Bone & Muscle Notes

<u>The Role of the Skeleton:</u>

***Name at least 3 jobs the skeleton does.**

Bones are organs and the skeleton is a framework of bones.

***What is the job of the skull?**

***What is the job of the rib cage?**

***What is the job of the bone marrow?**

***Where is calcium stored in the body?**

***Where do muscles attach in the body?**

***How many bones does a typical adult skeleton have?**

There are 80 Bones in the Axial Skeleton (main torso & head) and there are 126 Bones in the Appendicular Skeleton (extremities – arm, legs, hands, feet, etc.).

***How many bones make up the human skull alone?**

***Give the common name for the 3 bones of the human ear.**

***Is bone alive or dead?**

There are only 5 bones in bones in the wrist of an infant and 8 bones in the wrist of an adult.

Most bones will consist of 6 major tissues (remember: groups of tissues make up organs).

- **Place these six tissues with the correct description.**
    - **LIGAMENT, CARTILAGE, SOLID BONE, SPONGY BONE, MARROW, OUTER MEMBRANE.**

***Tough, flexible tissue that supports and shapes the body.**

***Location of nerves and blood vessels to supply the bone with blood.**

***Very compact and hard bone.**

***Bone filled with empty spaces.**

***Soft center of bone, location of blood and platelet formation.**

***Tough fibers that hold one bone to another bone.**

- **Joints are places where bones come together.**

Name the following joints.

***Shoulder or Hip**

***Sutures of the skull**

***Knee or Elbow**

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The Role of Muscles:

The number of muscles in the adult human body is usually described as 400-600 muscles. The exact number is difficult to arrive at because it depends on if the muscles are named individually or in groups.

***What are the three types of muscles in the human body?**

- **Name the muscle category (SOME MAY NEED MORE THAN ONE ANSWER).**

***HEART**

***INTERNAL ORGANS**

***BICEPS & TRICEPS**

***STRIPED MUSCLE FIBERS**

***UNSTRIPED MUSCLE FIBERS**

***VOLUNTARY MUSCLE**

***INVOLUNTARY MUSCLE**

***MUSCLE HUMANS TYPICALLY EAT**

***NOT CONNECTED TO ANY BONES**

***CONNECTS TO BONES**

Muscles work by changing length. For a muscle to do its job it must shorten.

- **All or None Principle**
- **Muscle fatigue & spasms**
- **Sliding filament theory (Shorter & thicker) (Longer & thinner)**

***What connects muscle to bones?**

*** Reminder – What connected bone to bone?**

Muscles have an origin (anchor point) and an insertion (moving point). For movement to occur the muscle must go across a moveable joint like the elbow or knee.

- **Name the Origin & Insertion of these muscles.**

***Biceps (Origin)** **(Insertion)**

***Hamstring (Origin)** **(Insertion)**

Muscles work in pairs: When one muscle (group) is contracting the other muscle (group) is relaxing.

- **Name the relaxing muscle (group) associated with the contracting muscle (group)**

***Biceps**

***Hamstrings**

***Pectoralis Major**

***Quadriceps**

Bone & Muscle Notes

Bones and Muscle Problems:

The skeletal and muscular systems work very closely with each other and if one begins to breakdown the other may feel the effects as well.

***What are some of the signs & symptoms of arthritis?**

***Is arthritis only found in elderly people?**

***What are possible treatments for arthritis?**

***Can arthritis be cured?**

***What is the name for a stretched or torn ligament around your ankle?**

***What is the difference between a strain and a sprain?**

***What is the difference between a muscle cramp and a muscle strain?**

***Both can be quite painful but which will tend to go away in a short period of time (24 hours or less)?**

***What are some signs and symptoms of Muscular Dystrophy?**

***Can Muscular Dystrophy be inherited?**

***Do more males or females tend to have Muscular Dystrophy?**

Each year people seek medical attention for musculoskeletal (muscle & skeleton) related injury. In some cases the injury could not be avoided but in some situations the injury might be avoidable. We are constantly evaluating and designing things for comfort and to reduce injury.

***Name 3 products that are specifically designed to be more comfortable to the human skeletal system or muscular system.**