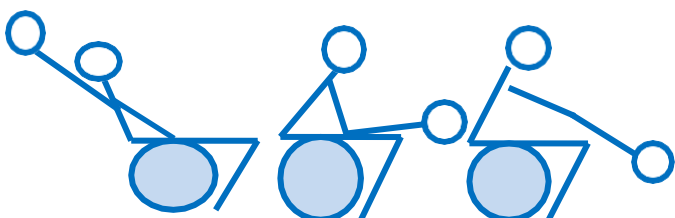


# PARA-BADMINTON WHEELCHAIR DEVELOPMENT



# Para-Badminton Wheelchair Development

## *Introduction*

The use of the arms for both movement and hitting technique are the main challenges in the wheelchair sports class. As with standing badminton where players will use long and short, slow and fast leg movements along with various techniques for stopping and recovering, the wheelchair athlete also has to deliver long and short, fast and slow pulls and pushes as well as techniques for stopping and recovering. You can use the same movement patterns for both, just remember the change in court dimensions and adapt accordingly for the wheelchair.

For example:

For standing the stroke cycle is:

Preparation – movement (run / chase / step etc.) – hit – stop (lunge / rotate etc.) – recover

For wheelchair the stroke cycle is:

Preparation – movement (push or pull) – hit – stop (brake) – recover (push or pull)

To improve speed and agility in the wheelchair the goal is to increase the speed and power of the initial push/pull and also the power of stopping so effectively reducing the time between:

push/pull ————— hitting ————— stopping —————

recovery to

**PUSH/PULL — HIT — STOP — RECOVER**

*This will take development of grip, arm, shoulder and core strength and power as well as wheelchair technique. Each routine in the manual will aid this development if used as part of a progressive programme.*

The initial position of the hands on the wheel in the ready position can vary, and players should experiment with this. It will also vary depending on the player's physical condition, core strength and disability.

Remember: half-court is used for all singles matches, thus affecting tactics and the area from the service line to the net is always 'out'. For the latest full court diagrams and laws please consult the [Badminton World Federation website](#).

It is also recommended that wherever possible coaches should experience and develop their own skills by using a sports wheelchair in order to understand, in more detail, the requirements of the wheelchair player.

Before starting it is essential that the wheelchair tyres are at the correct pressure (approx. 90 psi) and that this is the same in each tyre. Also check the tread as together with correct pressure this can make a big difference to the performance of the chair.

Correct tyre pressure and good tread = good grip and fast movement.  
Low pressure and worn tread = poor grip and slow movement.

For activities and routines, subscribe free to the Badminton World Federation's "[Shuttle Time](#)". All the routines and activities here can be adapted for use with wheelchair and disabled athletes in general.

Using the knowledge gained from working through your Governing Body coaching awards you will have gained an understanding on how to develop and progress an able bodied player using simple to complex routines. This manual will use this knowledge and apply it to the wheelchair sports class in much the same way, moving from simple to complex in order to develop and perfect the movement of the wheelchair and strokes played from it.

Just like able bodied badminton we have movement, technique and a combination of them all. This is the same for the wheelchair and as such we will look at routines that will assist in the development of movement (no shuttle), skill and technique (little or no movement) and a combination of both as well as a number of Fun Team Games.

In the majority of routines the coach can develop the process by increasing the pace, time, frequency, distance etc. just as you would when developing an able bodied player's routine. As the player improves the routines can develop with them at the appropriate rate.

The coach's imagination is the only limitation on developing routines for the wheelchair and I hope that by using this manual many more routines will be developed and adapted to suit the needs of your players.

## Key points to remember

Communication between player and coach is key—don't be afraid to ask questions.

The player must always hold their racket during every routine as one of the major skills in wheelchair development is the ability to have the racket in hand as well as driving the wheel forward or backward.

The ability to use both hands in tandem and also slightly off tandem to either keep straight or change direction slightly. The ability to 'feather' the wheel, using slight touches on one side to make the chair change direction slightly.

The use of body weight to improve speed and braking. Body weight forward when driving forward, then body weight backwards when driving backwards. This is essential to develop hard braking and changing direction.

**Forward movement** - weight forward and low - weight back when braking.  
Weight back when **moving backwards** - brake - weight forward to aid quick movement forward.

*Depending on the disability the player will be able to be more or less dynamic in their body movements. For some with higher lesions it is very often essential to use the non racket hand to balance and pull their body back upright as their core muscles may not be as capable as those with a lower lesion and/or more core muscle strength. The coach should be aware of such important aspects and again adapt each routine accordingly*

For many strokes especially at the front of the court only the racket hand will move off the wheel to play the stroke. At the rear of the court players use either both hands off the wheel through the stroke or maintain one hand on the non racket wheel. A combination of both is often seen at top level. The player and coach must be open to what works best and for what overhead strokes and in what situations.

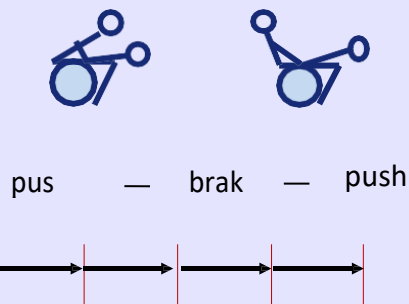
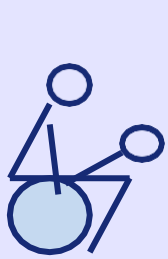
So in conclusion, coaches, remember to adapt and change appropriately and work with the players to get the best out of each routine. The success of a routine or technical activity is often down to correct and appropriate feeding. Coaches should always work on their feeding techniques to ensure consistency and accuracy.

Remember that none of these routines, games, exercises are new. They have merely been adapted to suit the wheelchair player but in the majority of cases no adaptations are required, just a common sense approach to the movement of the wheelchair.

Take a look at the routines you currently use and simply visualise exchanging the standing player for a wheelchair player and you will see that in the majority of cases routines can easily be adapted and developed.

DO NOT BE AFRAID TO TRY THINGS AND DO NOT BE AFRAID TO TRY NEW THINGS.

Have fun ...



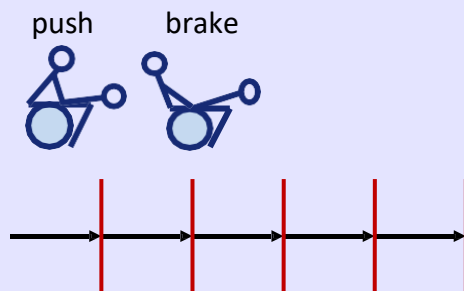
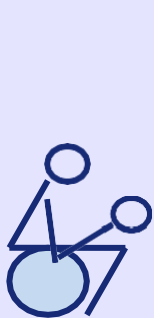
### AIM - MOVEMENT (1)

To increase agility in the chair and develop the ability to brake / push / pull.

#### DESCRIPTION

Push/Brake/Push

Always carry racket. Body weight forward when driving forward. Weight back when braking / lock arms, then weight forward to drive forward again. Use just one powerful push for this exercise.



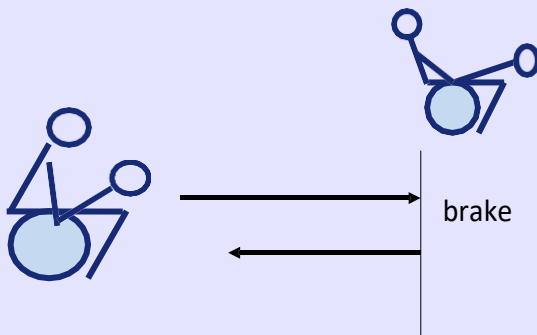
### AIM - MOVEMENT (2)

To increase agility in the chair and develop ability to brake / push / pull.

