

## Chapter 1 : Baseball Field Layout and Construction

*The distance from the pitching mound to home plate depends on whether the sport is baseball or softball. Furthermore, the distance can vary depending on the level of ball, the age range and the particular league. In baseball, the most common distance of the pitching mound to home plate is 60 feet, 6.*

Triangulate the Backstop If there is no backstop, position the apex of home plate in an appropriate spot. For positioning the apex of home plate using an existing backstop, start from one outside corner of the backstop and run a string or tape measure out to a couple of feet past where you think the pitching rubber will be. Repeat this process starting from the second post, making sure the second string or tape is the same length as the first. Next, measure and locate the center of the backstop. Extend a straight line from this point out to where the arcs intersect. Position the apex of home plate on this line, and depending on which type of field, a prescribed distance from the backstop. Recommended distance from backstop to apex: The distance to measure is from the apex of home plate to the center of second base. Distance from apex to center of second base: Locate First Base and Third Base Measure the appropriate baseline distance to third base from the apex and scribe an arc. Measure the same distance from the center of second base to third base and scribe another arc. Place the outside back corner of the base where the arcs intersect. Repeat to locate first base. Distance from apex and second base to first or third base: Set Home Plate Draw a line from the outside back corner of third base to the apex and from the outside back corner of first base to the apex. Align the back angles of home plate to match up with these lines. Watch this video on improving footing on your mound with just 8 Turface Moundmaster Blocks Step 5: Set Pitching Rubber Following the straight line from the apex to the center of second base, measure a line from the apex to the spot where the front of the pitching rubber will be. Square up the pitching rubber by measuring an equal distance from the front corners of home plate to the corresponding corners on the pitching rubber. Distance from apex to front of pitching rubber: The pitching plate rubber is measured from the front edge and center of the pitching plate rubber to the APEX of home plate. The front edge of home plate is 17 inches in front of the apex. You can also use this technique to layout an infield in a gym, or in the outfield grass for practice.

*Atop the mound is a white rubber slab, called the pitcher's plate or pitcher's rubber. It measures 6 inches (15 cm) front-to-back and 2 feet (61 cm) across, the front of which is exactly 60 feet 6 inches ( m) from the rear point of home plate.*

The two strike zone changes do not appear to be exactly opposite but they are fairly close. Another interesting point to note is that the rate of home runs changed during both strike zone changes. The answer is not obvious. Strikeouts already were trending upwards before the strike zone change in although not at the same rate , so there was already some other force pushing baseball toward more strikeouts. Home Runs You often hear about pitchers throwing with a good downhill plane, the idea being that a ball thrown on a more downward trajectory is harder to hit and when hit will generate lots of groundballs. This is one of the reasons scouts like tall pitchers, because taller pitchers release the ball from a higher point, therefore throwing it on a more downward trajectory. Dropping the height of the mound by five inches meant that pitchers were closer to level with the batter. If throwing downhill leads to ground balls, then we would expect to see fewer ground balls, and fewer ground balls means more home runs. We do not have complete batted-ball data for the s, but we do have records of ground outs and air outs, which have been shown to do a decent job of estimating groundball rates. This could lead one to believe lowering the mound had almost no effect on ground balls and rather may have even increased them. It turns out that the idea of throwing downhill to induce ground balls is more myth than fact. As a side note, if a five-inch change in mound height has no significant effect on groundball rates, then it goes to reason that any slight mechanical adjustments a pitcher makes to increase the height of his release point will have no effect on his groundball rate. An important note is that I am counting double plays as only one out, so the increase in double play opportunities in would not artificially inflate the number of ground outs. Batters obviously were hitting balls harder than they had in the past, leading to more home runs and more hits on balls in play. Why were batters suddenly squaring up pitches more easily than they had done in the past? The lowered pitching mound could be one of the contributing factors. While throwing on less of a downhill plane may not have drastically changed groundball rates, it very well could have affected the quality of contact. Denny McLain thought the lower mound would strain pitchers more, making it more difficult for them to pitch innings. Some pitchers complained of their arms getting sore in spring training, thinking the lower mound might be the cause. The smaller strike zone likely contributed to at least some of these increases. The effects of the strike zone extend beyond walks and strikeouts. Imagine the strike zone is enormous and almost any pitch gets called for a strike. The batter will have to swing at pitches nowhere near home plate, and if they make contact, it will most likely be feeble. Now, when a strike zone shrinks, the opposite should happen, as the batter no longer needs to swing at pitches he only can hit weakly. Additionally, a smaller strike zone means pitchers who fall behind the count are forced to throw more hittable pitches. In , batters had a. Once again, we cannot measure how many more favorable counts arose because of the new smaller strike zone, so we will have to resort to looking at the changes seen when the strike zone first was increased in size. So while it seems very plausible a decreased strike zone should increase home runs, the increase seen in looks to be caused by more than just a zone change. But this is just anecdotal evidence. I looked at the home run graph again and saw was a bit of an outlier in terms of home runs allowed, low even compared to Another possible effect was the change in ballpark dimensions. In an effort to increase hitting, several teams moved outfield fences closer to home plate, and the Dodgers notably moved their home plate closer to the fence. Another stadium change was the switch to synthetic turf in some stadiums. The new turf was supposed to let ground balls move faster, making them more likely to go for a hit. The BABIP for turf is much higher than for grass, but while the number of games played on turf increased in , the actual percentage of games played on turf went down slightly. One other interesting note: So while part of this could be from the Dodgers having to lower their pitching mound more than any other team, they did see most of the new scoring coming from home runs, which was due partly to their closer fences. In Conclusion What role could the mound change have? While the change in the pitching mound coincided with a large change in the offensive environment, it

