2.4 Back stroke

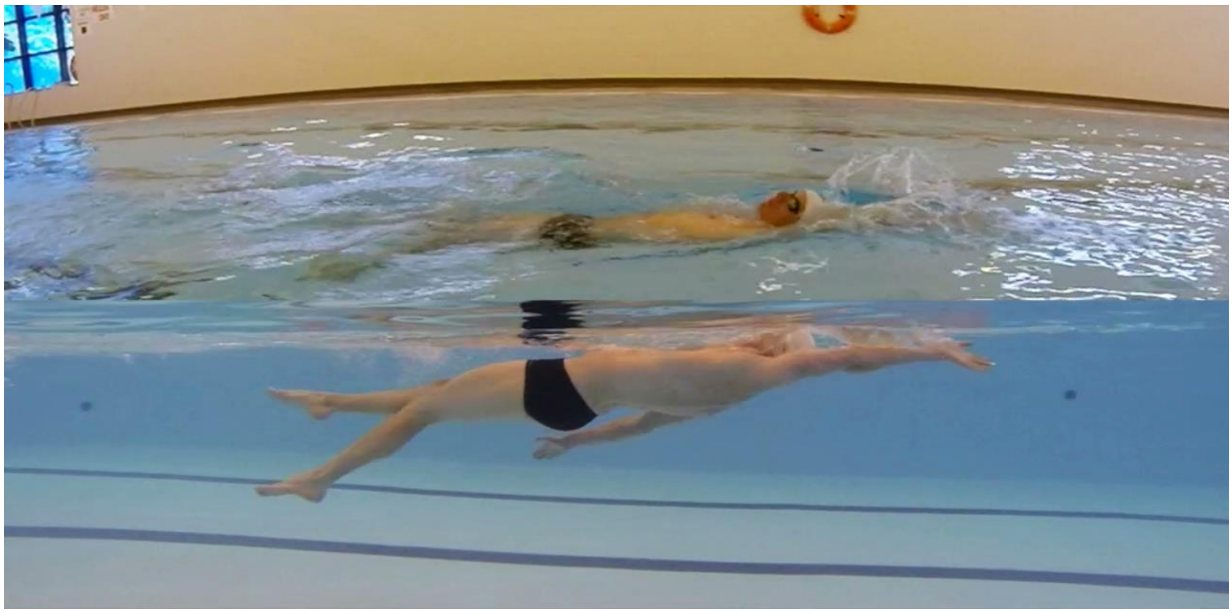
At the end of this section you should have a clear understanding of:

What to teach in back stroke
- The technique of the stroke
- The common faults in the back stroke
- The corrections for the main faults in the back stroke

How to teach the back stroke
- The technique of the back stroke to inform explanations and demonstration of the back stroke when teaching
- Suitable activities to introduce and develop the back stroke related to pupil ability
- The sequencing of practices to introduce and develop the back stroke

2.4.1 Stroke Technique

Back stroke is the major **supine** stroke. It is popular with many children because it does not present many 'breathing' or 'face in the water' problems. However although the face is not in the water throughout the stroke, water does get onto the face from time to time, thus to swim it confidently it is important that pupils are confident submerging. i.e. a pupil who is not confident submerging is likely to panic when the face gets wet / they go under and cannot be termed 'safe in water'.



Body Position

Main points
- **Supine (on the back)**

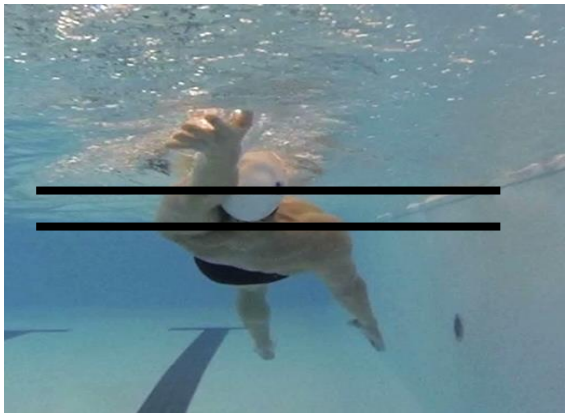
- **Head back**, with back of head and ears in the water
- Head must be kept **steady**.
- **Hips should be close to the surface** (legs just low enough to remain in the water as they kick)

