Freestyle Checklist
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Phases of the Freestyle
  1. The arm stroke
  2. The kick
  3. Body Position
  4. Body role and breathing

Arm stroke
The arm stroke produces 70 – 90% of the velocity in the water and can be divided into six phases –
1) Entry or put in
2) Glide-phase/Stretch
3) Pull-phase/Catch
4) Push-phase
5) Up-Sweep
6) Pull-over

1) Entry
- The arm enters the water directly inline with and in front of the shoulder with the elbow flexed and the palm facing outward.
- The hand touches the water before the elbow.

Hands enter the water before elbow ahead of the shoulder. Hand is turned out at entry.
2) Glide-phase
- Following the entry, the arm stretches forward and the palm of the hand points downwards.
- The arm will choose the best position to pull through; the hand “grabs” the water and acts like a prop on the water.
- During the recovery, the arm is kept high and above the water, so there is less resistance, while the other arm completes its underwater stroke.

3) Pull-Phase
- The arm moves from the point of entry into the water to being perpendicular to the shoulder.
- The arm starts the phase with a slight flexion in the elbow and almost 90° at the end of the phase.
- The palm of the hand will be facing backwards with the elbow staying at its highest point possible. The ideal arm position at mid-stroke is with the elbow opposite the shoulder and the upper arm parallel to the surface of the water - the elbow is kept high in the water to engage the powerful medial rotators of the shoulder during the pull back of the arm. The lower arm is pointing to the bottom of the pool, and the palm is facing backwards. A common error in the front crawl is to drop the elbow to a position under the shoulder, which will weaken the arm pull considerably.
- The hand moves first to the side and then back to under the shoulder, while pressing down and out and then back on the water.
- The wrist should be flexed and the palm should be pitched outward.
4) Push-Phase
- This phase starts when the arm is perpendicular to the pool bottom, under the shoulder, until the time when the arm and the hand leave the water.
- The hand sweeps downward and then inward toward the midline of the body. It moves back towards the hips, following a certain “S” shaped pattern. The elbow will never be fully extended. The hand moves from the mid-line in the pull-phase, to the lateral aspect of the mid-torso, then returns to the mid-line near the belly-button, and finishes with a sweeping motion back.
- The hand should remain at the same depth throughout the entire stroke, because the hand should be stationary in the water while the swimmer pulls their body over it.

5) Up-Sweep
- If the end of the push-phase is performed properly, with the elbow leaving the water first with the hand being the last part to leave (specifically the little finger).
- During the up-sweep the hand will remain as close to the body as possible.

6) Pull-Over (Recovery)
- The hand passes the head, a high elbow and unbent wrist: forearm and hand hang below the elbow. A good position is one in which the upper arm is pointing to the top of the pool in a near-vertical position. The fingers may just brush the top of the water as the arm is rotated forward into the next arm pull
- The higher the elbow and the tighter to the hand is to the body, the more energy is conserved due to decreasing the moment of inertia of the arm about the shoulder joint.
- A wide arm sweep with elbows extended can also produce unwanted rotation of the whole body to take up the action of the arms about the vertical axis.
- The recovery phase can take place faster than the pull-phase, because of this the athlete will rotate their shoulders about the vertical axis, extending and reaching in front of the body allowing for a longer recovery phase to counter the propulsive arm.
Body rotates about the longitudinal axis, allowing longer pull during recovery of opposite arm. High arm recovery will reduce unwanted roll.

The kick:
- Positioned shallower in the water than in the backstroke; leg kick is quite deep with maximum knee angle close to 115°
- Legs should not break the surface of the water during kick- kick is an underwater skill
- Legs should not kick too deep towards the bottom of the pool, otherwise increase drag due to legs as increase frontal area of the body
- Should use a 6 beat kick to maintain body position and aid in propulsion; 6 leg kicks for every arm cycle
- Kicking is less important in the freestyle than in the backstroke
- Propulsive force of the kick is on the upbeat; feet are plantarflexed and toes are pointed toward the back of the pool during the entire kick
- Knees bent for upbeat and extended for the down beat

Body Position
- The body position should be horizontal with the trunk as level as possible. This allows for the least amount of resistance during the contra-movements.
- The body rotates around the longitudinal axis that runs from head to toe through the body. The shoulder girdle should rotate from a level position to one in which the shoulder line is at 35° to the water line (see diagram above). A common error seen in freestyle swimmers is asymmetry in the amount of shoulder girdle rotation seen on each side of the body.
- The body rotation helps to decrease the frontal resistance on the swimmer, as well as increasing the efficiency of the pull by lining up the midline with the pulling hand and allowing the recovery arm to remain closer to the midline of the swimmer to reduce resistance to rotation.