is clear that it did not cause all of the change. There were so many modifications made to baseball in that we have too many confounding variables to definitely say what were the actual effects of the mound change. This change did have an effect, but it is much smaller than we might have guessed. Much of the change in run scoring can be attributed to other changes in the game. The increase in walks was not caused by a change to the pitching mound, but was caused almost entirely by the strike zone change. The decrease in strikeouts is right in line with what we would expect from the change in the strike zone. The only remaining area where the mound change could have had a significant impact is on home runs, but the home run increase is not entirely a result of the mound change, as at least some of it was caused by the diminished strike zone, changing park dimensions and other factors. My best estimate is that the mound change accounted for at most 25 percent of the increase in run scoring and half of the increase in home runs. This is in no way an exact number but just a best guess given the data available. If MLB ever decides to change the height of the pitching mound, I would appreciate it if they could do it one league at a time so we can see how much it matters.

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Third baseman Third base is the third of four bases a base runner must touch in a counterclockwise succession in order to score a run. Many batted balls that result in the batter being put out such as a sacrifice fly may nevertheless allow a runner to reach home plate and score a run from third base, provided that the third and final out is not recorded before he can do so. A runner on third base is therefore particularly valuable to the batting team when fewer than two outs have been recorded. The third baseman is the defensive player whose responsibility is to defend the area nearest to third base. A third baseman ideally possesses quick reaction to batted balls and a strong arm to make the long throw to first base. In the numbering system used to record defensive plays, the third baseman is assigned the number 5. For other uses, see Home plate disambiguation.

Home plate of a baseball field Home plate, formally designated home base in the rules, is the final base that a player must touch to score. Unlike the other bases, home plate is a five-sided slab of whitened rubber that is set at ground level. The use of rubber was developed by Robert Keating , who pitched one game for the Baltimore Orioles. Previously the plate was made of stone, iron, or wood. The rear edges are at 45 degrees to the sides, making a point at the back. The plate sits entirely in "fair" territory, with the two rear edges aligned with the right and left field foul lines. The length and angle requirements for home plate mandate that it is not a regular pentagon; it is a 17 by 8. In enclosed stadiums, the backstop is often composed of a lower part, which is like any other part of the wall, and an upper netting to protect spectators seated behind it; in recreational baseball fields, there is usually a tall chain-link fence , including an angled top section, composing the entire backstop. It is usually drawn in chalk on the dirt surrounding home plate , and the insides of the boxes are watered down before each game. However, those lines exist conceptually for the purpose of judging a batted ball fair or foul. Time will not be granted if the pitcher has already started his pitching motion. Foul poles, if present, help umpires judge whether a fly ball hit above the fence line is foul out of play or fair a home run. The poles are a vertical extension of the foul lines at the edge of the field of play. The outer edge of the foul lines and foul poles define foul territory. Both the lines and the poles are in fair territory, in contrast to American football and basketball, where the lines marking the playing boundaries are out of bounds. Now, a batted ball that leaves the field in flight is judged fair or foul at the point it leaves the field. Thus, such a fly ball passing on the fair side of a foul pole, or hitting a foul pole, is a home run regardless of where the ball goes thereafter. Foul poles are typically much higher than the top of the outfield fence or wall, and often have a narrow screen running along the fair side of the pole. It can still be a difficult call, especially in ballparks with no outfield stands behind the poles to provide perspective. Wrigley Field is notorious for arguments over long, curving flies down a foul line most notably in left field that sail higher than the foul pole. At Major League Baseball fields, foul poles are usually yellow. Those at Citi Field are orange. At the Rogers Centre , there are no foul poles, but large nets suspended from the roof that serve the same purpose. This is where the pitcher stands when throwing the pitch. This peculiar distance was set by the rule makers in , not due to a clerical or surveying error as popular myth has it, but intentionally further details under History. In Major League Baseball , a regulation mound is 18 feet 5. A pitcher will push off the rubber with his foot in order to gain velocity toward home plate when pitching. In addition, a higher mound generally favors the pitcher. With the height advantage, the pitcher gains more leverage and can put more downward velocity on the ball, making it more difficult for the batter to strike the ball squarely with the bat. The lowering of the mound in was intended to "increase the batting" once again, as pitching had become increasingly dominant, reaching its peak the prior year; is known among baseball historians as "The Year of the Pitcher. Usually before every game it is watered down to keep the dust from spreading. On youth and amateur baseball fields, the mound may be much different from the rule book definition due to erosion and repair attempts. Even in the major leagues, each mound gains its own character, as pitchers are allowed to kick away pieces of dirt in their way, thereby sculpting the mound a bit to their preference. The pitcher may keep a rosin bag on the rear of the mound to dry off his hands. Major League Baseball teams are also permitted cleat cleaners on the back of the mound. This

