4. Bony callus is ____ to make a permanent patch
Thumb joint (the only one of these in body) is an example of a ____ joint	Joint eg one at base of your index finger, allow bending and extending, rocking from side to side	Occur when muscles and tendons are damaged by being suddenly pulled hard	Common strains occur to tendons such as

A very strong force to a tendon can cause it to break right through or ____	Overused tendons can get inflamed and make the joints feel sore, e.g.	Occur when joint is moved beyond its normal limits of movement, partly tearing ligaments	Common sprains occur to ligaments such as those in the
Treatment for both strains and sprains includes... (4 letter mnemonic)	What 4 things do "R.I.C.E." stands for?	Joints become inflamed, hot, swollen and painful	"wear and tear" type of arthritis, caused by cartilage being worn away from bone ends
Arthritis common in damaged joints, worsening with old age	Treatment for joints such as knee, hip of finger, affected by arthritis	Autoimmune disease, affecting sometimes more than just the joints	Arthritis where tissues lining the joints to become swollen, stiff, and painful (inflamed).
Disorder when amount of bone is reduced, increasing the likelihood of fracture	Bones thin causing osteoporosis because the body can't absorb _____ as effectively	Hormonal changes occurring during _____ make woman more likely to suffer from osteoporosis	Builds up in the muscle tissue & causes the fatigue and soreness you feel in exercising muscles

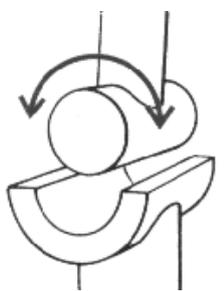
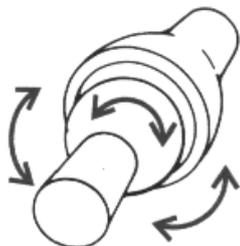
<p>Ends of a bone / head & the shaft of the bone</p>		<p>Bone that is spongy and contains red marrow</p>	<p>Cartilage plate in the long bones of children and adolescents, site of longitudinal growth</p>
<p>Tough outer covering of the bone</p>	<p>Contains yellow marrow; is centre of diaphysis</p>	<p>Smooth slippery surface to stop ends of bones from jarring and scraping</p>	<p>Place where 2 or more bones meet is called a</p>
<p>Fluid that lubricates a synovial joint, reducing friction</p>	<p>Membrane which contains and produces the synovial fluid</p>	<p>Special name for the cartilage at the ends of bones</p>	<p>Flexible, strong joints allowing movement in many directions eg hip</p>
<p>Examples of ball & socket joints</p>	<p>Joints allowing movement similar to an opening/closing door</p>	<p>Yellow bone marrow is a store for ____</p>	<p>Type of bone cell that destroys bone</p>

Reduced mobility / activity due to pain, stiffening & swelling of joints are all symptoms of...	The wearing away of articular cartilage causes bones to rub together causing ___ & ___	Inflammation & breakdown of the synovial membrane reducing synovial fluid production is due to	Give strength and support to joins, stopping sideways movement
A muscle must have a complementary muscle that produces the opposite....	The ___ muscle contracts to bend the arm. The ___ muscles contracts to straighten the arm.	Examples of sliding joint & Example of fixed joint	Makes bone light and allows a blood supply for bone cells
Muscle strains (pulled muscles) can be due to failure to _____ before exercise	Torn muscles heal faster than ligaments because muscles have a good ___	Torn muscles can't pull bones properly and restrict ___	
Disappears in long bones of humans by about age 20 (when we stop growing)	Type of fracture more likely to happen to harder adult bone	The wearing away of articular cartilage, bones rubbing over each other, joint swelling & becoming painful	Torn ligaments can lead to _____ of the joint

