



Chapter 5: Skills and Mechanics

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Part 1: Basic Biomechanics

Topic Questions:

1. What are three forms of resistance that affect swim performance?
2. How can resistance be decreased?
3. How can propulsion be increased?
4. Why should a swimmer learn to monitor stroke count and stroke rate?
5. What are some basic biomechanical terms that all coaches can use?

In order to correct and build swimming strokes with young athletes, the coach must first understand some of the crucial principles of speed and stroke development. The continued success of a swimmer depends on stroke technique basics learned by the swimmer and reinforced by the coach. Two basic principles are:

1. **Decrease Resistance.** For most swimmers, the fastest way for a swimmer to improve is to decrease resistance as the body moves through the water.
2. **Increase Propulsion.** After reducing resistance, the swimmer must then increase propulsion.

Resistance

Water resistance affects a swimmer in different ways. One way is through the impact of water with a swimmer and the subsequent flow of water around the body. This is called “form resistance.” Another way is through water turbulence and waves that are created by moving water. This is called “wave resistance”. A third way is through water sticking to a swimmer's suit or skin and creating “friction resistance”. These three resistance components all have a negative effect on swimming performance and should be reduced whenever possible.

- **Form resistance** is the most significant type of resistance and a swimmer's technique influences it tremendously. Form resistance is the resistance from the water that is dependent upon body position. The more horizontal the body position becomes in the water, the more form resistance decreases. Swimmers should try to stay up near the water surface (especially with the hips) during all strokes. A slanted body position will enlarge the frontal surface area in the vertical direction and increase the resistance. Extreme lateral swaying in the water is another example of increasing the resistance due to greater frontal surface area. Simply put, try to make swimmers look more like racing boats than barges.
- **Wave resistance** is caused by turbulence at the water surface created by the moving swimmer. Again, the canoe shape is critical so that water flows easily and smoothly around the shape. Resistance rebounds off the sides and bottom of a pool, which is why deeper pools are generally considered "faster" pools. What can the swimmer do about wave resistance? First, push off underwater, not on top. Research shows that a push-off that is .6 meters deep is 20% more efficient than a push-off that is .2 meters deep. Second, when swimming in the end lane in competition, stay away from the side walls.
- **Friction resistance** originates from the contact of the skin and hair with the water. Well fitting suits and swim caps are elementary ways to reduce friction resistance. Swimmers shave body hair before important meets to minimize the effects of friction resistance. Note that friction resistance is probably the least significant resistance a swimmer faces. When dealing with young swimmers there are philosophical questions involved in encouraging or discouraging shaving body hair and purchasing expensive racing suits. A coach should review his or her position on the use of these suits and on shaving because it will become an issue with parents at some point.

Decreasing Resistance

Streamlining and adjustments to body position and body balance are two ways to significantly reduce resistance.

- **Streamlining.** The first “stroke” that the coach should teach is underwater swimming with streamlining. The hydrodynamic principle of streamlining applies to all four strokes. The streamline position should be used during starts and turns when the body is completely submerged underwater. The head placement is most critical to minimizing the water resistance. The most streamlined position is with the ears just slightly above the arms and the arms squeezed as tightly as possible. Just the slight motion of lifting the head doubles the resistance from the water. Often the head will lift before breaking the water surface after starting or turning, even at the elite level. This doubling of the resistance can add up to precious tenths of seconds, especially during races of long duration. The resistance is not dramatically affected if the head is placed forward toward the chest.



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- **Body Position and Balance.** The human body tends to float upright in the water. This position is created by a center of gravity located somewhere near the hips and the center of buoyancy located in the lungs. Thus, the upper body tries to lift and the lower body tends to sink. A swimmer must “balance” his or her upper and lower body in the water so that both are perfectly horizontal in the water – the optimal position for fast swimming. This can occur in several ways:
 - Put the arms and hands above the head, out in front of the body in the water. This shifts weight forward and thus moves the center of gravity closer to the center of buoyancy.
 - “Lower the head” by placing the chin closer to the chest. Lowering the head helps raise the hips and legs by shifting the center of gravity forward, closer to the center of buoyancy.
 - Push the “buoy” or lungs downward. This brings the center of gravity closer to the surface.

