

**GCSE COURSEWORK – PHYSICAL EDUCATION**  
**ATHLETICS – SHOT PUT**

**17<sup>TH</sup> August 2003**

Shot Put is a high intensity, anaerobic sport. To be an effective and accomplished shot putter, there are many techniques that you have to master and apply to your own specific technique.

**Identify the important components/skills/techniques needed for a successful performance in the shot put.**

To achieve a good technique for shot putting firstly you will have to master 4 instrumental phases. Firstly, the grip. The shot should be placed at the base of the three middle fingers of your hand, with the little finger and thumb free to support the shot. Then the shot is placed under the chin, and you have to remember to keep the elbow in a raised manner.

Secondly, the stance. The athlete should take up a position of his entire weight over his right foot, and also should be thinking of “chin-knee-toe” being vertically in line with each other. The feet and hips should be facing the side of the shot putt circular arena, and should be at a direct right angle to the shoulders. The width of the stance will of course, vary due to the height of the athlete, but the feet should always be aligned behind each other.

Thirdly, the movement into the basic put. There are several ways to achieve this movement across the circle, but some movements are more effective than others are. There are two widely used techniques in this, the shift and the rotation. The Shift – Stand at the back of the circle, facing in the opposite direction to where the put will finally land, the hips and shoulders should be parallel. The athlete’s entire bodyweight will then be placed on the right foot and the body position should be a crouching, low one. The athlete will then hop backwards towards the stop board and when in this process, the hips will rotate in a complete 180-degree turn, so that they are at a right angle to the shoulders. The left foot will then be placed against the stop board, to achieve balance and make sure that you do not unintentionally exit the circle, as this will cause a no throw. During the six-week training course we will be using the Shift technique. The reason for our decision was that the shift suited both our techniques and was the most effective during competition.

Finally, the put. From this stance position, you will be ready to execute the putt. The movement will be initiated by which leg you are putting all your weight on; in this case the right leg. You will then drive the right leg and drive the hip to the front, transferring all the bodyweight of the athlete from the right leg onto the left leg. The left arm will then come up and point along the trajectory line that the shot will take (usually 45 degrees to the horizontal). During this action all emphasis should be put on a fast right hip, and concentrating on bringing the hip round to face the front of the circular shot putt arena, remembering to keep the elbow up high above the shot. As the hips have rotated round, the right shoulder is driven to the front and the left arm will swing round and help the athlete maintain balance. When the chest is facing forwards, the right arm punches the shot out in a rapid movement, hoping to gain as much power and precision as the athlete can, remembering always to keep the elbow high.

There are many components of fitness needed to perform the shot put. It is essential to have speed whilst performing the shot put. Speed is the ability to move the body and limbs quickly. The athlete will need speed because if the shot put were not done in a rapid movement, then maximum distance would not be achieved. As the shot put is high intensity, the athlete needs to use lots of speed. Another component of fitness that is required for the shot put is Muscular Strength and specifically Explosive Strength. Explosive strength is when we use our muscles to produce a very rapid movement. This is sometimes known as power, and is a combination of both speed and muscular strength. Explosive Strength is vital for a shot putter because the athlete will need to throw the shot to the maximum distance possible and an athlete with a lack of muscle bulk (e.g. marathon runner) would not be able to execute the shot put effectively. This would result in not achieving a good distance. A good way a shot putter can prepare for this intense strain on muscles is by doing Dynamic or Ballistic stretching. Dynamic or Ballistic stretching is stretching that involves rapid movement into the required stretch position. This is important in shot put as the movement is very rapid and therefore will put a lot of stress on the muscles, and may antagonise them. It is therefore important to prepare your muscles for such event by doing this. To do this start the stretches at half the speed you would do the activity at, then gradually getting faster to ease your muscles into the movement, to get the muscles used to it. Co-ordination is another component of fitness that a shot putter requires. Co-ordination is the ability to carry out a series of movements smoothly and efficiently. Without co-ordination the shot putter would find it difficult to execute the throw at the high level it is required. Without co-ordination the shot putter would be off balance and may cause the shot putter to step outside of the circle. This would cause the throw to be a no throw. Also another reason a shot putter would need co-ordination is that if the shot putter is doing the "Rotation" technique, then he would be unable to keep balance. If he finally managed to throw the shot then the shot may end up going out of the arena, causing the throw to be disqualified. It is important that all shot putters use the free arm to help them balance during throwing the shot.