may be a flat grate-style plate, or simply a hand tool such as a piece of wood used to remove mud and dirt from cleats. These items are allowed to remain on the backside of the mound at the discretion of the umpire , thus reducing the probability that they will affect a live play. Baselines are not drawn on the field, although the foul lines serve to mark the baseline between home plate and first base, and between third base and home. Running baseline[ edit ] Generally, base runners are not required to follow the baseline. A base runner seeking to advance more than one base typically "rounds" the base, following a more circular path. Running lane[ edit ] Beginning halfway between home and first base, and ending at first base, there is a second chalk line to the right of the foul line. This second line and the part of the foul line it runs parallel to, form the running lane that defines the path in which a batter-runner must run as he is advancing to first base. First base itself is not located in the running lane, but Rule 6. Humphrey Metrodome , showing a white "grass" line. The grass line, where the dirt of the infield ends and the grass of the outfield begins, has no special significance to the rules of the game, but it can influence the outcome of a game. Dirt running paths between the bases and, at one time and still in some parks, between the pitcher and the catcher have existed since the beginning of the game, although they were not mentioned in the rule books until around , and their specifications are flexible. In addition to providing a running path, the grass lines act as a visual aid so that players, umpires and fans may better judge distance from the center of the diamond. Occasionally the ball may take a tricky bounce off the dirt area or the edge between the dirt and the grass. Multiple World Series championships including , and have been decided or heavily influenced by erratic hops of ground balls. Among Major League Baseball fields, Rogers Centre was the last stadium to maintain this type of configuration and was reconfigured with a full dirt infield starting in the MLB season. Outfield[ edit ] The outfield is made from thick grass or artificial turf. It is where the outfielders play. Outfields vary in size and shape depending on the overall size and shape of the playing field. The outfield stretches from the infield to the outfield wall and it contains the warning track. Outfields especially vary from Little League to Major League fields. Little League outfields vary more in size than Major League outfields. Outfields often differ from infields in the specific type of grass used, but most Major League outfields are grass. It is generally designed to give about three steps of warning to the highest-level players using the field. Typical widths run from about six feet for Little League fields to about 10â€”15 feet 3. A warning track this wide also lets groundskeepers avoid driving maintenance vehicles on the grass. The track can be composed of finely ground rock particles such as cinders, which is why announcer Bob Wolff called it the "cinder path" rather than the "warning track. When ballpark designers saw how the track helped fielders, it soon became a feature of every ballpark. Single-minded fielders often crash into a wall trying to make a catch despite the warning track. For this reason, outfield walls are typically padded for extra safety. However, there are pads on the walls of the tight left and right field corners in foul ground. Warning-track power is a derogatory term for a batter who seems to have just enough power to hit the ball to the warning track for an out, but not enough to hit a home run. The term more generally refers to someone or something that is almost but not quite good enough for something. Outfield wall[ edit ] The Green Monster in , showing the manual scoreboard and Green Monster seating, and more recent additions, including charity advertisements along the top, billboards above the Green Monster seating, and the American League East standings. Pitchers warming up in the bullpen The outfield wall or outfield fence is the wall or fence that marks the outer boundary of the outfield. A ball passing over the wall is dead ; if it passes over the wall in fair territory while in flight , it is a home run. As a result, baseball fields can vary greatly along those lines. The wall has numbers affixed or painted on it that denote the distance from that point on the wall to home plate. In most modern major league ballparks, the wall is made of some hard material e. Chain link fencing may also be incorporated into the wall in areas where the wall needs to be transparent, e. Many ballparks feature a yellow line denoting the top of the wall to aid umpires in judging whether the ball passed over the wall or if the ball is fair or foul. Depending on the ballpark, it may be situated in foul territory along the baselines or just beyond the outfield fence. Relief pitchers usually wait in the bullpen when they have yet to play in a game, rather than in the dugout with the rest of the team. The starting pitcher also makes his final pregame warmups in the bullpen. Managers can call coaches in the bullpen on an in-house telephone from the dugout to tell a certain pitcher to begin his warmup tosses. The on-deck circle is where the next scheduled batter, or "on-deck" batter,

warms up while waiting for the current batter to finish his turn. The on-deck circle is either an area composed of bare dirt; a plain circle painted onto artificial turf; or often, especially at the professional level, a mat made from artificial material, with the team or league logo painted onto it. As the term "coach" evolved into a noun, the name of the box also changed. History[ edit ] This section possibly contains original research. Please improve it by verifying the claims made and adding inline citations. Statements consisting only of original research should be removed. May Learn how and when to remove this template message The basic layout of the diamond has been little changed since the original Knickerbocker Rules of the s. The distance between bases was already established as 90 feet Through trial and error, 90 feet had been settled upon as the optimal distance. The original Knickerbocker Rules did not specify the pitching distance explicitly. Although he had to release the ball before crossing the line, as with bowlers in cricket , he also had to start his delivery from within the box; he could not run in from the field as bowlers do. Furthermore, the pitcher had to throw underhand. By the s, pitchers had mastered the underhand deliveryâ€”in fact, in , there were two perfect games within a week of each other.

