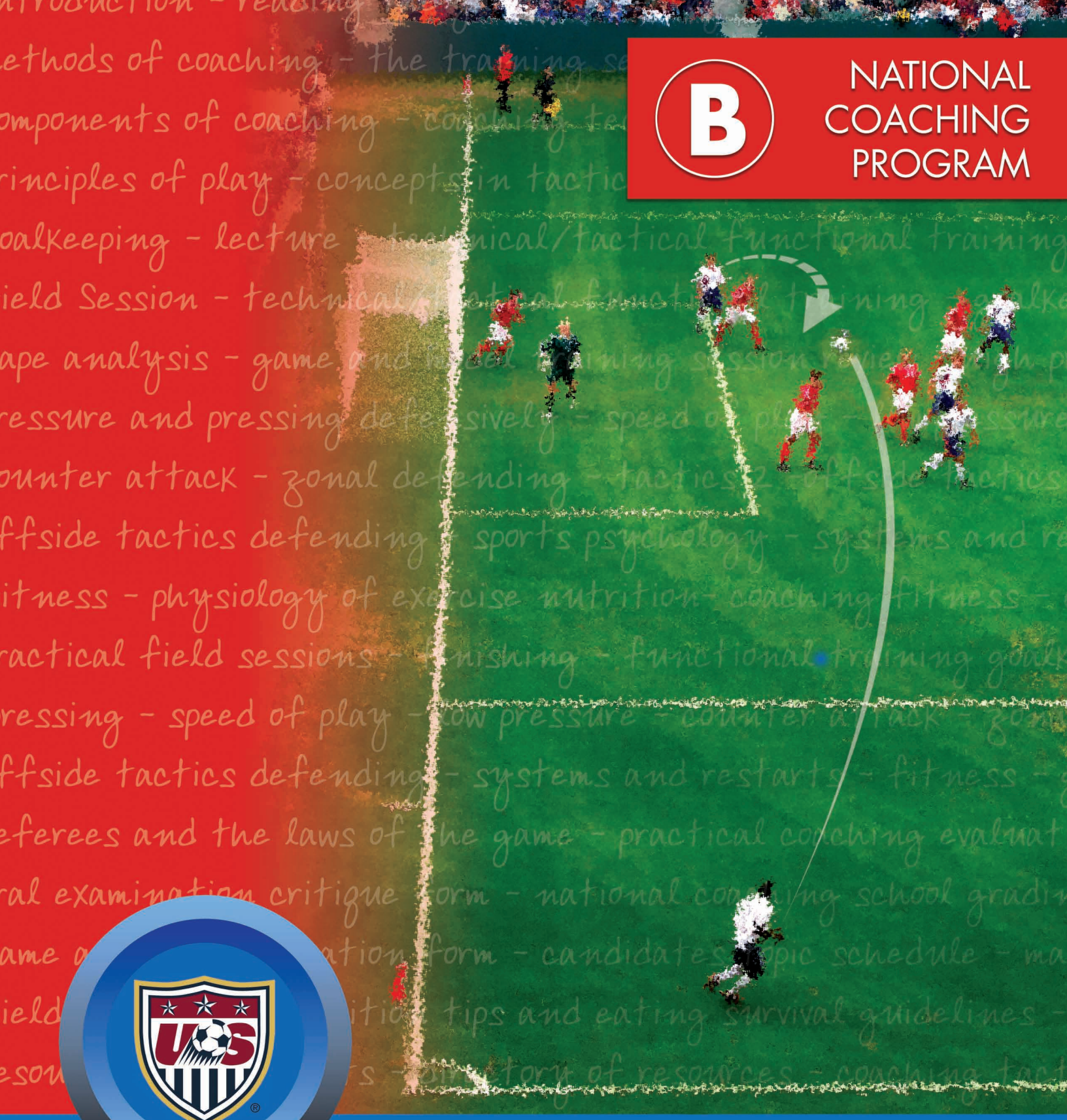


B

NATIONAL COACHING PROGRAM

CANDIDATE MANUAL

U.S. SOCCER NATIONAL "B" LICENSE COURSE

Candidate Manual

Contents by USSF

Why is it important to teach players to "respect the game"?

So they understand that the game is the best teacher. So they learn to respect the role of the referee; opponents; coaches; fans; their equipment; and nutrition. And to ensure future players continue playing, learning, and loving this game.

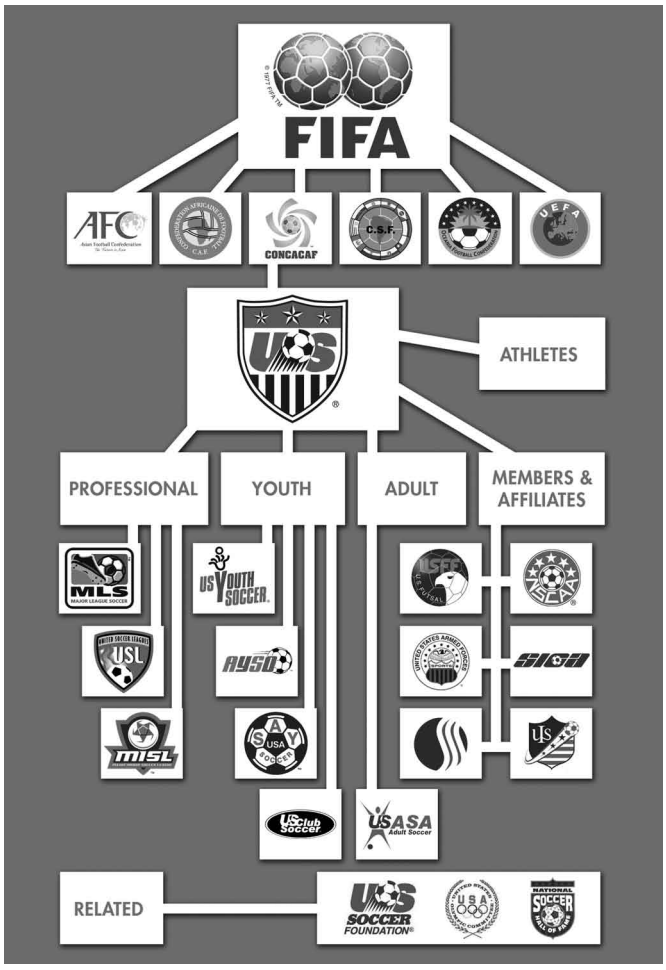
-United States Soccer Federation

FIFA – Soccer's World Governing Body

Founded in 1904 to provide unity among national soccer associations, the Federation Internationale de Football Association (FIFA) boasts 207 members, rivaling that of the United Nations, and is arguably the most prestigious sports organization in the world.

As soccer's ultimate administrative authority, FIFA governs all facets of the game: regulating the rules of play, overseeing the transfers of players internationally, organizing international competitions such as the FIFA World Cup, establishing standards for refereeing, coaching and sports medicine, and encouraging soccer's development around the world.

As a member of FIFA, U.S. Soccer's Licensing Program is recognized as the official and only organization allowed to run and issue coaching licenses in the United States.



The U.S. Soccer Federation has a 38-year tradition of certifying soccer coaches at various locations around the United States.

U.S. Soccer Federation is committed to providing soccer coaches, from beginner to most advanced, with up-to-date theoretical and practical knowledge, so coaches across the United States can ensure that players develop to their full potential. The diagram below shows the current U.S. Soccer National License progression.

Visit ussoccer.com for more details.

Table of Contents

U.S. Soccer National Coaching School
"B" License

Day	Date	7:00 - 8:00	8:00 - 9:15	9:30 -10:45	11:00 - 12:15	12:30 - 1:30	2:15 - 3:45	4:00 - 5:30	5:30 - 6:30	7:00 - 8:30
1		**11:00am - 2:00pm Check-in** **3:00pm – 4:00pmCourse Orientation**						**Lecture** Analyzing the Opponent	Dinner	**Field** Match Analysis
2		Breakfast	**Lecture** Methods I	**Field** Changing Point of Attack	**Field** Flank Play	Lunch	**Field** Playing out of the Back	**Field** Training the Playmaker	Dinner	**Field** Model Training Session
3		Breakfast	**Lecture** Goalkeeping	**Field** Goalkeeping	**Field** MF to Attacking Third	Lunch	**Lecture** Tactics I Roles of the Players	**Field** Playing in Attacking Third	Dinner	**Lecture** Model Session/Game Review
4		Breakfast	**Lecture** Tactics II Roles of the Players	**Field** Finishing	**Field** Zonal Back Defending	Lunch	**Field** Midfield Defending	**Field** Practice Coaching	Dinner	**Off**
5		Breakfast	**Field** Practice Coaching			Lunch	**Field** Practice Coaching		Dinner	**Off**
6		Breakfast	**Lecture** Team Management Psychology	**Lecture** Methods II Fitness	**Field** Fitness	Lunch	**Field** Practice Coaching		Dinner	**Off**
7		Breakfast	**Field** 9:9 - 11:11 Defending	**Field** 9:9 - 11:11 Attacking	**Field** Practice Coaching	Lunch	**Field** Practice Coaching	**Lecture** Course Summary	Dinner	**Oral Exams**
8		Breakfast	**Field Exams**			Lunch	**Field Exams**		Dinner	**Off**
9		Breakfast	**Field Exams**			**End of School - Departures**				

NOTES

Introduction
National "B" License

1.1 COURSE CURRICULUM

The curriculum for the "B" license course is based upon modern methods of coaching soccer and methodology. The curriculum is divided into Theory and Practical areas of coaching.

A. THEORY

- Introduction\Orientation
- Analyzing the Opponent
- Methods of Coaching I: Technique and Tactics
- Methods of Coaching II: Fitness; Speed Endurance Training
- Game Analysis and Model Training Session Review
- Tactics I: Roles of the Players
- Tactics II: Presentation/Discussion
- Psychology: The Coach and the Individual Player
- Goalkeeping in the Modern Game
- Course Summary

B. PRACTICAL

- Finishing
- Goalkeeping: Dealing with Crossed Balls
- Changing Point of Attack
- Playing out of the Back
- Training the Playmaker
- Middle 1/3 to Attacking 1/3
- Playing in the Attacking 1/3
- Zonal Defending in the Back
- Midfield Defending
- 9:9 to 11:11 Defending
- 9:9 to 11:11 Attacking
- Fitness
- Observation Topics
- Game for Analysis

- Model Training Session
- Candidates Game
- Practice Coaching
- Attacking from the Flank

C. EXAMINATION

- Open Book
- Laws of the Game
- Anatomy and Physiology
- Psychology \ Team Management

D. ORAL THEORY EXAMS

- Methods
- Tactics

E. FIELD EXAMINATION

- Coaching Topic
- Playing and Demonstration Ability

***NOTES**: Candidates are only allowed to receive a failing grade in one theoretical subject (oral or written) to be allowed a retest in that subject. Two failures in theoretical subjects the candidate does not receive their "B" License.*

Candidates are responsible for reading the Laws of the Game book prior to attending the course. Candidates will be expected to successfully complete the open book exam in this subject in order to receive the "B" License.

The Anatomy and Physiology exam is a combination of the materials in the candidate's manual and the fitness lecture and field session. This exam is open book.

NOTES

NOTES

Reading the Game

2.0 GAME ANALYSIS — THE OPPONENT

In this session we will briefly talk about reading the game. Learning how to watch the game as a coach and not a spectator. We will offer a general format for analysis, for both your opponent, as well as your own side.

2.1 TEAM STRUCTURE

A. NUMBER OF FORWARDS

B. MIDFIELD COMPOSITION

C. BACK PLAYERS

2.2 ATTACKING TENDENCIES

A. DIRECT/INDIRECT PLAY

B. GAME MAKER (SCHEMER)

C. MAIN GOAL SCORER

D. PATTERNS OF RUNS

E. RESTARTS

2.3 DEFENDING TENDENCIES

A. NUMBER OF BACK PLAYERS

B. MIDFIELD COMPOSITION

C. ROLE OF FORWARDS IN DEFENDING

D. HIGH PRESSURE OR LOW PRESSURE DEFENDING

E. MAN TO MAN MARKING, ZONE, COMBINATION

F. RESTARTS

G. GOALKEEPER

2.4 ASSESSING STRENGTHS AND WEAKNESSES

A. SPEED

B. SIZE

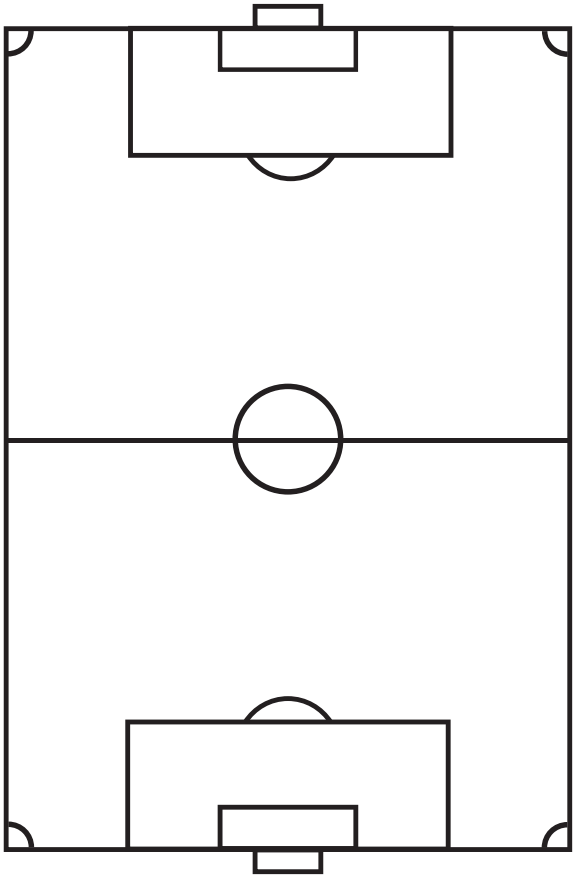
C. TECHNICAL-TACTICAL ABILITIES

D. HOW DOES A, B, AND C ABOVE, AFFECT OUR ATTACKING AND DEFENDING

US SOCCER
MATCH LINE-UP

Match:_____ vs. _____

Date: _____



STARTERS (Name / Number)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

Substitutes (Name / Number)

12. _____
13. _____
14. _____
15. _____
16. _____

PROBLEMS IN ATTACKING	PROBLEMS IN DEFENDING

Methods of Coaching

The classroom sessions are intended to promote discussion based upon the following outline with the overriding concern of what is expected of a "B" Licensed coach.

3.0 WHAT IS COACHING

A. LEARNING TO COACH CAN BE DIVIDED INTO FIVE DIFFERENT PHASES:
   1. Knowledge and understanding of the game

   2. Reading the game

   3. Determining objectives

4. Setting priorities

5. Planning

3.1 HOW TO TEACH

A. WHO ARE THE PLAYERS?

B. HOW DO THEY LEARN?

C. WHEN DO YOU TEACH?

D. WHAT ARE YOU GOING TO TEACH AND WHY?

E. ACTING AS A FACILITATOR.

F. PROVIDING A POSITIVE ROLE MODEL.

3.2 THE TRAINING SESSION

A. ORGANIZATION

B. PROGRESSION

C. TRAINING VARIABLES

Goals

Field

Balls

Players

Rules

Demonstration

3.3 THE PLAYING AREA

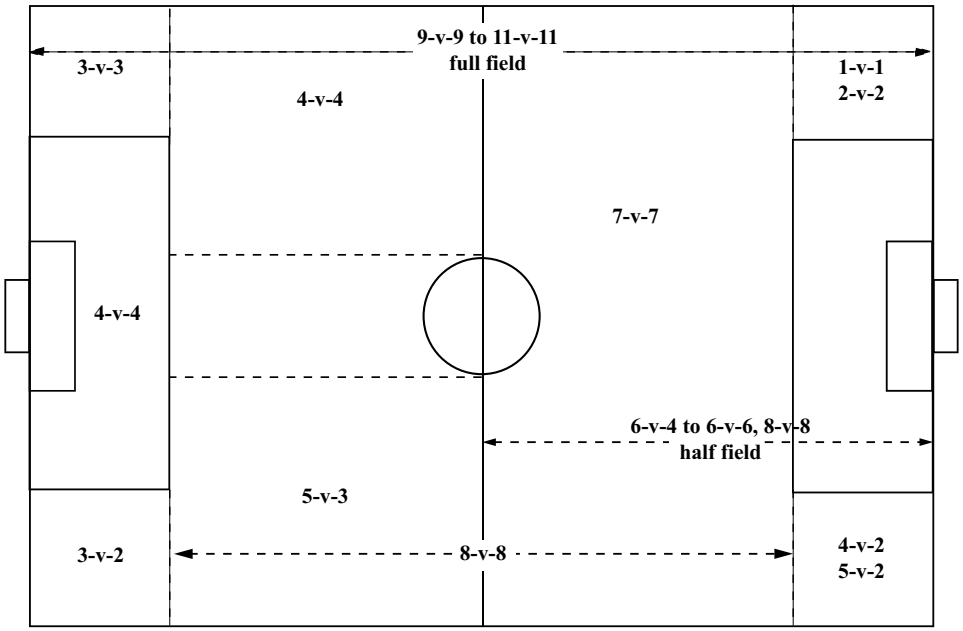


Diagram 1 —General Training Space Guidelines
The following spaces are intended to act as general guidelines for various training activities. Space should be adjusted according to age, ability, etc.

3.4 COMPONENTS OF COACHING

A. SKILL DEVELOPMENT

B. TACTICAL DEVELOPMENT

C. FUN & ENJOYMENT

D. PLAYER DEVELOPMENT

E. INTUITIVE DEVELOPMENT

U.16		U.23		PRO	
PSYCHOLOGY	TECHNIQUE TACTICS FITNESS	PSYCHOLOGY	TACTICS TECHNIQUE FITNESS	PSYCHOLOGY	TACTICS TECHNIQUE FITNESS

3.5 COACHING TECHNIQUE

- Fundamental

- Match Related

- Match Condition

- Technical Functional Training

- Technical\Tactical Functional Training

3.6 COACHING TACTICS

- Individual Tactics

- Group Tactics

  Unrestricted Space ? Restricted Space ? To One Large Goal with a Counter ? To Large Two Goals

- Team Tactics

- Tactical Functional Training

3.7 PRINCIPLES OF PLAY IN TEACHING TACTICS

A. DEFENSIVE PRINCIPLES OF PLAY

- Immediate Chase

- Pressure

- Cover

- Balance

- Compactness

B. ATTACKING PRINCIPLES OF PLAY

- Penetration

- Support

- Mobility

- Creating width and length

3.8 CONCEPTS IN TEACHING TACTICS

- Tactical Implication of Technique

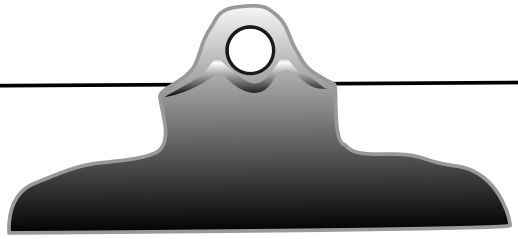
- Transition

- Vision

- Communication

- Speed of play

3.9 TOPICS FOR DISCUSSION



- How does a coach's background and philosophy affect his coaching style?
- Discuss teaching technique in relation to a player's age and ability.
- Discuss teaching tactics in relationship to a player's age and ability.
- What factors are taken into account with whom we are coaching?
- What is the relationship of technique to tactics?
- What is the relationship of technique to fitness?
- What is the relationship of technique to psychology?
- What is the relationship of tactics to fitness?
- What is the relationship of fitness to psychology?
- What is the relationship of tactics to psychology?
- What is the relationship of tactics to fitness?
- How can all of the above relationships vary according to a player's age and playing ability?
- How do players learn and how can age affect this process?

Relate concepts of the game to the components of the game such as concentration, speed of play on both sides of the ball, composure, patience, controlled aggression, team shape and vision.