### **Analyse and identify in detail the strengths of competitor/participant or self.**

I have been working with partner Grant Pugh over the last 6 weeks. He has many strengths in executing the putt and also some weaknesses. His strengths are firstly that he always keeps a high elbow when executing his putt. This helps him have optimum trajectory of the shot. If the elbow lowers, the shot will come out of the neck, which will cause the throw to be a "no throw". It is vital shot putters keep a high elbow at all times. Also he has a good hip movement, he swings the hips round rapidly and effectively, this also helps him execute the shot putt in an effective manner. Another strength that Grant has is that he punches the shot out with maximum effort and velocity. This helps him achieve maximum height and length on how far he putts the shot. This is key in achieving a good distance. Another strength that Grant has is that he moves through the shift phase with good speed. Speed is vital to any shot putter. Using speed, this helps him achieve momentum, speed and therefore distance on the shot. Also another key strength that Grant has is that he always remembers the "chin-knee-toe" combination. This is when the chin, knee and toe are vertically aligned whilst leaning back and putting all of the weight on the leading foot. This is important because you may become unbalanced if the chin, knee and toe are not in line correctly.

### **Analyse and identify in detail the weaknesses of competitor/participant or self.**

Although Grant has many strengths, he also has many weaknesses, which hinder him in throwing the shot. This is to be expected, as we do not have much experience in the event of shot putt. Firstly, he does the movement too quickly, and looks rushed. What Grant would need to do is take time over executing the shot, make sure that his chin, knee, and toe is all vertically aligned to each other, prior to the throw. Also he may have to make sure he is transferring all of his weight from back to front of his body, to achieve maximum power in putting the shot. Also another weakness that Grant has is that he doesn't swing his arm round to achieve balance when executing the shot. This could prove costly in competition as if he does not have appropriate balance, he could end up going out of the circle, and then the throw will not count. He should make sure that his free arm (the arm he isn't using to throw the shot) is out horizontally to help him achieve good balance after throwing the shot. Another weakness is that Grant varies in his release angle. Sometimes it is below 45 degrees, sometimes higher, and sometimes directly on it, this is when he achieves his furthest distances. To make sure that he throws the shot at a direct 45 degree angle he could maybe practice this, holding his free arm up in the air at a 45 degree angle to make sure he knows how high or how low he needs to throw. The focus of the shot putter must be on speed and not the projection angle. For elite shot putters, like Great Britain's Carl Myerscough, the optimum release angle lies between 30 and 40 degrees.

Over the last six weeks my partner and me have completed a six-week training programme. We did this so we could evaluate each other's performance, before and after the programme too see how much we had improved.

### **Six Week Training Programme**

During our training programme, there are several factors of training that we will have to consider. One part of this FITT Principles. These basic principles of fitness summarised in the acronym FITT.

- **F** - Frequency (How Often)
- **I** – Intensity (How Hard)
- **T** – Time (How Long)
- **T** – Type (the type of training, strength, endurance etc)

We will also look at training principles, these include:

- Specificity
- Progression
- Overload
- Tedium

Specificity is an important part of training as it means that all exercise done must be specific to the energy requirements of our chosen event, in this case anaerobic exercise.

Progression is important as it measures how far an athlete has come in his or her training. For example, in strength training using weights, progression would be after a number of weeks progressing onto bigger and heavier weights and also including more sets and repetitions.

Overload is the process of working the muscles beyond their normal working threshold. A muscle will only develop and increase in size when forced to work beyond its customary intensity. The load must be progressively increased in order to further adaptive responses as training develops, and the training stimulus is gradually increased

Tedium refers to making training interesting. It will usually involve introducing exciting and fun aspects of training to make sure athletes do not become bored with doing the same training day in and day out. This would include using different training methods, environments and activities.