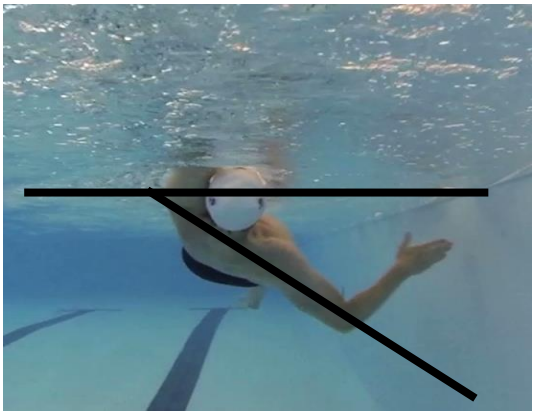
The body is flat / streamlined and as near the horizontal as will allow leg action to take place in the water i.e. a slight slope from the head to the feet. It is important to avoid 'sitting' in the water. As with the other strokes the principle of the streamlined body shape is important. This means that it is tapered at the head end and at the feet / toes to minimise the resistance that is caused. This streamlining allows the effort to be used to make the body travel rather than to overcome the large body shape being presented to the water.

Shape the body to minimize resistance…..
..... pointed at the front end and at the back end
allowing the water to flow on and off without disturbance

The head position will need to be adjusted to suit the individual's buoyancy. If the feet are well below the surface (a swimmer with poor buoyancy) then the head needs to be pushed further back to raise the feet. However if the feet / legs are breaking the surface (a swimmer with excess buoyancy) the head needs to be raised slightly to lower the feet. **The roll of the body around longitudinal axis** as the swimmer starts the arm pull and leans into the arm pull is likely if the arm action is powerful

- Body roll of between 45^0 and up to (but not including) 90^0 occurs towards the pulling arm when it is in the middle of its pull
- Roll assists with the propulsion from that arm and also with the recovery of the other arm





Look at the images above where the first image shows the stroke from the head on view at the point just as the left arm is finishing the recovery phase and the right arm is finishing the propulsion phase. The body is flat on the back i.e. the line between the two shoulders is parallel to the water surface. In the second picture the right arm is part way through the propulsive phase and the angle of the two shoulders to the water line is around 40 ˚ - 45˚.

Leg Action

The functions of the leg action are:
i) To maintain body position.
ii) To balance alternating arm action.
iii) To contribute to propulsion (minimal).

Main points
- Alternating up/ down action
- Legs pass close to each other
- Kick between the surface and 12 – 20" deep (30 – 50 cms.)
- Kick with the toes pointed / ankle in the plantar flexed position