Goalkeeping

4.0 FOUR AREAS OF GOALKEEPING

- Conceding Goals
- Poor Technique
- Dealing with Crosses
- Goalkeeping Distribution

4.1 VIDEO ANALYSIS

A. CONCEDING GOALS — ANALYZING THE GOALKEEPER

B. POOR TECHNIQUES/CORRECT TECHNIQUES OF GOALKEEPING

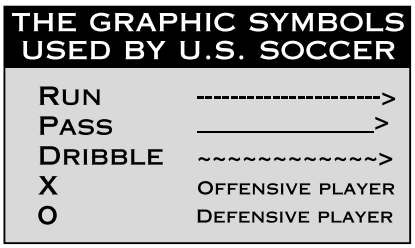
C. DEALING WITH CROSSES ANALYSIS TECHNICAL/TACTICAL

D. GOALKEEPING DISTRIBUTION TECHNICAL / TACTICAL

E. DISCUSSION — QUESTIONS/ANSWERS

Analysis

5.0 GAME ANALYSIS REVIEW



5.1 MODEL TRAINING REVIEW

1) How were the number of players, area of the field and field size and shape related? Give examples from the session.

2) Explain and give examples of how pressure was added or reduced throughout the training session.

3) Was the session …
   Technical Functional (give progression from the training session)?
   Tactical Functional (give progression from the training session)?

4) Give examples of technical functional corrections or tactical functional corrections or both if they took place in the training session.

5) Did this session have an effect on the participants' "playing behavior" or did learning take place? Explain!

6) Did this functional training session go towards solving the soccer problem observed in the game?

Tactics Functional Roles of the Players

6.0 TACTICS

- Decision making.

- Elevating the game to a thinking level.

- Transition both from attacking to defending and defending to attacking (teams are most vulnerable at the moment of lost possession).

Tactical Functional Training — Decisions by players as to which skill is necessary as dictated by the game. It joins together technical implications and tactical functions of players by their respective positions. It is position specific and the training is done in that area of the field where the player normally plays.

6.1 FUNCTIONS OF THE GOALKEEPER COACHING POINTS

Laws of the Game Governing Goalkeeping

Relationship of the following concepts to a player's technical and tactical functions — transition within attacking and defending and from the change of possession of the ball, verbal and visual communication, vision and reading of the game.

Technical Functions

- Shot stopping and ball handling: on ground, below waist, above waist, diving, tip overs, parrying, catching and holding, body position.
- Crosses: catching, boxing one and two handed, attacking the ball, body position.
- Distribution: throwing, bowling, kicking, punting, drop kicking.
- Break away technical aspects.
- Receiving.
- Passing.

TACTICAL APPLICATION OF TECHNIQUE

Tactical Functions: Defensive

- Organization of the defense.
- Playing as a sweeper, providing cover and balance.
- Starting positions in reference to the movement of the ball, pressure on the ball, athletic ability and movement of players.
- Distribution as the first attacker and as a support player in attack.
- Ability to close down players on a break away, cut down shooting angles.
- Range of the goalkeeper in the box to handle crosses and come off of the line.

Attacking

- Support player, ability to change the point of attack.
- Distribution to be the first attacker.
- Transition.

6.2 FUNCTIONS OF THE DEFENDERS

Relationship of the following concepts to a player's technical and tactical functions: transition within attacking and defending and from the change of possession of the ball, verbal and visual communication and vision, reading the game.

Technical Functions

- Heading
- Ability to clear the ball feet and heading
- Tackling
- Passing off of the interception of the ball
- Passing
- Receiving (also from the goalkeeper)
- Long range shooting
- Crossing
- Dribbling to beat an opponent
- Finishing

TACTICAL APPLICATION OF TECHNIQUE

Tactical Functions

Sweeper: Defensive

- Play behind, even and in front of the back line.
- Organize the team defensively, communication.
- Establish and control the line and rate of defensive retreat.
- Offside tactics and space consideration.
- Positional play in reference to the ball and players.
- Marking responsibilities and zonal coverage.
- Provide cover and balance.
- Stepping up to close players down, playing numbers up and down in the defense.

Attacking

- Play as a free player to penetrate with or without the ball.
- Play as a support player for the players in advance of the ball to change the point of attack and dictate or change the rhythm of the game, and to play out of the back.
- Play as a counter attacking player to start counter attacks.

Marking Backs: Defensively, varies depending upon the role assigned to the player

- Marking responsibilities, starting positions in relation to the ball and movement of players, denying, containing and winning the ball.
- Proper angles of recovery.
- Man to man marking, zonal and combination coverage.
- Offside tactics and space usage.
- Providing cover and balance.
- Controlled aggression in tackling and closing players down.
- Defending numbers up and down.

Attacking

- Distribution of the ball, long and short.
- Support player for players in advance of the ball.
- Establish width in the attack.
- Win ball and play forward quickly.
- Flank play to play into the attack as a wide Midfielders or winger
- Play off side of the ball in attack, team shape.
- Restarts.

Outside Backs: Defensive

- Deny penetration on the flank, 1 v 1, numbers down
- Positional play depending on movement of the ball and players and the defensive scheme and system of play of the team.
- Provide cover and balance.
- Tracking and recovery runs.
- Marking responsibilities.

Attacking

- Provide an early outlet after the ball is won.
- Establish within the attack
- Play as a flank player, wide midfielder, or winger in the attack, on the ball and without the ball.
- Maintain team shape in the attack on the side of the ball and the off side.
- Provide support both behind the ball and in advance of the ball.
- Play ball forward immediately upon the winning the ball.

6.3 FUNCTIONS OF THE MIDFIELDERS

Relationship of the following concepts to a player's technical and tactical functions: transition within attacking and defending and from a change in possession of the ball, verbal and visual communication and vision, reading the game.

Technical Functions
- Receiving ball and turning.
- Passing, long and short.
- Finishing and long range finishing.
- Dribbling, improvisation, speed, shielding.
- Tackling.
- Heading, defensive and attacking.
- Crossing, all variations.
- Ability to clear balls.

Tactical Functions: Defensively as a group
- Transition to get goal side of the ball, recovery runs and positioning.
- Delay the attacking progress, and winning the ball pressure points and pressure pockets within the defensive scheme of play.
- Provide pressure, cover and balance.
- Man to man, zonal and combination defensive play.
- Win 1:1 duels.
- Changing the rhythm of play defensively, by pressing.

Attacking as a Group
- Link the play from the back to the front.
- Support in advance and behind the ball.
- Create width in the attack.
- Create space for self and others to attack.
- Penetrate with and without the ball.
- Changing the point of attack and the rhythm of play.
- Finishing, long range shooting.

Defensive Midfielders: Defensive
- Organize the players, communication, midfielders and forwards.
- Provide cover to pressuring defensive players in the midfield.
- Provide balance in the midfield.
- Marking responsibilities.

- Specific marking responsibilities vs. opposing attacking Midfielders.
- Zonal play.
- Delay to attack playing numbers down in defense.
- Play numbers up in defense.
- Tracking down.
- Skillful in the air and at tackling.
- Ability to win 1:1 duels.

Attacking
- Support in advance of the defenders.
- Support behind the Midfielders and forwards.
- Penetration with and without the ball.
- Changing the point of attack and rhythm of play.
- Finishing and long range shooting.

Flank Midfielders: Defensive
- Defend the flank 1 v 1, numbers up and down
- Recovery runs.
- Understand man to man, zonal and combination defending.
- Provide pressure, cover and balance, in the defensive scheme of play.
- Tracking down players.
- Ability to win 1:1 duels.
- Skillful in the air and at tackling.

Attacking
- Ability to play on the entire flank.
- Ability to play as a winger.
- Establish width in the attack.
- Create space for self and others with and without the ball.
- Ability to penetrate with and without the ball, combination play.
- Ability to support in advance and behind the other players and ball.
- Ability to serve the ball effectively from the flank.

Game Making Midfielders: Attacking
- Support in advance of the ball.
- Support behind the ball.
- Availability to make the game, angles and distances in support, vision.
- Penetration with and without the ball.
- Ability to create space for self to play.
- Dictate rhythm of the game, changing the point of attack.
- Finishing and long range shooting.

Attacking Midfielders: Attacking
- Play in advance of the other midfielders and support to the forwards.
- Penetration with and without the ball.
- Support in advance and behind the ball.
- Finishing and long range shooting.

6.4 FUNCTIONS OF THE FORWARDS

Relationship of the following concepts to a player's technical and tactical functions: transition within attacking and defending and from change of possession of the ball, verbal and visual communication, and vision and reading the game.

TACTICAL IMPLICATION OF TECHNIQUE

Tactical Functions: Defensively as a Group
- Transition as a group (psychological aspects).
- Part of collective defending as a team within the team posture of defending.
- Tracking down.
- Pressing.

Attacking as a Group
- Support in advance of the ball.
- Ability to penetrate with and without the ball.
- Timing of runs to get behind the defense and then support ball.
- Ability to create space for self and others.
- Team shape and ability to pull the defense apart.
- Finishing.

Central Forwards: Strikers
- Compact the central defending players.
  - Push up on the sweeper.
  - Stretch the defense lengthwise.
  - Create space for others central.
- Pull apart the central defense and covering system.
  - Diagonal runs to the flanks to pull apart the defense.
  - Diagonal runs to get behind the defense.
  - Create space behind the defense by coming to the ball in the midfield.

Availability to play with other players in combination.
Bending runs to free one self of opponents.
Finishing.
1:1 ability to beat opponents with and without the ball.

Wingers
- Play wide in the attack.
- Support in advance of the ball.
- Creating space for self and others with and without the ball.
- Ability to beat opponent with and without the ball.
- Playing wide and coming to the inside to create opportunities.
- Crossing.
- Finishing.

Withdrawn Wingers
- Play wide but not as advanced as a winger.
- Understanding of winger and wide Midfielders position.
- Support in advance and behind the ball.
- Creating width in attack.
- Penetration with and without the ball.
- 1:1 duels.
- Create space for self and others.
- Ability to come central or penetrate on the flank.
- Finishing.

Withdrawn Central Forward
- Support in advance and behind the ball.
- Timing of runs, angles and distances to play off of another player.
- Penetration with and without the ball.
- Finishing.

Methods II
Fitness

7.0 COACHING FITNESS

Every sport has specific requirements concerning fitness. The fitness required of a soccer player is different than that of a tennis player, swimmer or baseball player. In soccer, fitness is not everything; however, because of the amount of running required in comparison to other sports, the game is nothing without fitness. This section attempts to provide the coach with the understanding of the principles and methods used to improve the physical fitness of soccer players.

Proper conditioning provides the player with the physical and psychological foundation to meet the requirements of the game. In order to carry out the technical and tactical demands of the game, players must be physically and mentally fit. Without fitness, technique and tactics soon disappear from the game.

It is vital that coaches are able to recognize the specific fitness needs of their players, then prepare and implement programming that addresses these demands. Recognition by coaches at the highest levels means that they are responsible for accurately measuring a player's fitness by administering tests that are both specific to the demand and reliable. Testing must be targeted in order to use scores and data as a work base for individual program design. Testing without a purpose is a waste of precious coaching time. Therefore, coaches have to be able to read and evaluate the results, have an understanding of the current research and data available, and be able to compare and ascertain how specific fitness activities will enhance a player's performance.

Physiology, physiology of exercise, nutrition, the components of fitness (Speed training, flexibility training, and weight training), and rest and recovery are all parts of the total fitness program. Coaches knowledgeable in each area of the discipline are better prepared to enhance a player's physical capabilities in the game.

7.1 ENDURANCE

In soccer, we understand that endurance is the ability to overcome resistance to fatigue. Generally, we speak of endurance in two different forms: General Endurance, which is aerobic (with oxygen) and provides the player with long time endurance; and Local Muscle Endurance, which is anaerobic (without oxygen) and corresponds to speed training and speed endurance training and provides for short-time endurance.

To develop general endurance, players are trained aerobically in order to improve the efficiency of the cardiovascular system. Aerobic training can be divided into three categories: aerobic low intensity or Aerobic Capacity, aerobic high intensity or Aerobic Power, and recovery training.

Players must also be able to maintain a level of fitness that permits them to execute technically throughout the game. In order to achieve this, training must focus on developing the ability to perform various running speeds for long periods of time. Aerobic capacity aids in developing this capacity.
Players must also be capable of performing at high intensities at any time during a game. This ability is developed through aerobic power training.
The most common analogy is that if the player is a car, then aerobic capacity corresponds to the size of the tank, while aerobic power corresponds to the engine power.

There should be a progression in the training. Ideally, adequate aerobic capacity should be reached first before switching to aerobic power training. Going back to the car image, the best car would still stop running without gas, no matter how much horsepower it has. Applied to the soccer player, a coach wants to make sure that his or her players are capable of simply running for 90 minutes (or less depending on the age group) before worrying about the running speed.

Another important aspect of conditioning is recovery and regeneration. Following a match or an intensive training session, players perform light physical activities that aid and allow for recovery. We refer to this as recovery training.

7.2 AEROBIC CAPACITY

In soccer, a player must be capable of performing for long periods of time as well as recovering quickly following periods of high-intensity activity, e.g., sprinting. In order to achieve this, players need to have a high endurance capacity. This ability is developed through aerobic capacity training and complimented by aerobic power training. The goal is to develop the player's ability to maintain a high work-rate and level of technical performance throughout the game.

During aerobic capacity training, the intensity should be such that a player's heart rate is:

Average: Approximately 80% of Maximum Heart Rate (MHR)
Range: 65% - 90% of MHR

For a player with an MHR of 190 bpm this would correspond to the following:

Average: Approximately 150 bpm
Range: 125 – 170 bpm

This training can take the form of either continuous or intermittent exercise. The heart rate should not exceed the recommended limits for more than short periods of time. During intermittent exercise (Interval training), the work bouts should be longer than five minutes.

If the training is performed without a ball, it is recommended that continuous exercise at varying intensities is used, e.g., alternating between exercise intensities corresponding to 70, 80 and 90% of maximum heart rate each third minute.

HEART RATE				
TYPE OF TRAINING	% OF MHR		BMP	
	MEAN	RANGE	MEAN*	RANGE*
RECOVERY	65%	40%-80%	130	80-160
AEROBIC LI	80%	65%-90%	160	130-180
AEROBIC HI	90%	80%-100%	180	160-200

The "Vo2 Max":
VO2 Max refers to the amount of oxygen your body can consume during a maximal effort. This is measured in liters per minute per kilogram of body weight. The air we breathe has a set amount of oxygen. Obviously the bigger Vo2, the more air available, and potentially the more endurance and work rate a player will have.

Field tests or lab tests can give the coach a good idea of the player's Vo2 max. These tests reflect how efficient your energy system is at supplying oxygen to working muscles. While VO2 Max is primarily a genetic factor, this can be increased through training, perhaps by as much as 30 percent.

The VO2 max is one of the most popular indexes for endurance athletes. Professional strength and conditioning coaches working for soccer clubs or national teams often compare VO2 max readings. Studies show that the average intensity for a professional game is around 75% of the Vo2 max.

In addition to aerobic capacity training, an interval training aerobic power workout, or Vo2 max training, will lead to an increase of oxygen consumption efficiency at the cell level. Some structural and enzymatic reorganization facilitates the energy amount produced by the aerobic system. For the same effort, less lactic acid is produced and its removal is accelerated.

7.3 AEROBIC POWER

It has been demonstrated that the distance covered by high intensity running during the game is related to the standard of soccer, i.e., top class players cover the most distance. Because of this fact, it is important that players are capable of repeatedly performing at high intensities for prolonged periods of time during the game. The basis for this ability is a well-developed capacity for high maximum

oxygen uptake, which can be developed through aerobic power training. During this type of training, a player exercises intermittently (Interval training) with an average heart rate of 180 bpm. Aerobic power training must be organized and conducted through an interval method only.
During aerobic power training, the exercise intensity should be such that a player's heart rate is:

Average: Approximately 90% of MHR
Range: 80% - 100% of MHR

For a player with a MHR of 190 bpm this would correspond to the following:

Average: Approximately 170 bpm
Range: 150 – 190 bpm

There is a relation between aerobic power training and Anaerobic Speed Endurance Training. During aerobic power training, the energy producing system from speed endurance (the lactate-producing energy system) may be highly stimulated for short periods of time, causing the training to overlap anaerobic speed endurance training. The coach must ensure that the intensity during aerobic power training does not become so high that the training becomes exclusively speed endurance. If the intensity is too high, then the players will be unable to maintain a high enough work rate during subsequent work bouts and the desired effect of the aerobic power training will be lost. Training should be targeted so that the intensity always flirts with players' anaerobic thresholds but does not exceed it, in order to guarantee adequate duration and subsequent workload.

The anaerobic threshold (A.T.) is the intensity during exercise when the body can no longer meet its demand for oxygen and anaerobic metabolism predominates. It also corresponds to the maximum level of exercise that an athlete can maintain for a long period of time without accumulation of lactate.

If a player reaches his or her A.T. threshold, then his or her heart and muscles do not get the oxygen they need to function at this speed, forcing him or her to slow down. A.T. training techniques aim at improving this specific ability (See SPEED ENDURANCE TRAINING.)

The anaerobic (or "lactate") threshold is one of the best standards for the endurance athlete performance capacity, and varies from person to person. Untrained individuals have a low AT (approximately 55% of their Vo2 max), and

elite endurance athletes and top masters athletes typically have lactate thresholds at or above 80% of VO2 max. Values approaching 90% have been reported.

As it is expressed in percentage of Vo2 max, we understand once again how crucial it is also to improve the Vo2 max (Aerobic Power).

In addition to the intermittent exercise inherent to a game of soccer, different intermittent training methods can be used in aerobic power training. Three of these methods are described below.

1. Fixed time intervals – The principle of the fixed time intervals is that the duration of the exercise and rest periods are determined in advance, e.g., alternating between 2 minutes of work and 1 minute of rest. If the exercise periods are longer than 1 minute, the rest periods should be shorter than the exercise periods; otherwise, the overall exercise intensity will be too low. The shorter the exercise periods, the higher the exercise intensity should be, according to the principles given for this type of training. Rest periods should include some forms of recovery exercises, e.g., jogging. The above principles are valid for training with and without the ball.

   Below are examples of work/rest period ratios for Aerobic Power training based on fixed intervals.

FIXED TIME INTERVALS			
	EXERCISE	REST	HEART RATE
A	30 SECONDS	30 SECONDS	90%-100%
B	2 MINUTES	1 MINUTES	85%-95%
C	4 MINUTES	1 MINUTES	80%-90%

2. Alteration of the rules – By changing the rules during a training game, the exercise intensity may be varied, e.g., alternating between using the rule of exactly two touches each time a player is in contact with the ball. Set time can also be implemented here. The rules are changed to either increase or decrease the exercise intensity.

3. Natural variations – Training games can be structured so that the exercise intensity changes in a natural way during a game, e.g., limiting of players' actions within a certain area of the field can result in elevated exercise intensity during periods of the game. Another variation would be the coach feeding the ball during an exercise to maintain the rhythm.

In general, at the start of the season we would begin our training with an interval that would have a lower work to relief ratio, such as 1:3. For example, we may work for 30 seconds and recover for 90 seconds. As the level of fitness increases we adjust the work to relief ratio to 1:2 and eventually to 1:1. This is referred to as the Interval Training Principle.

7.4 RECOVERY TRAINING

Following a match or intensive training session, small ruptures to connective tissues and fibers may cause muscle soreness and stiffness throughout the body. In addition, the body's ability to replenish glycogen is limited and performance is reduced.

This is the main reason why a good diet is necessary, a diet based on carbohydrates to replenish glycogen stores, and also proteins in order to repair and rebuild muscle fibers.

To assist the body to recover and reduce muscle soreness, players usually perform light physical activities, such as stretching, jogging and low intensity games or activities. In addition, recovery training also assists the player psychologically, as the need to recover physically is often accompanied with the need to relax mentally.

During recovery training, the intensity should be such that a player's heart rate is:

Average: Approximately 65% of maximum heart rate (MHR)
Range: 40% - 80% of MHR

For a player with a MHR of 190 beat per minute (bpm) this would correspond to the following:

Average: Approximately 120 bpm
Range: 70 – 150 bpm

This training can take the form of either continuous or intermittent exercise. The heart rate should not exceed the recommended upper limits for more than a short period of time. A recovery training session is approximately 60 minutes in total duration. Exceeding this time may diminish the positive effects of the recovery training and impair the player's ability to regenerate.

The intensity during recovery training should be around 60% of Vo2 max. This running pace has been proven to be high enough to optimize byproducts (lactate) removal rate, but also slow enough to prevent the creation of any more toxins. Recovery training may be done with and without the ball. It should also be noted that the need for recovery training will vary from player to player depending upon their level of fitness and the intensity of work from the previous game or training session.

Lately, the efficiency of old recovery techniques has been challenged by many studies. It appears that selected treatments such as anti-inflammatory drugs and antioxidants supplementation appear to have a better potential in the treatment of soreness than massage, ultrasound, and static stretching.