### **Week 1 (Monday 18<sup>th</sup> August)**

#### **Skills:**

Today was the first week of our assessment and we decided to throw an initial shot put just to see how far the distance was at the start of the assessment. We would do this at the start of the assessment and then at the end, to measure if we had taken on board any of the improvements that we had done, and also if there was a direct improvement.

	Attempt 1	Attempt 2	Attempt 3
Jordan	10.45	10.98	10.91
Grant	10.72	10.87	10.78

Here we worked on our stance, making sure that we had both our stances up to standard. We both analysed each other's stances whilst throwing a shot initially and both commented on how we could both improve our stance to the maximum potential. Here we decided to look at certain types of stances, but the most common and effective one is to put all weight on one leg, and be bent over so that the chin, knee and toe are aligned correctly.

## **Fitness Phase**

We both agreed that we had to warm up before physical activity to minimise the chance of injury. Firstly we ran a lap of the track to get the blood flowing and heart pumping. After the lap, we decided stretching was the best method of warming up. There are various techniques of stretching. The required stretch that was carried out today was static stretching. Static stretching involves gradually easing into the stretch position and holding this position for a certain period of time. This can be anything between 6 seconds to 2 minutes depending on which muscle you are stretching and what activity you are doing. As we were working on the stance and the hop movement, we decided to stretch the gastrocnemius (calf). Grant and me achieved this by cross the legs and touching your toes, remembering to keep the legs vertically straight, and holding for about 15 seconds and then changing legs.

Today it was decided upon working on both arms and legs, to increase power in both, as this is important in shot putting.

Calf Raises: 30 Seconds on moderate weight: 20kg

Bench Press: 30 Seconds on heavy weight: 50kg

Leg Extensions: 45 Seconds on moderate weight: 25kg

Arm Curls: 30 Seconds on heavy weight: 50kg

## **Week 2 Monday 25<sup>th</sup> August**

### **Skills:**

This week it was time to work on the grip and stance. But, firstly, we went over last weeks training and summarised what we had learned and just made sure that it was attainable by both of us. Then Grant and me both went onto looking at certain types of grip that athletes use, and looking at the most effective ones. We decided to settle on the most common one of placing the shot at the base of the three middle fingers, with the little finger and thumb supporting. Then we looked at where to place the shot in relation to the chin.

## **Fitness Phase**

Here Grant and me decided to do our weekly lap of the running track just to get muscles working and to get warm for today's training.

We did an hour in the gym this week too focusing on all aspects of the body, but mainly arm and leg, and again did 3 sets. This week it was agreed that both of us would increase the amount of time we spent on the weights.

Calf Raises: 40 Seconds on moderate weight: 20kg

Bench Press: 40 Seconds on heavy weight: 50kg

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Leg Extensions: 60 Seconds on moderate weight: 25kg

Arm Curls: 40 Seconds on Heavy Weight: 50kg

### **Week 3 Monday 2<sup>nd</sup> September**

#### **Skills:**

To start, me and Grant reinforced the principles of the previous two weeks training, just to make sure that no parts were forgotten. This week we both decided that we would concentrate on the movement into the basic put, as this is one of the most important parts of the shot put. It was evident that it was essential improve our movements into the put. Firstly we looked at video tapes of world elite shot putters, and then recorded ourselves in doing the same action, and then we looked where we went wrong. We also analysed their stance before moving into the putt movement. Some athletes' stance's were totally different from other so we looked to see which putt went furthest and from which stance.

#### **Fitness Phase**

Here to warm up, both of us did a warm up by completing a lap of the track. Then some basic ballistic stretching.

We also decided to work on power again. It was decided that we would do plyometric exercises:

- Standing based jumps performed on the spot (low intensity) – tuck jumps, split jumps

Jumps from standing (low medium intensity) – standing long jump, standing hop, and standing jump for height.

Depth jumping (very high intensity) – jumps down and up on gym boxes (40-100cm), bounding up hill/steps to increase power in legs

Basic gym activities were done this week. But we decided to increase the amounts of sets, but decided to reduce the amount of time that was spent on each weight.

