Lesson 6

The Skeletal System

The skeleton is made up of all the bones in the body. There are about **206** bones in the body of an adult human. The **skeleton** has three functions. It supports the weight of the body, enables it to move and protects vital organs.

Bones are made of different kinds of **tissues**. Some bones are hollow. These are light and strong. The outer part of bones is made of hard bone tissue. The hardness is crystals of **calcium**.

The **skull** protects the brain and forms the shape of the face. Your skull has special holes for your eyes, ears, nose, and mouth. Put your fingers at the outside corner of your eyes. Feel the bone? You have 14 different bones in your face! Let's see… 14 bones in the face, plus eight bones in the **cranium**…that's 22 bones. Some people also count the three tiny bones in each ear as part of the skull. Then there's the mandible or jawbone… that makes a grand total of 29 bones in the skull.

Neck bones. On the back of your neck, you can feel the neck bones. They are called the **cervical vertebrae** (plural; say: VER-tuh-bray). Each vertebra (singular; say: VER-tuh-bruh) has a hole in the middle of it. They are shaped like rings. Your spinal cord passes through each vertebra.

The **spine** is made up of **vertebrae** that support and protect the spinal cord. The **ribs** protect the heart, lungs and other organs in the chest cavity such as the heart, and the lungs.

Your **hip bones** or pelvis are six bones joined together. The rounded hard points that poke out on each side are the anterior superior iliac crest.

Your **thigh bones** are the biggest, strongest, and heaviest bones you have. It's hard to feel your thigh bones. Big muscles cover them. You need big muscles there to help you walk, jump, and run. The thigh bones are big because they have to hold up all your body's weight when you stand and move about. The thigh bone's fancy name is the **femur**.

Knee bone. When you are sitting down, you can feel your kneecaps. The fancy name is the **patella**. There's no muscle over the patella. When you kneel on a hard floor, it hurts your kneecaps. That's because they are only covered with skin. There's no padding on them. This is why it is important to wear kneepads when you roller skate or bicycle. If you fall on your knees, it hurts! The patella's job is to protect the knee joint. This is a hinge joint. It works just like the hinge on a door. It can only move one way.

Leg bones. Below the knees, the lower leg has two bones in it. Their fancy names are the **tibia** and the **fibula**. The tibia is called the shin bone. It doesn't have much padding on it, either. If you walk into something and hit your shin bone, it hurts! The fibula is on the little toe side of your leg. It is much smaller than the tibia.

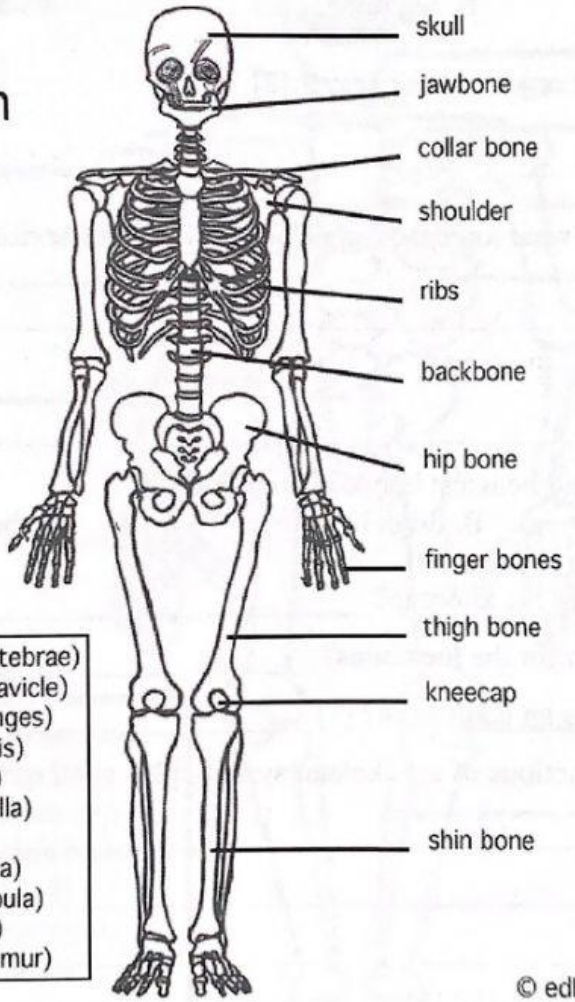
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Ankle bone. The big bump you feel at your ankle is really just a part of the tibia. The ankle bones are hidden away, and you can't feel them.

