Anatomy

Bones/Landmarks

Pelvis: Sacrum
- Coccyx, tailbone
- Ischial Tuberosity, sitzbone
- Pubic bone
- ASIS (anterior superior iliac spine), hipbone
- Iliac Crest

Chest:
- Scapula, shoulder blade, “wings”
- Clavicle, collarbone
- Sternum, breastbone

Vertebral Column, Spine:
- Cervical (7 – concave “lordosis”), C1 (atlas), C2 (axis) modified to connect head to thorax
- Thoracic (12 – convex, “kyphosis”), T1-T7, with ribs attached to sternum
- T8, 9, 10 with “false” ribs attached to cartilage of T7
- T11, 12 with “floating” ribs

- Lumbar (5 - concave, “lordosis”)  
- Sacrum (5 fused – convex)
- Coccyx (3-4 fused)

Skeletal Muscles

Abdominals*:
- Pelvic Floor Muscles (to “lift”), Kegels
- Transversus abdominis, “girdle”, “corset” (runs laterally from pubic bone to sternum, to pull belly in, “zip up ribs”)
- Internal obliques, “back pocket” (side bending/rotation, also flexion and extension)
- External obliques, “front pocket” (ditto)
- Rectus abdominis, “six pack” (runs vertically from pubic bone to sternum, flexion, assists compression)
- (Diaphragm, “domed roof” for respiration)

Spine movers:
- Quadratus lumborum (from posterior iliac crest to rib 12 and lumbar vertebrae, side bending)
- Multifidus (several layers of very deep, short back muscles, several “directions” all functions)
- Erector spinae group (superior to deep back muscles) main action is extension

Muscles of the (upper) back:
- Serratus anterior (“sandwich muscle”, broad, thin muscle covering lateral ribcage, stabilizes scapula tight against ribcage)
- Trapezius, (large, diamond-shaped, scapula mobilization)
- Latissimus Dorsi, (“armpit muscle”, large muscle attaching humerus to lower 6 thoracic, lumbar, sacral vertebrae, and posterior iliac crest)

Muscles of the pelvis:
- Iliopsoas: Psoas major (from lumbar vertebrae through pelvis to femur, hip flexion)
- Iliacus (from anterior iliac crest to femur, hip flexion)
- Gluteus maximus, buttock (hip extension)

Muscles of the leg:
- Hamstring group (3 muscles - knee flexion, thigh extension, might restrict ROM of hip flexion and pull pelvis into “tuck”)
- Quadriceps femoris group (4 muscles – knee extension)

Questions? Please feel free to ask!
### Movements

<table>
<thead>
<tr>
<th>Spine: movement</th>
<th>flexion (forward fold, curl)</th>
<th>extension (“backbend”, arch)</th>
<th>lateral flexion (left &amp; right)</th>
<th>rotation (twist)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
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<table>
<thead>
<tr>
<th>Pelvis:</th>
<th>neutral</th>
<th>tilt (anterior tilt)</th>
<th>tuck (posterior tilt)</th>
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<tbody>
<tr>
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<thead>
<tr>
<th>Hip Joint</th>
<th>flexion (forward)</th>
<th>extension (backward)</th>
<th>abduction (away)</th>
<th>adduction (together)</th>
<th>internal rotation (knees in)</th>
<th>external rotation (knees out)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image8.png" alt="Image" /></td>
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<tr>
<th>Movement of Thigh in Hip Socket:</th>
<th>flexion</th>
<th>extension</th>
<th>abduction, adduction</th>
<th>rotation of humerus</th>
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</thead>
<tbody>
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<table>
<thead>
<tr>
<th>Shoulder Joint:</th>
<th>flexion</th>
<th>extension</th>
<th>abduction, adduction</th>
<th>rotation of humerus</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image19.png" alt="Image" /></td>
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<td><img src="image21.png" alt="Image" /></td>
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</table>

- movement of arm with stabilization of shoulder blades

<table>
<thead>
<tr>
<th>Shoulder Girdle:</th>
<th>elevation</th>
<th>depression</th>
<th>protraction (abduction)</th>
<th>retraction (adduction)</th>
<th>rotation of scapula</th>
</tr>
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- mobilization of shoulder blades (no movement of the arm)

**Questions? Please feel free to ask!**
Practice

Joint-release & Warm-up exercises (Selection)

**Positions:**
- Standing (also: “upside down”)
- Seated (also: balanced)
- Kneeling (on all fours = cat)
- Side-lying (also: side support, elbow support)
- Prone (also: front support, elbow support)
- Supine (also: back support, elbow support)

**Alignment:**
- Neutral: neutral pelvis, neutral spine
- Cane: neutral pelvis, curled at top of spine
- Tucked: tucked pelvis, long spine
- C-shape: tucked pelvis, curled at both ends of spine

**Stabilization of Shoulders**
- Breathing (directing; pulsing)
- Paddles/angel arms/helicopter/hug-a-tree
- Dead Bug
- Digging trenches

**Stabilization of Pelvis**
- Side bend, also with twist
- Leg slides/knee folds/toe dips/
- Single knee sways/knee stirs/hamstring stretch
- Locust (1-leg, both legs), parachute

**Stabilization of Spine**
- Breathing (directing; pulsing)
- Hip hinge
- (Pelvic clock)
- Puppet arms/shimmies
- Shoulder shrugs/circles
- Leg slides/knee folds/toe dips/
- Dead Bug
- Pregnant cat
- Cross crawl
- Hip escalator marching

**Mobilization of Shoulders**
- Puppet arms/shimmies
- Shoulder shrugs/circles
- Telescope arms

**Mobilization of Pelvis**
- Pelvic tuck, tilt, tailwag, clock
- Double knee sways

**Mobilization of Spine**
- Seaweed Ribs
- Side bend, also with twist, Mermaid
- Spiral, thread the needle, knee-drops
- Curve-overcurve/oscillation, spine undulation
- Spinal peel-down, spinal peel-up
- Cane-shape
- C-shape, mad cat/happy dog
- Hood Ornament, digging trenches
- Hip escalator

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Pilates Concepts

Breathing/Imprinting
Concentration
Control
Centering
Precision
Flow/fluidity of movement
The powerhouse “core” muscles

Pilates Exercises: Level 1 and Level 2* (Selection)

The Hundred
Roll Up
- Roll Over* (Hip Escalator)
- (Knee) / Leg Circles
- Rolling like a Ball
- Co-ordination
- Single Leg Stretch
- Double Leg Stretch
- Single Straight Leg Stretch
- Crisscross*
- Spine Stretch
- (Rowing)*
- Open Leg Balance
- Open Leg Rocker*
- Climb-a-Tree*
- (Corkscrew)*
- Saw
- Swan / Swan Dive*
- Single Leg Kick
- Double Leg Kick*
- Shoulder Bridge/Pelvic Lift
- Shoulder Bridge Series* (marching)
- Spine Twist
- Side Kick series
  - (Side Kicks, Bicycle, Circles, Ovals)
  - (Leg Lifts, Impassé, Hot Potato, Grande Ronde de Jambe)
  - (Banana, Scissors, Heel Beats,)
  - (Inner Thigh Lift)
- CanCan
- Teaser (variations)*
- Leg Pull Front*
- Leg Pull Back*
- Side Lift*
- Swimming (& Breast Stroke)
- Seal
  - Push Up* (Elbow Plank, Full Plank, Push Down)