**Chapter 4 : fastpitch softball camps events lessons**

*The pitcher's mound requires the most attention on your field. A properly built and maintained mound will help prevent injuries to your pitcher and will give you a home field advantage.*

Setting the Pitching Rubber When a half inch becomes two feet! Ever stood on a pitching mound and noticed the rubber was twisted in one direction or the other? While the apex of home plate is the benchmark of a ballfield where everything is laid out with respect to the pitching mound and its rubber are equally critical to ensure proper alignment and function for a pitcher. Elevation, Distance, Level, and Square There are 4 parameters that require absolute perfection in order to successfully install a pitching rubber to specification elevation, distance, level, and square. The elevation of the pitching rubber is measured with respect to the elevation of home plate. When someone says the mound is ten inches tall It means that the surface of the pitching rubber is exactly ten inches higher than the surface of the home plate. Most infields have a slope from the base of the mound down towards the baselines and bases in order to facilitate surface drainage off the infield. This will take away some of the height that you will build your mound up to. For instance, if you have three inches of fall from the base of the mound to home plate and you have to build a ten inch high mound, then the actual mound of soil you will build should only be seven inches in height. It is easiest to use a transit or builders level to help measure the elevations of the surface of the home plate and the surface of the pitching rubber to insure the correct change in elevation between the two. Some fields will have irregular surface grades and may tilt in odd directions. When the rule book lists the pitching distance for a ballfield, it is describing the distance from the apex of home plate to the front center of the pitching rubber. By the way, that is the apex of the white portion of home plate, not the black portion. This distance should always be measured using a steel tape when possible. Fiberglass tapes can stretch considerably over distance thereby threatening the accuracy of the measurement. Level is checked in two directions on the rubber. From side to side and front to back. A torpedo level will work best for this portion of installation. Be sure that the pitching rubber you are working with does not have any bubbling of the rubber going on. This can make it almost impossible to level the rubber. Once the pitching distance is correct, then checking to make sure the rubber is square to home plate is the next critical measurement and alignment. On the pitching rubber scribe a line with a pencil or pen marking the centerline of the pitching rubber. Then, run a very tight string line from the apex of home plate to the center of second base. Pop the string three to five times to get an idea where the line is settling on average. Ideally, the string will fall on to the center line drawn on the rubber each time. Using the Measurements Table, find the pitching distance for your ballfield and reference the squaring measurement. These two measurements should be the same when home plate is square to the pitching rubber. If these measurements are not the same, then the pitching rubber needs to be adjusted by twisting it ever so slightly until the measurements to match.

Chapter 5 : Baseball field - Wikipedia

*The pitching distance increased to 60 feet, 6 inches; a pitching slab replaced the pitching box; and the pitching mound was introduced. Between and , the only rule regarding the height of the pitching mound was that the top could be no more than fifteen inches above the playing field.*

Samantha Leave a comment Mark R. Why do pitchers stand on an elevated mound? Today, the pitcher is probably the most important position on a baseball field. In the early days of the game see: Who Really Invented Baseball? Pitchers often lobbed the ball underhand; there were no fastballs or curveballs at least other than the natural curve from the underhand pitch , and no balls or strikes were called. Since baseball revolved around batters hitting the ball, a pitcher would pitch as many pitches as needed until a hit was executed. In the mid century, the front of the pitching area was 45 feet from home base. However, as more serious competition took root, pitchers began to look for ways to gain an advantage over hitters by inducing weaker contact. For instance, to gain more speed on their pitches, pitchers took a running start before pitching the ball underhand to the batter. The hope was that a faster pitch would prevent a batter from squaring up the ball. As pitchers continued to experiment with pitches, their varied attempts often resulted in wild pitches to try and lure hitters to swing at balls outside their reach. Selective batters caused pitchers to throw pitches per game, which made for a really long, slow game and presumably some sore arms. This back and forth game between pitchers and hitters finally resulted in the National Association setting parameters for what would eventually be balls and strikes. Also towards this end, by , the pitching box was instituted to limit the freedom of pitchers. The 3 x 12 foot box prevented pitchers from taking a running start prior to releasing the ball. Just to be sure, though, they were also required to pitch with both feet on the ground. But all was not lost for pitchers. Their reward for such innovation was an increased pitching distance to compensate for the increase skill of the pitcher, with the front of the pitching box moved to 50 feet from the batter instead of In , pitchers were allowed to throw overhand if they desired, which resulted in even faster pitches that batters had a difficult time handling. In , in the attempt to, once again, create an equilibrium between pitchers and hitters to maximize fan enjoyment, new rules were put in place. The pitching distance increased to 60 feet, 6 inches; a pitching slab replaced the pitching box; and the pitching mound was introduced. Between and , the only rule regarding the height of the pitching mound was that the top could be no more than fifteen inches above the playing field. Either way, the variable height and mound construction provided a home field advantage. In response to this, in , Major League Baseball mandated that each pitching mound had to be exactly fifteen inches high. By delivering the ball from a fifteen inch elevation, pitchers gained momentum as they lunged downward off the pitching rubber and the ball gained even more speed, which made it more difficult for batters to square up, especially with the downward angle of the ball. Combined with a rule change that expanded the strike zone, pitchers began to dominate hitters once again to an extreme degree. For reference, during the steroid era in as high as 5. In , there were 4. The sweet spot to maximize fan enjoyment, and where MLB has mostly tried to stay within when adjusting things to favor the hitter or pitcher, is between 4 to 5 runs per game. Although there are some who argue even higher is better, almost no one argues that below 4 runs per team, per game makes the game more enjoyable to watch. It worked; in the average run scoring per game jumped to 4.