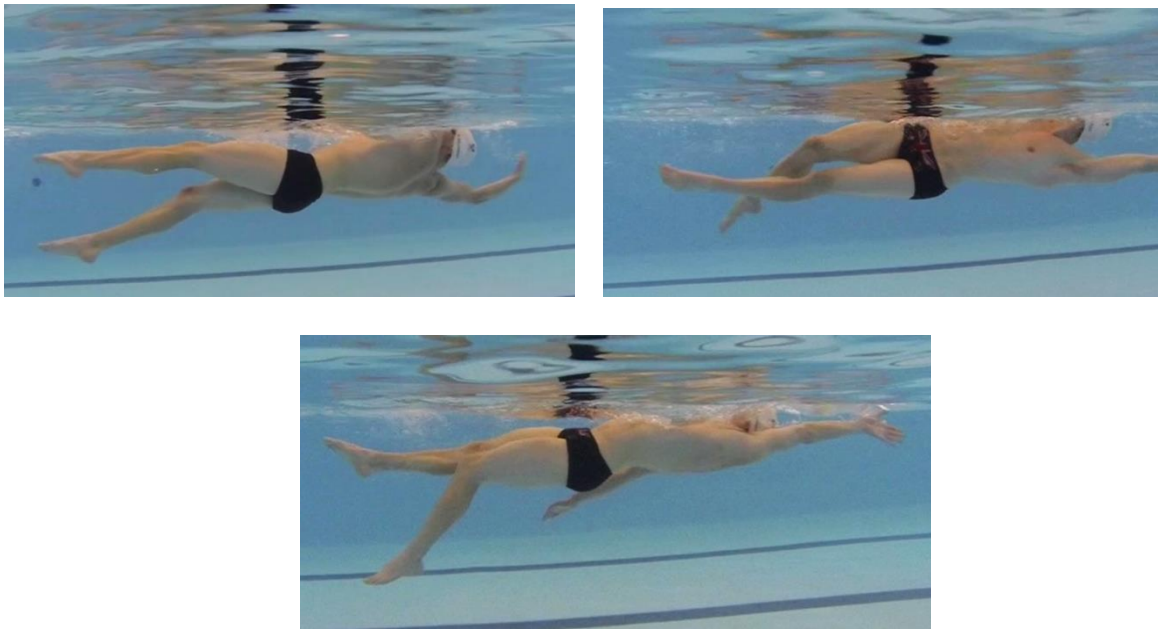
The leg action is a **continuous**, **alternate up/down** action. The **legs should pass close** to each other and the kick takes place between the surface and about 12 and 20 inches deep. The shallower depth would be suitable for children and the deeper one for adults who have larger bodies / longer legs. Ankle flexibility, particularly in **plantar flexion (pointed toe position**), is vital to kicking efficiency. The body roll is essential to the overall efficiency of the stroke and the legs roll with the stroke. The kick is thus performed on the left side / flat on the back / right side / flat on the back / left side etc.

Task: Next time you are at the pool look at swimmers swimming straight towards you on the back – watch the line of the shoulders. Does it vary from being angled to the right / parallel to the surface / angled to the left? Now look at the hips / legs – are they rolling from side to side as well?

The kick can be divided into an upbeat and a downbeat.

Upbeat

- **the kick comes from the hip**
- the knee bends and rises towards the surface prior to the **knee extending, driving the foot up** to the surface
- the ankle is in **extreme plantar flexion** (pointed toe position) as it reaches the top of the kick



Upbeat - in the diagram above the leg furthest from you has just started the upbeat (1st of the 3 pictures) – the knee is bending as it is rising towards the surface and the leg will then extend vigorously (the movement between pictures 2 and 3) driving the foot towards the surface.

Downbeat

On the downbeat the leg (nearest to you) is held **straight** as it descends to a depth of about 16 - 18 inches (40 – 45 cms). In the diagram above (image 1) the leg nearest to you is straight as it has finished the upbeat and then starts the downbeat. At the end of the downbeat the knee bends slightly in anticipation of the next upbeat.

Task: Next time you are at the pool look at back stroke swimmers. They do not need to be very able swimmers. The exercise is about training your observation. Stand where you can see the swimmer coming towards you / going away from you / swimming past you showing their side view. Look at the following things

- Are the feet churning the water at the surface continuously or are they well below the surface? If the feet are low is the head high?
- Are the feet going up and down passing very close to each other?
- Are the legs rolling from side to side as they go kick?
- Are the ankles stretched and the toes in the pointed position?

