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Creation Anatomy Kids Classes Skeletal System and Muscles

Presented by
Felice Gerwitz
Author ~ Creation Study Guides

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Our Bones!

- Bones
 - Are alive!
 - Living Cells
 - Rigid Bone
 - Hollow Cylinder

• Job 8-11 “ Your hands shaped me and made me... Remember that you molded me like clay...Did you not...clothe me with skin and flesh and knit me together with bones and sinews?”

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Strong but Light

- Bones are strong but light
- Thigh bone is stronger than concrete!
- Babies born with 350 soft bones
 - Bones harden and some fuse as they grow
- 206 Bones Make Up the Skeletal Frame
 - 650 muscles
 - Organs weigh 5 x more than bones

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Skeleton

- Axial ~
 - Skull, Spine, Rib Cage
 - 80 Bones
- Appendicular
 - All the other bones
- Skull
 - Protects the brain

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Bones at work!

- Spine
 - Keeps us upright

6 Protection Plate

- Skull
 - Protects the brain
 - Eyes
 - Recessed into the bone sockets
- Ribs
 - Protect the:
 - Heart
 - Lungs

7 Bone Factory ~ God as Engineer!

- Bones grow and repair themselves
- New growth and re-absorption

8 Flexible Skelton

- Types of Joints
 - Moveable
 - Some are hinges –
 - knee and elbow
 - Ball and Socket joints
 - Hips
 - shoulders
 - Saddle Joints
 - Thumb
 - ankle
- Synovial Fluid
 - Lubricant inside joints

9 Joint & Bone Facts !

- Non Moving Joints – skull
- Moving Joints - shoulder
- Most often broken - clavicle

10 More Facts!

- Largest group of bones and joints- hands & feet
- Smallest joint – stapes and incus in middle ear
- Largest Bone – femur

- 11 **More Fun Facts!**
- Most complex joint - knee
 - Largest bone without a joint – patella
 - Strongest bone – jawbone
 - Vertebrae –wider range of motion atlas and axis specialized
 - Only bone not attached to any other – hyoid bone in floor of mouth
 - Strongest joint – hip joint

- 12 **Muscles connected to Bone**
- Muscles are connected to the bone
 - They hold the joints together
 - ligaments and tendons
 - Bones are moved by muscles
 - Work in pairs

- 13 **How Muscles Work**
- Arm
 - Muscles contract
 - Muscles relax
 - Energy needed
 - Nutrients in food
 - Energy used to contract and the rest is given off as heat

- 14 **Muscles**
- Voluntary and Involuntary Muscles
 - 650 Voluntary: Think!
 - Blink your eyes on purpose
 - Try not to blink your eyes
 - Takes more work!
 - Involuntary: Without Thinking
 - Heart (beats)
 - Digestive organs (takes care of food)
 - Lungs (breathing)
 - We are always using our muscles

- 15 **Esophagus ~ Smooth Muscles**
– Found in the Esophagus

- 16 **Gastrointestinal~ Smooth Muscles**
– Gastrointestinal tract

- 17 **Trachea ~ Smooth**
– Trachea

18 Lungs ~ Smooth
– Bronchial tubes of the lungs

19 Arteries and
Veins ~ Smooth

20 Iris ~ Smooth

21 Cardiac Muscle

- Cardiac – Myocardial
- Combination of smooth and striated muscles
- Striated muscles work quickly and more powerfully but become tired
- Smooth muscles work without tiring but move slowly