<p>hard outer layer of bones with minimal gaps and spaces</p>	<p>Hold a joint together so that it doesn't dislocate or collapse</p>	<p>Joints, eg in skull, that don't allow movement. Bones held together with fibrous connective tissue.</p>	<p>Inflammation & breakdown of synovial membrane. Less synovial fluid production. Less lubrication causes stiffness and pain</p>
<p>At 30+ bone density decreases Bone reabsorption > bone formation Most rapid in women</p>	<p>Menopausal bone loss in women is due to a deficiency in ____</p>	<p>Osteoporosis can be combated with... (3 ideas)</p>	<p>Characteristics of older person with osteoporosis</p> 
<p>To hold bones together / prevent dislocation, ligaments have to be ____</p>	<p>To allow bones to move in a joint, ligaments have to be slightly ____</p>		
		<p>Names not needed</p> 	

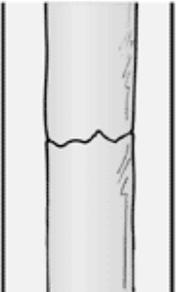
<u>Role of Skeleton</u> Organs held in place. Lets us stand upright - provides the body with ____	<u>Role of Skeleton</u> Provides anchorage for muscles, bones act as levers, to bring about ____	<u>Role of Skeleton</u> Surrounds delicate organs - brain, heart, lungs, spinal cord, giving ____	<u>Role of Skeleton</u> Store of calcium and phosphates
support	movement	protection	mineral storage
<u>Role of Skeleton</u> Red bone marrow of many bones makes ____ ____	Hard living tissue with blood supply and nerves, capable of healing itself	Cells arranged in circles around blood vessels and nerves, making a "web" are ____	Collagen and calcium phosphate and calcium carbonate make the bone ____
red blood cells	bone	osteocytes	hard
The skeleton of the embryo and then foetus is made of ____	Bones grown in length at regions called ____ ____	As bones grow _____ is replaced by _____	Word that means cartilage is turned to bone
cartilage	growth plates	cartilage bone	ossified
Bones are linked to other bones by ____ Flexible strong bundles of fibres	Muscles are joined to bones <i>across a joint</i> , by ____	Contractions of muscles bring about _____ of limbs	Muscles can only c_____ and can't p_____
ligaments	tendons	movement	contract push

Muscles work in a _____ p. _____	An example of an antagonistic pair of muscles in the arm are ___ & ___	An example of an antagonistic pair of muscles in the leg are ___ & ___	Muscles that straighten a limb are called _____ muscles
antagonistic pairs	biceps & triceps	quadriceps & hamstring	extensor
Muscles that bend a limb are called _____ muscles	Place where tendon of muscle is anchored to a <i>fixed point</i> on the skeleton	Place where tendon of muscle is anchored to a bone that will move	In an antagonistic pair of muscles, one _____ as the other one _____
flexor	origin	insertion	contracts / relaxes
Muscle type under our control eg we move arm to pick up school bag	Muscle type NOT under conscious control eg walls of blood vessels, intestines, eyes stomach	Involuntary muscle found in the walls of heart that contracts rhythmically	<u>Classification of bones</u> Long and cylindrical eg Femur, ulna
voluntary	involuntary (smooth)	cardiac muscle	long bone
<u>Classification of bones</u> Short squarish bones eg caprals and tarsals	<u>Classification of bones</u> Ribs, sternum, scapula, & bones of the skull	<u>Classification of bones</u> Vertebrae, & hip bones	Name for the place where 2 or more bones meet
short bone	flat bones	irregular bones	joint