Decreasing resistance is a major key to improvement. If the swimmer does not decrease resistance, the natural tendency to get the body into position is to kick harder. Kicking hard is extremely important to fast swimming, but it should not be emphasized to compensate for poor body position. Decrease resistance and kick hard... don't kick hard because of high resistance.

Propulsion

The next step is to increase propulsion. Propulsion is primarily achieved by a direct application of force on the water in a backwards direction. In other words, in order to most effectively move the body forwards, swimmers should generally focus on pressing on the water with their palms and forearms facing toward their feet as much and as long as possible. There are several forces at work that create propulsion. Lift forces are created by the sculling motion of the hands and forearms (and the feet in breaststroke) while drag forces are the result of pressing the water “backwards” toward the feet. These concepts are more fully explored in the ASCA Level 2 Stroke School.

- **Sculling.** The phrase, “feel for the water,” is used by coaches to describe a swimmer who has natural ability with strong skill potential. It seems difficult to teach a “feel for the water,” but it is fairly easy to recognize. The best way to develop this kind of sensitivity is through sculling drills. Sculling drills emphasize the initial motions that set up all of the strokes and help to develop “feel for the water.”

Monitoring Biomechanical Improvement

Helping athletes to improve strokes and stroke efficiency is one of the most important jobs of a coach. It is even better to be able to objectively show the athletes how much they are improving. This can be done by monitoring stroke count (ie. distance per stroke) and stroke rate. All that is needed are a stopwatch and the ability to count.

- **Stroke Count and Distance Per Stroke.** One of the easiest ways to monitor stroke technique improvements is to measure distance per stroke. To monitor an athlete, simply count (or have the athlete count) the number of strokes taken per length of the pool. Stroke technique improvement would be achieved when the athlete is swimming faster for the same number of strokes or swimming the same pace with fewer strokes. Stroke count is a good indicator of the development of muscular endurance.
- **Stroke Rate.** Many young swimmers cannot consistently maintain successful stroke rates. While we don't want them to “spin their wheels” they must attain – and more importantly – **maintain** a stroke rate that generates some speed. Measure stroke rate by timing five complete stroke cycles. As the swimmer's left index finger enters the water in freestyle, start the watch. (Consider the first entry “zero.”) Watch and count the left index finger entries and stop the watch after the 5th complete cycle. Multiply by 2 and then shift the decimal to get a measurement of seconds per cycle.
 - For example: 5 cycles = 11.03 seconds
 - Multiply by 2 = 22.06
 - Shift the decimal = 2.20 seconds per cycle.

Teach the swimmers to be aware of their stroke rates and check it from time to time during sets. Then do sets as “stroke rate sets” or “stroke count sets” to monitor biomechanical improvement. Maintaining sufficient stroke rate (while



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decreasing stroke count and therefore increasing distance per stroke) is the most important evidence of biomechanical improvement.

Muscular Strength and Power

A coach can also work to improve the muscular strength of the athletes so they can increase the power they bring to exert on the water. Physical activity in and out of the water can improve athleticism and muscular strength. Of course, all dryland work should be age appropriate. (See earlier Chapter 4 on growth and development.)

Biomechanics Terminology

With coaches using a variety of terms or descriptions to describe biomechanical movement, there is a need to standardize terminology and utilize descriptions that can be used by coaches all across the country. Although many terms have survived the ages and have been used for decades, there are a number of new terms that more clearly describe aspects of stroke technique.

- **Body line.** Also called posture, or just line; an imaginary line from the head to feet through the center of the body. Body line has a direct influence on resistance forces opposing the swimmer's forward motion through the water. Typical symptoms of poor body line are low hips, an arched back, low legs and a high head position. Most body line issues are related to head position and/or breathing mechanics.
- **Spine line.** An extension of the body line in that a straight spine line (tail bone to the base of the skull) is essential in all strokes.
- **Connectivity.** The ability of the upper and lower body to work together instead of independently. A swimmer who is well-connected (to the core) is able to use the arms and legs in concert with the torso/hips to generate propulsion. A swimmer who is not connected is not using power efficiently.
- **Balance.** An action/reaction relationship in swimming. Like a see-saw, when one side goes up, the other side goes down. Loss of balance can be used to describe what happens when a swimmer lifts the head to breathe and an arm presses down on the water to counteract that action. Or, if a swimmer over-rotates the shoulders versus the hips to breathe, there may be a wide scissor-like kick to balance the twisting of the upper body. Typically, if swimmers hold their lines, they won't have balance issues.
- **Tone.** Also referred to as tension or stiffness and related to body line and connectivity. If there is minimal tone/tension/stiffness in the body the swimmer will probably not have a good body line or be well-connected. Having good tone is about having a tight core (locked together upper and lower body) and applying full body-based force to the water during propulsive phases.
- **Anchor.** The establishment of a solid/stable catch position as the swimmer applies leverage through the core to propel the body towards and then past the anchor position. (The arm can never be completely anchored in the water and won't stay completely in one place, but the term is a great visual and descriptive term that negates the use of the term pull.)