Calf Raises: 25 Seconds on moderate weight: 20kg

Bench Press: 25 Seconds on heavy weight: 50kg

Leg Extensions: 45 Seconds on moderate weight: 25kg

Arm Curls: 25 Seconds on Heavy Weight: 50kg

### **Week 4 Monday 9<sup>th</sup> September**

#### **Skills:**

Again, last weeks training was looked and both of us decided to go over it briefly again just to make totally sure that we firmly took on board what was learnt. This week it was decided upon

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that we would concentrate on the optimum projection angle of the shot. The ideal angle that the shot should be released at is 45 degrees. This will achieve maximum distance. For the elite athletes who compete in world competitions it is around 30/40 degrees. This is only unique to the shot put, and other throwing events such as hammer, javelin and discus because all these have different projection angles at which each respective item is thrown. Again Grant and me looked at videotapes of athletes performing, and estimating what angle they release it at, and we also looked at ourselves to compare and analyse.

### **Fitness Phase**

This week we did ballistic stretching and also partook in partner stretching. In partner stretches, your partner will assist you in the stretch position whether it would be with balance or help you ease into the position. Partner stretches are used as developmental exercises, with each stretch being held for approximately 30 seconds.

The weight training consisted of doing 4 sets of each, with a period of 30 seconds recovery between each. They were both increased from last week to achieve both progression and overload.

Calf Raises: 40 Seconds on moderate weight: 20kg  
Bench Press: 40 Seconds on heavy weight: 50kg  
Leg Extensions: 70 Seconds on moderate weight: 25kg  
Arm Curls: 40 Seconds on Heavy Weight: 50kg

Grant and me also introduced circuit training to our programme to achieve tedium. We decided to do 6 exercises:

- Jump Squats
- Step Ups
- Half Squats
- Split Jump Squats
- Press Ups
- Sit Ups

Each event was done for a period of 45 seconds, with 30 seconds rest.

### **Week 5 Monday 16<sup>th</sup> September**

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### **Skills:**

Today we decided the final part of shot putting was looked at, the put. Me and Grant both took into consideration what we already knew about the shot put, and what we knew about the put. It was essential to remember such aspects as driving the hips in a rapid manner, keeping the elbow firmly up high. I felt if I could remember to do this well, it would prove to be very successful in the long run.

### **Fitness Phase**

Again, the same warm up was done (a lap of the track) and both of us did a variety of stretches, including static, ballistic and partner. We did this to get synovial fluid into the joints and reduce the risk of injury to any part of our body, as this would hinder the outcome of our put.

Again it was agreed upon that working on weight training and circuit training was the theme of the weeks training

The weight training consisted of doing 4 sets of each, with a period of 20 seconds recovery between each. We also increased the weight, and increased the time period allowed for each exercise

Calf Raises: 50 Seconds on moderate weight: 350kg

Bench Press: 50 Seconds on heavy weight: 60kg

Leg Extensions: 80 Seconds on heavy weight: 40kg

Arm Curls: 50 Seconds on heavy Weight: 60kg

- Jump Squats
- Step Ups
- Half Squats
- Split Jump Squats
- Press Ups
- Sit Ups

We did each event for a period of 60 seconds, with 20 seconds recovery period. In this circuit, both of us increased the amount of time that was spent on the activity and also both of us decided to reduce our recovery time. This was an attempt for us to achieve overload in training.

**Week 6 Monday 23<sup>rd</sup> September**



Jordan Winnard

### **Skills:**

Today it was decided upon that we would put all of the aspects of shot put that both of us have learnt together, and focus on the entire aspect of shot putting. This would include remembering everything that we have learnt in previous weeks and being able to apply them in our final throwing distance. These aspects would include, the grip, the stance, the movement of the basic put, the projection angle of the shot put and the put itself. If both of us had correctly took on board what we had learnt previously our distances should be significantly better than our previous totals

### **Week 1 Initial Assessment**

	Attempt 1	Attempt 2	Attempt 3
Jordan	10.45	10.98	10.91
Grant	10.72	10.87	10.78

### **Fitness Phase**

1 lap of a 400m track was completed. Onto partner stretching and ballistic stretching as this was the result of our final assessment, which would ultimately be the culmination of the past 6 weeks. It was essential too fully warm up as both Grant and I wanted good distances.