7.5 HEART RATE

Reference has been made to heart rate in all three aerobic methods. This is an important measurement for determining the level of effort expended during training. During exercise the heart rate rises, which results in an increase in cardiac output. The maximum heart rate (MHR) can be determined by using different formulas.

The general formula is MHR = 220 – age

There is also a more refined, but still limited, formula where MHR = 205 –half the age.

However, there is a large range within a given age group. It has been found that boys and girls aged 16 to 19 had a range of 180 to 230 beats per minute for maximum heart rate. In order to make use of heart rate measurement it is necessary to determine the maximum heart rate for each player.

There are specific exercises that coaches may use to determine maximum heart rate; however, one of the simplest methods to determine a player's maximum heart rate is to measure it immediately after a bout of presumed maximum intensity exercise during training. i.e., 1v1 or 2v2. In order to ensure that the true maximum heart rate has been obtained, the measurement should be repeated several times. Since a player's maximum heart rate will not vary with changes in training throughout the season, it is only necessary to determine a player's maximum heart rate once a year.

Measuring the heart rate at the end of aerobic capacity testing, because theoretically these are conducted until exhaustion, will also constitute a great indicator of MHR. By knowing maximum heart rate, we can easily determine the intensity of training for our players. For example, a heart rate of 170 bpm recorded during a training game could reflect a very high intensity for a player with a maximum heart rate of 180 bpm (reflecting an intensity of 94% of maximum heart rate). However, for a player with a maximum heart rate of 230 bpm, the exercise would be far less demanding, as 170 bpm would only reflect 74% of maximum heart rate.

But coaches should always keep in mind that maximum heart rate itself has nothing to do with ability or fitness. It's a matter of genetics and cardiac efficiency. Only resting heart rate (RHR), usually about 60 beats per minute, can be considered as a fitness number when assessing the capacity of recovery or the level of endurance. Well-trained endurance athletes have a lower resting heart rate, which in extreme cases, can be below 30 beats per minute; they will also have the capacity to go down to RHR quickly after effort. One good indication of fitness level would be returning to RHR (+/- 10%) in one minute after the effort stops.
The best formula when working on heart rate training is the Karvonen formula:

Target training heart rate = (MHR – RHR) x % of intensity + RHR

This formula gives quick and reliable target heart rates for all the players.
Example: Joe is a 20 years old midfielder, with a 50 bpm resting pulse and you want to work him or her out at 80%.

(195-50) X 0.8 + 50 becomes 145 x 0.8 + 50 becomes 116 + 50 = 166 bpm.

You then know that Joe, when training, should attempt to keep his or her heat rate close to, but always below, 166 beats per minute.

7.6 LOCAL MUSCLE ENDURANCE

This is the ability of a specific muscle group to be intensively active for a necessary period of time in the absence of oxygen. During this anaerobic stage, the energy supply is produced predominately through the anaerobic breakdown of glycogen, the so-called lactate energy production cycle. Through anaerobic training methods and diet, glycogen is accumulated in the muscular system (See figure A: Energy systems and their contribution in Soccer). A player's diet must consist of high quantities of carbohydrates, proteins, iron and vitamins for the necessary production of glycogen during this high intensity exercise.

Anaerobic training must always be organized in an interval training method. Interval training is a principle that dictates that work be done for a specific period of time followed by a relief period. The time period allocated to the work to relief ratio varies depending upon the level of fitness of the players and the required demand of the training session. During the relief period, players are never at a complete rest but recover while performing light activities such as walking or jogging. Anaerobic training can improve a player's work rate by increasing his or her potential to perform high intensity exercise during a game. The specific aims of anaerobic training are:

- Increase the player's ability to act quickly and to rapidly produce power during high-intensity exercise. By doing so the player reduces the time required to react and elevates performance of a sprint during a game.
- Improve the capacity to produce power and energy via anaerobic energy producing pathways. Thus, a player elevates the ability to perform high-intensity exercise for longer periods of time during a game.
- Improve the ability to recover after a period of high-intensity exercise. Thus, a player requires less time before being able to perform maximally in a subsequent period of exercise and is therefore able to perform high-intensity exercise more frequently during a game.

7.7 SPEED TRAINING

Speed for soccer is a complex idea. Speed training for soccer is different than training for track and field events. While the speed required in track and field is a cyclical movement (same rhythm), in the game of soccer it's an acyclical movement (arrhythmical movement).
However, running biomechanics, when sprinting for example, remain the same. Therefore, running technique and correct running form should not be neglected.

If possible, training for speed must follow the pattern of the game. Players must read visual signals and cues to stimulate action for speed, rather than analyzing audio signals, from a whistle or voice command. The application of speed within the game is determined by the following movements and actions found in the game:

- Movement of the ball
- Movement of the opponent
- Movement of a teammate / as part of general team movement

We can differentiate between various types of speed that are required of the

soccer player within the game. They are:

- Pure speed – the ability to overcome the distance between two points in the shortest amount of time
- Technical speed – the ability to manipulate the ball with the legs and feet at speed and maintain control
- Speed of action – processing various information and signals from the game and choosing an appropriate response quickly to the situation. Also called Analytical speed
- Mental speed – ability of the player to be aware of all factors inside and outside of the game.

Explosive power is necessary to initiate a run, overtake your opponent, reach the ball first or beat your opponent in a 1v1 duel. For that reason we say that the first step or first three steps are more important than the thirtieth. When training for speed, we need to train with and without the soccer ball. Science tells us that we can only improve speed as much as 10% through coaching. This is a significant increase when developing top-level players.

Aside from the technical and specific training design to improve the first step, it is interesting to note that the ability to improve first step efficiency will always remain directly linked to good analytical and mental speeds. For example, the combination of how quickly the player analyzes various signals (voice, movement of the ball/teammate) in order to determine in what direction he or she should run matters as much as how quick his or her first step is.

When training for speed certain principles must be observed to prevent injury and to replicate the training environment necessary to improve speed.

Principles to observe when training for speed:

- Muscles must be prepared by a proper warm-up
- Speed is trained in the beginning of the main part of a training session.
- As a rule of thumb, the most complex and intense movements should always be trained first, in order to have an optimal influence on the nervous system
- Therefore, speed training should never follow activities that create fatigue
- Sub-maximum and maximum intensities have to be applied
- The volume of speed training remains relatively limited because of the high demands on the neuromuscular system
- Distance of 5-30 yards are considered advantageous for the training of

speed for soccer
- During speed training player should perform maximally for short periods of time (less than 10 seconds)
- The intervals between single repetitions can be up to 3 minutes in duration
- The main training method is repetition within the interval training method

An example of training for speed through the repetitive interval methods follows below:

SPEED TRAINING			
DURATION	REST	INTENSITY	REPETITION
2-10 SECONDS	> 5 TIMES THE EXERCISE DURATION	MAXIMAL 100%	2-10 TIMES

It is important that the periods between the exercises bouts be long enough for the muscles to recover to near resting conditions to enable a player to perform maximally in a subsequent exercise bout. For example, tests on professional players showed that 25 seconds was not sufficient for them to recover fully after a seven-second sprint.

7.8 SPEED ENDURANCE TRAINING

The number of short sprints (10-15 meters; 2 to 3 seconds) per game has steadily increased during soccer history from 70 in 1947 to 145 in 1970 and finally 195 in 1989. Running at intensities higher than Vo2 max will result in an important acidosis production.
This acidosis creates a big disadvantage for the body: it progressively blocks neuromuscular liaisons, ending up in a more and more complicated and difficult muscular contraction.

For this reason, it is crucial to have efficient ways to remove the acidity surplus. If the anaerobic work comes after the aerobic work, it means that the oxygen brought by the aerobic system is a powerful way to remove this acidity. Meanwhile, it takes a longer time to develop aerobic qualities than to develop anaerobic qualities.

In addition to the intermittent exercise inherent to a game of soccer, training must be done using the interval training method. This will enable the players to maintain a near maximum intensity level throughout the exercise.

Speed Endurance Training helps increase the player's muscle ability to produce force and also improves the muscle capacity, helping them to maintain a high power output. Speed Endurance Training can enable the elite player to train at a higher intensity level during sessions more frequently and also for longer periods of time.

There are two types of speed endurance training: production training, which is used to improve the ability to perform at maximum for short periods of time, and maintenance training, which is used to increase the ability to sustain training at high intensity.

Production Training:

- Exercises should be short periods, ranging from 20 to 40 seconds
- Rest periods should be longer, ranging from 2 to 4 minutes
- This work-to-rest ratio will help to ensure that the players are able to maintain a high level of intensity throughout the training exercises

Maintenance Training:

- Exercises should be in the range of 30 to 120 seconds
- Rest periods should be approximately the same as the exercise periods
- During this work-to-rest ratio, the player will become progressively fatigued, helping to build maintenance

Note: When exercises during speed endurance training last for periods of 60 seconds or longer, the player's heart rates should be close to maximum towards the end of the exercises.

The rest is passive, but in some cases, and as training progresses, active rest can be used i.e., a possession game or small-sided game with adequate player density (ratio between field dimension and number of players), with rest intervals consisting of walking, jogging, or reaction speed drills.

In an ideal situation, speed endurance training should be done at the end of training sessions, as the fatigue factor will definitely have an effect on the player's performance in the training session.

7.9 STRENGTH AND POWER

Strength and power are important in soccer. Both characteristics help to accentuate the play of an individual. We define these fitness characteristics as:

- Strength – the ability to overcome resistance or oppose an obstacle through muscular strength. Strengths in soccer include:
  - Shooting strength
  - Strength in the challenge
  - Jumping strength

Muscular soccer strength:
- Core Strength
- Eccentric strength

- Power – the application of strength in time, connected to explosive action of performance

During training, the coach can use activities that place players in situations where they can overcome the resistance of their body weight or the body weight of their opponent. By decreasing the time to perform the actions, we accentuate the element of explosive power.

Strength training should also take place in the weight room. A specific, explosive weight-training regimen is recommended for soccer, in order to:
- Increase power
- Help to prevent soft tissue injuries by specifically strengthening targeted areas; in particular, the groin and hamstrings

Because eccentric overload is a common mechanism of injury, strengthening the muscle eccentrically will help prevent it.

As we have seen, the periodization of training helps design a practice plan, which becomes a progressive, well-balanced, and organized in time. When using the same periodization principle for designing a weight program, the coach needs to include some additional progressions.

WEIGHT LIFTING PROGRESSIONS

1) Weight progression

Calisthenics ⟶ Non-weighted, body weight ⟶ Weighted

2) Muscular Contraction modes progression

Isometric Concentric ⟶ Eccentric

3) Speed of Execution progression

No speed → Slow → Intermediate → Fast

4) Plyometrics

Low Intensity → Medium Intensity → High Intensity

5) General Teaching Skills Progression

Simple (i.e., guided, single joint) → Intermediate (i.e., non guided, seated) → Complex (i.e., Standing, multi joints) → Olympic style lifts (i.e., Complex + Speed of execution factor)

7.10 FLEXIBILITY, AGILITY & BALANCE

Flexibility, agility and balance are important to a soccer player in terms of a physical action as well as technical skill. We define these fitness characteristics as:

- Flexibility – the ability to conduct movements in certain joints with an appropriate range of motion
- Agility – the ability to change direction quickly and easily with the body and body parts
- Balance – the ability of the body to maintain stability and equilibrium while running or standing on one foot

Flexibility is a physical quality that is easy to develop if it is trained systematically and daily, i.e., stretching exercise before and after practice. Flexibility has a direct connection to technique. The more flexible the player, the greater the potential range of technique. Flexibility also plays a key role for speed development and injury prevention. Adequate flexibility is a requirement allowing limbs to travel through a range of motion without impediment, in order to make the running movement fluid and efficient. Meanwhile, flexible muscles are generally less injury prone than tight muscles or joints. Static, but even more, dynamic, stretching should be used in order to improve flexibility.

Agility is required hundreds of times within a soccer game; a player must constantly change directions, stop and start, get up after falling, and turn throughout the game. Players who are agile have an advantage when playing in small spaces. Like flexibility, agility can also be improved through targeted drills

and frequent repetition.

Balance is required constantly throughout the game. When kicking, passing or receiving a pass; a player is often standing on only one leg. Good Static balance (the ability to maintain a stable position), but more importantly, Dynamic balance, is the ability to respond to the disruption of the center of mass position and to recapture stability when an unexpected force displaces the center of mass. An example would be a player trying to maintain balance when moving at speed and when being challenged for the ball. This athletic quality is important to develop as it is related directly to technique. Balance is best improved by the use of proprioception training (training of the mechanoreceptors).

7.11 WARM UP & COOL DOWN

Both of these phases are important when starting or ending a training session. A proper warm-up prepares the players for training, not only physically, but also mentally.

By definition, the primary goal of any warm up is to raise the body's core temperature, and subsequently, the muscles' temperature. A good warm up must be divided into three separate segments:

Part 1: Also called the general warm up, in Part 1 the coach should basically put his or her players in motion using any kind of physical activity, but usually jogging, in order to "break a sweat".

Part 2: Generally consists of a static stretching segment

Part 3: Called the specific warm up, it is the last, but also most important, section of a warm up. The specific warm up can either mix sport specific movements with dynamic stretching movements, or have one distinct segment followed by the other. Because this segment is specific, the ball can be used. Note that in the final phase, the intensity should be replicating game (or desired practice) intensity. The same is true for muscle contraction modes and soccer specific motions.

This last section is crucial in order to ensure player's safety as well as practice quality. During this phase, dynamic stretching movements must be used. They encourage correct running technique and movement patterns, and help to eliminate wasted motions. The coach needs to ensure that correct footwork becomes second nature, particularly for young players, so it is important that these movements are carried out regularly and performed correctly.

When it comes to duration and intensity, research has shown that a warm up performed at around 60% Vo2 max, for a total duration ranging from 10 to 20 minutes, is likely to cause minimum phosphate depletion, maximize the increase in muscle temperature and significantly improve short term performance.

During the cool down, light jogging and static stretching can aid the body to recover from the trauma received during the training session.

7.12 OVERTRAINING

The effects on performance due to overtraining are well documented. The signs and symptoms of aerobic overtraining are identifiable and can include physiological, psychological and biomechanical characteristics. If an athlete or coach does not recognize the symptoms of overtraining, the danger lies in mistakenly thinking that the athlete is not training hard enough. Often times, these athletes and coaches increase the training load in an attempt to improve performance, when in fact it should be reduced to let the body recover (See Overload/supercompensation illustration). Because many off-field factors (sleep, nutrition, relationships, school, work, etc.) can affect training, communication between the coach and athlete is critical to make a proper diagnosis of overtraining.
It also appears that combined psychological and physiological changes during high-intensity training are primarily of interest when monitoring training stress in relation to performance.

Coaches should carefully consider all aspects when determining the factors that may be contributing to overtraining. Below are just some of the symptoms of overtraining:

PSYCHOLOGICAL	PHYSIOLOGICAL	BIOMECHANICAL
Lack of Motivation	**Decreases in Total Body & Lean Body Mass**	**Deterioration of Technique**
Anxiety	**Decreases in Limb Circumferences**	
Depression	**Certain Hormonal Changes**	
Irritability	**Decreases in Peak Oxygen Consumption**	
Lack of Self Confidence	**Increased Resting Heart Rate During Work & Recovery**	
Fatigue		
Inability to Concentrate		

7.13 REST/RECOVERY

Children are very sensitive to the physical and psychological stresses imposed by a demanding training and competition schedule. They are especially susceptible to injury or burn-out during growth spurts and puberty. In this case, planning the rest becomes almost as important as planning practices. Following the overload principle, there is also no possibility of improvement if a player doesn't get the rest he needs to recover, and ultimately overcompensate, from the workload.

Youth coaches must take into consideration the positive effects of adequate rest periods during training, alternating hard and light practices through the season and allowing days off and time away from soccer to recuperate and rekindle passion for the game.

7.14 PHYSIOLOGY

Physiology is the study of the function of the human body. It involves the workings of all the systems of the body and how they act together. The following systems are all directly related to the functioning of the body during exercise.

1. Respiratory system – the system that controls our breathing. Under the influence of exercise and constant training, the body can increase its capacity to take in oxygen. Additionally, it has the ability to utilize a greater percentage of that which is taken in to send to the appropriate organs for energy production. Finally, the maximum volume of air that our lungs exchange in one breath increases. For the untrained athlete, the above has to be compensated for by increasing their rate of respiration, while falling into oxygen debt due to lack of oxygen for the amount of exercise being attempted. The trained athlete is able to establish a steady state of oxygen consumption at higher work rates due to their greater efficiency performing a task, working with a lower expenditure of energy, thus enabling exercise to continue for longer periods of time.

2. Cardiovascular system – this system combines the heart and the circulatory systems. As an athlete trains, the heart muscle will increase in size, strength and efficiency. The results will be a more powerful contraction and, accordingly, a greater volume of blood output per stroke. This allows more blood to be circulated with less contraction. The training effect is also seen in the resting state of the athlete, as now his or her pulse rate and resting heart rate decrease due to greater efficiency. The trained athlete also has the ability to recover more quickly.

3. Musculo-skeletal system- this system involves both the muscles and skeletal systems of the body. As the athlete trains, his or her muscles develop and adapt to the stress of exercise by being able to become more effective as an energy provider. Training increases the number of capillaries surrounding each muscle fiber, allowing for a greater exchange of heat and fuel between blood and the working muscle fibers. The increased exchange maintains an environment conducive to energy production and repeated muscle contractions. Specific training, intensity and duration of the exercise sessions are important to increase the ability of the muscle to store fuel and to utilize oxygen and these stored reserves for energy production. Inactivity will cause a loss in the functioning of the muscles in the above; the extent and time of this regression are not known as many variables are taken into consideration. Returning to training will again recover the muscle's adaptations. However, this time period may be longer than the de-training period. As one exercises, bone strength (density), cartilage, and tendons also increase in strength.

4. Central nervous system – this system is at the stem of all movement patterns. Its efficiency to initiate and carry out complex movement patterns within the game - like all other systems - needs training. This is the most complex of all of the body's systems, and is related to all other functions of the body during exercise.

7.15 PHYSIOLOGY OF EXERCISE

Physiology of exercise relates to how the body functions during exercise and the chemical processes that occur to enable the body to meet the demands of the intensity of the exercise. To meet these demands, the body has to be able to produce energy that is specific to the demands of the exercise (anaerobic and aerobic). Energy is produced through numerous chemical reactions within the systems of the body. Our main focus is the production of ATP (Adenosine tri phosphate), which is the biomechanical source necessary for muscle contraction.

All foods are broken down either by anaerobic or aerobic processes to produce ATP. The specific process by which ATP is generated depends upon the intensity and duration of the activity performed, which is once again specific to the demands of the game.

Process by which ATP is generated:

Anaerobically ATP and PC (phosphocreatine)

- Both are stored in the muscles
- PC can manufacture ATP
- Short activities performed at maximum effort derive ATP through this source
- Muscle tissue can not store large amounts of ATP-PC
- Training can increase the amount of ATP-PC stored in muscle tissue
- Anaerobic breakdown of glycogen after ATP-PC is depleted from the muscle.
- ATP is now produced through the breakdown of glucose
- High intensity activities lasting 1-3 minutes
- Glucose is stored in the muscle tissue
- Training can increase the amount of glucose being stored in the muscle tissue

Aerobically

- Carbohydrates and fats provide constant production of ATP
- It is the most efficient and abundant method to produce ATP
- This method provides energy for endurance events
- Training will enhance the ability of muscle cells to consume oxygen and manufacture ATP

Energy sources:

Anaerobic = “Without oxygen”

Sources of energy are Creatine phosphate or ATP, both stored in the muscles

ATP $\longrightarrow$ ADP + energy

CP + ADP $\longrightarrow$ ATP + Creatine

Aerobic = "With oxygen"

Sources of energy can be fats or carbohydrates (glucose)

The breakdown of fats is as follows:

Fat + oxygen + ADP $\longrightarrow$ carbon dioxide + ATP + water

The breakdown of carbohydrates is a little more complex and takes place in two successive reactions shown as follows:

First phase: glucose + ADP ⟶ lactic acid + ATP

Second phase: lactic acid + oxygen + ADP ⟶ carbon dioxide + ATP + water

The first phase does not use oxygen, whereas the second does. When the exercise is light, the byproduct lactic acid (or lactate) is directly worked into the second phase, so that the final result is as follows:

Glucose + oxygen + ADP ⟶ carbon dioxide + ATP + water

If, during exercise, the oxygen system is not stressed beyond certain limits, the inhaled oxygen is sufficient and lactic acid does not accumulate.