**Chapter 6 : When and Why the Pitcher's Mound was Introduced to Baseball**

*The pitcher's mound (aka the hill) is the raised dirt area in the center of the infield from which the pitcher pitches. Just behind the center of the mound is the pitcher's rubber, which the pitcher must touch with his pivot foot while preparing for and making the pitch. The pitcher's rubber is set.*

Softball Field Dimensions Softball Field Dimensions The softball diamond is closely related to the baseball diamond, which is one of the oldest and most complex pieces of geometric symmetry in all of sports. Of course, not every field is constructed exactly the same. Fields all across the world differ in terms of distances of baselines, outfield fences, and the pitching rubber. In the official rules of the International Softball Federation, the maximum outfield distance is stated to be feet. Interestingly, this maximum is shared by both men and women. The variations in the distances are purely team-specific. These dimensions can also vary depending on the league. The following are all taken from the official International Softball Federation rules, but apply universally to nearly every full-sized field in the world. Home Plate Area click to enlarge Home plate: The plate is a white rubber pentagon with one side measuring 17 inches in length from the base to the point. Two sides measure 8. Both the right-hand and left-hand boxes measure 3 feet in width and 7 feet in length; each box is 6 inches away from home plate, positioned so the midpoints correspond to the midpoint of home plate. The rubber is a white slab, measuring 24 inches by 6 inches. The pitching rubber should be level with the ground. Bases and Baselines First base: First base is a called a safety base or double base. It is the length of two bases, 15 inches wide and 30 inches long. The safety base is positioned across the first base line so that half of the base lies in fair territory and the other half lies in foul territory. The half that is in fair territory is painted white and the half that is in the foul territory is painted orange. Second and third base: Second and third base are white, measure 15 square inches, and are 3 to 5 inches thick. Third base is positioned entirely in fair territory. Second base lines up squarely with first base and third base, so that the four bases form a perfect foot square. Distance from home plate to first base: Distance from first base to second base: Distance from second base to third base: Distance from third base to home plate: Width of each baseline: Other Dimensions Infield size: Distance from first base to third base across the diamond: Distance from home plate to second base across the diamond: Distance from home plate to the backstop not mandatory: Softballs and Bats The ball: It may be wound with yarn, covered with latex or rubber cement, and have a cover of tanned horsehide or cowhide, synthetic material, or a material approved by the ISF Equipment Standards Commission. Variations on Field Dimensions It must be noted that many leagues and organizations throughout the world use variations of the above dimensions and standards for different levels of softball. Slowpitch fences are typically between feet and feet in distance depending on the type of league and age group. Most players begin playing permanently on the official full-size field around the time they start high school. However, in many instances, fields do not subscribe exactly to the above dimensions usually due to lack of space or resources. Infield dimensions vary depending on location and governing body, but all are designed to retain or closely mimic the proportions of the official dimensions.

*Little League Baseball is a national organization encompassing many baseball and even softball leagues. Little League Baseball has a standard set of rules which specify the dimensions of the field, including the distance from the pitcher's mound to home plate. This distance varies however, depending.*

The top of the rubber must be 10 inches higher than home plate. Take a pencil and mark a line down the center. Take a string from the apex of home plate and extend it to the second base peg. Measure 60 feet 6 inches from the apex of home plate and sink a spike. This marks the front of the rubber. Take a transit level and obtain a reading off home plate. The top of the pitching rubber must be 10 inches above home plate. Add or reduce height of the mound. Do the same on the right side. When these two measurements are the same distance, the rubber will be squared. Make sure that the rubber measures 12 inches on each side of the anchored spike. If building a mound from scratch, it is a good idea to place a solid concrete block under the rubber to keep it from shifting. Also, fill the hollow tube in a 4-way rubber with dirt for added stability. The following steps will provide proper dimensions and an easy way to get your 9-foot radius. This should be in line with the exact center of the rubber. This is the center of the mound. Attach a string to the spike and measure out exactly 9 feet from the spike. Keeping the string taut, circle the mound marking the outline. The diameter of the outline should be exactly 18 feet. With an edger or a spade, follow the outline and remove all inside turf to establish a permanent boundary for the mound. This provides a pitcher with a firm, safe playing surface. The plateau should be level with the top of the rubber and measure 5 x 3 feet. The inside frame should be positioned 6 inches in front of the rubber, 24 inches in the back of the rubber and 18 inches on each side of the rubber. Trace the inside of the frame in the clay with a nail. Carefully remove the frame from the mound. With a pick, loosen and remove existing soil within the outline to the appropriate depth. One layer of blocks is adequate for any level. Loosen or scarify the soil at the base of the hole to assure the new clay will bond to the existing soil. With a square-faced shovel or a spade, make sure the edges of the outline are properly loosened as well. Return frame and re-measure for accuracy. With the Turface Professional Mound Clay add a layer one inch at a time and tamp firm. A vibrating asphalt compactor will save a lot of time and hard work if you have access to one. Scratch up the existing soil and mix with the first inch of Turface Professional Mound Clay to assure a good bond. Lightly water and tamp each 1-inch layer until you reach the desired height. With MoundMaster Blocks excavate down 2 to 3 inches deep and place the blocks into the hole. Water the blocks after they are wedged into place and smear the seams together with a trowel or with pieces of MoundMaster Blocks that have soaked in water 9. It is important to be extremely careful tamping the front of the plateau because the tamp is close to the pitching rubber. By tamping too carelessly, you disturb the rubber. Once the table is constructed, slowly remove the plateau frame. It is important to go slow to avoid breaking edges. After the mound is completely constructed, rake a light coating of infield mix and Turface over the clay for traction and cover the mound. Watch this video on selecting the right mound clay. How to Construct the Mound Slope Because of the risk of injury, it is important to give a pitcher a firm consistent landing area on which to complete a pitch. It is also important for moves to any of the bases. This slope can be accomplished as follows: Use a large nail or spike to outline the landing area. This should start from the front corners of the plateau and continue outward toward the turf. With a pick loosen existing soil so your mound building soil will bond to the existing soil. Break up clumps with a square-faced shovel or remove with a rake. Place the four foot 1" x 4" on top of the rubber and extend it to the right edge of the plateau. The board should run parallel to the rubber making sure the four-inch side of the board is resting on the surface. Place the ten foot 2" x 4" along the right outline of the landing area. The top of the board should rest on the four foot 2" x 4" and the bottom on the board should rest at the base of the mound at the edge of the turf. Be sure that the board is turned on its side so the mound supports its two-inch side. The following will illustrate: Bring a wheelbarrow of mound clay and dump it to the left of the ten foot 2" x 4" Spread materials along the length of the board. Move any substantial excess away from the board because it will cause too much buildup, making the board too heavy to move. Another person will be needed at this point. In a slow, controlled motion, begin moving