### **Final Assessment**

	Attempt 1	Attempt 2	Attempt 3
Jordan	11.56	11.85	11.61
Grant	11.33	11.66	11.82

This conclusively proves that we have increased the distance in which both of us have thrown the shot due to the six-week training programme. In this training programme, progression, overload, specificity and tedium were all achieved. We achieved progression by increasing sets and repetitions and reducing the time between sets.

We also did Circuit and Weight training.

The weight training consisted of doing 5 sets of each, with a period of 30 seconds recovery between each. We also did not increase the weight, and we gave ourselves more time to recover due to us increasing the amount of sets we were doing

Calf Raises: 50 Seconds on moderate weight: 350kg  
Bench Press: 50 Seconds on heavy weight: 60kg  
Leg Extensions: 80 Seconds on heavy weight: 40kg  
Arm Curls: 50 Seconds on heavy Weight: 60kg

We did the same circuit training that we had been doing for the past week

- Jump Squats
- Step Ups
- Half Squats
- Split Jump Squats
- Press Ups
- Sit Ups

We did each event for a period of 40 seconds, with 300 seconds recovery period. We did 3 sets of each activity. We decided to decrease the amount of time we did each exercise, and increase the time allowed to recover. This was because of the rapid rise in sets we did.

That is the Six-Week training course completed to a very high standard and to complete effectiveness.

There are many factors that can affect performance both positively and negatively.

One factor is smoking. The view on smoking has drastically changed over the past twenty years. During this time, cigarette advertisements were widespread in the press and on television. Then experts confirmed that smoking has appalling effects on our health. Society is now fully aware of the harmful effects of smoking and we all know that smoking is not part of a healthy lifestyle. Young people starting smoking are usually under the impression that smoking will only affect them in old age and that smoking now will not affect them. In fact, smoking is harmful at any age and has drastic effects and serious consequences for the components of fitness. Smoking:

- Increases the likelihood of heart malfunction
- Increases the likelihood of blockages in the veins and arteries
- Causes damage to and reduced the capacity and efficiency of the lungs
- Reduces the oxygen carrying capacity of the blood
- Negatively affects the process of gaseous exchange

Smokers don't do this to themselves. Passive smoking or inhaling smoke from somebody else's cigarette is also just as dangerous. This means that people who care about their health, and are just in and around smoke can suffer from the same effects indirectly

Injury is another factor that can affect performance negatively. Injury is the unintentional or intentional damage to the body resulting from straining yourself during any physical activity and doing anything that stops you from partaking in physical activity for a certain period of time. It is extremely important for an athlete to try to prevent all injuries from occurring. Injuries decrease the amount of time you can spend in leisure activities, lower your fitness, downgrade competitive performance, and can lead to long term health problems such as arthritis. There are some general rules for injury avoidance, which apply to all sports. Sports scientists suggest that injury rates could be reduced by 25% if athletes took appropriate preventative action.

There are many things that you can do to reduce the risk of injury. These are:

1. Avoid training when tired
2. Use appropriate training surfaces
3. Check training and competition areas are clear of hazards
4. Increase your consumption of carbohydrate during periods of heavy training
5. Increase in training should be matched with increases in resting
6. Any increase in training load should be preceded by an increase in strengthening
7. If you experience any pain during training, you must stop immediately to prevent any potential injury from occurring
8. Check that the equipment that you are using is appropriate and is suitable and not liable to break
9. Allow sufficient amount of time for warming up and cooling down
10. Train on a range of surfaces, but remember to wear appropriate footwear for each surface
11. Have a shower and change clothes after training

Anxiety is another factor that can affect performance. Anxiety can be many things, but to summarise it is the uncontrollable worry about everyday things. Anxiety will ultimately hinder performance due to the many factors that anxiety can lead to. The intensity, duration and frequency of the worry are disproportionate to the issue and interfere with the sufferer's performance of tasks and ability to concentrate. Physical symptoms include:

- Muscle tension;
- Sweating;
- Nausea;
- Gastrointestinal discomfort or diarrhoea;
- Cold, clammy hands;
- Difficulty swallowing;
- Jumpiness

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Sufferers tend to be irritable and complain about feeling on edge, are easily tired and have trouble sleeping. If all these factors were to happen to an athlete before a very important event, then they would obviously be severely hindered in competing.