Note that at no point does an energy system work completely alone: energy systems always rely on each other. Only the percentage of involvement varies upon the nature, duration and intensity of the effort.

Figure A presents a summary of different energy systems and their application in soccer

Recovery of ATP

ATP stores are replenished within 10 minutes after exercise. The aerobic system and process provides most of the ATP energy for recovery. Glucose (glycogen) stores need several days for complete replenishment. The recovery rate depends upon the diet and types of exercises performed during this recovery period. Lactic acid, one of the end products from the anaerobic break down during high intensity exercise, can be stored in the muscle during high intensity exercise and, if not removed through either use as an energy source (aerobic) or from the blood transport system, can limit physical activity.

Figure A. Energy systems and their contribution in Soccer

Energy Systems	**Anaerobic System**		**Lactate System**	**Aerobic System**	
Duration	6 – 8 seconds		8 seconds to 2-3 minutes	> 3' The "steady state" is reached after 6-7 minutes	
Main nutrient	CP (Creatine Phosphate)	ATP (Adenosine Tri phosphate)	Glucose (Glycogen)	Carbohydrates (Glucose-Glycogen) Heart rate>130 bpm	Fats (Heart rate<130 bpm)
Formula	CP + ADP = ADP + Creatine	ATP = ADP + Energy	Glucose + ADP = Lactic acid + ATP Lactic acid + oxygen + ADP = Water + carbon dioxide + ATP	Glucose+ oxygen+ ADP = Water +carbon dioxide+ ATP	Fats+ oxygen+ ADP = Water + carbon dioxide + ATP
Availability	Very limited	Very limited	Determined by O^2 status (non availability)	Determined by O^2 status (availability)	Unlimited
Stores	16 mmols/ kg of muscle	5mmols / kg of muscle	400 g. in muscles (glycogen) + 100 g. in liver (fructose)	400 g. in muscles (glycogen)+ 100 g. in liver (fructose)	15 kg of Triglycerides in fat cells and muscles (limited).
Depletion	60% in 20''	Never more than 60 % from initial values	Blood glucose concentrations fall after 90'	Blood glucose concentrations fall after 90'	Primary energy source after 35'. Before that, it needs adequate oxygen uptake
Repletion	100% in 8'	100% in 3'-5'	100 % in 24 hours (If appropriate carbohydrates intake)	100 % in 24 hours (If appropriate carbohydrates intake)	Depending on diet.
Energy contribution in Soccer	20 %	20 %	30 %	30 % (*)	
Types of soccer actions	Start, short sprints, saves, jumps, shots, dribbles, headers, intense and short actions		Long sprints, Combination of multiple short or long and intense runs	Breaks (restarts, injury), any kind of rest, walk, jogging Repositioning and Offensive /Defensive moderate intensity runs.	
Nature of effort/total distance	16 %		20 %	64 %	
Work/Rest Ratios	1:3 of **MINIMUM** Work/Rest ratio - Called the "Rest relief" = walk or stretch.		1:2 of **MINIMUM** Work/Rest ratio Called the "Work relief' = more active than rest relief, i.e., Slight jog	1:1 of **MINIMUM** Work/Rest ratio	

Knowing the energy sytems is a must in order to provide a safe training environment for the players. For example, training for maximum speed running, and looking at the table, the coach should:

1) Identify the main energy source (in this case anaerobic)

2) Adapt the duration for each repetition (not more than 6-8 seconds)
3) Plan the suggested resting time, corresponding to the energy source trained (Around 3 minutes)

Example: The day after the game, the coach wants to send his team for a jog for the first 20 minutes of practice. After getting through every energy system during the first 3 minutes, the run becomes mainly aerobic and the main nutrient will either be carbohydrates or fats, depending on running pace. After 6 minutes, players are over the oxygen debt experienced early in the run, and now the energy system is self-sufficient ("Steady state").

With this in mind, the coach knows:
- That the main energy stores have not been depleted too much (because of the 20 minutes total duration, while the blood glucose concentration falls only after 90 minutes)
- That it will takes 24 hours to fully replenish energy stores with a good carbohydrate diet.

7.16 NUTRITION

A. WATER

- 60% of body weight is water.
- 65% of the water is in the body tissues.
- Maintains electrolyte balance during exercise.
- Transports nutrients to and from cells.
- Necessary for digestion, absorption and circulation.
- Water intake is controlled by the thirst sensation, but this is not great enough to meet the needs during exercise.
- Heat and humidity increases the need for water both during and after exercise.
- Water intake needs to take place before, during and after exercise.
- The addition of carbohydrate-electrolyte solutions can be vital to the athlete in the pre-exercise, during and post exercise hydration process.

B. MINERALS

- More than 20 elements in the body.
- Calcium – builds and maintains bones, teeth and is essential for muscle contraction.
- Iron – transports oxygen through the body.
- Sodium, Potassium, Chloride – electrolytes helping in the balance of the body during exercise.

C. VITAMINS

- Promote growth and maintain health.
- Essential for the release of energy to the tissues.

D. PROTEINS

- Necessary for growth, repair and maintenance of the body tissues.
- A potential source of energy if there is a low supply of fats and carbohydrates.

E. FATS

- Supply energy, but are an inefficient source.
- Saturated – solid animal fats.
- Unsaturated – liquid, from plant sources.

F. CARBOHYDRATES

- Sugars, starches from grains, fruits and vegetables.
- A breakdown of these to glucose as a source of energy.
- Glucose and sucrose restore muscle glycogen.

Diet – variations depending upon the demands of exercise, timing, competitions, etc.

Protein	10-15%
Fats	25-30%
Carbohydrates	55-60%

G. PRE-GAME MEAL

- 3-4 hours before competition.
- Avoid fats and greases that take longer to digest.
- Avoid spices and foods that can cause indigestion.
- Familiar foods can have a psychological effect upon competition.
- Drink plenty of fluids.
- Avoid high sugar content foods before competition (two hours)
- Fruits, vegetables, pasta, and gelatin are recommended.

H. POST-GAME MEAL

- Vital to the recovery process of the athlete.
- Meals need to be predominately carbohydrate in substance and take place immediately post exercise and at 1:00 hour intervals to restore muscle glycogen.
- Consume simple carbohydrates fruits, juices and sport drinks.

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Bangsbo, J. (1994) *Fitness Training for Football: A Scientific Approach.*
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NOTES

Sports Psychology

UNDERSTANDING THE PSYCHOLOGY OF COACHING

8.0 THE COACH AND THE INDIVIDUAL PLAYER

8.1 MENTAL TOUGHNESS ATTRIBUTES

A. STRONG DESIRE TO SUCCEED

Do I know where I am going and how I am going to get there?

How badly do I want it?

Am I prepared to make the sacrifices to get there?

Pride – Personal responsibility in delivering excellence.

B. STAY POSITIVE IN THE FACE OF CHALLENGE AND PRESSURE.

Competition is a continuous presentation of challenges and problems.

How good are you at staying positive under pressure?

Do you love the challenge of tough competition?

How well do you deal with adversity?

C. CONTROL THE CONTROLLABLES.

Do you worry about uncontrollable factors?

Focus on things you can do something about.

D. HIGH COMMITMENT — BALANCED ATTITUDE.

Demand more of yourself than others demand of you.

Maintain balance.

Do I give 100% in training as well as competition even if things are not going well?

How committed am I?

E. HIGH LEVEL OF SELF-BELIEF.

Ability to refocus and come back strong.

Can you maintain your self-belief when you are performing badly?

Is confidence under stress one of your strengths?

Never give up even when it looks like it is all over.

F. POSITIVE BODY LANGUAGE.

90% of a message is transmitted by non-verbal (body language) and para-verbal (speech patterns) means.

Non-verbal messages are 16 times more powerful than verbal ones.

Do you look like you mean business?

Do you maintain positive body language when you are losing or playing poorly?

Recommended Reading:
Bull, S.J., Albinson, J.G., & Shambrook, C.J. (1996). The Mental Game Plan. Eastbourne, UK: Sports Dynamics. ISBN: 0 9519543 2 6

Martens, R. (1987). Coaches Guide to Sport Psychology. Champaign, IL: Human Kinetics. ISBN: 0873220226

Miner, J.M., Shelley, G.A., & Henschen, K.P. (1999). Moving toward your Potential: The Athlete's Guide to Peak Performance. Farmington, Utah: Performance Publications. ISBN: 1-887476-01-6

Orlick, T. (1998). Psyching for Sport. Champaign, IL: Human Kinetics.

8.2 TEAM MANAGEMENT

- Safety and Ethical Aspects.

- Implement appropriate training and medical programs to insure players are fit for practice and competition. Example: proper warm-up, pre season screening and testing.

- Know and understand the Laws of the Game. Example: shin guards mandatory, proper footwear, inflation of the ball, no jewelry, safe field conditions, age appropriate duration of game and practice.

- Inspect and maintain equipment and supplies to make certain they are safe and in accordance with the rules.

- Inspect the practice and playing field recording dangerous conditions.

- Supervise and control players so as to avoid injury situations taking into consideration factors such as: age, experience, physical condition of the players, equal competitive situation, weather conditions.

- Insurance needs (players and coaches) - adequate coverage.

- Evaluate and plan in terms of "Risk Management" for your program and players.

- Ethics - Definition: the principles recognized as standards of behavior by a specific group.

"STRIVE TO MAINTAIN INTEGRITY WITHIN OUR SPORT"

A. STYLE OF COACHING

- Developing a Philosophy
  - Who am I coaching? - Youth, Club, High School, College, Pro (Group Dynamics), Age, Sex, Experience, Motivation, etc.
  - What is success?
  - Goal Setting.

- Personality
  - Be yourself, aware of temperament and disposition guidelines to "your" style.
  - Assess "your" strengths and weaknesses.
  - Coach within yourself.
    Easy Going - lacks passion, conviction, intensity, standards.
    Hard Nosed - dictator, inflexible, cold.
    Business Nice - task oriented, predictable, unimaginative.
    Nice Guy - indecisive, easily manipulated.
  - Ability to Teach / Coach (methods).
  - Fitness and ability to demonstrate (respect).
  - Knowledge.
  - Commitment and Passion.

B. PLAYER MANAGEMENT SKILLS

- Communication skills.
- Coach player interaction (relationships) more than a coach.
- Motivational skills.
- Developing leadership.
- Applied psychology.
- Team chemistry.
- Choosing a captain, team selection, substitutes for injured players, rivalry for positions, freshmen, rookies, reserve team players.
- Handling "problem" players.
- Winning / Losing.

C. SEASONAL PLANNING

- Pre-Season
  - Goals, duration, rhythm, training games, testing (what purpose), balance of technical, tactical, physical and psychological preparation, new players, tryouts.

- Seasonal
  - Schedule - times, dates, home, away, days.
  - Long term goals.
  - Regeneration.

- Post Season
  - Time off - regeneration.
  - Out of season rules.
  - Preparation for next season.
  - Self analysis - continuing education.

D. DAY OF GAME

- Pre Game (Home / Away)
  - Staff Responsibilities: facilities preparation, arrival times, pregame talk, evaluate field conditions, tactical considerations, warm-up, half time plan.

- During the Game
  - Staff Responsibilities, observation/analysis, control of emotions, evaluate both your own team and opponent, substitutions (why, when, how).

- Half Time
  - Allow players to "relax", allow free time for player interaction, check injuries, fluid, organization of substitutes (role, warm-up), only 2-3 "team" points, individual points.

- Post Game
  - Check injuries, decide if it is appropriate to summarize and / or comment or not, if press involved - consider "cooling off period" for both coaches and players, announce upcoming training schedule or pertinent information, make notes, evaluate, analyze performance, self-analysis, "after the game is before the next game".

E. PERSONNEL (SUPPORT STAFF)

- Administration
  - Club, Parents, High School, Colleges, athletic department, any support staff, professional, general manager.

- Medical Staff
  - Trainers, Doctors, specialists, prevention - care - rehabilitation.

- Technical Staff
  - Assistant coaches' roles/responsibilities and their development as coaches.

USYSA COACHES' CODE OF ETHICS

The overall responsibility of any coach is to create a safe, fun filled, learning environment.

With this basic premise established, USYSA has developed the following **Coaches' Code of Ethics** that addresses three areas:

1. SAFETY
2. PLAYER DEVELOPMENT
3. ETHICS

SAFETY

1. My first responsibility is the health and safety of all participants.

2. It is recommended that coaches become certified in basic first aid and are aware of their club, league, or state requirements in this area.

3. Be prepared to handle first aid situations as well as medical emergencies at all practices and games, both home and away;
   - Have and know how to use a properly supplied first aid kit / ice.
   - 911 emergency procedures / telephone location.
   - Location of nearest emergency medical facilities.
   - Always carry emergency medical release forms & team safety / information cards.
   - Follow up all injuries with parents / guardians.

4. Know and understand the *Laws of the Game*.

5. Inspect players equipment and field conditions for safety reasons.

6. Utilize proper teaching and instructing of players regarding safe techniques and methods of play.

7. Implement appropriate training programs to make sure players are fit for practice and competition.

8. Supervise and control your players so as to avoid injury situations.

PLAYER DEVELOPMENT

1. Develop the child's overall appreciation of the game.
2. Keep winning and losing in proper perspective.
3. Be sensitive to each child's developmental needs.
4. Educate the players to the technical, tactical, physical and psychological demands of the game for their level.
5. Implement rule and equipment modifications according to the players age group.
6. Allow players to experience all positions.
7. Players need to have fun and receive positive feedback.
8. Practices should be conducted in the spirit of enjoyment and learning.
9. Provide the appropriate number of training sessions and games according to the players stage of development.
10. Strive to help each player reach his / her full potential and be prepared to move on to the next stage of development.

ETHICS

1. Strive to maintain integrity within our sport.
2. Know and follow all the rules and policies set forth by clubs, leagues, state and national associations.
3. Work in the spirit of cooperation with officials, administrators, coaches and spectators to provide the participants with the maximum opportunity to develop.
4. Be a positive role model.
5. Set the standard for sportsmanship with opponents, referees, administrators and spectators.
6. Keep sport in proper perspective with education.

NOTES

Classroom Course Summary

9.0 COURSE SUMMARY

- Review of testing schedule - times, groups, rooms, etc.
- Practical Testing Topics.
- Review of practical testing procedure.
- Review of oral exam procedure — refer to sample test questions in this workbook.
- Review of practical evaluation critique form in this workbook.
- Distribution of outline forms and practical critique forms (if needed).
- Candidate will be informed if they will be utilized as players of if youth players will be used for testing.

9.1 TESTS & SAMPLE TEST

A. TAKE HOME / OPEN BOOK

- Fitness and Physiology
- Laws
- Psychology / Team Management

NOTES: CANDIDATES ARE ONLY ALLOWED TO RECEIVE A FAILING GRADE IN ONE THEORETICAL SUBJECT (ORAL OR WRITTEN) TO BE ALLOWED A RETEST IN THAT SUBJECT, OTHERWISE TWO FAILURES IN THEORETICAL SUBJECTS THE CANDIDATES DOES NOT RECEIVE THEIR "B" LICENSE.

Candidates are responsible for reading the Laws of the Game book prior to attending the course. Candidates will be expected to successfully complete the open book exam in this subject in order to receive the "B" license.

The Fitness and Physiology exam is a combination of the materials in the candidates manual and the fitness lecture and field session. This exam is open book.

B. ORAL EXAMS

- Methods (strongly encourage to use chalkboard to support answer)

  Sample Questions:

  1. What is technical, tactical functional training? Give an example for one position or role.

  2. Define and explain 2 aspects of fitness and their relationship to the game of soccer.

  3. Discuss how the organization of the equipment, balls, players etc., effects the quality of the session.

  4. What is specificity of training and the S.A.I.D. principle?

- Tactics (strongly encourage to use chalkboard to support answer)

  Sample Questions:
  1. What are the functions of a wide midfield player in a 3-5-2 system?

  2. What are the main coaching points in a 5 v 3 session?

  3. What is meant by team shape and balance?

  4. How would you prepare your team to play against an opponent whose main strength was scoring off of long flighted restarts?

C. PRACTICAL COACHING

You will be asked to coach either a ***technical functional*** or a ***tactical functional*** topic for your exam.

Practical Testing Reminders

- Come with outline and critique form.
- Know your topic and teaching progression.
- Is your training realistic.
- Use of space — appropriate size for the number of players and technical ability.
- How and when to add / reduce pressure.
- Stop to instruct — positive / negative.
- Presentation — look the part, volume and inflection of voice, relax, be yourself.
- Self analyzation.

KEEP IT SIMPLE, STICK TO YOUR TOPIC

D. GAME AWARENESS

As a "B" License candidate, you will be evaluated throughout the week on "Game Awareness." Your final score will be recorded as "Adequate" or "Needs Improvement."

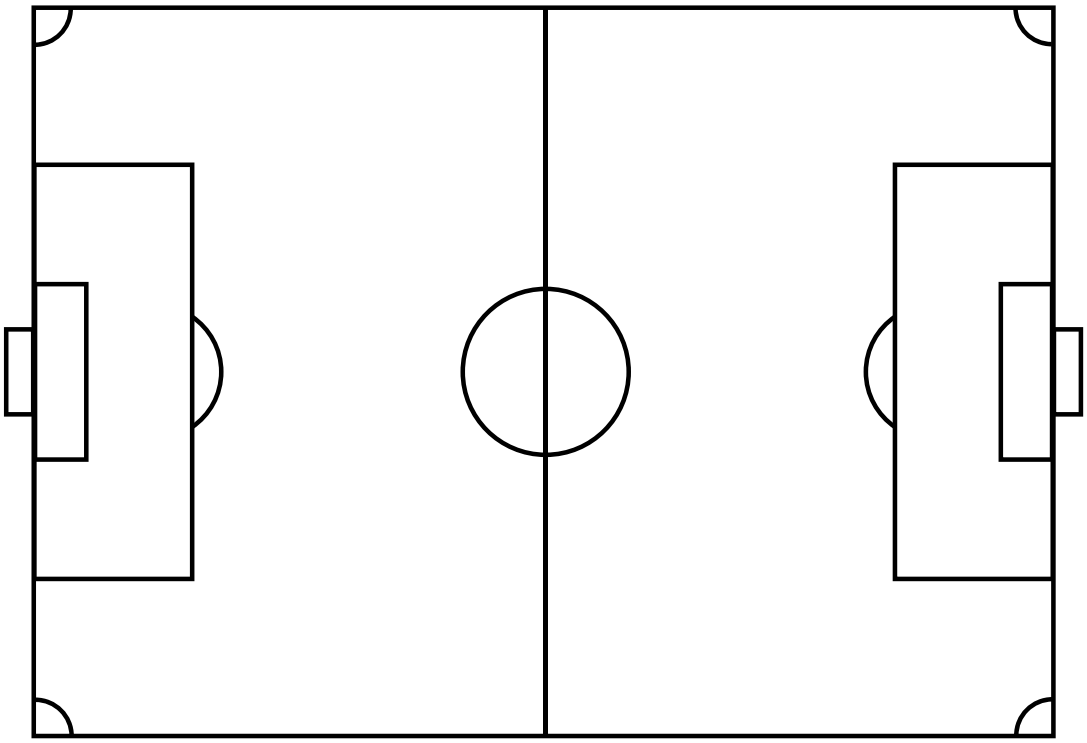
See appendix for information on the administration of exams.