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Part 2: Freestyle

Topic Questions:

1. What are the essential freestyle skills?
2. What is the freestyle skill teaching progression?
3. What are some effective freestyle drills?

Freestyle is the primary training stroke used by swimmers. It is the first stroke a coach should teach and emphasize with novice swimmers. Strong quality kicking is essential in the ability to swim freestyle and perfect the arm stroke mechanics.

The Essential Skills

The essential skills in freestyle include:

- Kicking
- Body position and alignment
- Ability to hold the head steady
- Roll to breathe, keep head low
- Controlled and relaxed recovery, high elbows
- No splash entry
- Anchoring the hand and forearm in the water, fingers down
- Distance per stroke
- Acceleration

Skill Teaching Progression

Good freestyle technique begins with strong kicking and an emphasis on both the streamlined position and the side glide position. Emphasize that freestylers swim by switching from side to side rather than by lying on the front.

- Kicking: with a board, without a board, head down streamlined
- Side glide
- Side glide with switching sides
- Three strokes to side glide
- Perfect stroke without breathing; with breathing

Drills

- Sculling
- Side glide and side glide with switching
- Zipper drill or fingertip drag drill
- Catch-up

Key Phrases

- Fast feet
- Splash equals slow
- Extend, rotate, breathe - together
- Extend arm forward
- Fingers down
- Elbow up
- Thumb your thigh

Freestyle Teaching Questions and Answers

- The back of your head is..... in line with the spine
- Eyes look.....down
- Splash equals.....slow
- Swim freestyle on your.....side
- How much rotation?...About 40 degrees to each side Shoulder should never go directly below the face.



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- What part of your hand goes in the water first?.....index and middle fingers
- Where does your hand go in the water?.....In front of your shoulder with the elbow high
- What is putting your arm in the water like?.....putting it through a hole
- What is the first thing your hand does?.....reach / extend forward
- What is the first part of the pull?.....fingers down, elbows up, palm/forearm facing back
- What is the second part of the stroke?Hand pulls straight back, along the line of the shoulder and side of the body. Maintain hand/forearm facing back. Elbow remains high.
- What is the last part of the stroke?.....Accelerate through the finish until you thumb your thigh, lift your elbow high
- How do you recover?.....Touch your thigh, elbow high; hand below your elbow
- How do you describe your handing speed through the water?.....it accelerates
- What should the breath be like?Keep head low and in line with spine. Keep one goggle in the water and breathe in the pocket.
- When do you breathe?Turn your head while your hand is entering the water. Turn the head back quickly (before the other arm enters).
- Biggest mistakes on breath? (1) Rotating too much (2) Breathing and turning the head back too late.
- Your feet are.....fast feet
- What is the kick like?.....a whip
- Describe the kick? Up straight, snap down

For specific drills, see Chapter 5 of the Foundations of Coaching DVD.



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Part 3: Backstroke

Topic Questions:

1. What are the essential backstroke skills?
2. What is the backstroke skill teaching progression?
3. What are some effective backstroke drills?

Backstroke is the companion stroke to freestyle and should be the second stroke taught, often simultaneously to freestyle. Both are considered long axis strokes because the entire body moves on the same axis. Many of the same principles apply to both strokes. Strong quality kicking is essential in the ability to swim backstroke and to perfect the arm stroke mechanics. Note that roll and rotate are used interchangeably. Young children more readily understand the concept of “rolling the body” and need to be taught the concept of “body rotation.”