Foot bones. Each foot has **26** bones in it. You can feel the metatarsals on the flat top part of your foot. You have five metatarsals. There's one for each toe. In the toes, the bones are called **phalanges**. You can feel many bones in your foot because there isn't much padding there, either.

Your bones are made of living cells. Bones can grow and repair themselves. If you break a bone, your body will begin making new bone cells. The two broken pieces of bone will grow back together. You will have to wear a cast. The cast will hold the two broken pieces together in the same place so that they can mend

Human Skeleton



backbone (vertebrae)
collar bone (clavicle)
fingers (phalanges)
hip bone (pelvis)
jaw (mandible)
kneecap (patella)
rib (rib)
shin bone (tibia)
shoulder (scapula)
skull (cranium)
thigh bone (femur)

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Date: _____

Circle the letter for the correct answer for questions 1, 2, 3, 7, and 13. Write short answers for the other questions.

1. Another word for your skull is the _____.
A. fibula B. metatarsal C. cranium

2. How many bones do you have in your face?
A. 14 B. 22 C. 24

3. What are the cervical vertebrae?
A. neck bones B. leg bones C. arm bones

4. The ribs protect which organs of our body? [2]

_____ _____

5. Why is it important to wear kneepads when you roller skate or ride your bike? [1]

_____

6. Where can you find the fibula? [1]

_____

7. What are the biggest and heaviest bones in your body?
A. the femurs B. thigh bones C. both a and b

8. What's another name for the kneecap? _____

9. What is the name given for the toe bones? _____

10. How many bones does an adult have? [1] _____

11. Name the THREE functions of the skeletal system. [3]

_____

_____

_____

12. What is the function of the rib? [3]

_____

_____

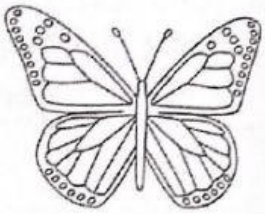
13. Bones are made of dry, dead cells.
A. false B. true

LIVEWORKSHEETS

Lesson 5

How Animals meet their needs

An instinct is a behaviour that an animal begins with. **Instincts** are adaptations that help animals meet their needs. The **monarch butterfly** flies south for the winter. It goes to places where they have the food and climate it needs to survive. The behaviour or action of flying south is not something monarchs have learned. It is an instinct. Some animals travel a long distance to meet their needs. E.g.: the female Atlantic green turtles go to Ascension Island to lay their eggs in the sand on the beach. The turtles do not learn from other turtles where the feeding areas are or how to get to Ascension Island. They know by instinct where to go. This type of instinct is called **Migration.** It is the movement of a group of one type of animal from one region to another and back again. It is a behavioural adaptation. Other animals that migrate are pectoral sandpiper, gray whales, and Pacific salmon.



Hibernation is a period when an animal goes into a long, deep '**sleep**'. An animal prepares to hibernate by eating extra food and finding shelter. During hibernation, the animal's body temperature drops and its breathing rate and heartbeat rate fall. As a result, the animal needs little or no food. The energy it does need comes from fat stored in its body. Animals that hibernate – **squirrels, bears,** and **bats**. Some animal behaviour is not instincts; they are learned. Example: how to hunt, sound to communicate with each other, how to build homes, how to eat certain foods. i.e.: crack open a nut.

LIVEWORKSHEETS

Date: _____

1. Why does the monarch butterfly fly south? [2]

_____

2. When animals leave one place to go to another place this is called. [1]

_____

3. Name TWO animals other than the monarch butterfly that travel. [2]

_____ _____

4. What is the term used for the period when animals go into a long deep sleep? [1]

_____

5. Name TWO animals that take a long sleep. [2]

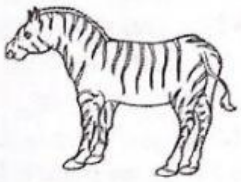
_____ _____

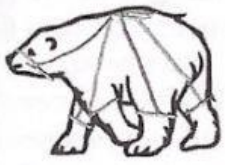
6. Define what an instinct is? [1]

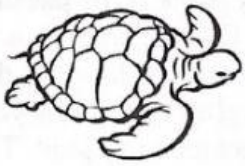
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_____

7. Write on the line beneath each animal the word **hibernate, migrate,** or **instinct** to tell how the animals below adapt. [3]







_____ _____ _____

8a. An animal's behaviour that is not an instinct is known as … [1]

_____

8b.Give an example

_____

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