#### DESCRIPTION

Push / brake / push rapidly, working on shifting body weight forward and back and reducing the time taken to deliver the process. (this is very physical). Try to keep chair in straight line.

Developed by repeating exercise backwards. Players can also shadow strokes during exercises.



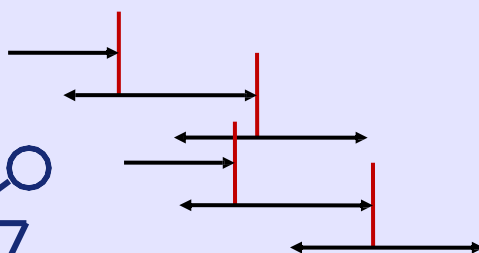
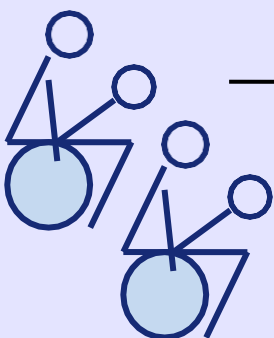
### AIM - MOVEMENT (3)

To work on push / brake / pull / change of direction

#### DESCRIPTION

Using one big push, then brake and pull back hard. Focus on big driving push and then brake hard, shifting body weight from forwards to backwards.

Develop using two smaller pushes before braking or start by pulling backwards initially. Players can also



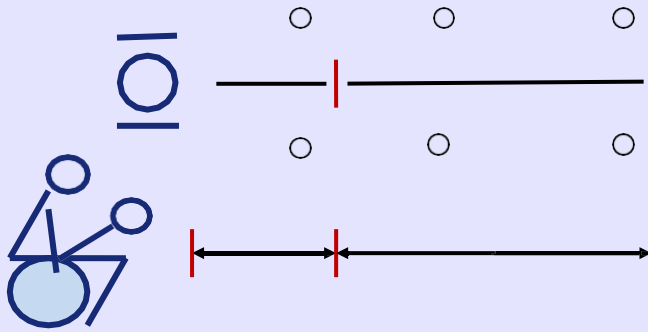
### AIM—MOVEMENT (4)

To work on push / brake / pull and making fast changes of direction.

#### DESCRIPTION

Two players or more can undertake this exercise. Player one takes the lead and the other must react to his changes of direction. Look for quick changes in body weight to assist direction of changes and fast hands back to wheels if playing shadow strokes.

Develop by adding more players,

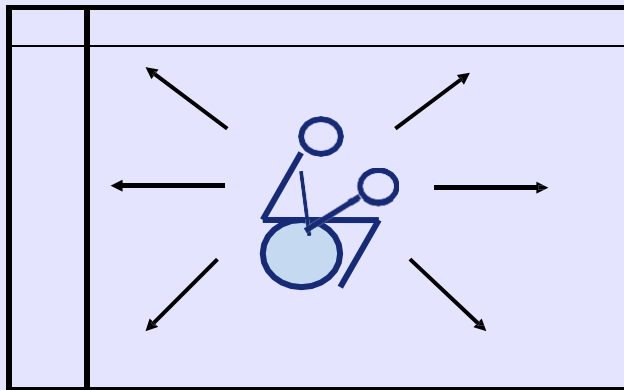


### AIM - MOVEMENT (5)

To work on push / brake / pull and making fast changes of direction while remaining stable.

#### DESCRIPTION

Work on keeping a straight line using hard long pushes, braking and pull back. Do over longer distances and include two / three pushes prior to braking and also repeat using pulling. Use cones to create channel to work in. Include shadow strokes and look at

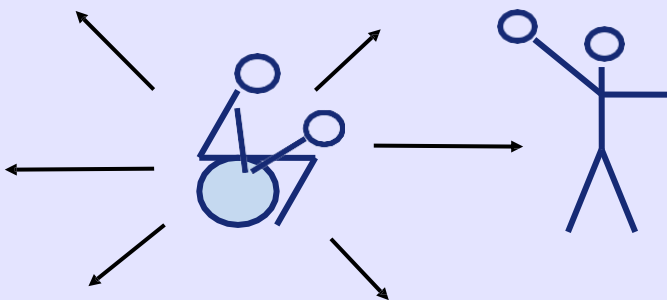


### AIM - MOVEMENT (6)

To work on changes of direction covering the singles half court points.

#### DESCRIPTION

Player starts to develop moving off in different directions and learning how to drive more with one hand than the other (with or without shadow strokes) Ensure good changes of body weight and strong locking of arms to break. Use one push / pull and then develop using two push / pull. This can be completed

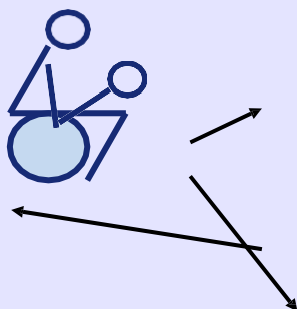


### AIM - MOVEMENT (7)

To work on changes of direction and covering half court points.

#### DESCRIPTION

As previous exercise with coach pointing. Coach can adjust speed and also direction at any time. Vocal instructions such as 'push', 'drive' etc. can assist the routine and encourage the player. Coach should be active and encourage player. The player can also use shadow strokes.

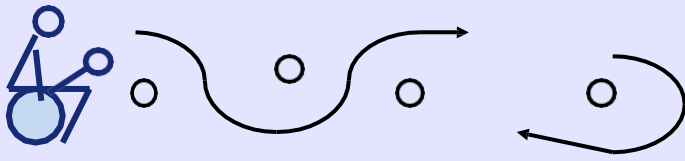


### AIM - MOVEMENT (8)

To work on changes of direction.

#### DESCRIPTION

As previous exercise but with player following random movements and not returning through a base. Looking for quick changes in body weight and hands on wheels. Can be undertaken with or without coach. Short sharp 'one' pulls / pushes as well as longer can used.



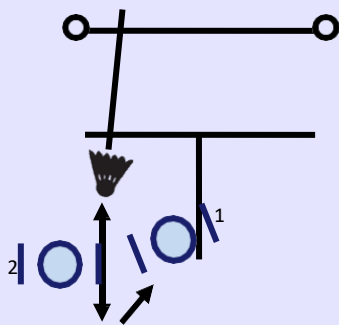
### AIM - MOVEMENT (9)

Movement in forward and backwards directions, using varying touch on wheels to change direction.

#### DESCRIPTION

Ability to 'feather'\* the wheel to change direction slightly whilst driving forward or backwards. Any course can be set up. Coach can shout direction changes to vary routine. Players can also chase each other to a finish line.

\* "Feather" the wheel—slowing down one wheel using light touches to enable slight changes of

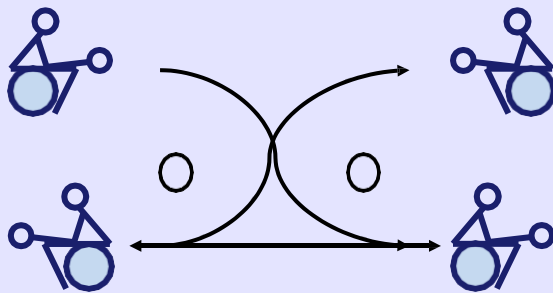


### AIM—MOVEMENT & SHUTTLE (10)

Hitting and then moving backwards.

#### DESCRIPTION

The player hits on backhand side then straightens up and moves backwards always facing forward. Develop this exercise by repeating on the forehand side as well playing forehand lifts or pushes.

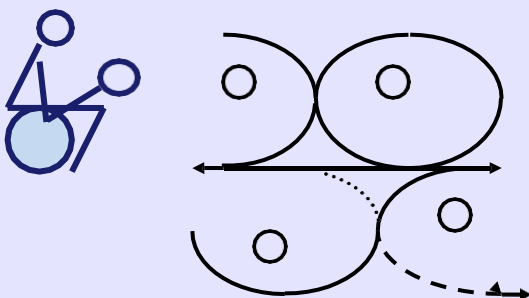


### AIM - MOVEMENT (11)

Working on chair agility, with rapid complex changes of movement.

