

Movement Analysis

1

Biomechanical Assessment

- State performance goals
- Consider influencing factors
- Understand motions and mechanics
- Determine relevant Biomechanical principles and movement techniques
- Observe / measure
 - Qualitative vs. Quantitative
- Assess (evaluate)
- Provide feedback

2

Movement Analysis

- Performance goals
 - Forward 1 ½ ss, tuck position – score > 5
- Influencing factors
 - Springboard type, fulcrum setting
- Motion
 - Approach, flight phase, entry
- Relevant biomechanical principles
 - Forces due to spring
 - Projectile
 - Moment of inertia
- Observe
 - Qualitative: Practice
 - Quantitative: Video
- Assess
 - Identify strengths and weaknesses
- Provide feedback
 - Communicate important information to performer

3

Movement Analysis

- Performance goals
 - 40 K cycling time trial under 1 hour
- Influencing factors
 - Bike, wheels, training, environment (e.g., terrain, elevation, temperature)
- Motion
 - Pedal phases
- Relevant biomechanical principles
 - Aerodynamics
 - Power
 - torque
- Observe
 - Qualitative: bike handling
 - Quantitative: aerodynamic fit
- Assess
 - Identify strengths and weaknesses
- Provide feedback
 - Communicate important information to performer

4

Applying Biomechanics Principles

- An important skill for a physical activity specialist, biomechanist, or allied-health rehabilitative specialist is to:
 - choose the *relevant mechanical principles* that apply to the movement of interest or to a phenomenon occurring inside the body.

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