

Year 8  
Science  
Holiday Homework  
Term 3 2017

- Read pages 140 – 143 of the textbook.
- Answer questions on page 144. Complete questions 1 – 13
- Complete the worksheets that are included in this document.
- Due back the first week of school.

# Muscular Skeletal system

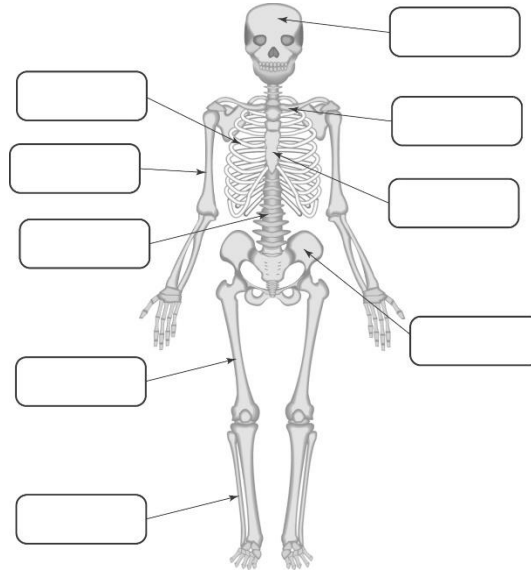
## Bones, joints and muscles

Name: .....

### Location of bones

1. Complete the following diagram by inserting the correct names of bones from the list below.

- clavicle
- humerus
- femur
- pelvis
- sternum
- tibia
- vertebra
- ribs
- skull



### Joints

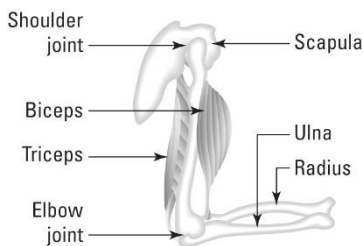
2. Complete the following table by inserting the correct term for the type of joint in the first column.

Types: hinge pivot ball and socket

Type of joint	Movement of the joint
	Allows movement in many different directions
	Allows movement in only one direction
	Allows twisting movements

### Joints, bones and muscles

3. Consider the diagram below of the arm and shoulder.



(a) Identify the types of joints in this diagram.

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(b) Explain how the forearm can be raised and lowered via the combined action of the two muscles and the elbow joint.

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# Excretory System

## Removing waste from the blood

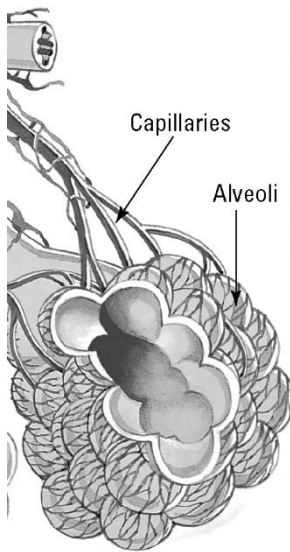
Name: .....

### 1. Removing waste from the lungs

The following table compares the composition of the air breathed into and out of the lungs.

Gas	Oxygen (%)	Carbon dioxide (%)	Water vapour (%)	Nitrogen (%)
Air breathed in	21	0.04	Usually <1%	78
Air breathed out	16	4	2	78

(a) Which listed gas is classified as a waste gas? .....



(b) Explain why the percentage of oxygen has decreased and the percentage of carbon dioxide has increased.

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(c) The image on the left shows alveoli and blood capillaries. Explain the importance of the close association of these structures.

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### 2. Removing waste from the kidneys

Waste removal is also the responsibility of the kidneys. Blood is filtered and wastes leave the kidneys as urine. The following table provides data on the typical composition of urine.

Component	% (by weight)
Water	95
Urea	2.5
Other nitrogenous waste	0.3
Salts	1.9
Other	0.3

(a) Identify the major component of urine. ....

(b) Urea is the major nitrogenous waste. Calculate the total nitrogenous waste in urine. ....

(c) Glucose is initially filtered out of the blood by the kidneys but is reabsorbed and so is absent from the urine. Explain why it is important that glucose is not lost by the body.

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(d) A patient's urine gives a positive glucose test. What information does this provide for a doctor?

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