the board in a short sawing motion, sliding the board up and down over the four-foot board. It is important to keep the ten-foot board on the four-foot board to avoid damaging the edges of the plateau. Continue the short sawing motion as you slowly move the board in a clockwise motion to the other side of the outlined landing area. As you are moving the board you may experience some low spots in the surface. Stop, move the board to the right of the low spot. Bring the mound building clay to the board in front of the low spot. Begin sawing motion again and continue forward. Use a mound slope board to measure an accurate slope of the mound. Once the entire landing area has been formed through this process, aggressively tamp this area for added firmness. Excavate the front slope of your mound to a 4" to 6" depth. Moisten the bottom of the hole with water. Add an inch of Turface Professional Mound Clay with a rake, cut into the soil for proper bonding. Lightly moisten but do not drown, and tamp again. Evenly add an inch of new Turface Professional Mound Clay to the area you are working. Water the area, but do not drown. As you near the last layer, reduce the amount of water you add to the Turface Professional Mound Clay. As you reach the top of your Turface Professional Mound Clay area on the mound, use a rake to rough grade the slope in front of the mound. Tamp or roll the slope for a smooth surface. Add Turface Professional Mound Clay to any low spots and use your rake to cut down the high spots. After leveling tamp or roll again. Add a final coating of water on the Turface Professional Mound Clay areas once all grades and slopes are set and rolled. Place the blocks 10 inches before the shortest stride and 10 inches wider than the longest landing foot. Remember pitchers may pitch from either edge of the rubber. The entire table around the mound should be built with MoundMaster Blocks. Outline your landing areas and plateau using a mound gauge to obtain the desired slope. Excavate 3" below the surface. Level and tamp firm. Excavate the landing area and be 10" wider and longer than the longest stride of your pitchers. Fill around blocks with adjacent soil and tamp to wedge together. Tamp and water thoroughly several times for about an hour. Allow water to be absorbed into clay so blocks swell. Tamp firmly between watering. Apply a thin layer of Turface Professional Mound Clay match color to blocks, moisten and tamp. Rake Turface Professional Mound Clay and infield mix over the surface and hand drag. To repair holes, cut up blocks or use Turface Professional Mound Clay. Before repairing, sweep out hole to expose pure packing clay. Moisten exposed packing clay, then add repair clay. Cover your mound with a plastic tarp to hold moisture. This can be done with a landscape rake. Lightly moisten the mound. Roll the mound with a hand roller, if available.

**Chapter 8 : A Guide To Softball Field Dimensions - Womens College Softball Pitchers Mound Distance**

*The normal mound distance for high school and up is 60'6". The best tunnel size will depend on if you're doing live pitching with a catcher behind home plate. Typical batting cages measure 70' long x either 14' or 12' wide x 12' high.*