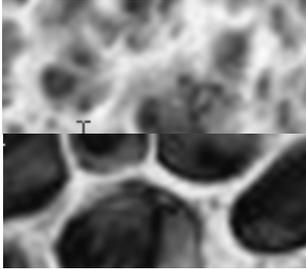
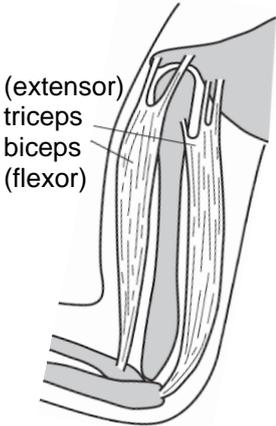
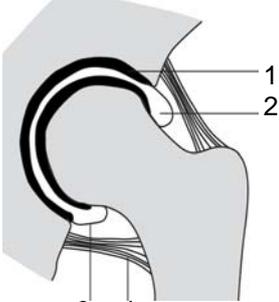
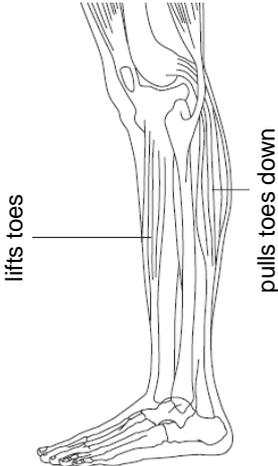
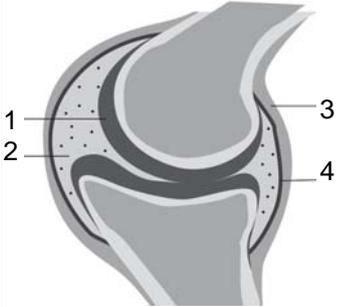
Tough outer covering of the bone	Contains yellow marrow; is centre of diaphysis	Bone that is spongy and contains red marrow	Growth plate near head of bone
periosteum	medullary cavity	spongy bone	epiphyseal plate
Membrane which contains and produces the synovial fluid	Special name for the cartilage at the ends of bones	Smooth slippery surface to stop ends of bones from jarring and scraping	Fluid that lubricates a synovial joint, reducing friction
synovial membrane	articular cartilage	cartilage	synovial fluid
		Flexible, strong joints allowing movement in many directions eg hip	Joint with movement limited to rotation eg between atlas and the axis (neck)
hinge joint	ball & socket joint	ball and socket joints	pivot joint
Examples of ball & socket joints	Joints allowing movement similar to an opening/closing door	Examples of hinge joints	Type of bone cell that destroys bone
hip and shoulder joints	hinge joint	knee and elbow	osteoclast

Type of bone cell that makes new bone	Name for process where old bone is broken down and replaced with new bone	<u>Fractures</u> Bone breaks cleanly; Little damage to surrounding tissues	Joint allowing the twisting movement of the radius and ulna against the upper arm
osteoblast	bone remodelling	simple fracture	pivot joint
<u>Fractures</u> Broken bone penetrates skin - risk of infection	<u>Fractures</u> Bone breaks into fragments	<u>Fractures</u> Young flexible bone breaks incompletely - bone cracked only on one side	Methods of realigning broken bones
open fracture	compound fracture	greenstick fracture	Plaster/fibre glass casts, pins, wires and rods
<u>Steps of bone repair</u> 1. Blood filled swelling at site of fracture (a ___)	<u>Steps of bone repair</u> 2. Haematoma replaced & splinted by a ___	<u>Steps of bone repair</u> 3. Cartilage callus is replaced by ___	<u>Steps of bone repair</u> 4. Bony callus is ___ to make a permanent patch
haematoma	a callus (of cartilage)	bony callus / spongy bone	remodelled
Thumb joint (the only one of these in body) is an example of a ___ joint	Joint eg one at base of your index finger, allow bending and extending, rocking from side to side	Occur when muscles and tendons are damaged by being suddenly pulled hard	Common strains occur to tendons such as
saddle	ellipsoidal joints	strain	Hamstring & Achilles

A very strong force to a tendon can cause it to break right through or ____	Overused tendons can get inflamed and make the joints feel sore, e.g.	Occur when joint is moved beyond its normal limits of movement, partly tearing ligaments	Common sprains occur to ligaments such as those in the
rupture	tennis elbow	sprain	ankles & wrists
Treatment for both strains and sprains includes... (4 letter mnemonic)	What 4 things do "R.I.C.E." stands for?	Joints become inflamed, hot, swollen and painful	"wear and tear" type of arthritis, caused by cartilage being worn away from bone ends
R.I.C.E.	rest, ice, compression, elevation	arthritis	osteoarthritis
Arthritis common in damaged joints, worsening with old age	Treatment for joints such as knee, hip of finger, affected by arthritis	Autoimmune disease, affecting sometimes more than just the joints	Arthritis where tissues lining the joints to become swollen, stiff, and painful (inflamed).
osteoarthritis	replacement	rheumatoid arthritis	rheumatoid arthritis
Disorder when amount of bone is reduced, increasing the likelihood of fracture	Bones thin causing osteoporosis because the body can't absorb ____ as effectively	Hormonal changes occurring during ____ make woman more likely to suffer from osteoporosis	Builds up in the muscle tissue & causes the fatigue and soreness you feel in exercising muscles
osteoporosis	calcium	menopause	lactic acid