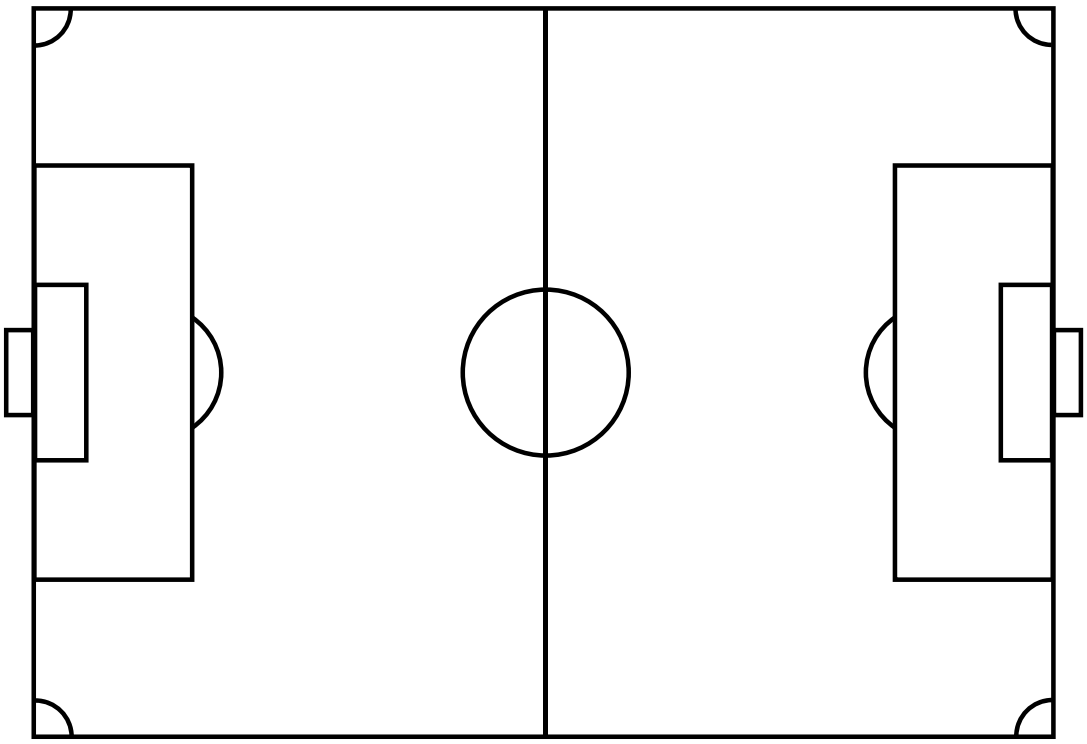
NOTES

Practical Field Sessions

What follows are guidelines which will be addressed during the practical field sessions. The Technical sessions are designed to show how to organize, develop and coach technique that focuses on the players' comfort level, competency and creativity with the ball utilizing the teaching progression: Fundamental, Match Related and Match Condition.

NOTE TO INSTRUCTOR: *All technical sessions should be designed to show the candidates how to organize, develop and coach technique that focuses on the players' comfort level, competency and creativity with the ball utilizing the teaching progression; Fundamental, Match Related and Match Condition.*





10.0 CHANGING THE POINT OF ATTACK

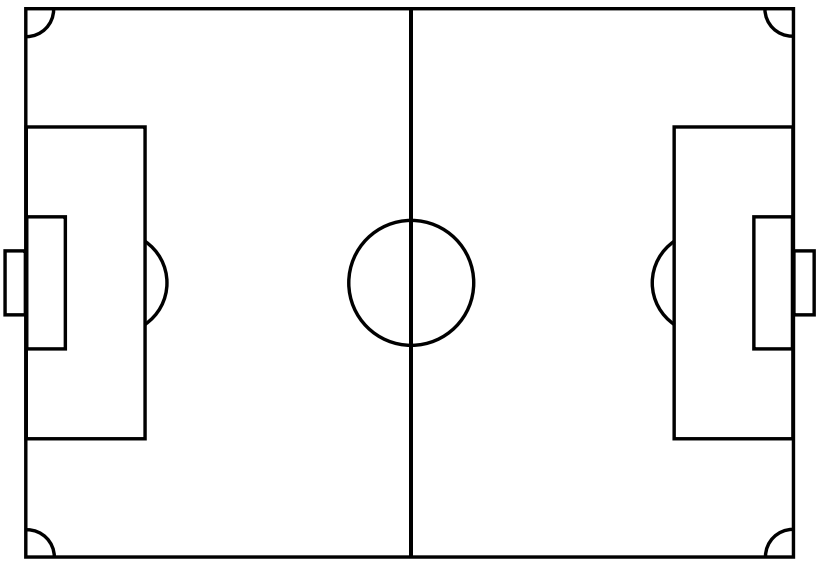
In this session, the focus is on maintaining possession of the ball, recognition of numbers up or down, and having the ability to play out of pressure, change the point of attack and support the next attack. The session also stresses establishing a "rhythm of play" that has variety and is suitable for a team's technical ability.

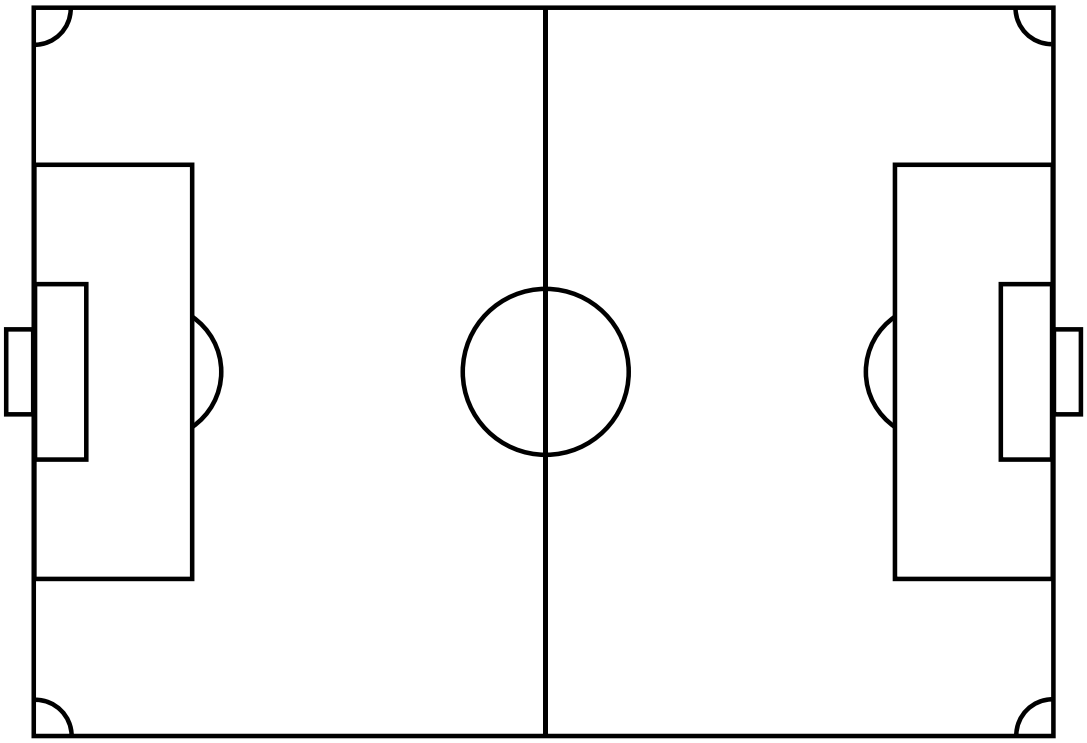
Major Coaching Points

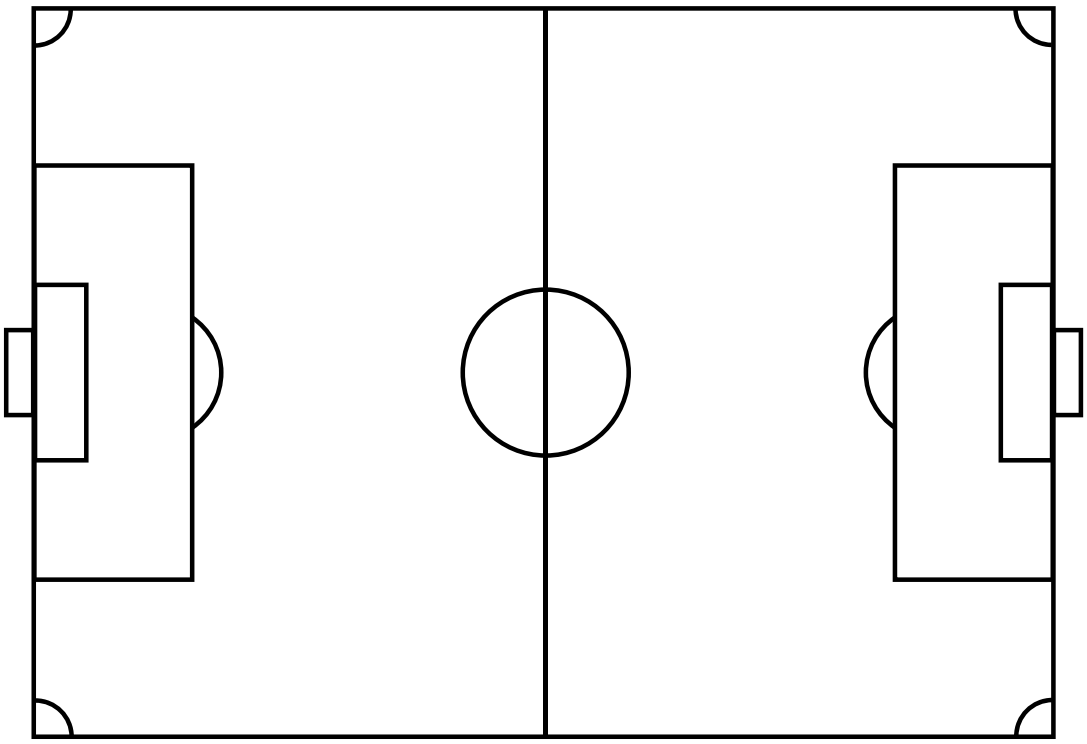
- Angles and distance of support.
- Being “open” to the game (vision) passing – weight, accuracy, disguise, (tactical implication).
- Is the tempo/rhythm varied and under control?
- Speed of play at “new” point of attack decision making.
- Technique/tactical implication.

Suggested Session Progression

- 4v2 for possession.
- 5v3 for possession.
- 5v5 with neutral players (directional).
- 8v8 with neutral players (directional).







10.1 ATTACKING FROM THE FLANK

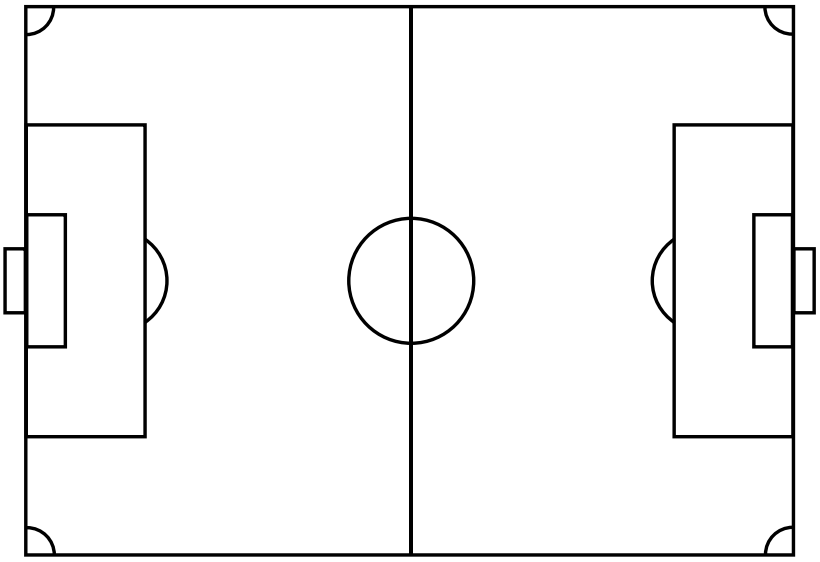
This session stresses how to develop a wide / flank attack. This session also shows how to get the ball wide and get behind the defense using individual ability (1v1) and combination play (wall pass, overlap, double pass) for crosses to create goal scoring opportunities. It also addresses proper crosses, timing of runs in the box and finishing from crosses.

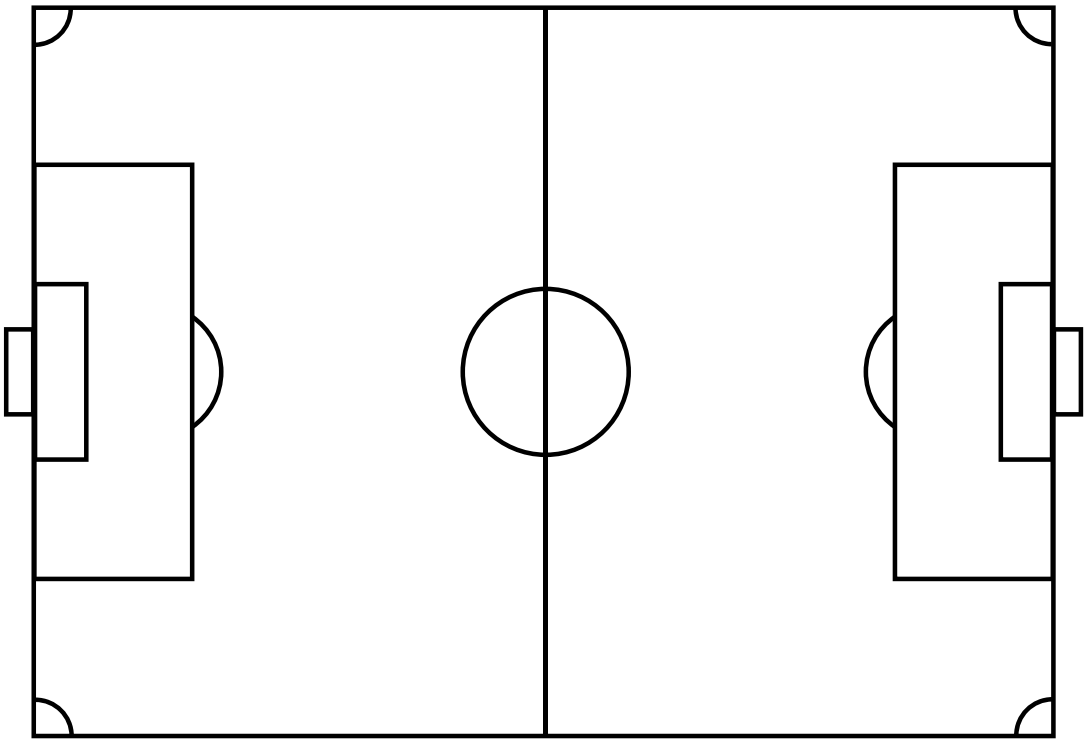
Major Coaching Points

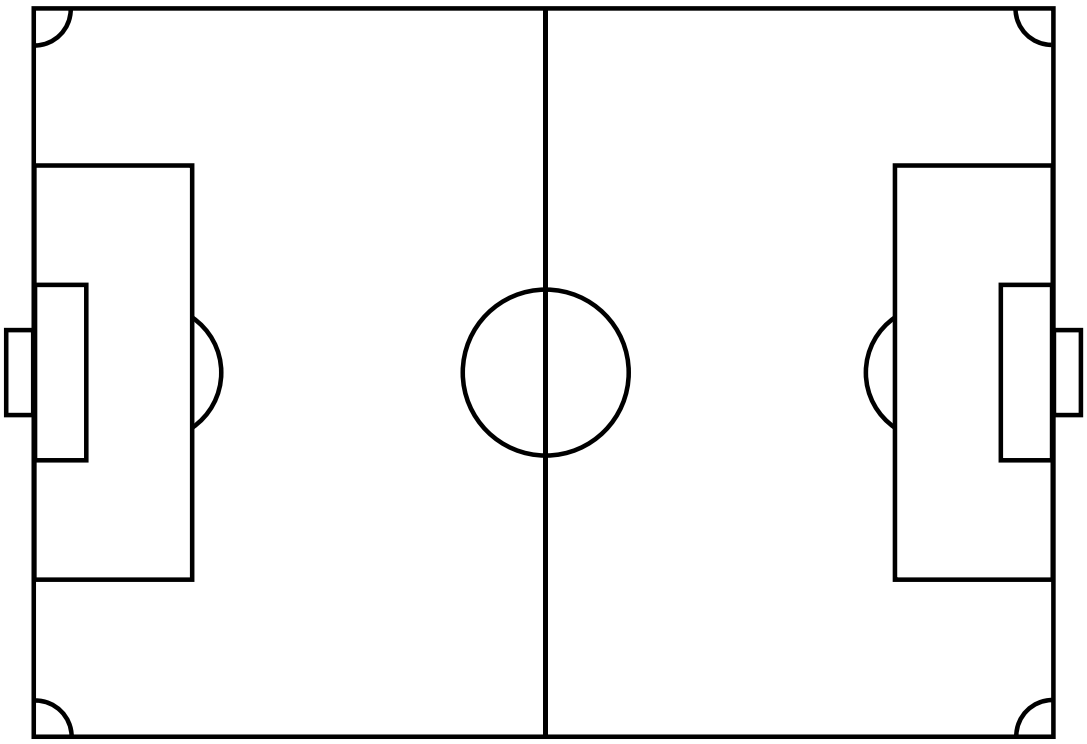
- Create width in attack.
- Technical aspects of passing and receiving in wide positions.
- When and how to combine in wide areas.
- Proper crossing technique and type — Tactical Application of Technique (TAT).
- Proper runs and timing of runs in the box.
- Finishing technique.

Suggested Session Progression

- 7v0 to goal (show patterns)
- 7v3 or 7v4 to goal with small counter goals (create 2v1 on the flanks)
- 7v5 or 7v6 to goal with counter targets







10.2 GOALKEEPING — DEALING WITH CROSS BALLS

Major Coaching Points

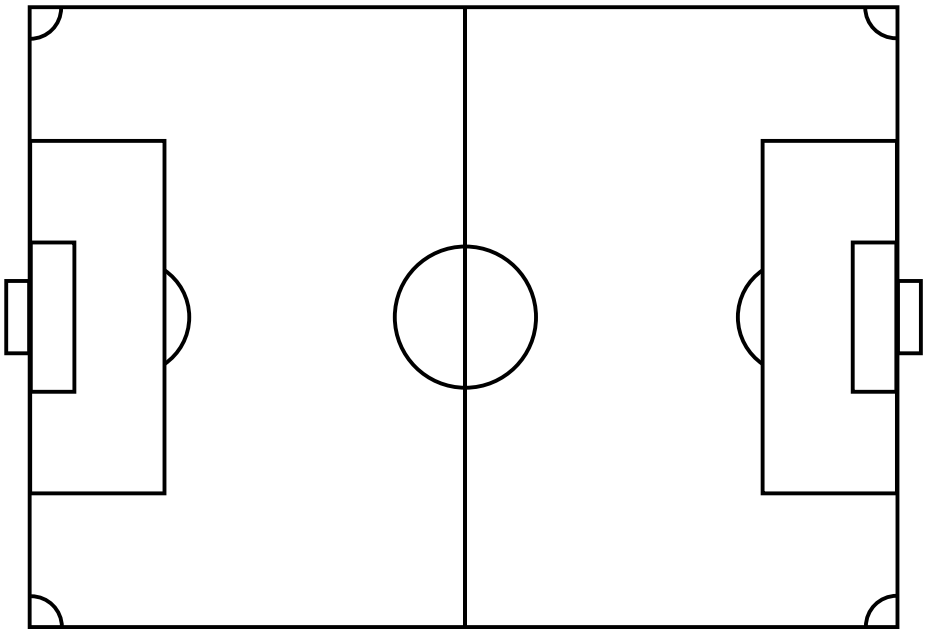
(1) The starting position
(2) The Flight of the ball
(3) Making an early Decision
(4) Attacking the Ball
(5) Take off (which leg)
(6) Handling Decision (catch or punch)