The Essential Skills

- Kicking
- Body position and alignment
- Steady head
- Rolling/rotating the body
- Alternating arms in steady rhythm
- No splash entry
- Anchoring the hands in the water
- Good underwater catch with deep arms, up and over recovering
- Acceleration

Skill Teaching Progression

Like freestyle, good backstroke technique begins with strong kicking and an emphasis on both the streamlined position and the side glide position. Emphasize that backstrokers swim by switching from side to side rather than by lying on the back.

- Streamline kicking
- Streamline kicking to one arm pull and side glide
- Streamlining kicking to one arm pull, side glide and switch sides, adding cycles

Drills

- Kicking, one arm overhead, one arm at side
- Kicking, streamlined with or without a board
- Side glide and side kicking
- Streamline kicking to one arm pull to side glide and switch sides
- One arm backstroke

Key Phrases

- Splash equals slow
- Freestyle and backstroke are the same stroke
- Palm always facing towards feet
- Fingers pointing towards the side of the pool
- Deep and straight
- Bend elbow early when hand is about 12-18 inches under water
- Deep, up and over
- Don't push the hands down
- Roll/rotate the hips, shoulders follow
- Follow through on the finish
- Steady head



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Backstroke Teaching Questions and Answers

- Where do your hands go in the water?....with the arms straight at 11 o'clock and 1 o'clock
- What part of your hand goes in the water first?...little finger
- Where are your fingers pointing on the entry?....Out
- After the entry, what do you do?.....roll to complete the body rotation, catch deep with a bent elbow
- The first part of the stroke is.....deep and straight.
- The catch is.....with a bent elbow
- How deep?about 12-18 inches underwater.
- Palm and forearm face..... towards the feet.
- What is the second part of the stroke?....Pull straight through. Maintain palm and forearm pushing directly back towards feet.
- Where does your hand finish the stroke?....to the side, deeper than the hips
- What part of the hand recovers first?....the thumb
- The speed of the hand through the stroke is.....accelerated from s-l-o-w to fast
- What helps the body to roll?...a strong follow-through on the finish
- What causes overreaching or entering with the back of the hand?Not using the finish to roll the hip
- What do your shoulders and hips do?.....roll and rotate (about 30-40 degrees)
- What does your head do?.....stays steady
- Where are your ears?.....at water level
- What is the kick like?.....like kicking a ball on the surface of the water
- Where are your eyes looking?.....up and slightly back

For specific drills, see Chapter 5 of the Foundations of Coaching DVD.



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Part 4: Breaststroke

Topic Questions:

1. What are the essential breaststroke skills?
2. What is the breaststroke skill teaching progression?
3. What are some effective breaststroke kick drills?

Body position and timing are crucial in breaststroke. Swimmers should be taught to return to the streamline position at the conclusion of every stroke cycle. There are many style variations in breaststroke. It may be easier to teach a traditional breaststroke style and then modify the stroke to fit the swimmer. Breaststroke is a short axis stroke because unlike freestyle and backstroke, the entire body does not rotate on one long axis.

The Essential Skills

- Timing: pull, kick, glide
- Lean forward and “swim downhill”
- A kick that pushes water back
- Wide arm stroke
- Late breath

Skill Teaching Progression

- Kicking on wall, kicking on back, kick on belly
- Kick with/without a board: “breathe, kick, glide”
- Kinesthetic teaching of arm stroke on pool deck
- Full stroke emphasizing glide in streamline position

Drills

- Sit on the side of the pool and kick “up to the wall, toes out, push back together”
- Kick on back with/without board
- Kick on belly with/without board/face in “breath, kick, glide”
- Kick on front, hands down, touch heels to hands “up, kick, dive”
- Sculling while sitting on kickboard
- Foam “noodles” in the arm pits

Key Phrases

- Whole stroke: (1) Scull out (2) Pull towards the body, breathe (3) Recover arms, set-up kick (4) Extend arms, kick back (5) Stretch
- Pull, kick, glide
- The kick: Heels up, toes out, push back
- Breathe late, at end of insweep of hands
- Hips at surface

Breaststroke Teaching Questions and Answers

- What is the goal of breaststroke?to maintain forward speed at all times
- Where do swimmers lose speed?At the peak of the breath by going too high and getting too vertical.
- Where do the hands begin the stroke?.....arms extended, below the surface
- What begins the stroke?.....little finger turns up
- Where does the first part of your stroke go?....Out
- How wide do you go?....way outside your shoulders
- Then what?Hands “turn the corner.” (Rotate so that the hand/forearm face towards the chest.)
- Where do your hands point on the sweep in?Inward and towards the feet.
- Where do the hands finish the in-sweep?.....In front of the chest, below the neck
- The hands recover.....fast. Push forward with the elbows.