#### DESCRIPTION

Two cones, player drives around first to face the other way, brakes then pulls back and round to the right of the second cone, then drives around this to go forward again. Watch for work with both hands operating differently to be able to create direction changes. Player can then go back the same way.

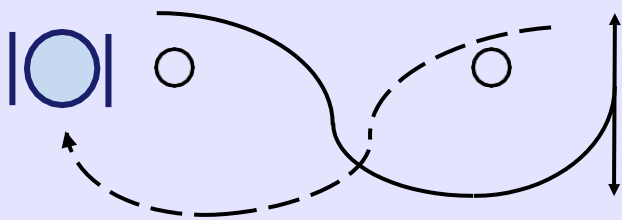


### AIM - MOVEMENT (12)

Working on chair agility, with rapid complex changes of movement.

#### DESCRIPTION

As previous routine, player / coach can work out random circuits and coach can shout instructions for change etc. Can also add further cones to the course. Develop by creating complex combinations of movement as the player develops their skill.

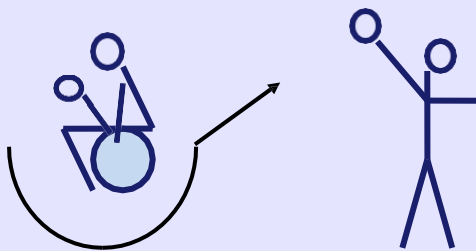


### AIM—MOVEMENT (13)

Work on reaction speed and sideways movement.

#### DESCRIPTION

Player starts on side of cone and waits for coach to shout 'go'. Player turns sideways and moves around cone to shadow stroke. Can be used as shadow or with shuttle. Repeat both ways. Good routine for doubles where movement across court is sometimes required.

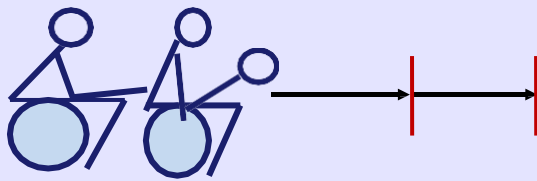


### AIM - MOVEMENT (14)

Working on rapid hand movement and quick reactions.

#### DESCRIPTION

Player faces opposite direction to coach, who shouts 'now' for player to turn rapidly and move in direction coach has indicated. Can also be undertaken with shuttles being thrown. Focus on fast hands and strong drive are key. Can also include strokes to the rear of court.



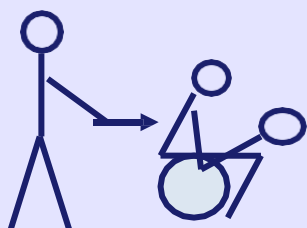
### AIM - MOVEMENT (15)

To increase player's power when pushing forward.

#### DESCRIPTION

Player drives forward 1, 2, 3 pushes with partner (in wheelchair or not) holding chair from rear.

Player concentrates on initial quick hard pushes to gain momentum. Weight forward and used to assist forward drive. Can add further players to the chain.



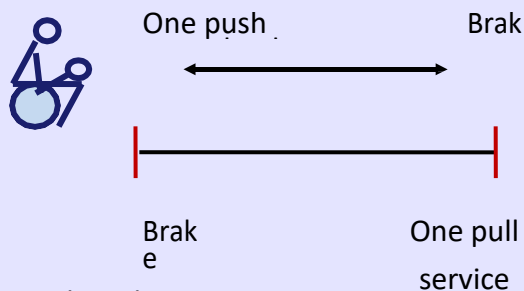
### AIM - MOVEMENT (16)

To increase player's power when pushing forward.

#### DESCRIPTION

As above with coach / player using a 'thera' band / strap and resisting player ability to drive forward. Player must continue to drive, using variety of pushes and body weight forward.



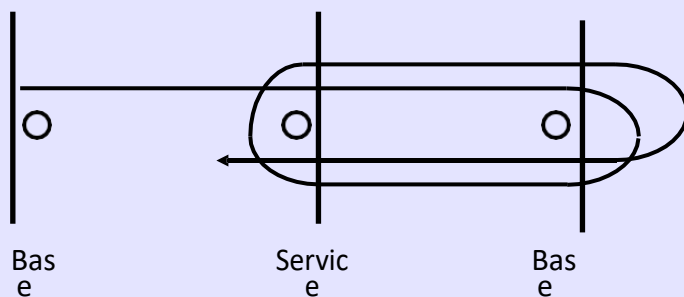


### AIM - MOVEMENT (17)

Measure of speed and power development.

#### DESCRIPTION (Test)

Player pushes to service line from base line with only ONE push (they can feather the chair to stay straight), brake and return using only ONE pull (again, feathering chair to stay straight). When front wheel passes over base line, brake and repeat 10 times. Record total time and repeat every 6/8 weeks to record

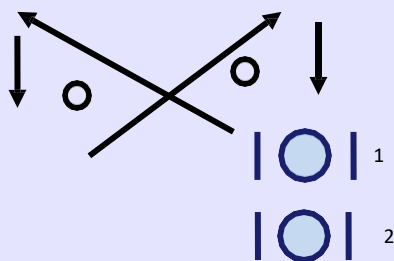


### AIM - MOVEMENT (18)

Measure of speed and power.

#### DESCRIPTION (Test)

Complete circuit forward at maximum speed. Stop clock when player passes service line for a second time. Can do same exercise backwards and also over shorter distances. Look for straight line movement, smooth turns and equal delivery of power. Record times and re-test over a set period of time.

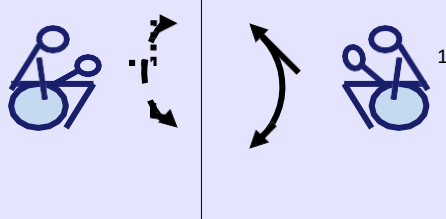


### AIM-MOVEMENT (19)

Forward and backward movements with reactions.

#### DESCRIPTION

Player one leads and player two must follow and react to all player one movements. Any course can be followed and player two must try to stay as close as possible to player one. Leading player can shout commands such as back, forward, stop etc.

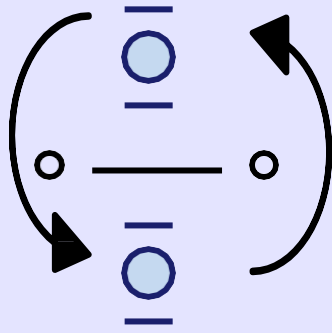


### AIM-MOVEMENT (20)

To develop reaction and speed of change of direction.

#### DESCRIPTION

Players face each other across a line or net. Player one leads and can go anywhere along line and return. Player two must react and follow. Short intense periods of work are best for this routine.

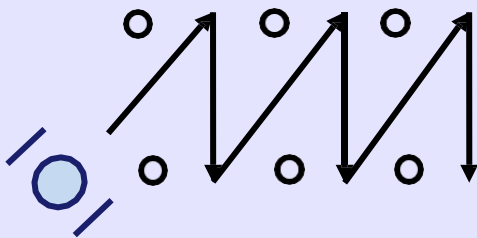


### AIM—MOVEMENT (21)

Forward or backward movement at maximal effort.

#### DESCRIPTION

Pursuit: two markers a metre apart are set up with the players facing each other. Coach shouts 'go' and players move to their right and chase each other. Complete over a set time or when one catches the other. Develop by increasing distance of markers and also adding players to each team (Team Pursuit)

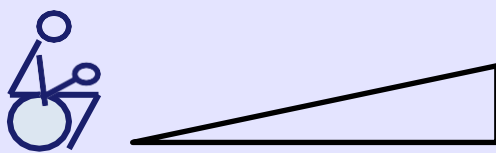


### AIM - MOVEMENT (22)

To develop drive and speed.