Diet is also another factor that can affect performance in both positive and negative ways. Firstly, if the athlete concerned is eating the correct health conscious foods that an athlete should be eating, then he will ultimately his fitness levels will increase, turning him into a greater competitor and performer. The sorts of food that an athlete would be expecting to eat would depend on his/her event. If the athlete were a long distance runner, then he/she would be expected to eat meals with high quantities of carbohydrates. When starches or sugars are eaten, the body changes them all to glucose, the only form of carbohydrate used directly by muscles for energy. Whether carbohydrates are in the form of starches (in vegetables and grains), sucrose (table sugar), fructose (found in fruits and juices) or lactose (milk sugar), carbohydrates are digested and ultimately changed to glucose. Most athletes need not be concerned with "carbohydrate loading," the special technique of eating a lot of carbohydrates for several days before an endurance event. Instead, focus on getting enough carbohydrate everyday. The best way to ensure plenty of energy for exercise is to eat a nutritious, balanced diet that is high in carbohydrates and low in fat with lots of different foods.

An athlete needs to have a good, healthy balanced diet to be able to compete to his/her full ability in competitions. If the athlete does not take care of his/her diet than this may lead to a number of problems within the athlete's body. If the athlete decides to eat foods consisting of high amounts of fat or more commonly known as "fatty food", then this would cause the veins and arteries within the athlete to block and clog up. This will be especially important in events where the breathing is needed. The heart will be required to pump more blood the muscles, and if the veins and arteries that the blood travels along become blocked, the heart will have to pump that much harder to get the blood past the parts that are clogged. This will result in a large amount of lactic acid build up which would be unfortunate for long distance runners who rely on their oxygen getting rid of the lactic acid build up.

Another factor that affects performance is Motivation, both intrinsically and extrinsically.

Intrinsic motivation could affect performance in both negative and positive ways. A way intrinsic motivation could affect an athlete in a positive manner could be that during a race, a 100m athlete has been running sub 10-second times during the past year, and has a personal best which beats any of his fellow competitors during the race. Within himself he knows that he can run faster than any of the other athletes in his race, if he performs to the best of his ability. This may spur him on with the knowledge he can overcome his fellow competitors. A way that intrinsic motivation could prove to be a negative factor for an 100m athlete could be that during a race he knows he hasn't been running up to the standard that he is capable of, and has been running well short of his best. He also knows that many of his other competitors have been beating him lately with faster times. Knowing this, an athlete may just accept defeat, and now have that key edge within him to take him over the line in 1<sup>st</sup> position because he knows he will probably be beaten.

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Extrinsic motivation could also affect performance in both negative and positive ways. A way that extrinsic motivation could prove to be a positive factor would be that during the start of a 100m race, an athlete's coach, family had come to watch him perform. They have been encouraging the athlete to beat the rest of the field, and willing him on as he does so. This may cause the athlete to perform at his best, as he knows he wouldn't want to disappoint them in anyway. A way extrinsic motivation could prove to be a negative factor in an athlete's performance could be that an athlete had been suffering from abuse being hurled at him by fans in an arena. This may affect the athlete's concentration and if the athlete is not concentrating 100% on the race, he may lose vital seconds that may be the difference between gold, silver or bronze medals.

Alcohol can also have negative effects on performance. Drinking alcohol is a socially accepted activity. In the UK, drinking is seen as part of many social activities. For example, it would be normal for a rugby team to go drinking alcohol after a game. There are many negative effects of alcohol. These include:

- Reduced co-ordination
- Slower Reactions
- Dehydration
- Slower removal of lactic acid from muscles
- Heat Loss
- Weight Gain
- Constriction of the arteries

There are some sports in which alcohol has been banned as it gives an unfair advantage to the competitor. These sports include archery and clay pigeon shooting as in these types of sport it is important to keep steady and not shake, and alcohol reduces stress and lowers heart rate. But in some sports alcohol advertisements are widespread. For example in football, many shirts have alcohol advertisements on the front e.g. Liverpool's sponsor "Carlsberg" which is a lager.

