

JOHN GRAY HIGH SCHOOL

KS3 SCIENCE: YEAR 8

UNIT : SKELETAL SYSTEM AND RESPIRATION

PAPER 2

Time : 45 mins

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This paper consists of **FOUR** questions.
2. Answer **ALL** questions.
3. Write your answers in the spaces provided in workbook.
4. Remember to read the questions properly before attempting to answer
5. You are permitted to use a calculator in this exam

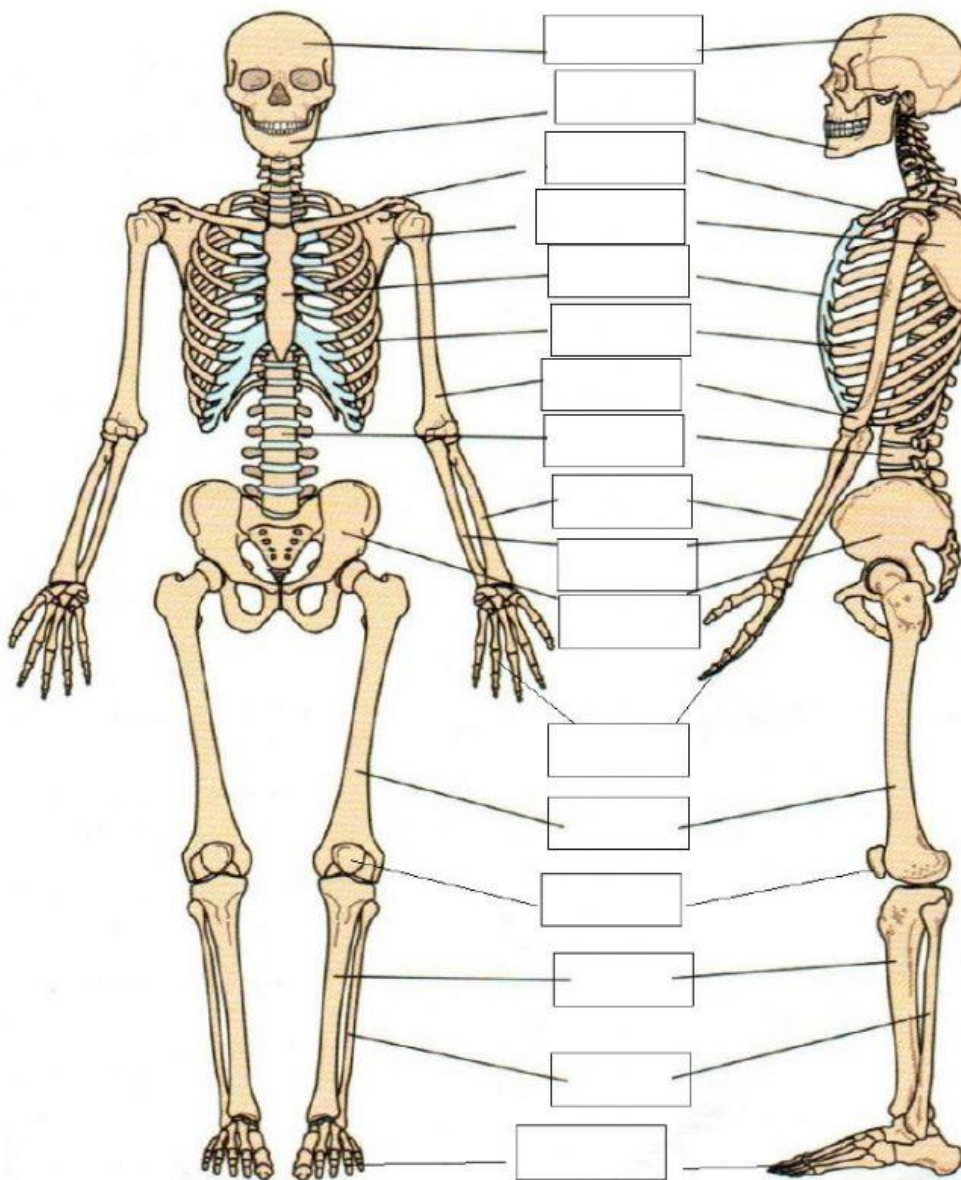
Name: _____

Teacher's Name: _____

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

1. Label the human skeleton below with the words from the word bank.

[17]



clavicle
cranium
femur
fibula
fingers
humerus
jaw
patella
pelvis
radius
ribs
scapula
sternum
tibia
toes
ulna
vertebrae

b. Label the following bones LONG, FLAT, SHORT, IRREGULAR.

[4]