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- When do you breath?Late, at the end of the insweep of the hands. (When your hands and elbows are under the chin.)
- Where is your head during the stroke?in line with the spine, looking slightly downward.
- How do you kick? heels up, toes point out, kick straight back.
- What is the timing of the kick.....start the kick with the arm recovery, kick back when arms are extended.

For specific drills, see Chapter 5 of the Foundations of Coaching DVD.



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Part 5: Butterfly

Topic Questions:

1. What are the essential butterfly skills?
2. What is the butterfly skill teaching progression?
3. What are some effective butterfly drills?

As in breaststroke, body position and timing are crucial in the butterfly. Butterfly and breaststroke are referred to as short axis strokes because of the varying body movement of the upper half versus the lower half of the body; the body is not moving on one long axis as in freestyle and backstroke. Butterfly is a rhythm stroke with the rhythm driven by the body position. The body rolls through the water by moving the chest down and hips up, then chest up and hips down.

The Essential Skills

- Kicking
- Timing
- Low splash entry
- Body position

Skill Teaching Progression

- One pull and “dive” or press. (The downward chest press brings the hips up and creates the kick. Young swimmers may not understand the concept of “chest press” and will more readily understand “diving” slightly underwater.) “Hands go in, hips go up” is a visual concept for teaching.
- All types of dolphin kicking (with a board, streamlined without a board, under water)
- Pull and kick, then kick again (kick when hands leave the water, kick when hands enter the water.)

Drills

- One arm fly
- 3 kicks per stroke; dive under and streamline
- Right arm, left arm, both arms

Key Phrases

- Drive forward on entry and extension
- Kick in, kick out: arm entry kick and arm exit kick
- Hands go in, hips go up
- Press down with chin and chest
- Stretch out, look at the bottom
- Breathe low
- Controlled and relaxed recovery
- Back of the head in line with the spine. Don't lift to breathe.

Butterfly Teaching Questions and Answers

- Where do the hands go in the water?.....in front of the shoulders
- Where are the elbows?.....up
- What part of the hand goes in the water first?.....first two fingers
- What are three things you do when your hands enter the water?....stretch out, chest down, hips up
- How much should a swimmer press down with the chest?Enough so that the hips come up and to help the arms drive forward.
- Describe the first part of the pull.....fingers down, elbows stay up, hand/forearm face back
- Describe the second part of the stroke.....hands travel inward to meet under the chest, elbows up
- What happens on the third part of the stroke?....hands sweep out fast
- What part of your hand comes out of the water first?.....little finger



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- When do you breathe?.....Head comes out when arms are under chest, head comes back in just before the arms enter
- What should the breath be like? Low to the water. Breathe forward, head in line with spine. Don't lift head up too much or arch the back to breathe.
- Where do the eyes look when you breathe?forward and down
- When your arms extend forward, where do you hips go?.....up
- When do you kick?.....kick when your hands enter, kick when your hands leave; entry kick, exit kick
- Is one kick bigger than another?No, they are both strong
- How do you recover?.....arms straight, bend when even with the shoulders

For specific drills, see Chapter 5 of the Foundations of Coaching DVD.



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Part 6: Starts

Topic Questions:

1. What are the progressions for teaching forward starts, backstroke starts and relays starts?
2. What are the safety issues that must be addressed?

Following are some considerations and instructional hints for teaching racing starts to young and/or inexperienced swimmers. Safety is a major concern when teaching starts, especially head first entries. Be sure to tell swimmers of the potential dangers and that they can get hurt doing the start incorrectly or fooling around on the starting blocks. Follow teaching progressions recommended in Safety Training for Swim Coaches and ensure that swimmers can execute a shallow head first entry before attempting to teach racing starts. Be aware that USA Swimming rules mandate minimum water depths for both teaching racing starts and for using starting blocks in competition. Have all swimmers first demonstrate the ability to do shallow head first entries into deep water. If swimmers are fearful or unable to complete a shallow head first entry, teach or review the process. Refer to The American Red Cross [Safety Training for Swim Coaches supplement](#), pages 12, 13 and 14 for teaching progressions. Backstroke starts can also involve danger in that the swimmers are moving backwards and cannot see what is behind them. Do not allow swimmers to practice any racing starts unsupervised. Use caution when practicing movements on a wet pool deck which may be slippery.