Arm Action

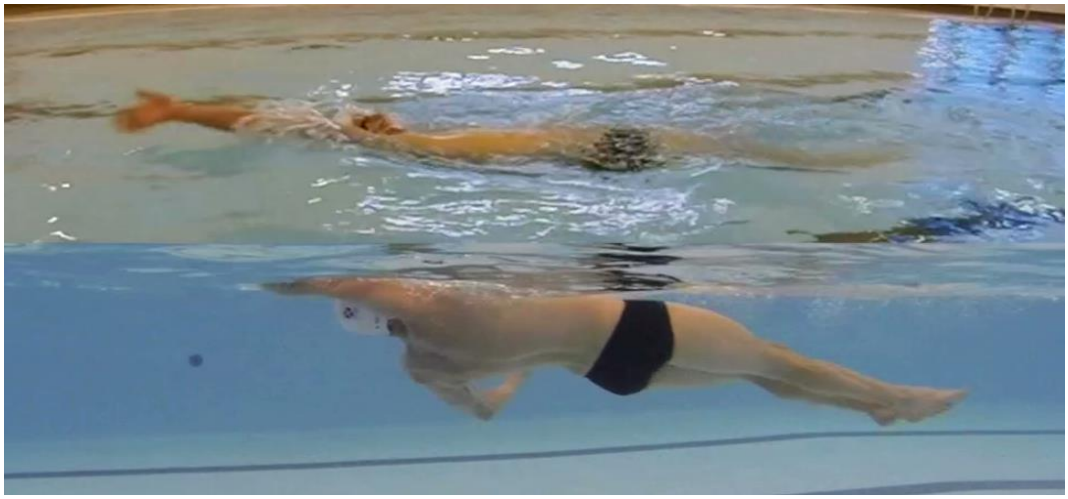
The arm action is the major propulsive feature of the stroke and can be broken down into **entry, propulsion and recovery**.

Entry

- arm enters the water with the **arm straight**
- **little finger enters first** with the palm facing outwards
- entry point is **behind the shoulder**

Task: Lie on something (such as a bed or settee) with one arm hanging over the side and perform the back stroke arm action with one arm concentrating on the recovery / arm entry.
Check the following points:

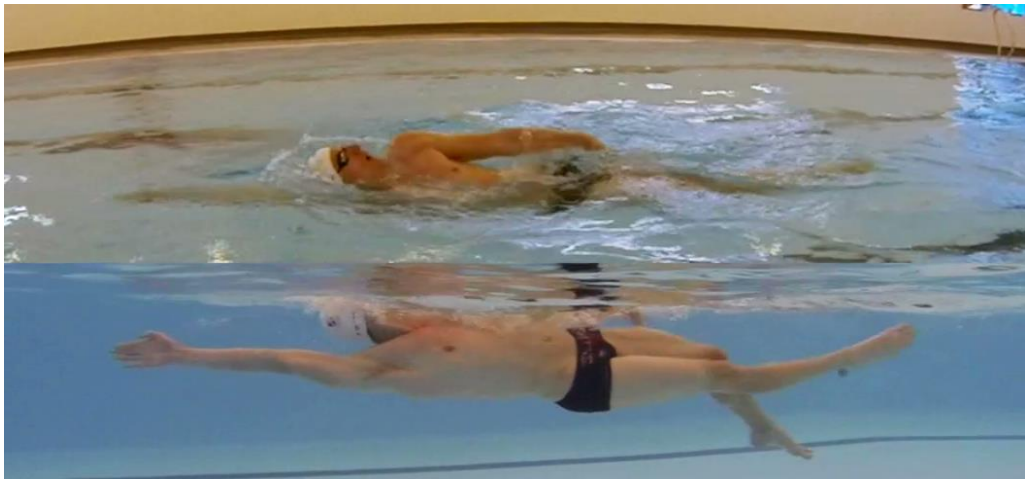
- ♦ Arm travels backwards above the side of the body
- ♦ Entry behind the shoulder with the arm straight and the palm facing outwards
- ♦ Little finger entering the water first