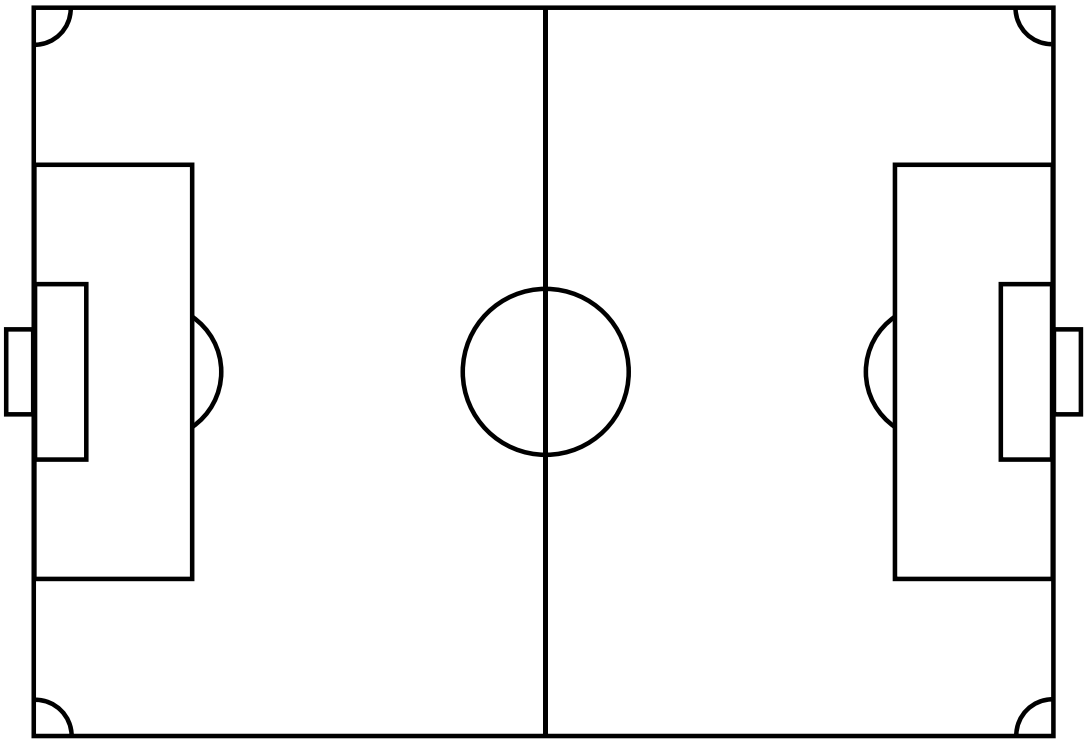
Playing The Percentages

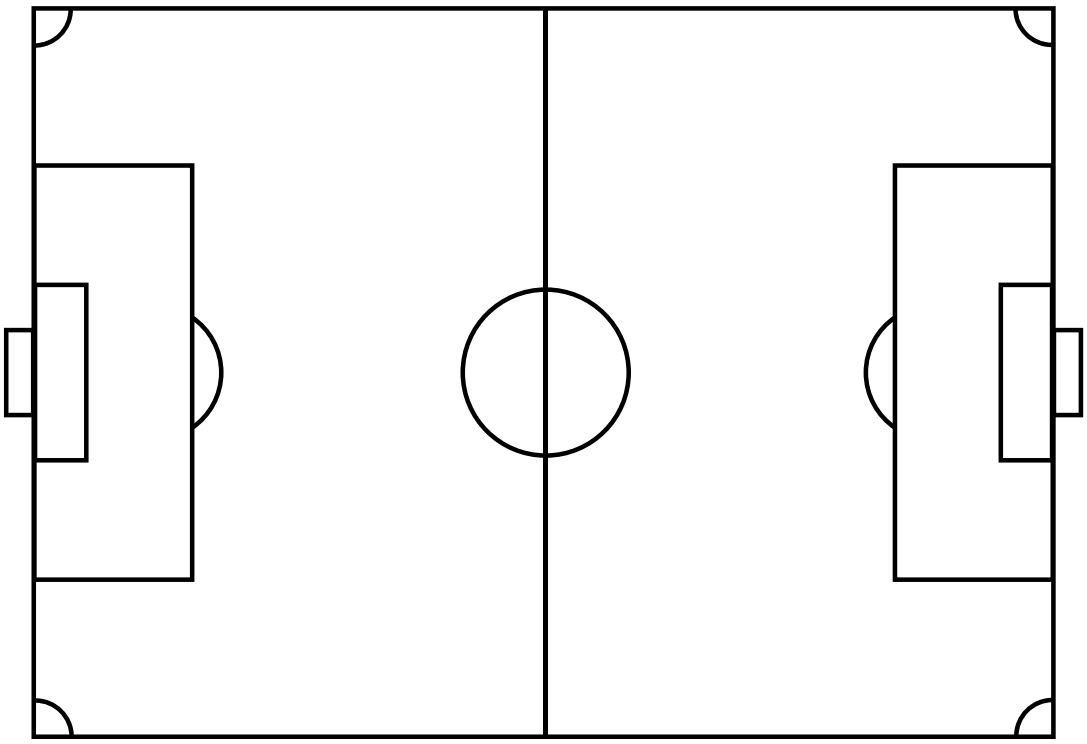
(1) Review of the 3 target areas that cross balls which come into, in, and around the 6 yd. box.
(2) Review of goalkeeper starting position relative to different types of cross balls including in swinger v out swinger and different points of delivery in and around the penalty box.

Functional Practice to Coach Above

8v8 Game Situation / Match Condition







10.3 PLAYING OUT OF THE BACK

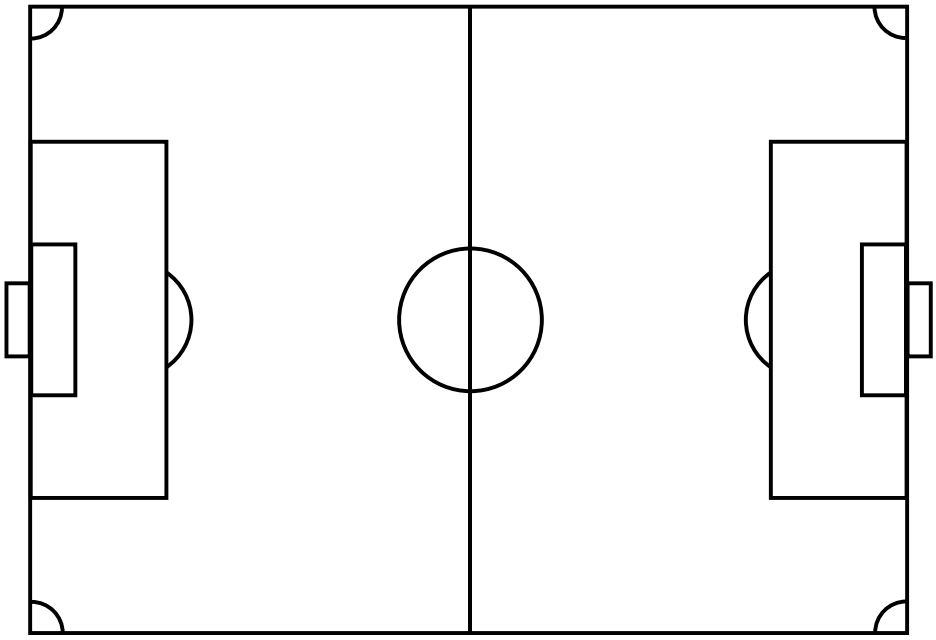
This session focuses on the ability of back players to safely and effectively build the attack from the defensive third, also, as the session increases in number of players, attention is given to playing from the back regardless of where we are on the field.

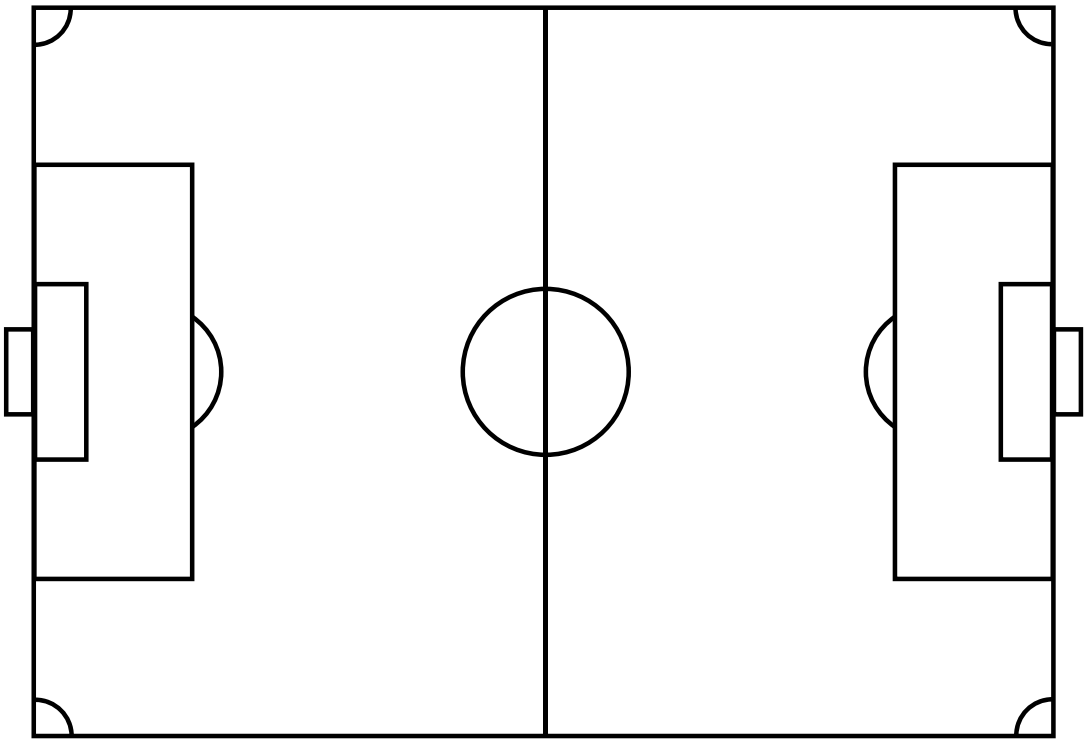
Major Coaching Points

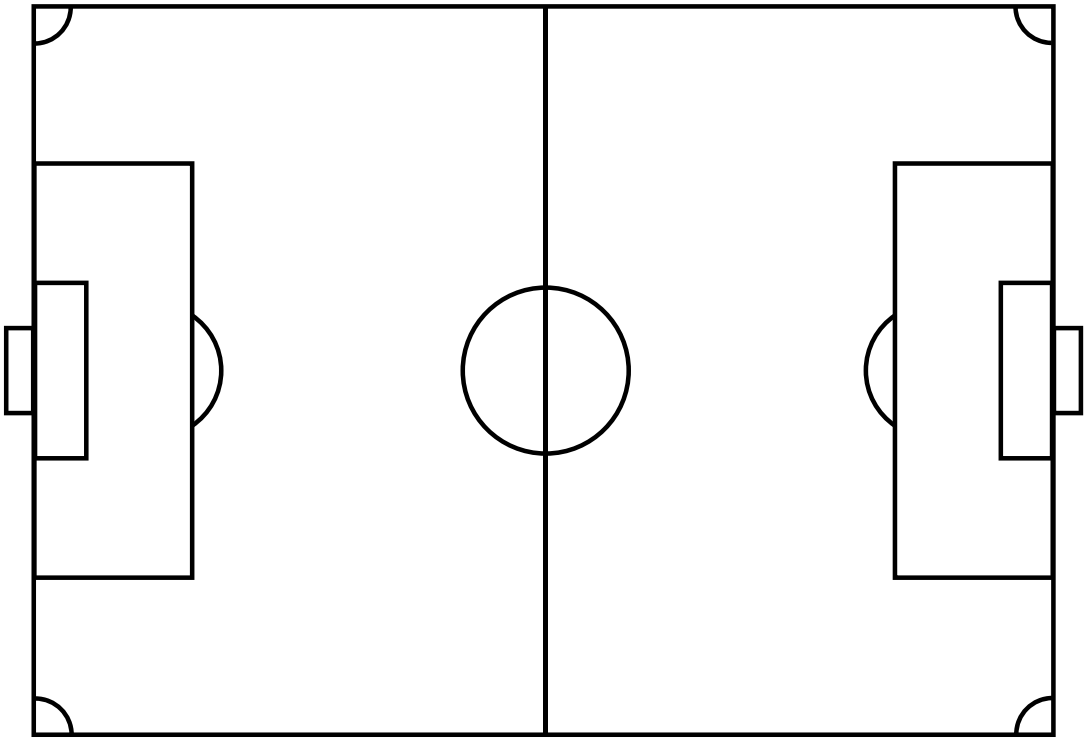
- Safety and risk factors.
- Angles and distance of support (shape).
- Utilization of GK and passback implications.
- Passing – weight, accuracy, disguise (tactical implications).
- Decision making – options (playing forward whenever possible).
- Transition (defense to attack).
- Technique through tactical implication.

Suggested Session Progression

- 4v2 possession (warm-up).
- 3v2 directional (functional).
- 4v3 directional (functional).
- 7v6, 7v7, 8v8





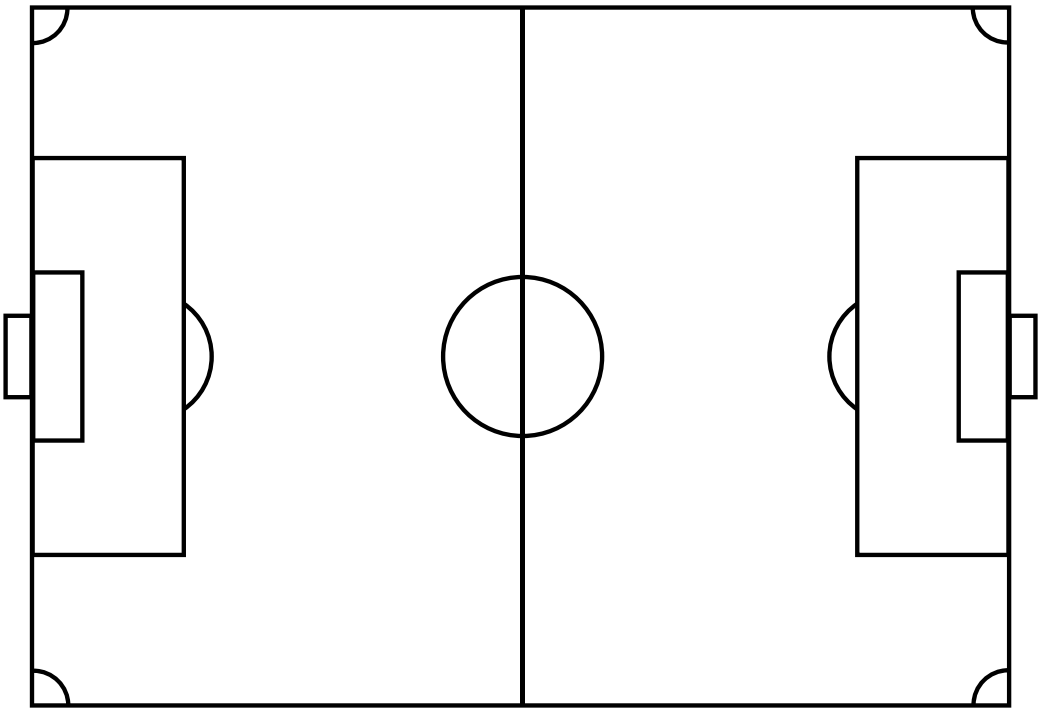


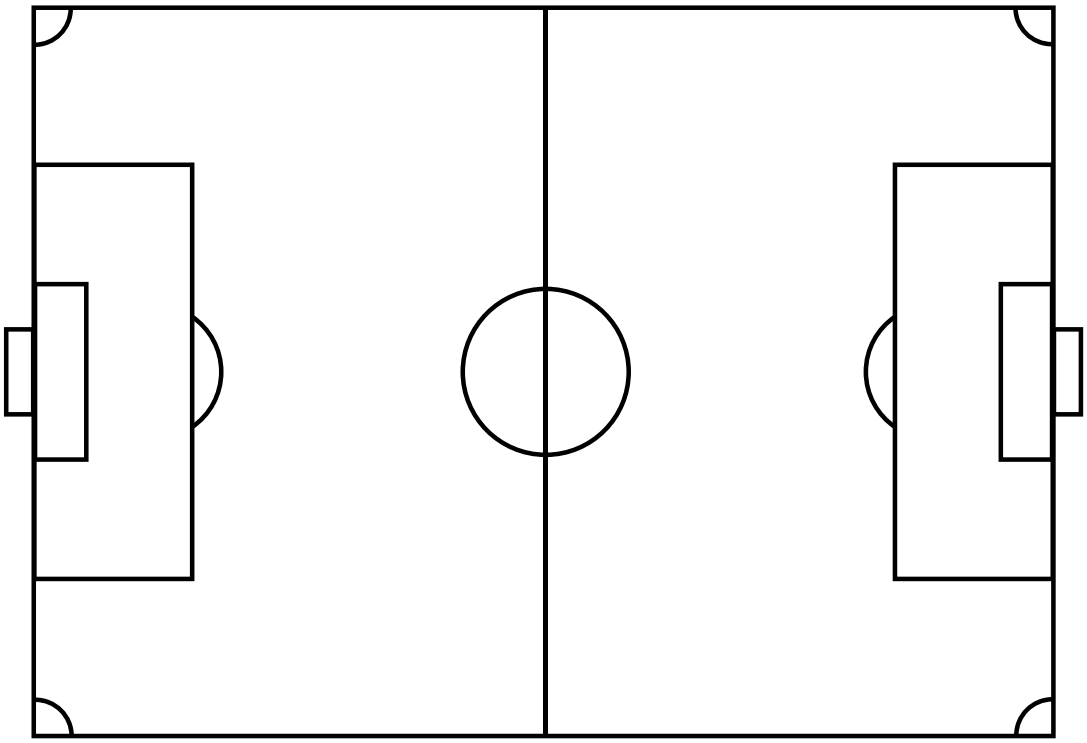
10.4 FINISHING

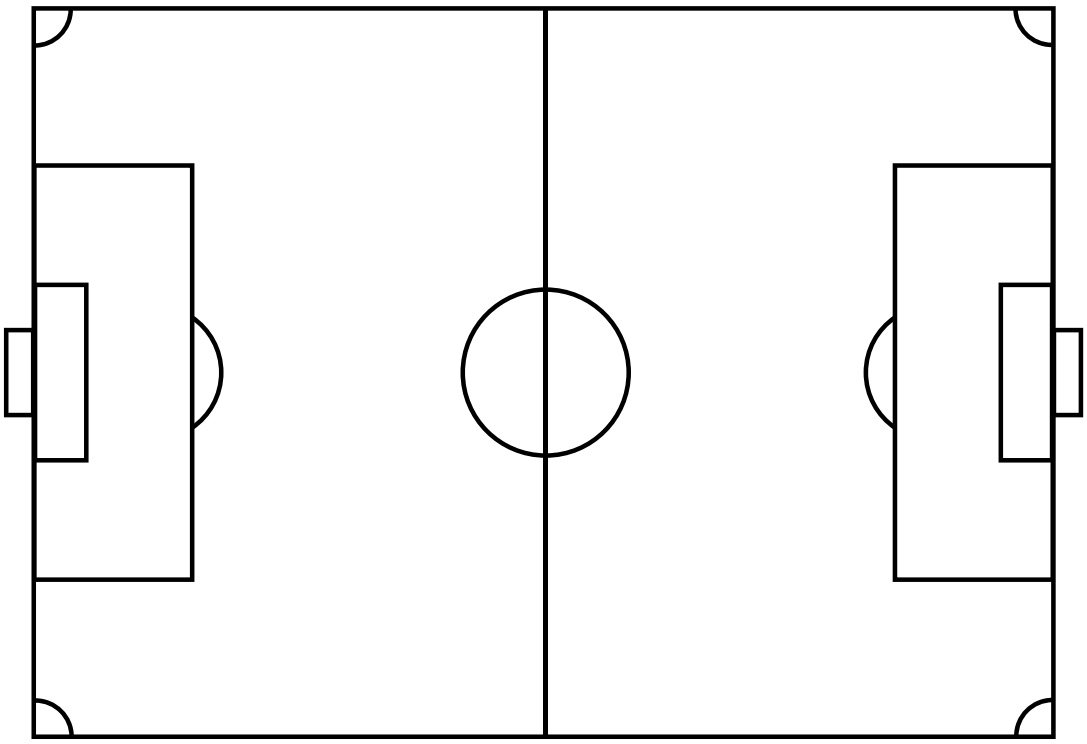
This session stresses finishing with all surfaces, and from various angles and distances under pressure.

Finishing
- Accuracy.
- Power bending balls.
- Volleys – all types.
- Breakaways.

Major Coaching Points
- Body mechanics/balance.
- Weight transfer.
- Aggressive and positive mentality.
- Tactical applications.