Forward Start (Freestyle, Breaststroke and Butterfly)

Description

Swimmers can use either a grab start with two feet forward or a track start with one foot back. Dependent upon their age and development, swimmers may feel better balance in the track start.

- Strong leg back, toes straight ahead
- Other leg forward, toes over the edge
- Hands grab block on each side of front leg, thumbs forward
- Look down or slightly back
- Forward knee over the toes, hips over the heels
- Lean forward

Actions

- Pull down for an instant
- Head and arms thrown forward
- Drive with the legs
- Perform a shallow dive

Mistakes

- Leaning back excessively
- Head too far up or too far down. (Keep head in neutral position after leaving block)
- Hands or head thrown too high
- No leg push
- Breaking at the hips or executing a start in the pike position

Progression

- Swing jumps on deck
- Swing jumps from the deck into deep water
- Swing jumps from the blocks into deep water
- Swing dives from the blocks into deep water

Coaching

- Safety warnings
- Awareness of water depth with appropriate warnings and instruction
- Remind swimmers to execute a shallow dive
- Stand next to the block
- Check start position and make adjustments
- Ask "what goes out?" (hands and head)
- Ask "how do you enter the water?" (shallow)



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Note

- Teaching dolphin kick off of the forward start may not be appropriate for young or inexperienced swimmers. There is a documented tendency for young or inexperienced swimmers to hit the knees or toes on the pool bottom in shallower water

Backstroke Start

Very young swimmers often cannot reach the handles on the starting blocks intended for backstroke starts. Teach them to start by gripping the gutter.

Description

- Strong foot slightly lower than the other foot
- Feet shoulder width apart
- Bring head toward the wall, not up, but in
- Hips point down the pool, not next to the heels
- Knees at 90 degrees
- Arms bent, head down

Action

- Hands, head, legs, in that order
- Arms throw out and around
- Head goes back
- Legs drive

Mistakes

- Pushing legs first
- Head too far back
- Going too deep
- Hands thrown straight over head
- Slipping caused by pulling up too high or improper foot placement

Progression

- Quarter squat jumps on dry or non-slippery deck
- Arm throw on dry or non-slippery deck
- Off the ladder in the deep end

Coaching

- Safety warnings
- Awareness of water depth with appropriate warnings and instruction
- Stand next to the block
- Check start position and make necessary adjustments
- “Push your belly to the sky”

Relay Starts

Swimmers love relays, both in practice and in meets. Teach them right away to do correct relay starts. “Step” relay starts are probably not appropriate for young and/or inexperienced swimmers.

Position

- Feet are shoulder width apart, toes over the edge
- The back is parallel with the water surface
- Arms outstretched at about 45 degrees
- Knees slightly bent

Action

- Arms lift, head drops and the body begins “falling”
- Arms swing up, back and around (in a clockwise movement) and coordinate with a leg drive as they swing through and forward

Progression

- Stand on deck, hands out front at 90 degrees to torso



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- Move arms up and around
- Swing and jump
- Swing and jump from side of the pool
- Swing and dive

Coaching

- Teach safety. Be sure of headfirst entry skills and racing start skills before teaching relay starts
- Practice the movements first without having a swimmer in the water
- Stand beside block and check body position
- Ask for key words: swing, dive
- Once the swimmer can perform the movements, have the swimmer do the skill with a swimmer in the water approaching the wall.
- Remind the swimmer in the water to stay low until the swimmer leaving the blocks has completed the entry
- Practicing without blocks is potentially dangerous. The swimmer in the water must stay low in the water and could be advised to stay on one side of the lane until the swimmer executing the start has completed the entry.



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Part 7: Turns

Topic Questions:

1. What are the common aspects of all turns?
2. What are some drills to teach and improve turning and push-off techniques?