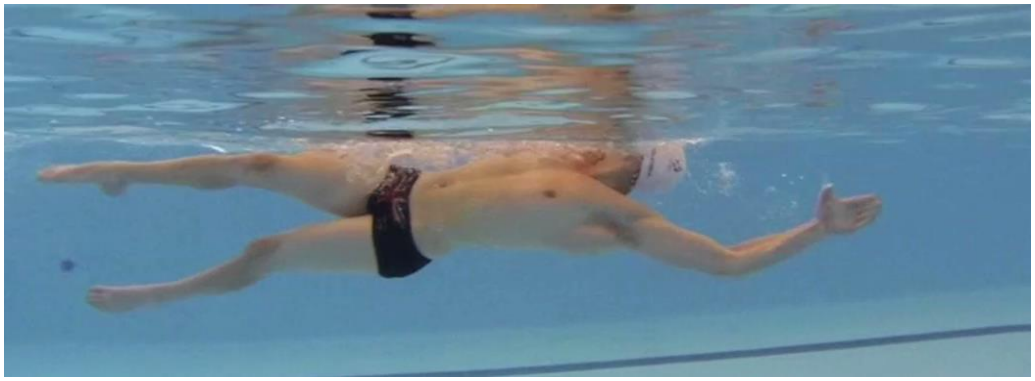
Propulsion

Catch and downsweep

- after the little finger first entry the **arm sculls outwards and down to 8 - 10 inches** (20 – 25 cms.) the wrist and hand position adjusts to enable the **'catch'** to occur
- propulsion starts with a **'downsweep'** (down and outwards) – the arm also moves backward as it sweeps down.



- the **body rolls** towards the pulling arm
- the hand **accelerates** through the propulsive phase

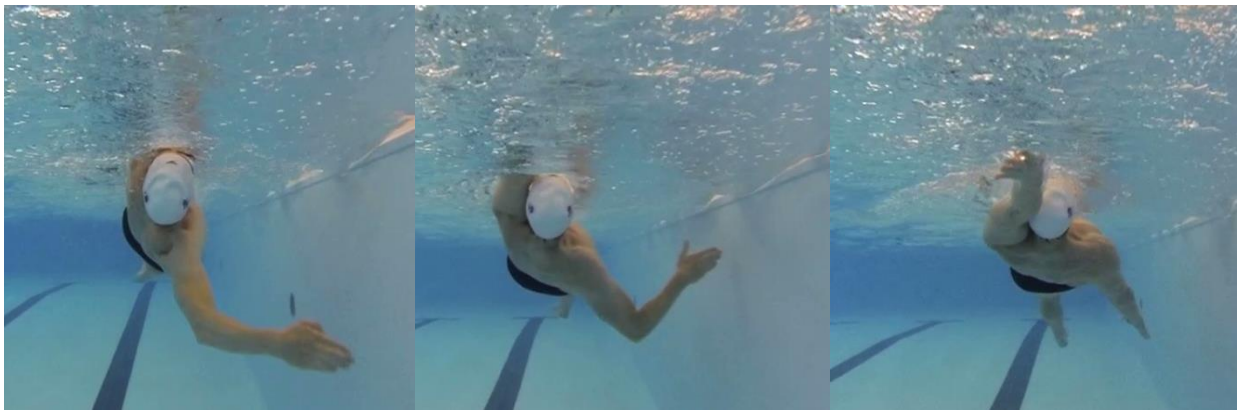


Upsweep

- from a depth of around 40 - 50 cms the **'upsweep'** starts
- the hand **sweeps up and in wards** travelling backwards as it goes
- the **elbow bends to 90^0** bringing the **hand to just below the water surface**
- **the elbow points down towards the pool floor**
- **body roll can be from 45^0 to 90^0**
- the arm reaches the maximum bend as it passes the shoulder
- acceleration of the hand continues throughout the pull.

Second downsweep

- from close to the water surface (left hand in picture above) the second **down sweep** starts – the hand / arm sweeps backwards as it sweeps down.
- the elbow extends
- the hand **continues to accelerate as it sweeps down** towards the hip
- the palm is pitched back and slightly down with the fingers pointing outwards



Downsweep
(right arm)

Upsweep
(note the elbow is pointing down, not leading the movement)

Second Downsweep

The arm sweeps back throughout the down / up and down sweeps. These are the sweeps of the longer curved pathway and the use of the elbow joint as well as the shoulder joint adds additional muscle groups to the propulsive effort thus contributing more power.