#### DESCRIPTION

Player drives as fast as possible in straight lines through a course set up as indicated. Gaps between markers should be reduced as players increase ability and accuracy of movement.

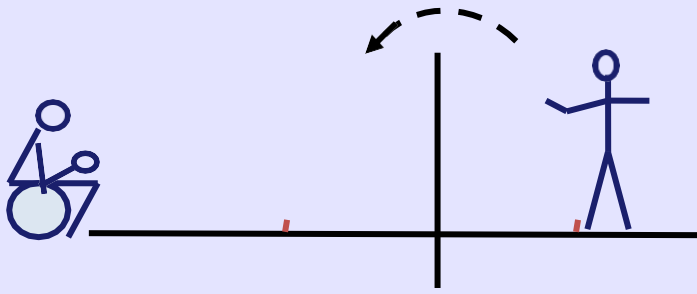


### AIM - MOVEMENT (23)

To develop power and strength for both push and pull movement

#### DESCRIPTION

Using any incline (the steeper it is the harder the routine), the player starts at the bottom and drives forward using hard fast pushes to a set distance before turning a freewheeling back to start. Can also be used backwards to develop the pull. The routine can be developed by increasing a gradient. length of movement

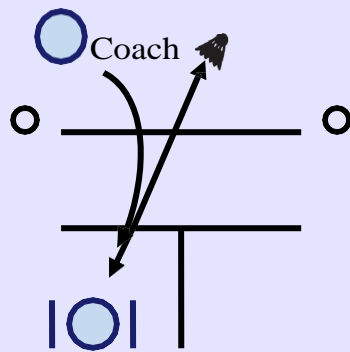


### AIM - MOVEMENT & SHUTTLE (1)

To increase power and drive forward.

#### DESCRIPTION

Player starts at a set distance behind service line. Coach using a set hand feed. Hold shuttle high, drops down and then throws underarm to land on front service line. Player reacts immediately, coach drops arm. Player to drive hard and low and return shuttle using underarm stroke. Increase distance away from front service line.

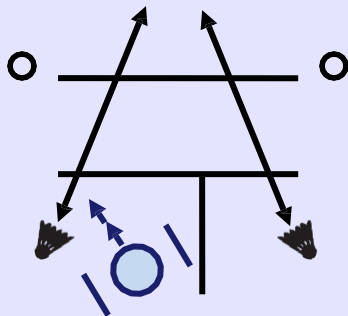


### AIM—MOVEMENT & SHUTTLE (2)

Introduce shuttle and technique to movement.

#### DESCRIPTION

Start with small movement of push / hit / brake and pull back. Coach hand feeds to service line. Player plays block or underarm lift. Slowly move player further back to increase movement. Coach must use consistent feeds. Encourage quick reaction and consistent push / pulls and well as quick braking after stroke has

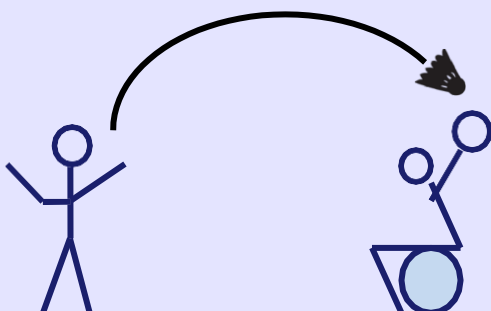


### AIM—MOVEMENT & SHUTTLE (3)

Introduce shuttle and technique to movement **KEY COACHING POINTS**

As previous routine, this time adding the movement and stroke on forehand and Backhand side alternately.

Develop by throwing randomly to each side and vary pace of feed.

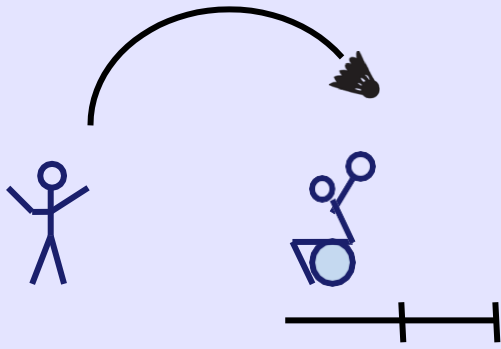


### AIM—MOVEMENT & SHUTTLE (4)

Development movement to overhead strokes.

#### DESCRIPTION

Start with no movement of chair. Player with weight forward, then stretching back with a small pull to hit overhead stroke. Coach feeds above player's head allowing time and space to reach up. Player hits clear. Concentrate on racket into prep position fast. Then both hands back on wheel.

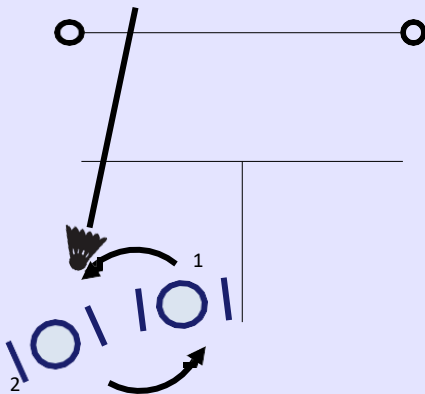


### AIM—MOVEMENT & SHUTTLE (5)

Development movement to overhead strokes.

#### DESCRIPTION

As above, the distance can be increased to the stroke and for the recovery. Focus on racket into prep position as fast as possible, stability of chair and recovery in straight line. Develop by increasing distance, number and speed of feeds. Also include feeds to the side on both Forehand and

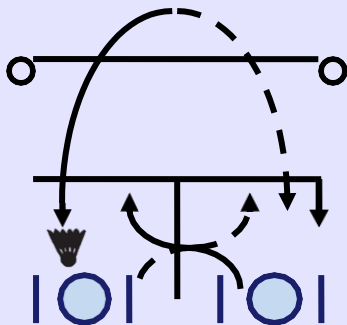


### AIM—MOVEMENT & SHUTTLE (6)

Hitting and moving and working around partner.

#### DESCRIPTION

Two players will work closely together in this routine. Coach underarm or racket feeds shuttle low to front service line. Player one moves, hits, turns and continues to drive around. Player two follows closely and repeats cycle. Players should hit, move and turn as quick as possible.

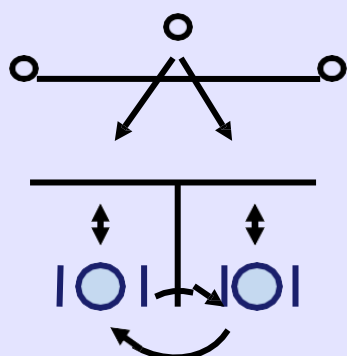


### AIM—MOVEMENT & SHUTTLE (7)

Players to practice forward, backwards, and diagonal movements.

#### DESCRIPTION

Two players position themselves side by side. Coach feeds to backhand side and player on forehand side crosses over to hit BH lift or push, as player one moves across player two then moves behind and toward forehand side and coach feeds for player to hit a lift or push

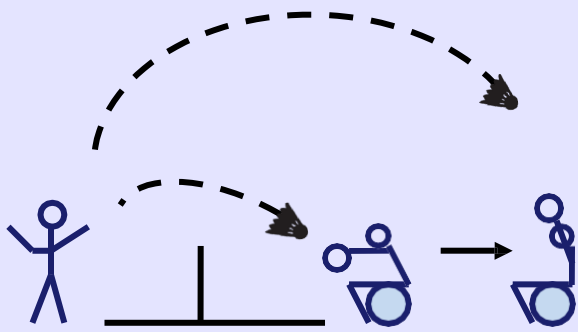


### AIM—MOVEMENT & SHUTTLE (8)

Push, hit, and return.