Ends of a bone / head & the shaft of the bone		Bone that is spongy and contains red marrow	Cartilage plate in the long bones of children and adolescents, site of longitudinal growth
epiphysis & diaphysis	simple fracture	spongy bone	epiphyseal plate
Tough outer covering of the bone	Contains yellow marrow; is centre of diaphysis	Smooth slippery surface to stop ends of bones from jarring and scraping	Place where 2 or more bones meet is called a
periosteum	medullary cavity	cartilage	joint
Fluid that lubricates a synovial joint, reducing friction	Membrane which contains and produces the synovial fluid	Special name for the cartilage at the ends of bones	Flexible, strong joints allowing movement in many directions eg hip
synovial fluid	synovial membrane	articular cartilage	ball and socket joints
Examples of ball & socket joints	Joints allowing movement similar to an opening/closing door	Yellow bone marrow is a store for ____	Type of bone cell that destroys bone
hip and shoulder joints	hinge joint	fat	osteoclasts

Reduced mobility / activity due to pain, stiffening & swelling of joints are all symptoms of...	The wearing away of articular cartilage causes bones to rub together causing ___ & ___	Inflammation & breakdown of the synovial membrane reducing synovial fluid production is due to	Give strength and support to joints, stopping sideways movement
arthritis (both types)	swelling & pain	rheumatoid arthritis	ligaments
A muscle must have a complementary muscle that produces the opposite....	The ___ muscle contracts to bend the arm. The ___ muscles contracts to straighten the arm.	Examples of sliding joint & Example of fixed joint	Makes bone light and allows a blood supply for bone cells
action	biceps triceps	some wrist bones / skull	spongy bone
Muscle strains (pulled muscles) can be due to failure to _____ before exercise	Torn muscles heal faster than ligaments because muscles have a good ___	Torn muscles can't pull bones properly and restrict ___	
warm up	blood supply	movement	open fracture
Disappears in long bones of humans by about age 20 (when we stop growing)	Type of fracture more likely to happen to harder adult bone	The wearing away of articular cartilage, bones rubbing over each other, joint swelling & becoming painful	Torn ligaments can lead to _____ of the joint
epiphyseal / growth plate	simple or compound fracture	osteoarthritis	instability

hard outer layer of bones with minimal gaps and spaces	Hold a joint together so that it doesn't dislocate or collapse	Joints, eg in skull, that don't allow movement. Bones held together with fibrous connective tissue.	Inflammation & breakdown of synovial membrane. Less synovial fluid production. Less lubrication causes stiffness and pain
compact bone	ligaments	immovable / fixed / fibrous	rheumatoid arthritis
At 30+ bone density decreases Bone reabsorption > bone formation Most rapid in women	Menopausal bone loss in women is due to a deficiency in ____	Osteoporosis can be combated with... (3 ideas)	Characteristics of older person with osteoporosis 
osteoporosis	oestrogen	Ca supplements, regular exercise, healthy diet	rounded shoulders, bent back (stoop)
To hold bones together / prevent dislocation, ligaments have to be ____	To allow bones to move in a joint, ligaments have to be slightly ____		
strong	elastic	normal bone & bone with osteoporosis	greenstick fracture
	 1 cartilage 2. synovial fluid 3. synovial membrane / capsule 4. ligaments	 lifts toes pulls toes down	 1 cartilage 2. synovial fluid 3. capsule 4. synovial membrane