Task: Lie on something (such as a bed or sofa) with one arm hanging over the side and perform the back stroke arm action concentrating on the pulling phase of the arm action.

Check the following:-

- Check the entry position of the arm / hand
- Identify the 'catch position'
- Move through the first downsweep - hand sweep down and out / roll towards the pulling arm
- Check the position at the end of the upsweep / elbow bent to 90˚ / fingers just below the water surface / elbow pointing towards the floor (of the pool)
- Move through the second downsweep – hand sweeps down and out / elbow extends / accelerate the hand towards the thigh
- Link the sweeps together

Recovery

The roll of the body toward the opposite pulling arm helps to release the shoulder/arm for the recovery.

- the **arm leaves the water straight**
- lifted **out thumb first** (or with the back of the hand leading)
- the arm is carried straight up and over, **above the side of the body** / shoulder. If the arm swings wide over the water there will be a sideways swinging reaction from the legs, widening the body shape/ contributing greater resistance.
- the **arm rotates** as it travels back to its entry position behind the shoulder

Breathing

Breathing generally does not present problems in back stroke due to the face being clear of the water. It is, however, important to ensure that breathing is regular. The normal breathing pattern is to inhale through the mouth as one arm recovers and exhale through the mouth and nose as the other arm recovers.

Timing

There are few variations to timing in the back stroke.

- the arms work in opposition to each other (i.e. one pulls / the other recovers)
- one arm enters the water as the other is just finishing the propulsive phase (at the hip)
- 6 leg kicks to each cycle of the arms (i.e. a right arm pull plus a left arm pull) gives a continuous kicking pattern

Check your understanding and knowledge

Now that you have read about the back stroke you need to check up on your knowledge. If you have done the tasks on the way through the section that will help you to both understand and remember. If you have not yet done the tasks you would be better to do them first and then attempt the written questions.

Question 1: What are the functions of the leg kick within the backstroke?

_____

_____

_____

_____

Question 2: Give two main points of technique relating to each of the following aspects of the backstroke.

a) the catch of the arm action_____

_____

b) the upsweep of the arm action_____

_____

c) the arm recovery_____

_____

d) the breathing in backstroke_____

_____

Task: Stand in front of a mirror (use a stool / chair to assist you if you want). Demonstrate the following as if on the poolside showing technique to a class.

i) demonstrate backstroke leg action a) with your own feet / legs

b) with your hands / arms

ii) demonstrate backstroke arm action ensuring that you show the bent arm and the sweeps of the propulsive phase clearly. Make sure that the pupils are getting a good visual image of what you want them to copy. i.e. is your demonstration accurate?

iii) repeat each of your demonstrations (leg action and arm action) giving a verbal commentary as you would to pupils. Make sure that the key points of your commentary are timed appropriately with the movement that the pupils would be watching.

2.4.2 Practices for Teaching the Stroke

Practices must be selected to suit the ability of the child/group and relate to the aim of the lesson. Use of a more extensive range of practices adds interest to sessions.

Practices are listed with some brief comments indicating their main use, important points in execution of the drill, etc. Appropriate teaching points should be selected from your knowledge of stroke technique related to the level of ability / age / expertise of the pupil.

Body Position and Leg Kick Practices

PRACTICE (what to do)	USE (when / why to do it)	COMMENTS (teaching points)
1. Back lying position with the feet under the rail	To establish the basic back lying position. Static practices such as this are only used very briefly.	Hook the feet under the rail. Head back.
2. Floating in supine position with arms • holding 1 or 2 floats. • by the side	Elementary stage to develop back lying position.	Only use briefly as few people float horizontally, legs will tend to sink.
3. Push and glide from the side in the supine position.	Development of back lying position.	Legs will sink if glide is held too long. Float / 2 floats can be used to help beginners. Back of head and ears should be in the water.