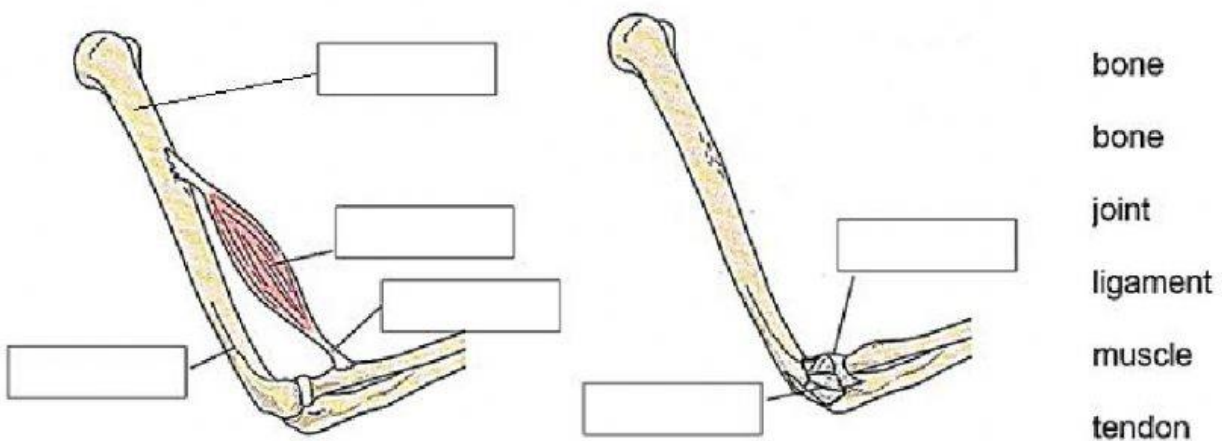


c. Complete the table of skeletal function with the examples given below.

Movement	Protection	Support

Ribcage around lungs and heart.	Standing.	Chewing
Sitting upright.	Body shape.	Skull around brain.
Running	Eye socket around eyeball.	Kicking and punching.

2. Look at the diagrams of a joint below. Label the diagrams with the words given and name the type of joint.



This is an example of a _____ joint.

b. Use the words in the box below to complete the sentences.

Contract	Joint	Ligament	Movement
Muscle	Relax	Skeleton	Tendon

One of the main roles of our _____ is to bring about movement. Wherever bones meet, a _____ is formed. At these areas, the bones are held together by fibres called _____. In order to move, _____ tissue, made of muscle cells, must be a part of the skeletal system. They are held firmly to bones by fibres called _____. Muscles bring about _____ of our bones when they _____ and _____.

c. Match the types of joints below with a suitable example.

Ball and socket joint
Pivot joint
Hinge joint
Immoveable joint

Knee
Cranium/Skull
Shoulder
Upper part of neck

3. Complete the sentences using words from the box.

biceps	triceps	joint	tendons
contracts	antagonistic	relaxes	

- i. Muscles that work together as a pair are called _____ muscles.
- ii. Muscles are joined to bones by _____. When a muscle contracts, it can move a bone if that bone is found at a _____.
- iii. An example of antagonistic muscles in the arm are the _____ and _____.
- iv. To bend the leg at the knee, the quadriceps _____ and the hamstring _____.

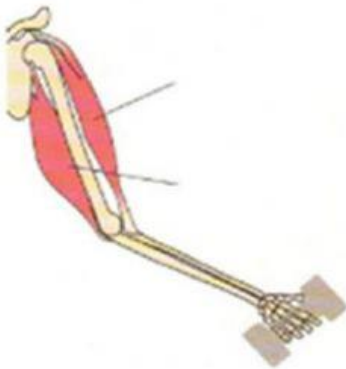
b. Label the diagrams below using the word bank.

relaxed
tricep

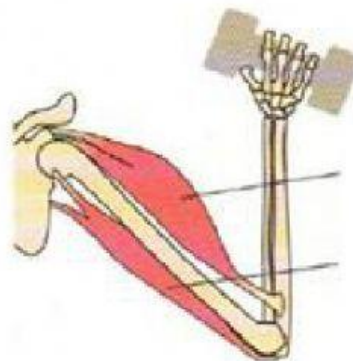
relaxed
bicep

contracting
bicep

contracting
tricep

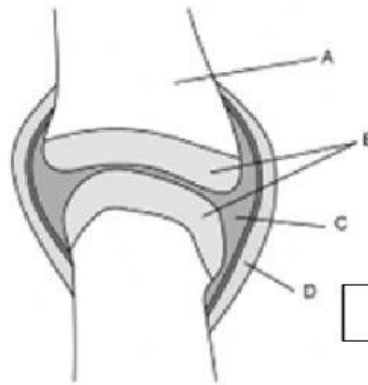


In this diagram, the arm is straight
or E _____.



In this diagram, the arm is bent
or F _____.

c. Label the diagram of the synovial joint with the labels given



Ligament

Cartilage

Bone

Synovial fluid

d. Jaxszon picked up a baseball and threw it. Match the joints that he uses with the various movements.

- | | | |
|----------------|---|--|
| Finger joints | • | • No role played in this movement. |
| Shoulder joint | • | • To bend his arm to throw. |
| Knee joint | • | • To get a snapping motion just before releasing the ball. |
| Wrist joint | • | • To rotate the whole arm to throw. |
| Elbow joint | • | • To curl around the ball to grip it. |

4. The process that all cells use to make energy is called respiration. When oxygen is used up in this process, what type of respiration occurs?

b. Which organelle (cell component) carries out the process of respiration (with oxygen) in cells?

c. Drag the components below to outline the process of respiration using oxygen.

OXYGEN

CARBON DIOXIDE

ENERGY

GLUCOSE

WATER



d. The number of mitochondria vary in different types of cells. Look at the table below and answer the following questions.

Type of cell	Average number of mitochondria per cell
muscle cell	1900
red blood cell	0
liver cell	1300
skin cell	800
mucus cell	180

i. Which type of cells have the most mitochondria? _____

ii. Suggest why muscle cells need so much energy? _____

iii. Red blood cells which transport oxygen around the body to other cells for respiration, have no mitochondria. Suggest why it is important that red blood cells have no mitochondria.