10.5 TRAINING THE PLAYMAKER

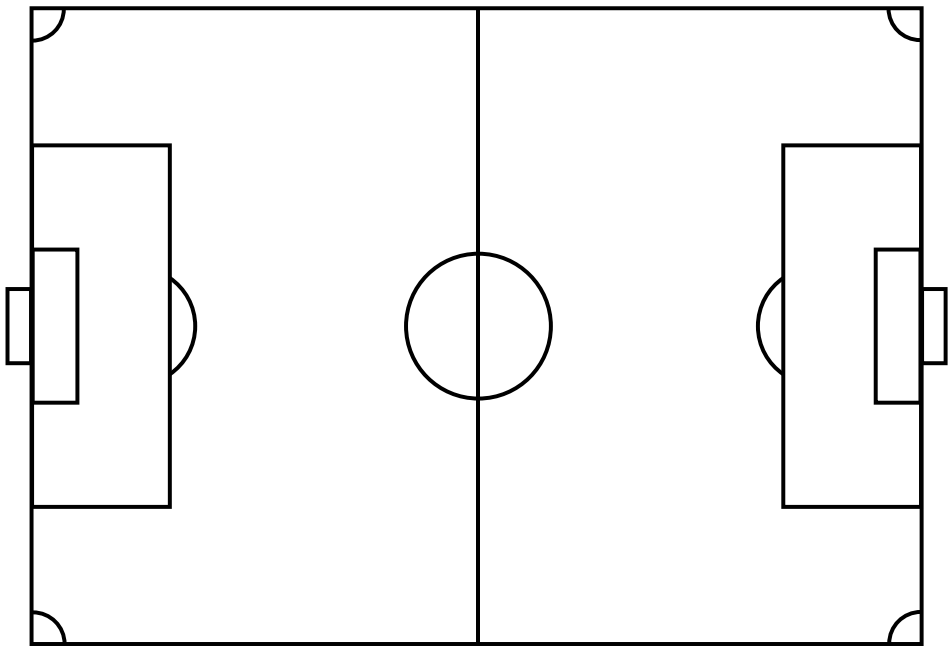
In this session the focus is an example of tactical functional training for a central midfield player in attack.

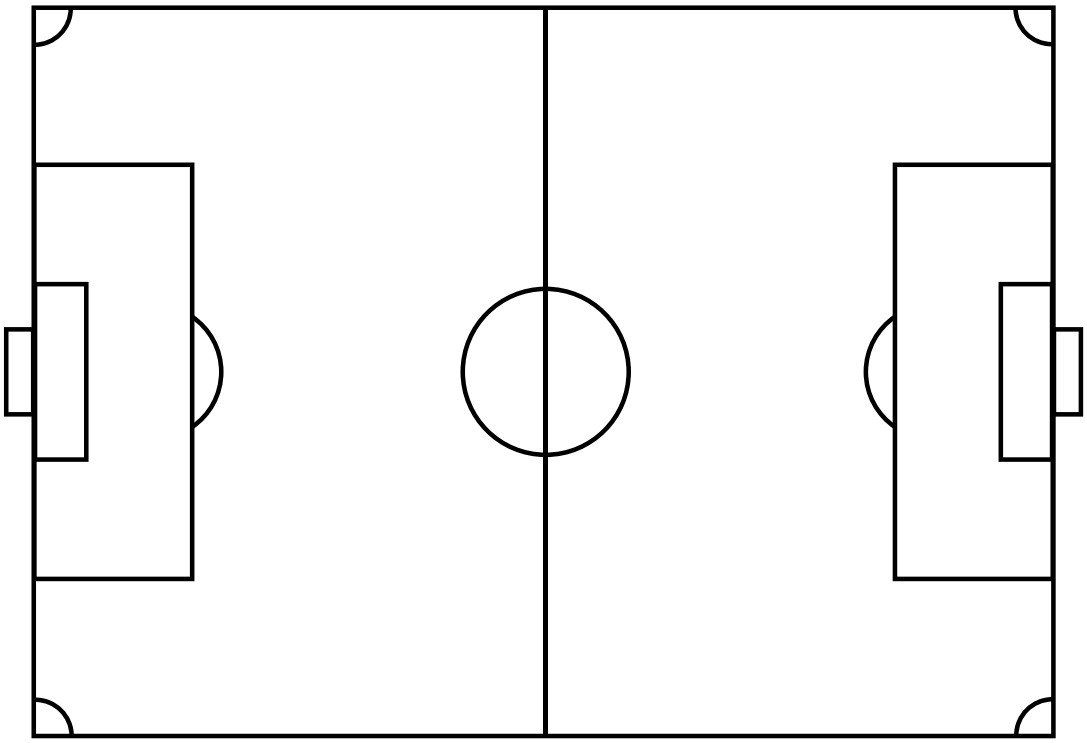
Major Coaching Points

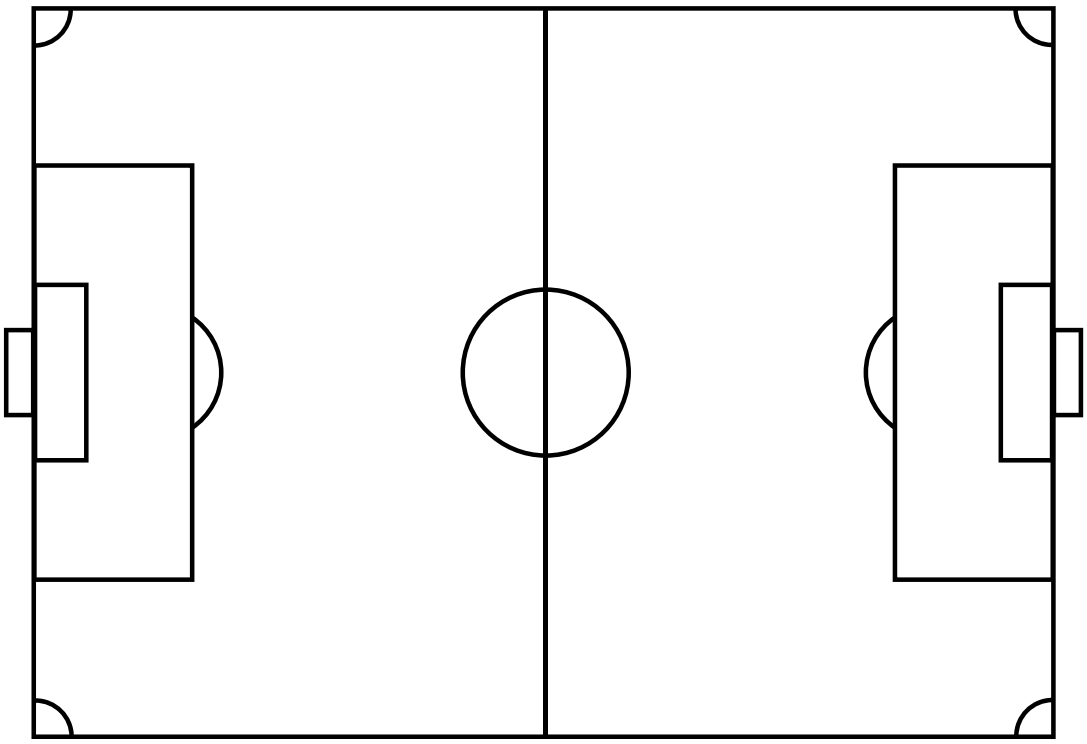
- Developing player personalities.
- Angles and distance of support.
- Changing the point of attack.
- Penetrating with and without the ball.
- Combination play, long passing.
- Connection with back players.
- Decision making (vision).
- Technique through tactical implication.

Suggested Teaching Modules

- 3v3 With a neutral player.
- 5v5 + 1 (directional).
- 6v4 or 6v5 (directional).
- 8v8 With neutral players.







10.6 PLAYING FROM THE MIDDLE THIRD TO THE FINAL THIRD

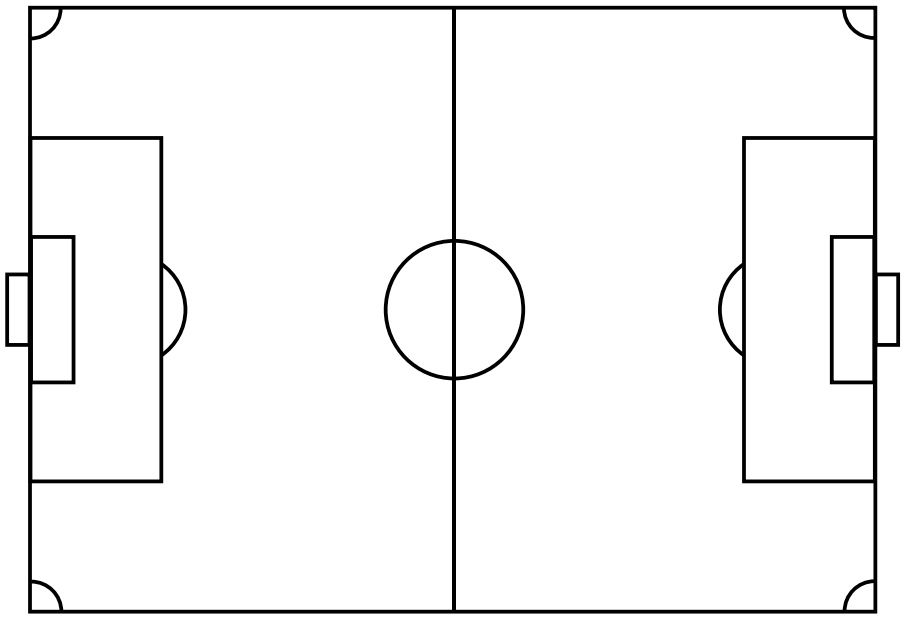
In this session the focus is on developing the attack from the middle third to the final third to create scoring opportunities.

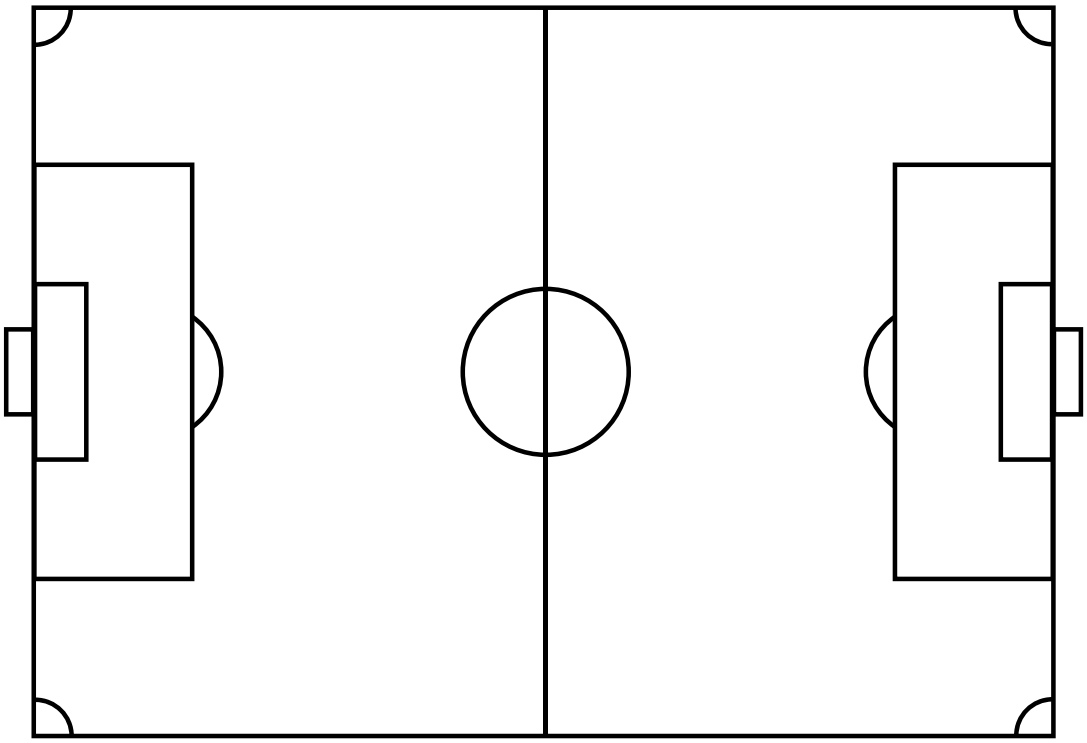
Major Coaching Points

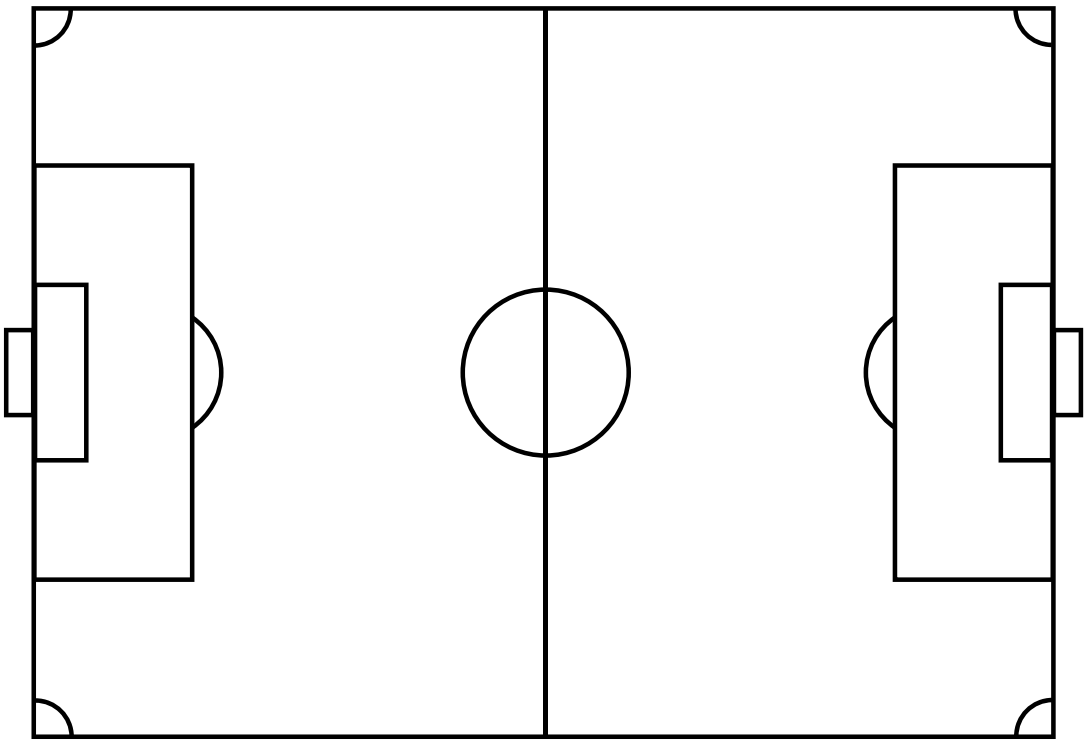
- Team shape (width, depth).
- Flank combinations.
- Central combinations.
- Changing the point of attack.
- Improvisation (dribbling).
- Finishing.
- Decision making.
- Transition (defense to attack).
- Technique through tactical implications.

Suggested Session Progression

- 3v3 (combination play).
- 6v0 (shown patterns), 6v4, 6v5.
- 8v8.







10.7 PLAYING IN THE ATTACKING THIRD

In this session the focus is on developing the attack in the attacking third to create scoring opportunities.

Major Coaching Points

- Principals of attacking play, i.e., support, width, mobility.
- Technical aspects, i.e., passing, receiving, dribbling, heading, finishing.
- Tactical implications of technique.
- Technical and tactical functions of players in the attacking 1/3.
- Combination play.
- Speed of play.
- Team shape.
- Deception.
- Improvisation.
- Training of runs in the box.

Suggested Session Progression

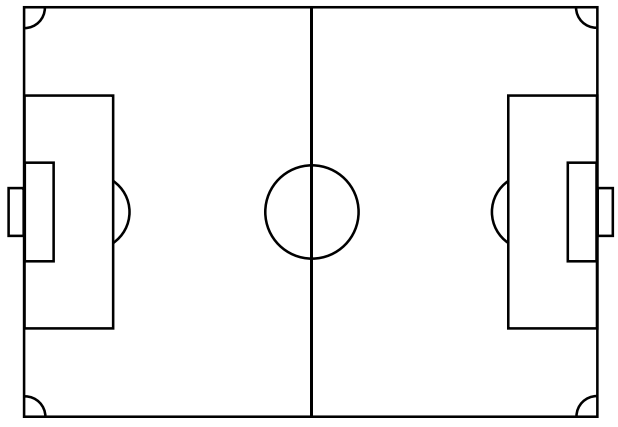
1. Generally, the progression of the session should evolve from simple to complex, ending with a 9 v 9 game to two big goals.
2. More specifically, the session should progress in the following manner:

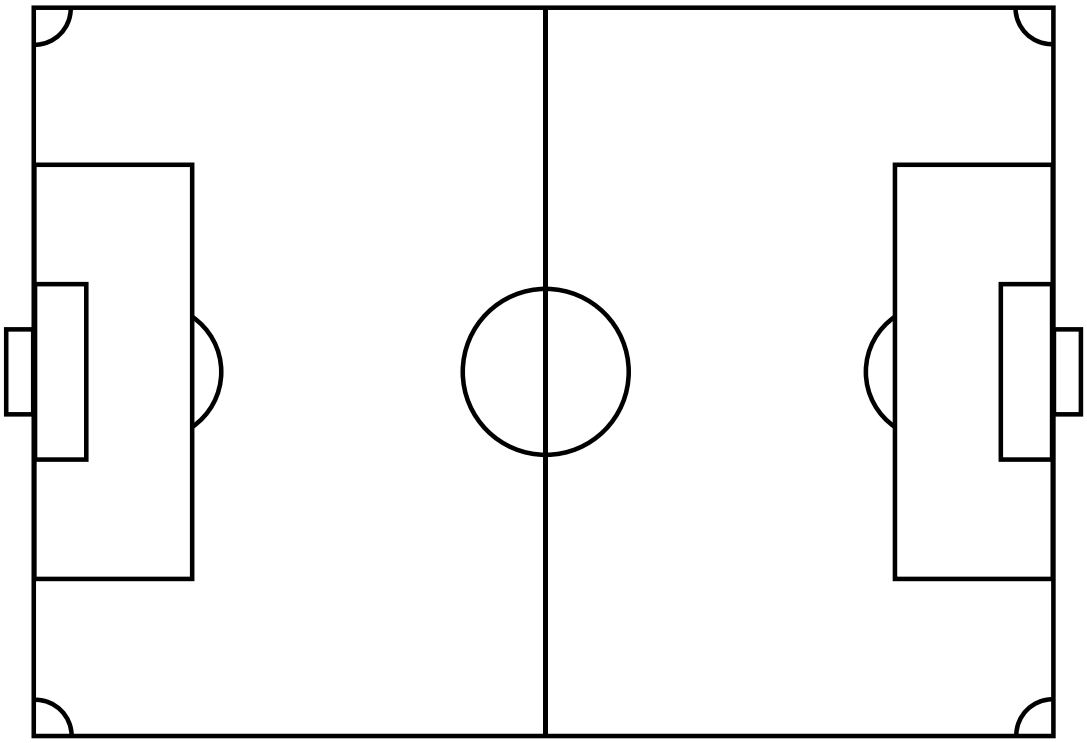
   A. Warm-up (with some attention to movements and technique to be used in the session).

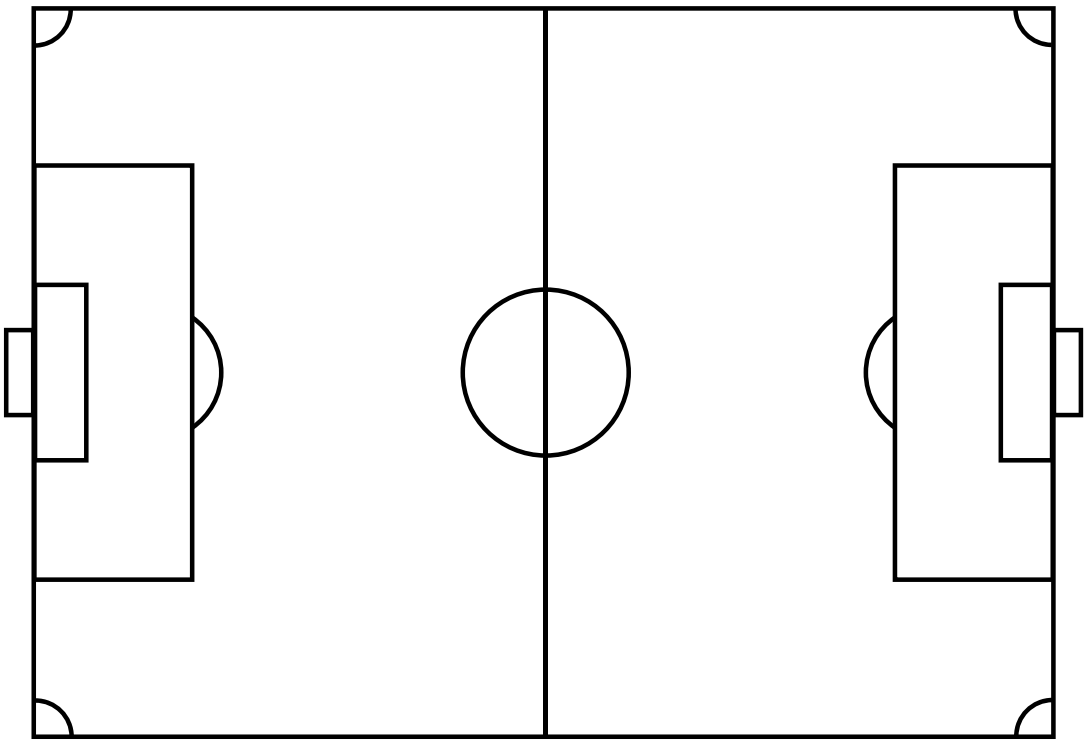
   B. Generic or functional exercise with or without direction.