4. Kicking on the back with 2 floats held one under each arm or with a noodle	To give confidence on the back for the elementary stage swimmer or non-swimmer.	Encourage head back and body position with hips close to the surface as well as kicking action. Feet should come to the surface. Kick from the hip. Pointed toes.
5. Kicking on the back with 1 float. Float should be held above the abdomen at the water surface.	Development from practice 4 as confidence is gained. Basic leg kick practice.	Check body and head positions (as above) as well as kicking action. Legs passing close to each other, toes pointed, knees staying under the water.
6. Kicking on the back without a float, arms by the side.	Development from practice 5 - basic kicking practice.	Legs passing close to each other, toes pointed, knees staying under the water. Hands can scull at the hips for balance.
7. Back paddle - kick on the	Introductory stage to back	Body position, leg kick as in

back plus sculling or paddling movement (for early learners)	stroke for beginners	previous practices plus sculling with hands under the surface.
8. Kicking on the back with 1 float held above the thighs/ knees.	Helps prevent excessive knee bend. Keeps knees under the water.	Hold small float at arm's length so that it reaches to the knees. Do not let knees hit the float.
9. Kicking on the side (right and left). a) with a float held against the chest b) without a float.	Check depth of kick / equal pressure in both directions.	Arm on the side you are lying should be extended, other (upper) arm by the side.
10. Rolling kick - left side / back / right side.	Develops body roll.	6 kicks, move on to the next side or back. Focus on roll.
11. Kick with arms by the side rolling to raise the shoulder of the upper arm clear of water.	Develops body roll.	Shoulder to elbow of raised arm should come out of the water. Focus on lifting the shoulder.
12. Glide with one arm extended behind the head. a) gliding b) glide plus kick.	Less demanding on the shoulders / spine than 13. More suited to younger / less experienced swimmers. Similar to the position when the hand enters.	One arm back, upper arm against ear.
13. Push and glide with the arms extended behind the head.	Only for more experienced swimmers who are competent in all easier stages. Establishes the extended back lying position.	Many children will find this difficult due to limited shoulder mobility making the extended position difficult to attain with the arms in the water. Arms should be straight with the hands one on top of the other. Head back.

14. Kicking on the back with the arms extended behind the head.	Suitable for more able improver onwards. Gives body alignment and kicking. Should only be used where the	Arms extended behind the head, should be stretched back with the hands one on top of the other and the upper

	pupil can keep their face above the water comfortably. Alternative with one arm back and one at the side (practice 12)	arms against the ears. Arms must be in the water. All technical points of kicking action as needed.
15. Full stroke with emphasis on the kick.	Transition to full stroke focusing on the kick which they have just worked at.	All points relating to body position and kicking action. Continuous kicking.

Arm action

1. Full stroke over short distances concentrating on points of arm technique.	Improvement of arm technique (propulsion or recovery phases).	Working over a width. Give only 1 or 2 points at a time.
2. Single arm back stroke with a float held against the chest.	Development of arm technique/length of stroke. Allows concentration on the technique. Can be done arms only or full stroke.	Ensure both arms are used in turn. Slowly 'feel' the way through the arm sweeps – down …. up…. down. Pitching of hand 'back' and …. .
3. Single arm back stroke (other arm by side) lifting shoulder of non-pulling arm to emphasise body roll into stroke.	Develops body roll into the stroke. For more able swimmers.	Raising the shoulder of the non-working arm as the working arm enters.
4. Double arm back stroke.	Helps eliminate the down and up 'digging' into the water that some pupils show. Helps to emphasis the arms sweeping along beside the body.	Emphasise the feel of sweeping down / out and up / down. Use of hands throughout the propulsive phase.
5. Arms only with float or pull-buoy.	Develops arm strength and propulsion. Only for able swimmers.	Point of technique related to the part being worked on e.g. the entry.
6. Catch up back stroke.	Develops stroke length and body alignment. For more able pupils.	Ensure 'catch up' takes place at the point of entry i.e. before next pull starts.
7. Pulling along a width divider or lane rope	Helps to encourage the bent arm movement	Grasp rope with the arm extended behind and pull the body along. Keep the body close to the rope. Elbow points down to the pool bottom (not along the line of the rope / leading the movement) Pull till hand is level with shoulder then push or 'throw' the water towards the hip.