#### DESCRIPTION

As above but with no cross over. Player moves forward, hits, brake and returns. Coach feeds to one then the other. Develop by increasing pace and distance.

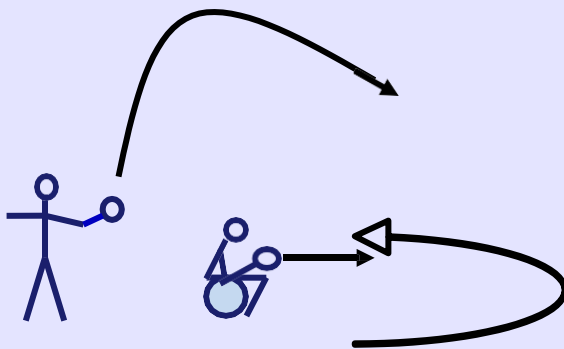


### AIM—MOVEMENT & SHUTTLE (9)

To develop hitting and movement techniques.

#### DESCRIPTION

Coach can hand feed or racket feed. Feed to front and back of court at varying distances. Initially in order then coach can change order of strokes. Player should move back towards base after every stroke.



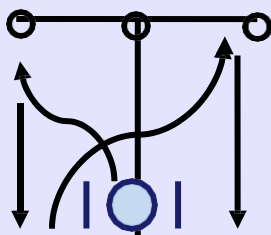
### AIM—MOVEMENT & SHUTTLE (10)

To develop reaction and spatial awareness.

#### DESCRIPTION

Coach hits high service and player facing the other way reacts to the sound of the stroke and attempts to move hit and return to starting position.

Note: shuttle to be hit over non-racket arms of player to allow for correct

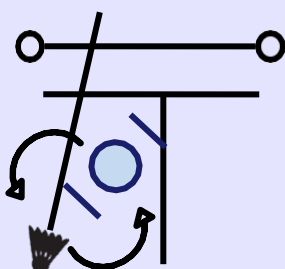


### AIM - MOVEMENT & SHUTTLE (11)

Forward, backward and cross changes of direction.

#### DESCRIPTION

This routine can be used as a movement routine and / or a movement and hitting routine. Player moves BH side and then move straight back before driving across to FH side and straight back. Can repeat using shuttles fed to any of the points.

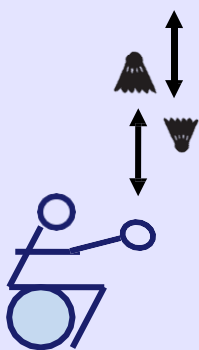


### AIM—MOVEMENT & SHUTTLE (12)

To develop backhand stroke and rotational movement.

#### DESCRIPTION

Coach feeds to rear backhand and player hits stroke (drop or clear), rotates and moves back to base to start again.

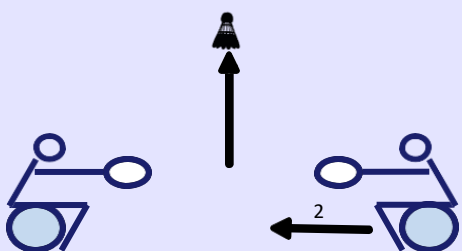


### AIM—SHUTTLE & CHAIR SKILLS (1)

Shuttle and chair control.

#### DESCRIPTION

Shuttle bouncing. Player bounces shuttle and returns hands to wheel after every hit. Use FH and BH taps, encourage forward and backward movement as well as rotating. Try to hit and turn full circle. Great for developing grip changes.

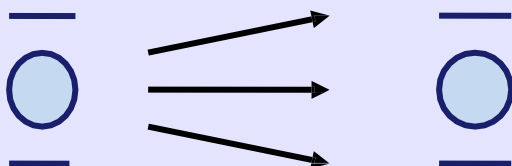


### AIM—SHUTTLE & CHAIR SKILL (2)

Control and racket

#### skill DESCRIPTION

2, 3 or more players create a circle. One player hits the shuttle in air and then the next and the next etc. Can be done in turn or players can be given a number which is shouted out prior to their hit. Player must move in and out of the circle.

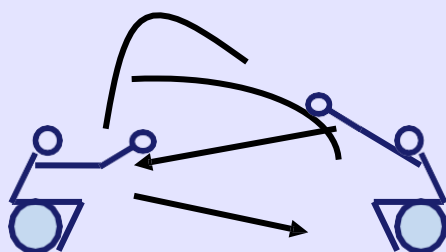


### AIM—SHUTTLE & CHAIR SKILLS (3)

To develop racket control and change of grip.

#### DESCRIPTION

Working in pairs. One player is static and in control of routine. Player hits to partner, to either side and above with controlled pushes and taps. The worker will return hands to wheel after every stroke. This routine encourages short sharp corrections and good racket carriage. Can also be undertaken with a

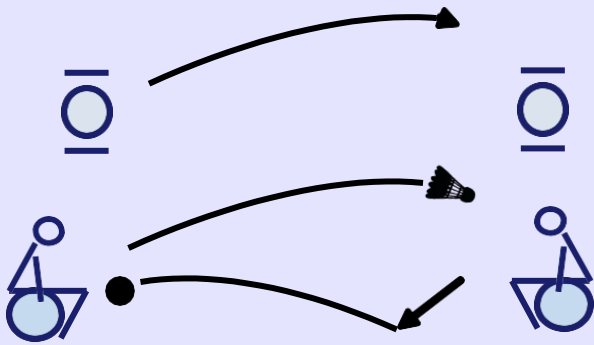


### AIM—SHUTTLE & CHAIR SKILLS (4)

To develop racket control and change of grip.

#### DESCRIPTION

Working in pairs and both working. Player hits to partner, to either side and above with controlled pushes and taps. Develop by hitting high and low and also to side.

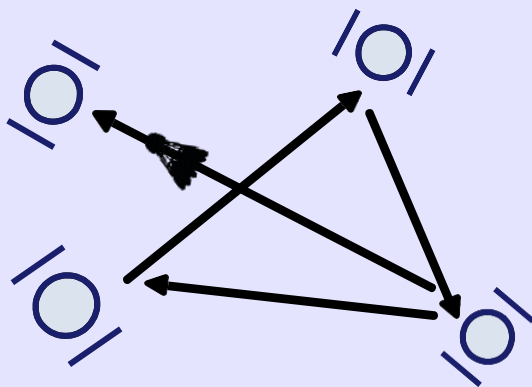


### AIM—SHUTTLE & CHAIR SKILLS (5)

To introduce taking hands off wheels and leaning and moving around in the chair.

#### DESCRIPTION

Throwing back and forth with no racket, throwing shuttles to right and left, underarm and overarm. You can use a ball as well. (bouncing the ball as well can add variety)

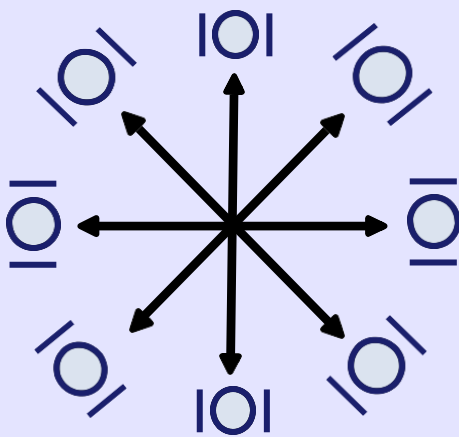


### AIM—SHUTTLE & CHAIR SKILL (6)

Racket and shuttle

#### control DESCRIPTION

3 or 4 players set themselves up approx 4 metres apart. Shuttle can be played to and from any player to another. Players must adjust chair to be able to return any stroke. Can add players and reduce or increase distance between them.