Weather can also affect performance in positive and negative ways. If the weather has been very good, the track will be in peak condition, and with a slight following wind would be very good for sprinters, as this would help them gain a faster time. Also the sun will put the athlete in a good mood and also a good frame of mind for competition. In contrast, if the weather hasn't been kind to the athletes, this may be at a disadvantage for the athlete because the rain and cold weather may put the athlete in a frame of mind that is not associated with competition. They may not be able to run their fastest if they are cold and not correctly warmed up. Also if the weather is bad then this will have an effect on the track, making it difficult to run on.

Arousal may affect performance in both positive and negative ways also. Arousal can affect performance in a positive ways because if a competitor is appropriately skilled then it will help them perform to the highest of their capabilities if their drive compete is aroused, this may be known as being "psyched up". This whole concept is known as the "Drive Theory". An alternative to the drive theory is the "Inverted U Theory". This

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predicts a relationship between arousal and performance approximates to an inverted U shape. The theory is that as arousal increases, the level of the performance increases, but this can only improve up to a certain point (Top of the Inverted U). If an athlete's arousal increases beyond this point, then the whole performance diminishes. A good example of this occurring is in the 1991 F.A Cup final, where Tottenham Hotspur played Nottingham Forest. During this game Tottenham player, Paul Gascoigne, was so "psyched up" for the game that he got red carded after two professional fouls and this occurred in the first 12 minutes of the game. Not only did this seriously hinder his team's chances of winning the F.A Cup; it also resulted in Paul Gascoigne becoming injured by tearing ligaments. This sidelined "Gazza" for months on end. This is an example of when over-arousal leads to poor performance in the sporting arena.

After successfully completing the six-week training programme I feel that both Grant, and me have become an accomplished and potentially successful shot putter. At the start of this we could both admit that our technique was relatively poor. When Grant first started this, he had faults, which he managed to rectify during the course. Such things like rushing his attempt at the put, or not correctly moving the free arm to accommodate balance. With time and precision, he has rectified these faults. After closely studying tapes of elite shot putters, we adapted their techniques and postures and I believe this has made Grant become a successful shot putter.

### **Grant's Observation**

Jordan has made good progress over the past 6 weeks. He has overcome the weaknesses that he possessed to add to his much strength. At the start of the programme Jordan had such faults as not keeping his elbow up high enough, which resulted in the shot not being projected at the optimum angle. This ultimately, resulted in the shot not going as far as it could have done. We both studied videotapes of athletes and I believe this has helped us. Jordan recognised where he went wrong and now always tries to keep his elbow up to achieve maximum height and length on the shot. He did this by practicing keeping the elbow high without throwing the shot. Then he went into the process of throwing the shot with elbow held high, which came to great effect. I believe that with time, effort and coaching Jordan has the required potential to do well in Shot Put.

### **Jordan's Observation**

Grant has definitely made good progress over the training programme. The weaknesses that Grant had have been looked at during the programme and now been rectified. Such weaknesses as not releasing the shot at the optimum angle, remembering to swing the free arm round to achieve balance and rushing his performance have closely been monitored and now I can witness that these are not a factor for Grant anymore. He remembers to swing the arm round fully for balance and he believes it has helped him. He also now remembers to take his time over the entire process. Also, Grant has also looked at the optimum angle and now always knows the correct time to release the put. I believe that if Grant perseveres with shot put he has the talent and potential to succeed.

### **Initial Assessment**

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	Attempt 1	Attempt 2	Attempt 3
Jordan	10.45	10.98	10.91
Grant	10.72	10.87	10.78

### **Final Assessment**

	Attempt 1	Attempt 2	Attempt 3
Jordan	11.56	11.85	11.61
Grant	11.33	11.66	11.82

Here we can see that we both made startling progress over such a short period of time. With help of the training programme we have both improved our distances and we should be very pleased with our results.

### **Teachers Views**

#### **Mrs. Waite**

I observed Jordan and Grant many times and I believe these two were the best shot putters out of the group, and with the training programme I am pleased with the progress that they have both made. I am glad that they both stuck to the regime and followed it with detailed precision. This of course reaped rewards and after having put in 100% effort into the regime, the work has paid off. I feel these two could become accomplished athletes in the shot put domain and maybe someday compete in competition.