Support Baseball Field Layout and Construction The following page answers many questions about baseball field layouts including field dimensions, construction tips, and materials necessary for building a baseball field. Whether you are a parks and recreation type, work for a local school system, or just want your own regulation backyard baseball field, knowing a few basics is necessary before you can build your own field. The following instructions are designed to help set up a field from a relatively level, open area of ground. In addition to the field set-up requirements, keep in mind that to have a quality turfgrass playing surface, sports fields must have the following: Baseball and softball are the only major sports that are played on fields that have both turf and exposed soil for a playing surface. The concept of clay management is similar to turf management in that it is difficult to write a maintenance program for all infield skinned areas due to diversity among infield soils. One thing that does not change though, is the basic layout. Baseball Infield Dimensions click here for a full size image of Figure 1. The following list is a basic step program for laying out a baseball field Figure 1. If you can follow these basic 13 steps, you can build your own field of dreams. In addition to the steps, a few tips and suggestions were also included. A few basic tools such as shovels, rakes, a couple of measuring tapes, a small sledge hammer, a tamp or roller as well as some supplies such as stakes, string, paint inverted aerosol spray cans, pitching rubber, bases, and home plate are needed to complete this project. Power tools and some extra hands will make the project go much faster. Basic Baseball Field Layout 1. Start with a flat, open area. If some elevation is on-site, it should be in the infield area. Ideally, the open area has a good, dense stand of turf or with a little help one can be rejuvenated. If that is not the case, plan a turf management program to coincide with the construction of your ball field. It is helpful to mark out the components of an infield with paint as outlined below to visualize the field before you actually start removing turf. Placement of home plate determines layout of the field. Be sure to plan for some type of backstop to contain stray pitches and to protect fans from tipped balls. If it is truly a backyard field and fans behind the batters box are not likely, planting shrubs about 60 feet minimum required for high school and college fields behind home plate may prevent errant balls from rolling too far away from the field. Using the apex of home plate back corner, cut out turf in a foot radius. The next step is to locate second base. Mark with a wooden stake. When installing base pads, this will be the center of second base. With the tape measure still in place, it is easiest to go ahead and mark the location of the pitching rubber at this time. The placement can be marked by measuring from the back tip of home plate along a string stretched to second base. The pitching rubber should be at 60 feet 6 inches. The easiest way to find first and third base is to use two tape measures. Stretch one tape from second base stake toward the first base line and the second tape from the back tip of home plate toward first base area. The point where the two tapes cross at the foot mark is the back corner of the bases. Repeat this step to find third base. A baseball diamond is actually a foot square. First and third base fit within the square, but second base is measured to the center of the bag. Improperly placed second base is one of the most common mistakes made when setting up a baseball field. To make a "slide area" around the bases, cut out turf around bases by measuring a foot radius within the foot square. You can leave the base paths grassed if you like, or you can turn them into skinned base paths. The top of the mound consists of a plateau that is 5 feet wide. A transit or field level is best for setting the height, but in a pinch, other methods may also work. Another option is to use your stakes with taut string and a ruler. As you add each layer, tamp or roll the soil.

**Chapter 9 : What is the distance between the pitcher's mound and first base**

*Follow CoverSports guide to make sure your softball field dimensions are correct or modifying a softball field for high school or college womens fastpitch play, and college softball, the distance from home plate to the front of the pitching mound.*

In most cases, the objective of the pitcher is to deliver the pitch to the catcher without allowing the batter to hit the ball with the bat. A successful pitch is delivered in such a way that the batter either allows the pitch to pass through the strike zone, swings the bat at the ball and misses it, or hits the ball poorly resulting in a pop fly or ground out. If the batter elects not to swing at the pitch, it is called a strike if any part of the ball passes through the strike zone and a ball when no part of the ball passes through the strike zone. A check swing is when the batter begins to swing, but then stops the swing short. If the batter successfully checks the swing and the pitch is out of the strike zone, it is called a ball. There are two legal pitching positions, the windup and the set position or stretch. Either position may be used at any time; typically, the windup is used when the bases are empty, while the set position is used when at least one runner is on base. Each position has certain procedures that must be followed. A balk can be called on a pitcher from either position. A power pitcher is one who relies on the velocity of his pitches to succeed. A control pitcher succeeds by throwing accurate pitches and thus records few walks. The position of the pitcher Nearly all action during a game is centered on the pitcher for the defensive team. The type and sequence of pitches chosen depend upon the particular situation in a game. Because pitchers and catchers must coordinate each pitch, a system of hand signals is used by the catcher to communicate choices to the pitcher, who either vetoes or accepts by shaking his head or nodding. The relationship between pitcher and catcher is so important that some teams select the starting catcher for a particular game based on the starting pitcher. Together, the pitcher and catcher are known as the battery. Although the object and mechanics of pitching remain the same, pitchers may be classified according to their roles and effectiveness. In Major League Baseball, every team uses Baseball Rubbing Mud to rub game balls in before their pitchers use them in games. Please help improve this section by adding citations to reliable sources. Unsourced material may be challenged and removed. The most basic pitch is a fastball, where the pitcher throws the ball as hard as he can. Other common types of pitches are the curveball, slider, changeup, cutter, sinker, screwball, forkball, split-fingered fastball, slurver, and knuckleball. These generally are intended to have unusual movement or to deceive the batter as to the rotation or velocity of the ball, making it more difficult to hit. Very few pitchers throw all of these pitches, but most use a subset or blend of the basic types. Some pitchers also release pitches from different arm angles, making it harder for the batter to pick up the flight of the ball. See List of baseball pitches. A pitcher who is throwing well on a particular day is said to have brought his "good stuff. Some pitchers use a sidearm delivery in which the arm arcs laterally to the torso. Effective pitching is vitally important in baseball. In baseball statistics, for each game, one pitcher will be credited with winning the game, and one pitcher will be charged with losing it. This is not necessarily the starting pitchers for each team, however, as a reliever can get a win and the starter would then get a no-decision. Rotation and specialization[ edit ] This section does not cite any sources. November Learn how and when to remove this template message Pitching is physically demanding, especially if the pitcher is throwing with maximum effort. A full game usually involves 100 pitches thrown by each team, and most pitchers begin to tire before they reach this point. As a result, the pitcher who starts a game often will not be the one who finishes it, and he may not be recovered enough to pitch again for a few days. The act of throwing a baseball at high speed is very unnatural to the body and somewhat damaging to human muscles; thus pitchers are very susceptible to injuries, soreness, and general pain. Chris Young throws a four-seam fastball in the bullpen pregame. Teams have devised two strategies to address this problem: To accommodate playing nearly every day, a team will include a group of pitchers who start games and rotate between them, allowing each pitcher to rest for a few days between starts. Exceptional pitchers are highly sought after and in the professional ranks draw large salaries, thus teams can seldom stock each slot in the rotation with top-quality pitchers. He is usually followed in the rotation by 3 or 4 other starters before he would be due to

