

Biomechanics Descriptions	Level One Minimums	Level Two Minimums	Level Three Minimums
<p>The biomechanical progressions emphasize technique acquisition in the development of swimmers. The goal here is to provide a step-by-step developmental timeline to keep athletes advancing throughout their careers.</p> <p>The levels focus on both creation of propulsion through sculling and the minimization of water drag during training and races. Both factors are critical in improving overall swimming speed.</p> <p>The distance per stroke cycle (one complete cycle, e.g. right-arm entry to right-arm entry in freestyle and backstroke) is very important to proper biomechanics and must be reinforced as the swimmer progresses through the developmental levels. Research continually shows that long distance per stroke is the most important factor in elite level swimming. Monitoring an athlete's distance per stroke cycle is the simplest, most objective tool that can be used in the field to assess biomechanical technique. Distance per stroke cycle should lengthen as technique improves.</p> <p>Speed is the combination of distance per stroke and the speed those strokes are taken. The challenge of swimming is to maintain the appropriate distance per stroke while increasing the stroke rate. This is achieved by first learned proper form in the water and emphasizing it throughout the swimmers' career.</p>	<p>Physical:</p> <ol style="list-style-type: none"> 1. From a push in prone streamlined body position, defined as: one hand on top of the other, ears between the upper arms, lower body stretched long, and toes pointed. 2. Hold this position for at least one and one-half body lengths, and be able to vary the depth of the underwater push-off. 3. Execute a breakout from a push by holding the streamlined position; then initiate a kicking action and progress to the surface of the water with a pull to the surface. 4. Propel forward in a prone position for at least one length of the pool. 5. Propel forward in a supine position for at least one length of the pool. 6. Maintain a vertical, stationary position with little or no leg movement in deep water, using a sculling motion. 7. The swimmer is certified in racing starts from the blocks. 8. Perform an open turn, either prone or supine, where the hand touches the wall first, the body rotates to place the feet against the wall, the body drops underwater, and the swimmer pushes off in a streamlined position. 9. Stroke progressions. Complete progressions for the freestyle and backstroke. Begin to develop the butterfly and breaststroke. <p><i>Freestyle</i></p> <ol style="list-style-type: none"> A. Complete the legal freestyle technique using arms and legs for one length of the pool. B. Demonstrate hip rolling motion during the freestyle stroke. C. Demonstrate the ability to comfortably take a breath on either the right or left side. <p><i>Backstroke</i></p> <ol style="list-style-type: none"> A. Complete legal backstroke technique using arms and legs for one length of the pool B. Demonstrate hip rotation during the backstroke. <p>Cognitive:</p> <ol style="list-style-type: none"> 1. The swimmer can count strokes of freestyle and backstroke. 2. The swimmer is able to repeat key words as prescribed by the coach to explain and describe movements appropriate to that level. 	<p>Physical:</p> <ol style="list-style-type: none"> 1. Execute a start from the blocks. Hold the underwater streamlined position for one and one-half body lengths, initiate a kicking action for one body length, and progress to the surface of the water with a pull. 2. Execute a legal freestyle, backstroke, butterfly, and breaststroke turn, including an approach of at least 10 yards. 3. Perform legal breaststroke pull outs off each wall. 4. The swimmer performs relay exchanges. 5. The swimmer performs prescribed underwater dolphin kicks for freestyle, backstroke, and butterfly starts and turns. 6. Performs 100 yards of individual medley with legal technique. 7. Stroke progressions. Complete progressions for the butterfly and breaststroke. <p><i>Butterfly</i></p> <ol style="list-style-type: none"> A. Complete one length of the pool with legal butterfly form. B. Demonstrate correct timing of the pull, kick, and breath during the butterfly. C. Demonstrate an undulating motion during the butterfly stroke. <p><i>Breaststroke</i></p> <ol style="list-style-type: none"> A. Complete one length of the pool with legal breaststroke form. B. Demonstrate correct timing of the pull, kick, and breath during breaststroke. C. Perform legal kick with the knees narrower than the feet. <p>Cognitive:</p> <ol style="list-style-type: none"> 1. From a push swimming freestyle the swimmer can accurately count their strokes for a 25 and record their time unassisted. 2. From a push swimming backstroke the swimmer can accurately count their strokes for a 25 and record their time unassisted. 3. From a push swimming breaststroke the swimmer can accurately count their strokes for a 25 and record their time unassisted. 4. From a push swimming butterfly the swimmer can accurately count their strokes for a 25 and record their time unassisted. 5. The swimmer knows the difference between stroke count and cycle count. 	<p>Physical:</p> <ol style="list-style-type: none"> 1. The swimmer can perform a legal 200 Individual Medley. 2. The swimmer can perform 100 yards of each stroke legally. 3. The swimmer can perform the age appropriate distance event. <p>Cognitive:</p> <ol style="list-style-type: none"> 1. From a push the swimmer can accurately match their stroke count to their time for repeat 25's freestyle. 2. From a push the swimmer can accurately match their stroke count to their time for repeat 25's backstroke. 3. From a push the swimmer can accurately maintain their time while improving their stroke count for repeat butterfly 25's. 4. From a push the swimmer can accurately maintain their time while improving their stroke count for repeat breaststroke 25's.
