Muscles that Act at the Knee
Movements (actions) at the Knee

• Flexion
• Extension
• Medial/internal rotation
• Lateral/external rotation
  - *note: most of the rotation occurs when the knee is flexed.
Flexion and Extension

Flexion

Extension
Medial and Lateral rotation

Internal rotation

External rotation
Muscles that produce Flexion

- *Hamstrings:
  - Biceps femoris
  - Semitendinosus
  - Semimembranosus
- *Sartorius
- *Gracilis
- Popliteus
- *Gastrocnemius (also acts at the ankle)
- * Are two-joint muscles
Popliteus

• **Origin:**
  – Posterior/lateral aspect of femur

• **Insertion:**
  – Posterior/medial aspect of tibia

• **Actions:**
  – Flexion, internal/medial rotation of the knee
Gastrocnemius

• **Origin:**
  – Lateral and medial condyles of the femur

• **Insertion:**
  – Calcaneus (via the achilles tendon)

• **Actions:**
  – Flexion at the knee
  – Plantar flexion at the ankle (primary action)
Muscles that Produce **Extension**

- The muscle group known as the “**Quads**”:
  - Rectus femoris*
  - Vastus medialis
  - Vastus lateralis
  - Vastus intermedius
  - *This muscle is a two-joint muscle that also acts at the hip to produce *flexion*. 
Rotation at the knee

• Internal/medial rotation:
  – Popliteus
  – Semimembranosus
  – Semitendinosus

• Primarily occurs when knee is flexed

• External/lateral rotation:
  – Biceps femoris
  – Sartorius