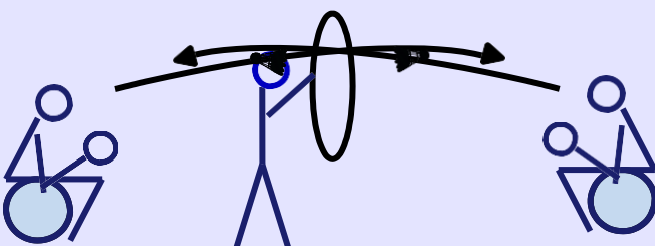


### AIM—SHUTTLE & CHAIR SKILL (7)

Hitting controlled pushes

#### DESCRIPTION

Mayhem!! Players work in pairs hitting blocks and pushes to each other. Set the pairs up so they face each other as shown. Players all start approximately together and concentrate on their shuttle. Can add more or less pairs and increase or decrease distance between pairs.

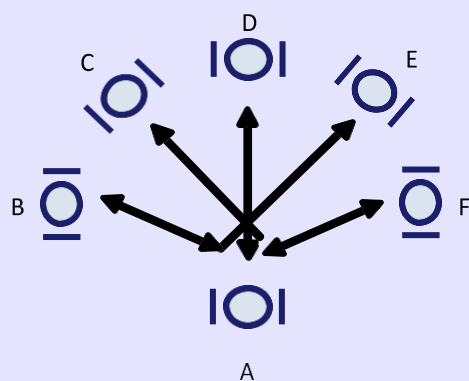


### AIM—SHUTTLE & CHAIR SKILL (8)

To develop control and accuracy

#### DESCRIPTION

Players in pairs hit through a hoop held by coach or player. The size and position of hoop can be changed as well as distance between players. Pairs count number of hits through hoop over set time or most hits through each hoop by each pair.



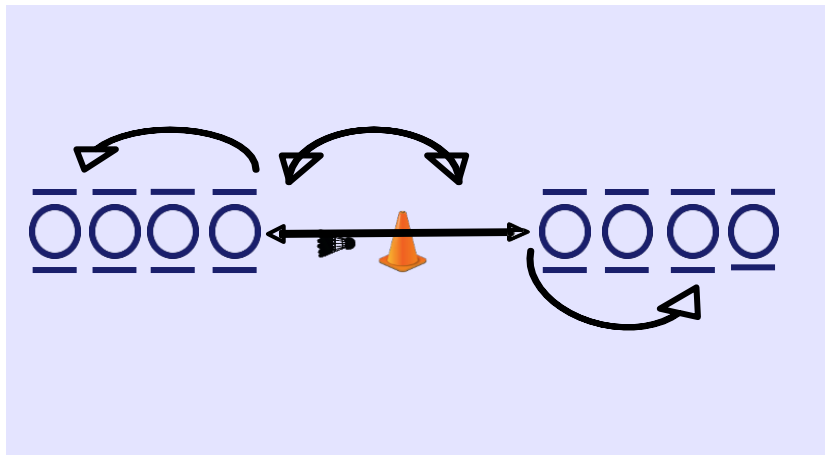
## AIM—SHUTTLE & CHAIR SKILL (9)

To develop racket and chair skills

### DESCRIPTION

Players form a semi-circle in front of another player who is the defender. The shuttles are hit back and forth to the defender who can play to any other player in the semi-circle. Distance between players can be changed and number of players changed.



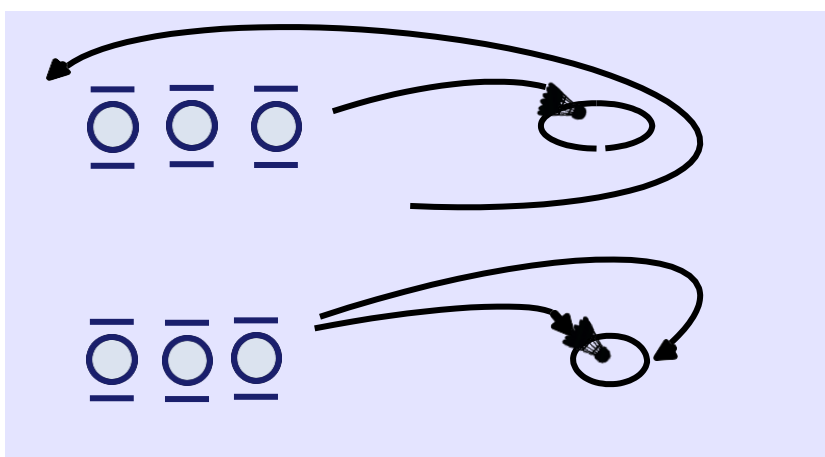


### AIM—FUN / TEAM GAME (1)

A team game that encourages movement and control

#### DESCRIPTION

4 players set up in two lines opposite each other. No net with just a cone or marker in the middle. Both teams must try and keep a simple rally going using blocks and pushes. After each stroke the player rotates and moves to the back of the group. Can use more or less players and also

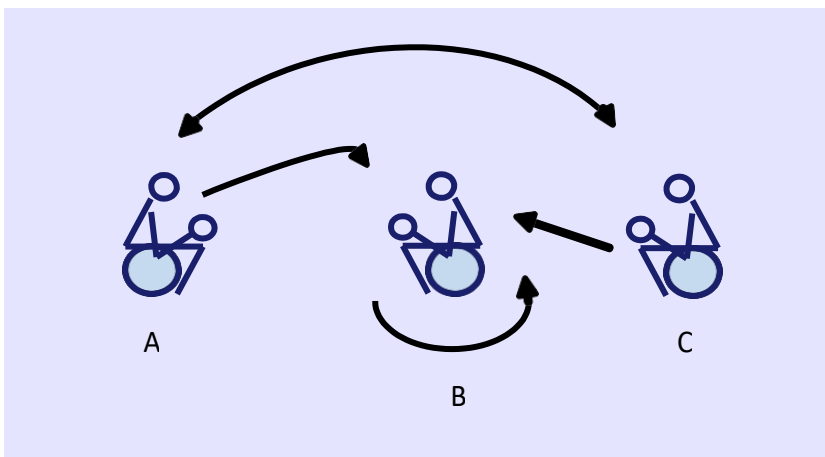


### AIM—FUN / TEAM GAME (2)

A team game to develop speed of chair movement and shuttle control.

#### DESCRIPTION

Start with teams of 2 or 3 or more players along side each other, Set a target such as a hoop approx 4 metres away. The goal is for the first player to backhand serve into the hoop. Each player gets 1 attempt and then moves around the hoop back to rear of team.

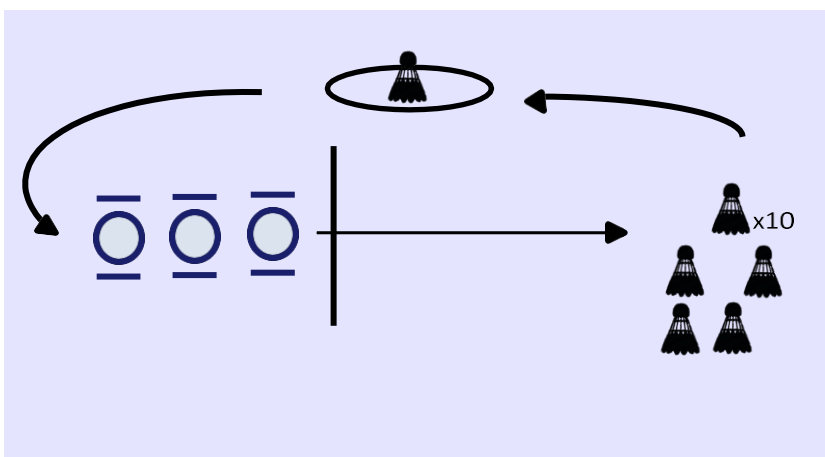


### AIM—FUN / TEAM GAME (3)

A 3 player game which develops chair and racket control.