Question 3: Give a practice that would help each of the following problems and provide a teaching point for it.

a) head up / sitting in the water position for the stroke

_____

_____

b) knees coming out of the water during the kick

_____

_____

c) failure to bend the arm in the propulsive phase of the arm action

_____

_____

Summary of main points of technique for teaching the basic stroke at Elementary / Improver level

- **Flat streamlined** body position with the **back of head and ears in the water**.
- **Continuous kick**ing action of the legs **feet 'pointed'**.
- **Legs pass close** to each other.
- **Feet** must come up **to the water surface.**
- **Continuous circling** action of the arm.
- Arm **entry is little finger first** behind the shoulder
- Arm **sweeps along 'beside' the body** so that it sweeps downwards, upwards and then downwards again.
- Arm **recovery is straight** with the arm travelling above the side of the body.
- **Body rolls** towards the pulling arm
- **Breathing must be regular**, in one arm/out on the other.

2.3.3 Faults and Corrections for backstroke

The best way to know how to correct the fault in a swimmer's stroke is to understand how the body moves in water. If you understand how the body moves in water i.e. what happens when you raise your head, what happens if you swing your arms wide etc. you will understand why things happen and will therefore know how to correct them. The following table provides you with a number of key / frequently found faults in young swimmers / early stage learners, shows the most likely reasons for those faults and provides suggestions of

the type of practices / specific practices that could be used to correct them. Check in the listing of practices for a fuller selection of practices.

In the first instance spotting the fault and getting it correct (i.e. spotting the primary fault / the most basic of the faults) requires both good observation and adhering to the procedure of looking at the stroke systematically i.e. BLABT. Look at the body position …. then the leg action ….. then the arm action ….. then the breathing …… then the timing. Pick the first fault as the most important.

	Stroke Fault	**Causes**	**Corrective practice**
1	Body very angled - Hips or feet low in the water.	• Head too high.	• Body position / floating practices with focus on the back of the head / ears in water. • Body position and kick practices with focus on the back of the head / ears in water.
2	Legs swinging from side to side behind the body.	• Arm entering across the body mid-line. • Recovery swinging wide sideways over the water. • Lack of body roll and wide, shallow straight arm pull.	• Body roll and kick practices. • Single arm practices working on recovery and entry position with focus on avoiding sideways movements. • Single arm practices working on the underwater propulsion.
3	Body flat / shoulders horizontal.	• No body roll.	• Body roll and kick practices.
4	Knees breaking the water surface.	• Over bending of knees.	• Kicking practice with a float held at arm's length above the knees / do not let knees touch float but toes must break surface.
5	Entry wide of the shoulder.	• Lack of shoulder mobility • Lack of awareness of the entry position. • Sideways swinging arm recovery.	• Practices for shoulder roll. • Single arm practices focusing on recovery and entry.

6	Entry across the centre line.	• Over- reaching for the entry.	• Single arm practices focusing on over the side of the body recovery and entry in line with shoulder.
7	Dropped elbow / elbow leading the arm pull.	• Weak catch position • Poor 'feel' for the water / poor use of the hand.	• Single arm focusing on the catch position. • Back paddle focussing on the elbow pointing down / use of the palm of the hand. • Sculling with the arms in the bent arm / elbow down position
8	Arm bent on recovery.	• Failing to finish the 2nd downsweep.	• Single arm practices focusing on the finish of the 2nd downsweep / watch the arm 'above the side of the body' in the recovery.
9	Hand stopping at the thigh.	• Stroke poorly timed / not continuous.	• Single arm practices focusing on the finish of the 2nd downsweep and the lift out of the hand. • Arm practices over short distances concentrating on continuous movement of arms rather than technique.
10	Straight arm pull.	• Lack of body roll. • Poor 'feel' for the water.	• Body roll and kick practices. • Single arm practices. • Sculling practices as for 7. • Double arm back stroke. • Pulling along a lane line.