pitch again. Barring injury or exceptional circumstances, the ace is usually the pitcher that starts on Opening Day. Aces are also preferred to start crucial games late in the season and in the playoffs; sometimes they are asked to pitch on shorter rest if the team feels he would be more effective than the 4th or 5th starter. Typically, the further down in the rotation a starting pitcher is, the weaker he is compared with the others on the staff. The "5th starter" is seen as the cut-off between the starting staff and the bullpen. A team may have a designated 5th starter, sometimes known as a spot starter or that role may shift cycle to cycle between members of the bullpen or Triple-A starters. These players are called relief pitchers, relievers, or collectively the bullpen. Once a starter begins to tire or is starting to give up hits and runs a call is made to the bullpen to have a reliever start to warm up. This involves the reliever starting to throw practice balls to a coach in the bullpen so as to be ready to come in and pitch whenever the manager wishes to pull the current pitcher. Having a reliever warm up does not always mean he will be used; the current pitcher may regain his composure and retire the side, or the manager may choose to go with another reliever if strategy dictates. Commonly, pitching changes will occur as a result of a pinch hitter being used in the late innings of a game, especially if the pitcher is in the batting lineup due to not having the designated hitter. A reliever would then come out of the bullpen to pitch the next inning. When making a pitching change a manager will come out to the mound. He will then call in a pitcher by the tap of the arm which the next pitcher throws with. The manager or pitching coach may also come out to discuss strategy with the pitcher, but on his second trip to the mound with the same pitcher in the same inning, the pitcher has to come out. The relief pitchers often have even more specialized roles, and the particular reliever used depends on the situation. Many teams designate one pitcher as the closer, a relief pitcher specifically reserved to pitch the final inning or innings of a game when his team has a narrow lead, in order to preserve the victory. Other relief roles include set-up men, middle relievers, left-handed specialists, and long relievers. Generally, relievers pitch fewer innings and throw fewer pitches than starters, but they can usually pitch more frequently without the need for several days of rest between appearances. Relief pitchers are typically guys with "special stuff". Meaning that they have really effective pitches or a very different style of delivery. This makes the batter see a very different way of pitching in attempt to get them out. One example is a sidearm or submarine pitcher. Position players are eligible to pitch in a game as well, this however is rare as these players are not truly trained as pitchers and risk injury. For instance, in a game, Jose Canseco suffered a season ending arm injury after pitching 2 innings. Plus, they tend to throw with less velocity. For these reasons, managers will typically only use a position player as a pitcher in a blowout loss, or if they have run out of available pitchers in order to avoid a forfeit the latter typically only happens in extra-inning games. Unlike the other fielders, a pitcher and catcher must start every play in a designated area. Once the ball is in play, however, the pitcher and catcher, like the other fielders, can respond to any part of the field necessary to make or assist in a defensive play. The pitcher must attempt to field any balls coming up the middle, and in fact a Gold Glove Award is reserved for the pitcher with the best fielding ability. Except for the first baseman, the pitcher ordinarily has the shortest run to first base of anyone other than the first baseman, and is the second-most-likely person to make a putout at first base by retrieving a fielded ball thrown by an infielder typically a first baseman. On passed balls and wild pitches, he covers home-plate when there are runners on. Also, he generally backs up throws to home plate. When there is a throw from the outfield to third base, he has to back up the play to third base as well. Pitching biomechanics[ edit ] The physical act of overhand pitching is complex and unnatural to the human anatomy. Most major league pitchers throw at speeds between 70 and mph, with fastballs, the most common pitch, generally ranging from mph, putting high amounts of stress on the pitching arm. Pitchers are by far the most frequently injured players and many professional pitchers will have multiple surgeries to repair damage in the elbow and shoulder by the end of their careers. As such, the biomechanics of pitching are closely studied and taught by coaches at all levels and are an important field in sports medicine. Glenn Fleisig, a biomechanist who specializes in the analysis of baseball movements, says that pitching is "the most violent human motion ever measured. Biomechanical evaluations are sometimes done on individual pitchers to help determine points of inefficiency. The pitcher catcher combination results in many throws and may increase the risk of injury. Frank Jobe, the pioneer of the Tommy John procedure. Jobs can be done using either resistance bands or

lightweight dumbbells. In addition to the Jobs exercises, many pitching coaches are creating lifting routines that are specialized for pitchers. Pitchers should avoid exercises that deal with a barbell. The emphasis on the workout should be on the legs and the core. Other body parts should be worked on but using lighter weights. Over lifting muscles, especially while throwing usually ends up in a strain muscle or possible a tear. Equipment[ edit ] Other than the catcher, pitchers and other fielders wear very few pieces of equipment. In general the ball cap, baseball glove and cleats are equipment used. Pitchers may also keep with them at the mound a bag of powdered rosin. Currently there is a new trend of introducing a pitcher helmet to provide head protection from batters hitting line drives back to the pitcher.