**High School Course II Pacing Guide**

**TUMBLING:**

***Focus Points:***

1. Move an object
   * Enough force must be applied to change the object’s state of motion (Newton’s First Law).
2. Absorb force
   * Force can be absorbed by increasing the surface area and/or the distance or time over which it is absorbed.
3. Increase balance
   * When receiving an object the force should be received close to the center of gravity so that stability is maintained.
4. Increase force/distance
   * Stabilizing the body segments involved in the motion increases the distance an object travels.
   * Using more muscles increases the distance an object travels.
   * Using stronger muscles (levers: force arm) increases the distance an object travels.
   * The greater the speed of projection, the lower the angle can be for a given distance.
5. Turn an object
   * The shorter the radius of rotation, the greater the angular velocity.
   * There must be an integration of forward linear motion with angular motion to get best results. Angular motion can increase linear speed if the point of release or transfer is at a right angle to the center of rotation.
6. Implication of resistance
   * As velocity increases the resistance is increased (squared).
   * The larger the object the greater the resistance.
   * A streamline position provides less resistance.

***Skills:***

1. Floor Exercise - Transitions:
2. V-sit
3. Front seat support
4. Floor Exercise - Forward Sequence:
5. Log roll
6. Front shoulder roll
7. Squat forward roll
8. (Advanced) Forward roll walk out
9. (Advanced) Pike forward roll
10. Forward roll combinations
11. Floor Exercise - Backward Sequence:
    1. Log roll
    2. Back shoulder roll
    3. Backward roll
    4. Back roll to standing
    5. Backward roll combinations
12. Floor Exercise - Headstand Sequence:
    1. Tripod
    2. Three point tip-up
    3. Headstand
13. Floor Exercise - Handstand Sequence:
    1. Switcheroo
    2. Teeter-totter
    3. Handstand
    4. (Advanced) Handstand roll out
14. Floor Exercise - Lateral Sequence:
    1. Cartwheel
    2. Round off

***Vocabulary:***

Review the components of skill-related fitness:

1. **Agility** – ability to change your body position quickly and to control your body’s movements.
2. **Balance** – An even distribution of weight enabling someone or something to remain upright and steady.
3. **Coordination** – ability to use your senses together with your body parts.
4. **Explosive power** – A quick muscular effort resulting in speed and/or power for a short period of time. Examples include tee shot, batting, tennis serve, basketball rebound, football tackle, etc.
5. **Power** – ability to use strength quickly. Areas most likely to improve with repeated effort.
6. **Reaction time** – amount of time it takes you to move once you realize the need to act.
7. **Speed** – ability to perform a movement or cover a distance in a short period of time.

Review the principles of biomechanics:

1. **Force –** A push or a pull applied to an object or person, measured in pounds or newtons.
2. **Inertia –** The tendency of a body at rest to remain at rest or of a body in straight line motion to stay in motion in a straight line unless acted on by an outside force.
3. **Leverage –** 1. a. The action of a lever. b. The mechanical advantage of a lever. 2. Positional advantage; power to act effectively
4. **Opposition -** The use of body parts on opposite sides of body to increase force and power.
5. **Rotary Motion –** The act of rotating as if on an axis; "the rotation of the dancer kept time with the music.”