#### DESCRIPTION

Players set themselves up as shown approx 3 metres apart. A plays to B, B hits back to A who then hits shuttle over the top to C. B rotates to face C. C plays to B who hits back to C who then hits over the top and the routine continues. Record number of strokes in a set time.

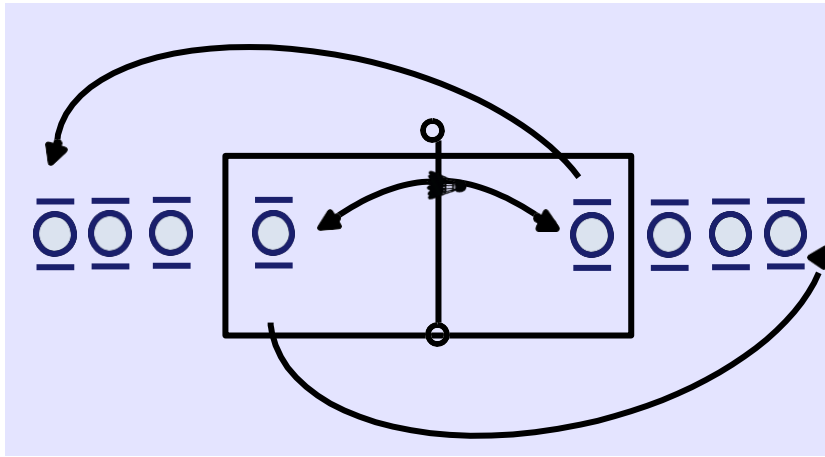


### AIM—FUN / TEAM GAME (4)

A team game to develop chair speed and control

#### DESCRIPTION

8-10 shuttles to be collected and dropped in hoop. Player 1 collects a shuttle and drops in cone and returns to rear of team. This can be done by hand or with racket. Record the fastest time. Can add changes in movement, by introducing some cones to go round.

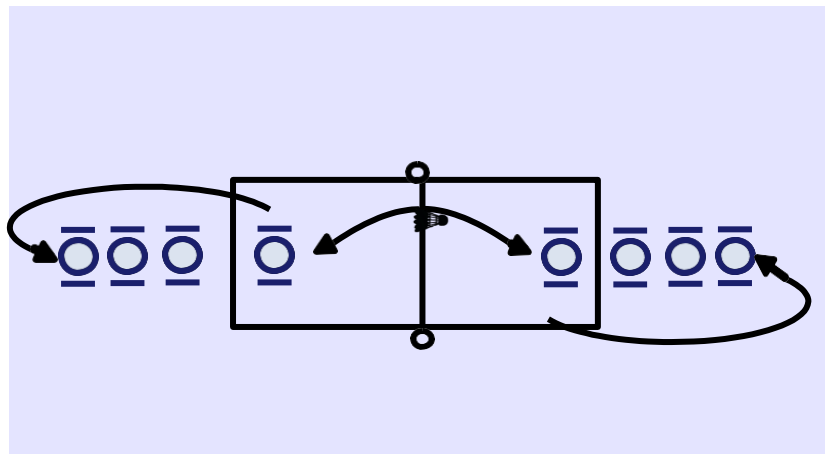


### AIM—FUN / TEAM GAME (5)

A team game to develop speed and control

#### DESCRIPTION

Two teams of 3 or more players set up as shown. Player 1 hits across net using underarm lift/ backhand serve and then moves to rear of opposite group. The rally continues. Can eliminate players when mistakes are made or time longest continuous rally

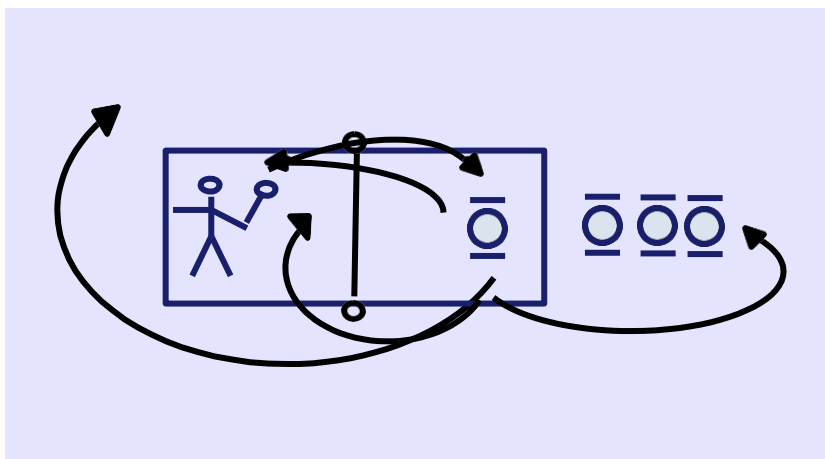


### AIM—FUN / TEAM GAME (6)

A team game to develop speed and control.

#### DESCRIPTION

As above with players hitting and returning to rear of their own team. Can eliminate players as mistakes are made.

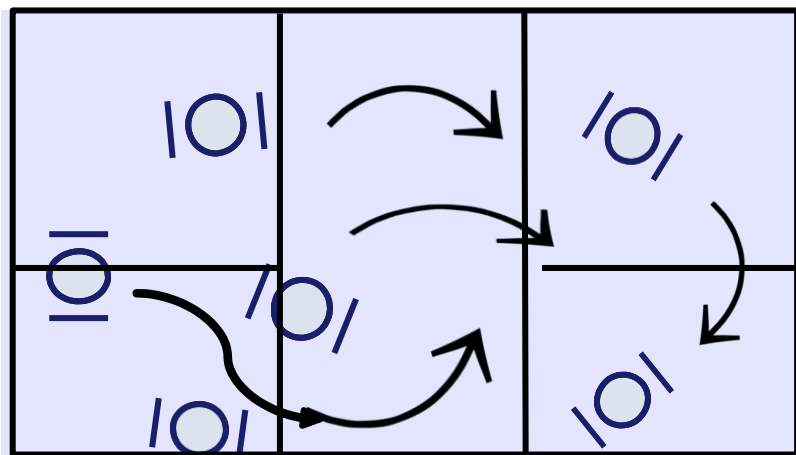


### AIM—FUN / TEAM GAME (7)

Coach to control rally and to push players

#### DESCRIPTION

A team of 3 or more players set up across from the coach. After each hit the players move to the back of the team. Coach can play any stroke and players must try to push coach around. If you have enough players, they can hit then move around outside of whole court or just around the net.

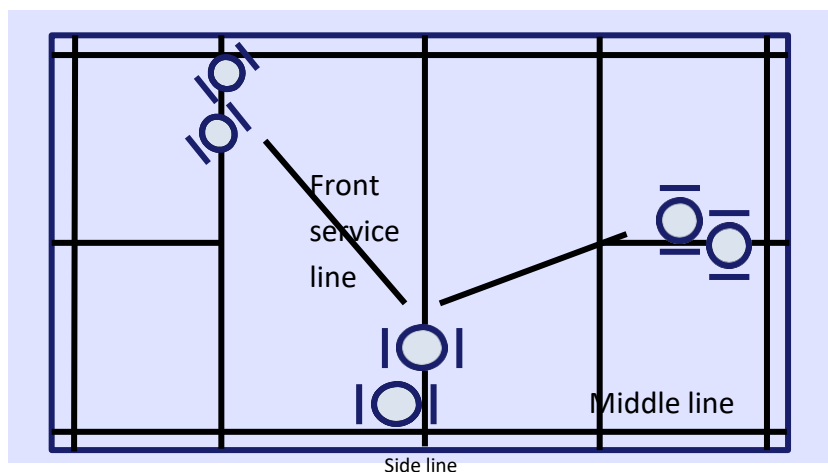


### AIM—FUN / TEAM GAME (8)

Movement and change of speed and direction

### DESCRIPTION

Players start at random places on a badminton court or set area. When the coach signals they can move around each other. Coach can shout commands to change pace, direction and movements. Can also add such commands as rotate, stop, reverse etc.

