Musculoskeletal System consists of:

The main function of the MS system is to:

**Bones:**
**Composition**
- Calcified matrix-
- Osteocytes-

**Shapes**
- Long-
- Short-
- Flat-
- Irregular-
- Sesamoid-

**Location**
- Axial-
- Appendicular-

**Function**
- Anatomic-
- Physiologic

**Muscles**
3 major muscles types:
   Visceral
   Cardiac
   Skeletal

1. Flexion
2. Extension
3. Hyperextension
4. Abduction
5. Adduction
6. Pronation
7. Supination
8. Circumduction
9. Inversion
10. Eversion
11. Protraction
12. Retraction
13. Elevation
14. Depression
15. Rotation
16. Internal rotation
17. External rotation
18. Dorsiflexion
19. Plantar flexion
Cartilage

Function
1.
2.

Ligaments

Bursae

Tendons

Joints

Classified by structure:
1. Fibrous-
2. Cartilaginous-
3. Synovial-

PHYSICAL ASSESSMENT OF THE MUSCULOSKELETAL SYSTEM

Equipment:

Assessment techniques:

Subjective History

1. __________________________________________________________
2. __________________________________________________________
3. __________________________________________________________
4. __________________________________________________________
5. __________________________________________________________
6. __________________________________________________________
7. __________________________________________________________
8. __________________________________________________________
9. __________________________________________________________
10. _________________________________________________________
Inspection

Major Muscles
Symmetry

Joints
Symmetry
Color
Size and contour
Swelling
Visible masses
Deformity

Palpation

Joints and Muscles together
Joint and muscle temperature
Joint and muscle tenderness
Joint and muscle swelling
Joint and muscle masses
Muscle tone
Muscle strength
Joint crepitation
Joint ROM testing
Active
Passive
Goniometer
1. **Temporomandibular joint**  
   *Function:*  
   
   *Joint Movement:*  
   - Hinge action  
   - Gliding action  
   
   *Assess TMJ Joint:*  
   Inspect  
   Palpate  
   
   **ROM**  
   Vertical motion  
   Lateral motion  
   Protrusion  
   
   *Assess temporal and masseter muscle strength:*  
   
2. **Spine**  
   *Consists of:*  
   ___Cervical___Thoracic____Lumbar____Sacral____Coccygeal  
   
   *Landmarks of the spine:*  
   C7  
   T7-8  
   L4  
   S2  
   
   *Lateral view of spine:*  
   Cervical-  
   Thoracic-  
   Lumbar-  
   
   *Motions of the spine*  
   Cervical  
   Flexion  
   Hyperextension  
   Lateral bending  
   Rotation
Vertebral Spine
Flexion-
Hyperextension-
Abduction-
Rotation-

Assess Spine:
Cervical
Inspect

Palpate

ROM
Flexion
Hyperextension
Lateral bending
Rotation

Muscle strength

Vertebral Spine
Inspect
Posture
Spinal curve
Vertebral column
Knee position

Palpate

ROM
Flexion
Lateral bending
Hyperextension
Rotation
3. **Shoulder**

Is the articulation of the ____________ of the _______ with the ______________ of the ______________. It is a ______________ joint.

The rotator cuff

**Palpable landmarks**

*The shoulder girdle*

*Acromian process*

*Greater tubercle*

*Coracoid process*

**Shoulder movements**

*Abduction*

*Adduction*

*Horizontal forward flexion*

*Horizontal backward extension*

*Circumduction*

*External rotation*

*Internal rotation*

**Assess shoulder**

*Inspect*

  *Size*

  *Contour*

*Palpate*

  *Clavicle*

  *Acromidclavicular joint*

  *Scapula*

  *Greater tubercle of the humerus*

  *Subscromial bursa*

  *Biceps groove*

  *Anterior aspect glenhumeral joint*

  *Deltoid muscle*
**ROM**
- Forward flexion
- Internal rotation
- External rotation
- Abduction
- Adduction

**Muscle strength**

**4. Elbow**
Is the articulation of the ________________________________

**Palpable landmarks**
- Medial and lateral epicondyles
- Olecranon process

**Movements of the elbow**
- Flexion of the forearm
- Extension of the forearm
- Supination of the forearm
- Pronation of the forearm and hand
- Hyperextension

**Assess Elbow**
**Inspect**
- Size
- Contour

**Palpate**
- Extensor surface
- Olecranon process
- Medial and lateral epicondyles
- Olecranon bursa

**ROM**
- Flexion
- Extension
- Pronation
- Supination

**Muscle testing**
5. **Wrist/Hand**

   Wrist
   Hand
   Metacarpophalangeal
   Interphalangeal joints

**Movements of Wrist**

- Extension
- Flexion
- Hyperextension
- Radial deviation
- Ulnar deviation
- Abduction

**Assess wrist and hand**

*Inspect*

*Palpate*

- Metacarpophalangeal joints
- Interphalangeal joints

**ROM**

- Hyperextension
- Flexion
- Ulnar deviation
- Radial deviation
- Abduction
- Fist
- Thumb to base of fingers

**Muscle testing**
6. Hip

Composed of:

Landmarks of the hip bone
Iliac crest-

Ischial tuberosity-

Greater trochanter-

Movements of the hip
Hyperextension
Flexion with knee flexed
Flexion with knee extended
Internal rotation
External rotation
Abduction
Adduction

Assess Hips
Inspect

Palpate

ROM
Flexion (knee extended)

Flexion (knee bent)
*check each leg!

Internal rotation-

External rotation-
*check each leg!

Abduction-

Adduction-

Hyperextension-
7. Knee
Articulation of 3 bones:
Supported and stabilized by:

Landmarks of the knee
Large quadriceps muscle-
Tibial tuberosity-
Patellar tendon-
Lateral and medial condyles of the tibia-
Lateral and medial epicondyles of the femur-

Movements of the knee
Extension
Flexion
Hyperextension

Assess Knees
Inspect
Palpate
ROM

Flexion
Extension
Hyperextension
*check both knees

Muscle strength

8. Ankle/Foot
Articulation of :

Landmarks
Medial malleous
Lateral malleous
Metatarsals
Middle Phalanx
Distal Phalanx
Movements of the ankle  
Doriflexion of the ankle  
Plantar flexion of the ankle  
Inversion of the foot  
Eversion of the foot-

Movements of the toes  
Extension  
Flexion  
Abduction  
Adduction  

Inspect  

Palpate  

ROM  
  Plantar flexion-  
  Dorsiflexion-  
  Eversion-  
  Inversion-  
  Flex and straighten toes  

Muscle strength