Push-offs

Before teaching turns, teach the swimmers how to do push-offs. Every turn is followed by a push-off in the streamlined body position. Practice push-offs and insist on correct push-offs at all times during practice.

Position

- One hand on the gutter, one hand pointing to the other end of the pool
- Feet on the wall, toes and knees pointing up at 45 degree angle
- Key words: sink, touch, push

Action

- Hand comes off the wall as the body sinks, staying on the side, head up
- Hands touch, legs push, keeping body on the side
- Key words: streamline, kick, swim

Freestyle Turns

Be sure that swimmers have learned to push-off on their sides. Practice the approach to the wall emphasizing strong kicking and swimming into the wall without taking a breath. A good drill is mid pool turns where the swimmers practice the approach and turning action without the use of the wall.

Progression

- Approach only
- Approach, tuck and turn
- Approach, tuck, turn and push off on back

Backstroke Turns

Having learned a freestyle turn, swimmers can progress to a backstroke turn. The turning mechanics are the same. The swimmers must know when to roll to the back to initiate the turn. Have them count their strokes from the flags to the wall, then subtract one stroke. For example if they take four strokes from the flags to the wall, to initiate the turn they would take three strokes and make the fourth stroke a stroke across the body which turns the body onto the breast. Swimmers love to practice swimming corkscrew to learn the roll from the back to the breast.

Freestyle and Backstroke Turn Questions:

- Where do you finish your swimming?.....before the T
- Where are your hands when you approach the wall?....by the hips, palms down
- What begins the turn?....a dolphin kick
- What do you do with your head?.....tuck tight
- Where does your head go?....to your hands
- Where do your feet hit the wall?....about a foot deep
- Where are your toes pointing when they hit the wall?.....about a 45 degree angle from straight up
- Where are your toes pointing when you push off the wall?....same place, 45 degree angle from straight up
- What is pushing off the wall like?....jumping off a trampoline
- Where are you looking when you push off the wall?....slightly to the side
- After the feet leave the wall, what do you do?....streamline, kick swim
- What hand do you pull with first?....the deep arm

Breaststroke and Butterfly Turns

The basic motion of both turns is rotating back, not around. Be sure to review push-offs and the push-off position and emphasize pushing off on the side. Have swimmers practice the touching and turning technique against a wall or fence prior to practicing the skill in the water. Then, practice holding on to the side of the pool kicking. Go through the 2-1-0-blast-off sequence (see below.)



FOUNDATIONS OF *Coaching*

Breaststroke and Butterfly Turn Questions

- Do we touch with short arms or long arms?.....long arms
- How do we touch the wall?....fingers at water level, shoulders even
- What three things happen after the touch?.....head back, elbow to the side, tuck toward the wall
- What happens first?.....They all happen at the same time
- Where is the head looking?.....up
- What is the countdown?.....2-1-0-Blast-off
- What is the 2?....two hands on the wall
- What is the 1?.....one hand on the wall
- What is the zero?.....nothing on the wall
- What is the blast-off?....feet kick the wall away
- Where are the toes pointing on the blast-off?.....up and slightly to the side
- Push off on your.....side

Breaststroke Pullout Training Drills

The timing of breaststroke pullouts can be taught through counting 3-2-1. Streamline and count to 3, pull down past the hips and count to 2, then recover and streamline for a one count before initiating the stroke. Young children (and older ones too) like to “count large animals.” Streamline and count “1 elephant, 2 elephants, 3 elephants,” then pull down past the hips and count “1 elephant, two elephants,” recover the arms and count “1 elephant” and then begin the stroke.

Practice drills include double pullouts after a turn, pullouts to a cone placed on the bottom and pullout contests.

Note that a single dolphin kick is now a legal part of the breaststroke pullout. The kick is part of the pull-down sequence, not a separate motion. The pull-down thus becomes similar to a butterfly stroke.

Butterfly Push-off and Breakouts

Teach swimmers to push-off on their sides in the streamline position and use underwater dolphin kicks to rotate the body onto the breast before beginning the arm stroke. Practice increasing the distance and adjusting the depth and alignment of the body kicking through hoops, kicking to a cone placed on the bottom or kicking underwater across the pool. Young swimmers will get a better feel for the kicking motion by kicking with fins.