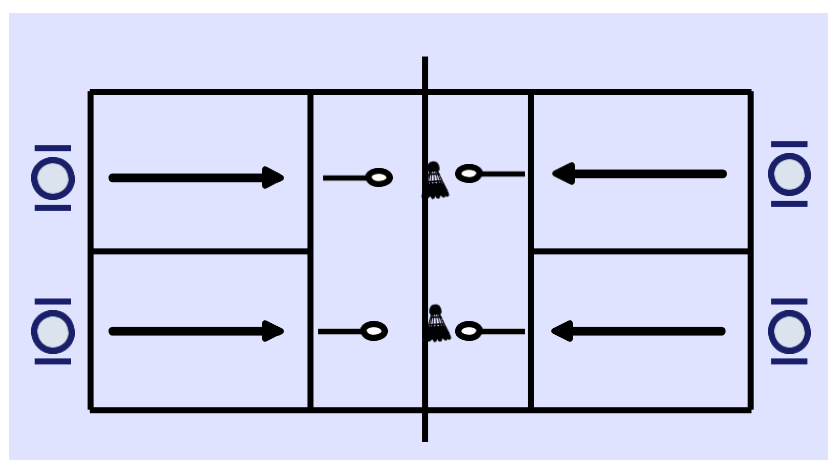


### AIM—FUN / TEAM GAME (9)

To learn lines on court and to develop chair speed and reaction.

#### DESCRIPTION

The coach labels each line appropriately (tramline, service line, middle line etc). Then as the coach shouts out each line the players must move quickly to meet it. They start with 2 or 3 lines before completing and then coach can add elimination for last person to reach line.

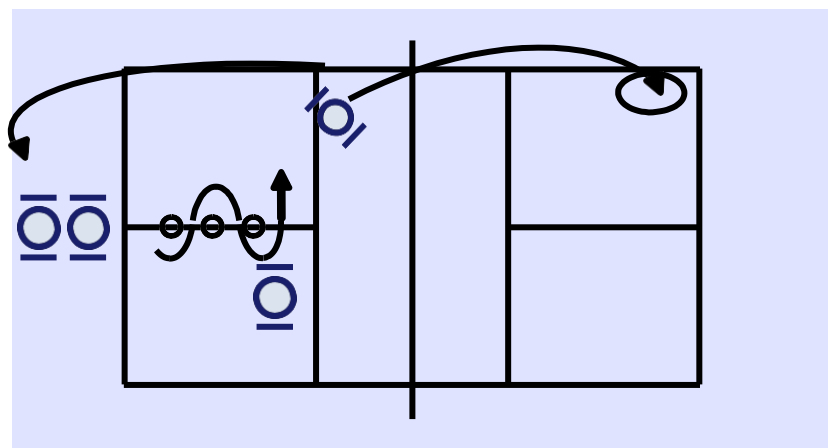


### AIM—FUN / TEAM GAME (10)

A fun game to increase speed and reaction

#### DESCRIPTION

1 V 1. Players start behind base line opposite each other. On coach signal they must move forward to collect their racket which is positioned on the floor and then the single shuttle. The one who gathers the shuttle can then serve and a rally continues.

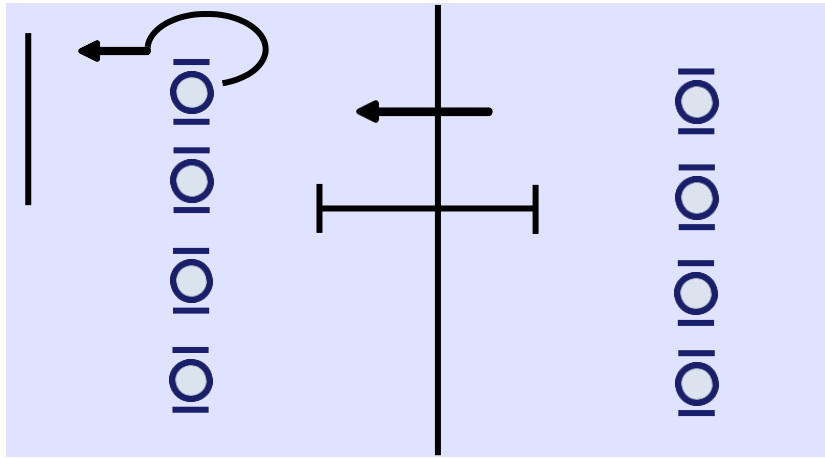


### AIM—FUN / TEAM GAME (11)

To incorporate movement skills and hitting skills.

#### DESCRIPTION

Team of players start behind base line. They must follow a course before moving to play stroke at set position. The shuttle being fed by the coach. Player 2 follows closely as soon as player passes 1st cone. Develop by having a series of teams on different courts competing against each

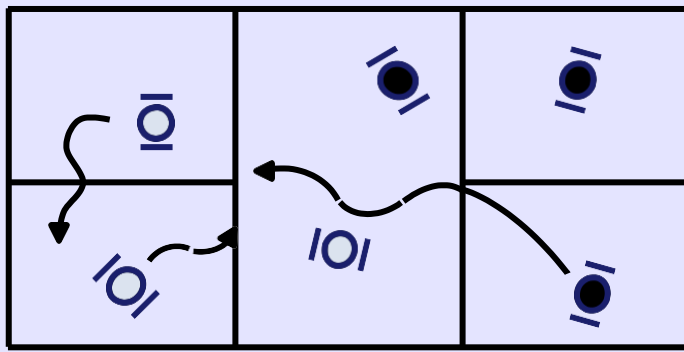


### AIM—FUN / TEAM GAME (12)

To develop reaction, rotation and drive

#### DESCRIPTION

Two teams of equal players face each other 2 meters apart. Team 1 and Team 2. The coach shouts either team 1 or 2. If the coach shouts 2, then this team must turn and drive towards a finish line a set distance away. Team 1 must try and catch them before this line. Distance between teams and also shouting other team during chase also



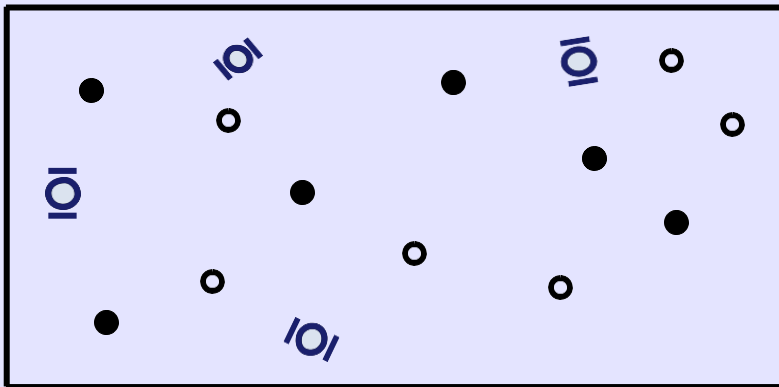
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### AIM-FUN / TEAM GAME (13)

Team and tactical game of chase

#### DESCRIPTION

Two teams of 3 or more players. One player is designated as target for the opposite team (A). Using a soft ball and passing amongst players the aim is to hit the opposing teams target. This player can be defended by his tem through forming blocks and barriers. You can have a set time and space to work in.



### AIM-FUN / TEAM GAME (14)

Speed and movement

#### DESCRIPTION

Two teams and a number of cones placed upwards and downwards across a set area. One team are Tops and the other are Tails. The aim is for each team to turn the cones over to their side, either Top or Tail. The one with the most turned their way after a set time are the winners.