Date Achieved			

Level Four Minimums	Level Five Minimums	Level Six Minimums	Level Seven Minimums	Level Eight Minimums
<p>Physical:</p> <ol style="list-style-type: none"> The swimmer performs a 400 IM with correct turns and transitions. The swimmer can adjust their stroke rate in reference to descend sets. The swimmer is able to maintain a consistent time or pace. The swimmer is able to achieve the following score in swimming golf: <ol style="list-style-type: none"> 4 X 50 Free @ :55 4 X 50 Back @ :55 4 X 50 Breast @ :60 4 X 50 Fly @ :55 <p>Cognitive:</p> <ol style="list-style-type: none"> The swimmer understands the relationship between distance per stroke, stroke rate, and swimming with speed. The swimmer can name two ways to minimize resistance or drag from the water. The swimmer can explain one reason why sculling is important in creating propulsion. The swimmer swims with prescribed breathing patterns during practice and meets. 	<p>Physical:</p> <ol style="list-style-type: none"> The swimmer completes 200 yards or each stroke legally. The swimmer is able to maintain stroke rate over the course of their swim. The swimmer is able to maintain proper technique under increased training loads. The swimmer is able to achieve the following score in swimming golf: <ol style="list-style-type: none"> 6 X 50 Free @ :50 6 X 50 Back @ :50 6 X 50 Breast @ :55 6 X 50 Fly @ :50 <p>Cognitive:</p> <ol style="list-style-type: none"> The swimmer, with the assistance of his or her coach, can calculate swimming speed, distance per stroke, and stroke rate during competition and training. The swimmer can manipulate stroke rate and distance per stroke to vary speed. 	<p>Physical:</p> <ol style="list-style-type: none"> The swimmer is able to achieve the following score in swimming golf: <ol style="list-style-type: none"> 8 X 50 Free @ :45 8 X 50 Back @ :45 8 X 50 Breast @ :50 8 X 50 Fly @ :45 <p>Cognitive:</p> <ol style="list-style-type: none"> The swimmer can calculate swimming speed, distance per stroke, and stroke rate. 	<p>Physical:</p> <ol style="list-style-type: none"> The swimmer continues to improve distance per stroke and/or swimming speed during competition and training. The swimmer is able to achieve the following score in swimming golf: <ol style="list-style-type: none"> 10 X 50 Free @ :40 10 X 50 Back @ :40 10 X 50 Breast @ :45 10 X 50 Fly @ :40 <p>Cognitive:</p> <ol style="list-style-type: none"> Stroke and speed control <ol style="list-style-type: none"> The swimmer can swim faster by decreasing cycle count and maintaining stroke rate. The swimmer can swim faster by increasing stroke rate and maintaining cycle count. The swimmer can choose precise cycle count and stroke rate combinations for different races. 	<p>Physical:</p> <ol style="list-style-type: none"> The swimmer continues to improve distance per stroke and/or swimming speed during competition and training. The swimmer is able to achieve the following score in swimming golf: <ol style="list-style-type: none"> 12 X 50 Free @ :35 12 X 50 Back @ :35 12 X 50 Breast @ :40 12 X 50 Fly @ :35