   C. Functional excercise that is placed in the part of the field where the position or line of the team, that the coach is focusing on, plays during the game.

   D. 9:9

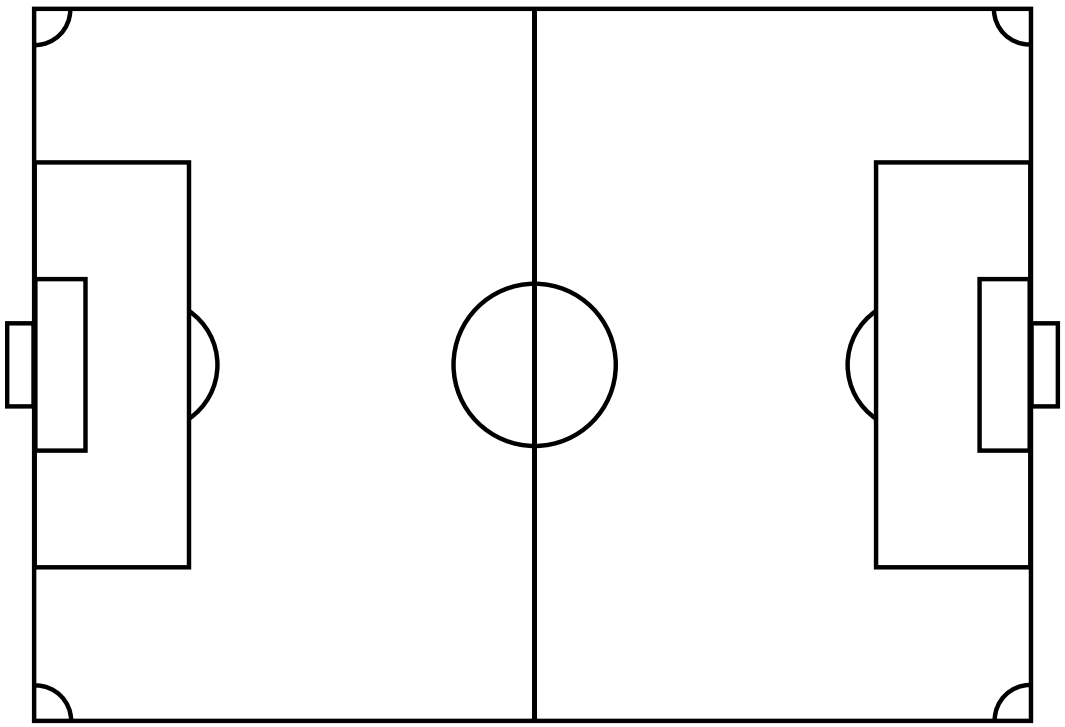


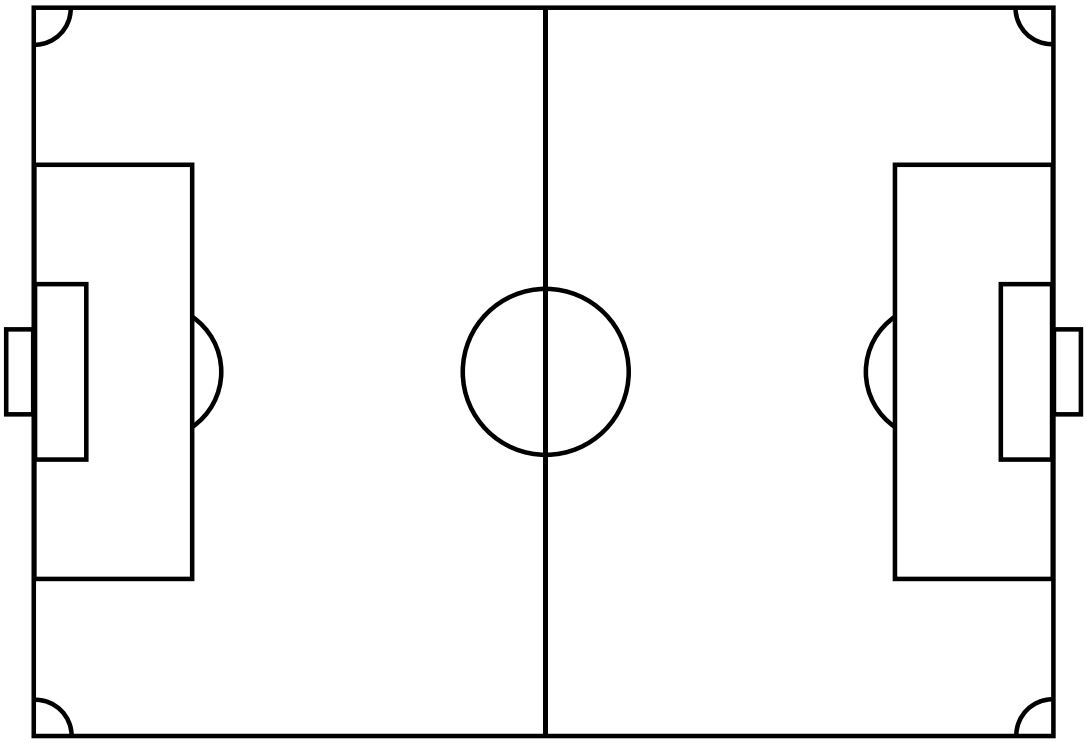


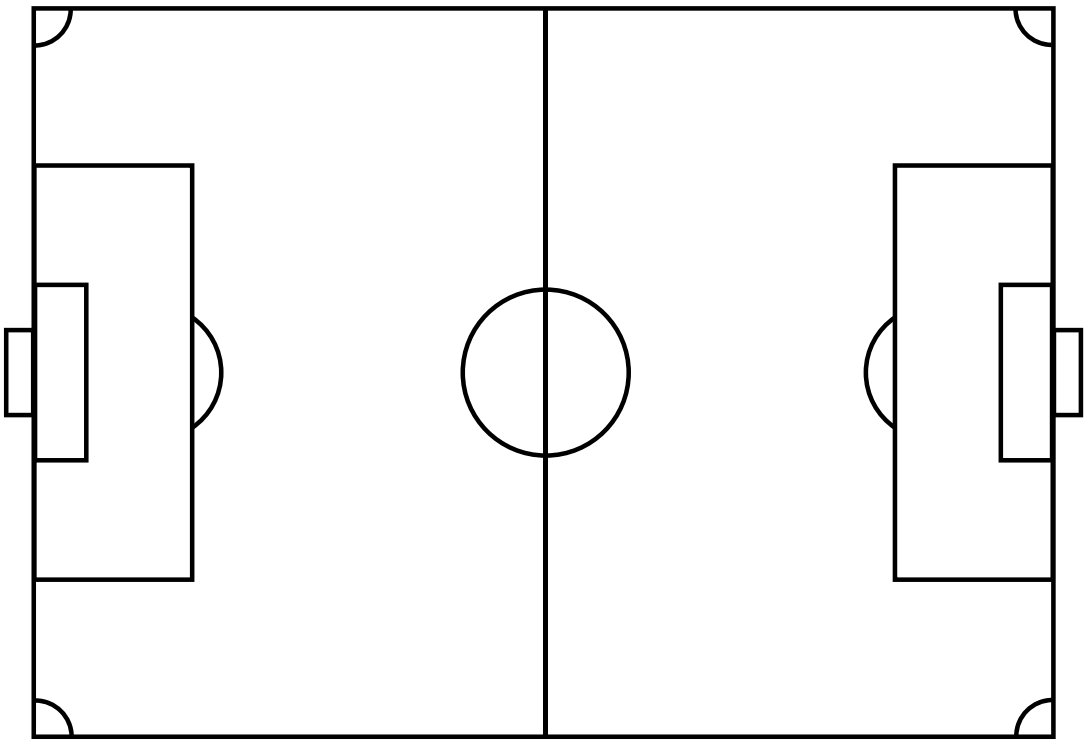


10.8 FITNESS – SPEED TRAINING/SPEED ENDURANCE TRAINING

The focus of this session is to improve the players' ability to anticipate and react to the various situations that happen in the game of soccer (perception, evaluation and decision, and action taken). The instructor will organize the session in the form of game-like exercises. Activities and games for both functional speed training, speed endurance production and maintenance training will be demonstrated using the principles discussed during the classroom session. The intensity of the players in the exercises should be maximal, which means that the training must be performed using the interval training method. During the training games, the players do not perform at their maximum level of intensity throughout the exercise period. This could be due to tactical requirements of the game or various other factors.







10.9 ZONAL BACK DEFENDING

In this session the focus is on how to organize a back line to defend using a zonal approach. The roles of individuals and groups in the back will be demonstrated as well as how they are tied together in the overall defensive scheme.

Major Coaching Points

- Knowledge of players functions and roles as individuals and groups.
- Team Shape.
- Defensive principles of play.
- Playing flat in the back.
- Offside space and the role of the goalkeeper.
- Communication, verbal and visual.

Suggested Session Progression

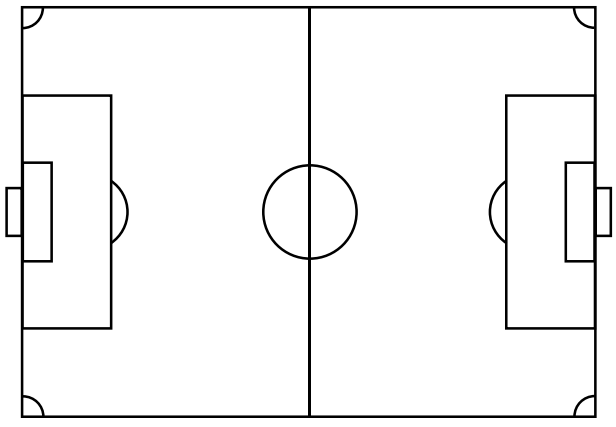
1. Generally, the progression of the session should evolve from simple to complex, ending with a 9 v 9 game to two big goals.
2. More specifically, the session should progress in the following manner:

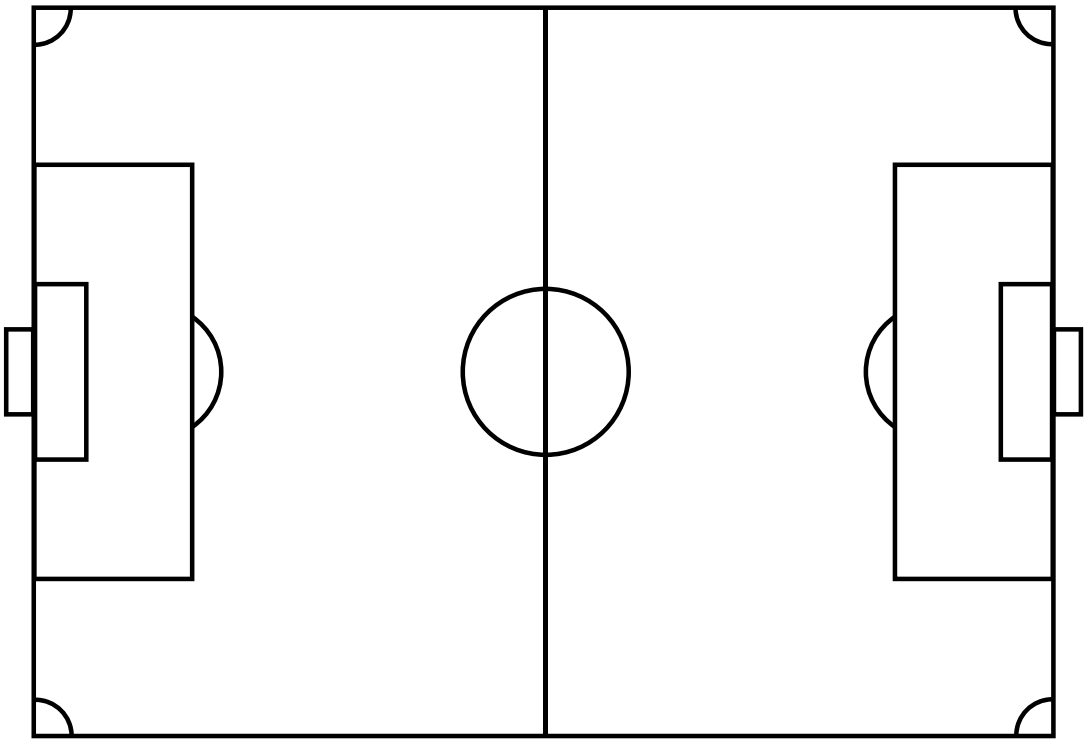
   A. Warm-up (with some attention to movements and technique to be used in the session).

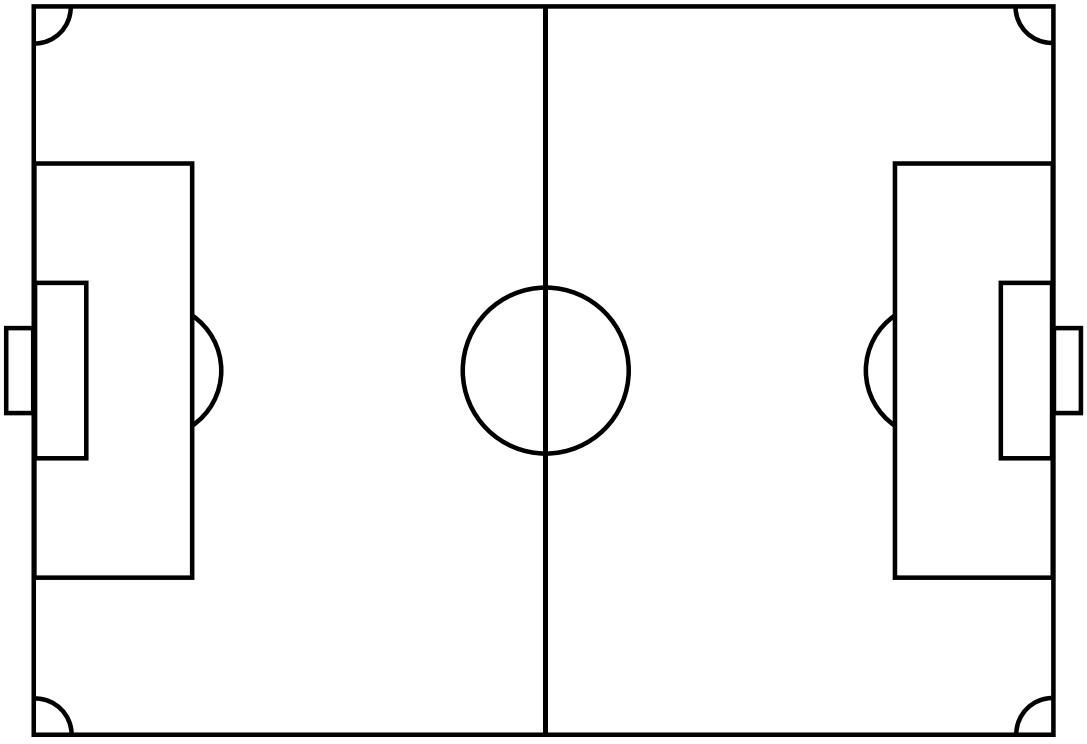
   B. Generic or functional exercise with or without direction.

   C. Functional excercise that is placed in the part of the field where the position or line of the team, that the coach is focusing on, plays during the game.

   D. 9:9







10.10 MIDFIELD DEFENDING

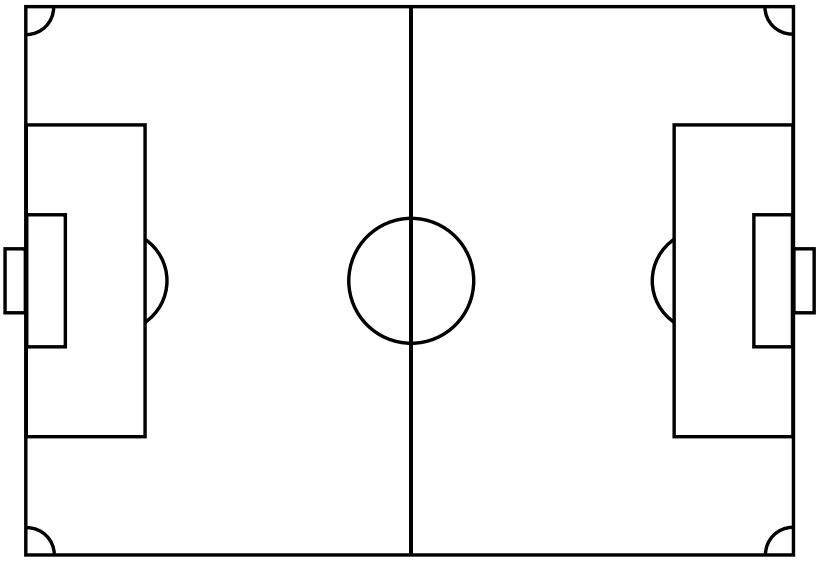
In this session the focus is on team shape and how individual and group tactics relate to the overall plan of defending in midfield. Demonstrating how the principles of defending are applied in midfield regardless of the system employed.

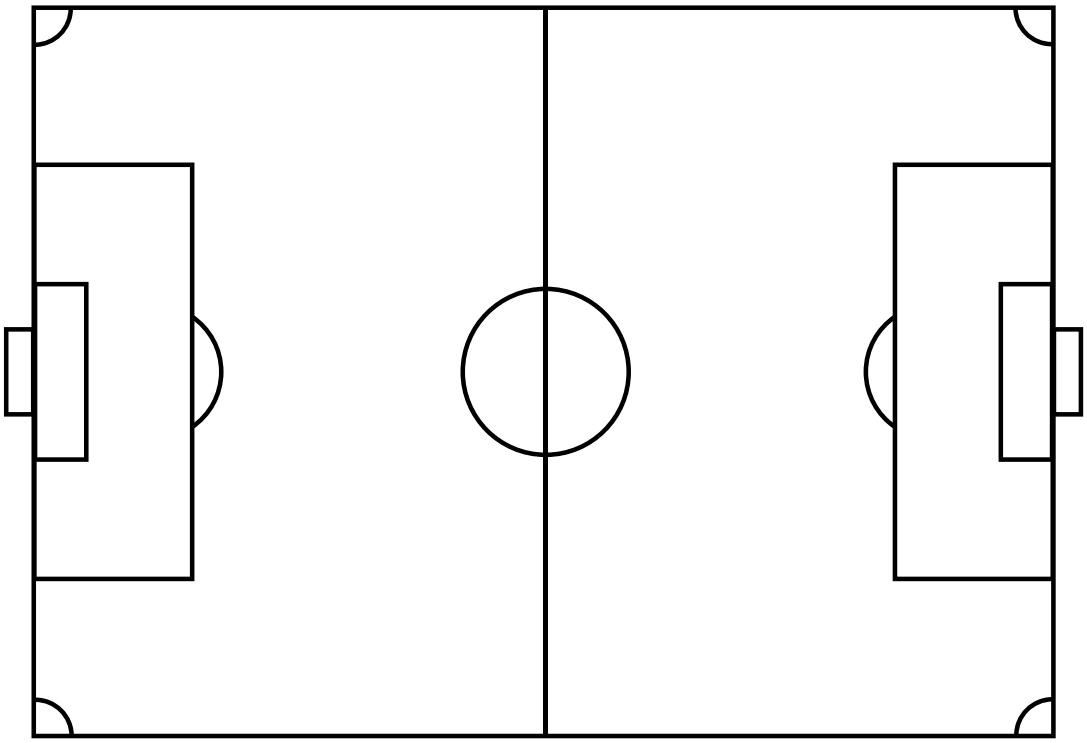
Major Coaching Points

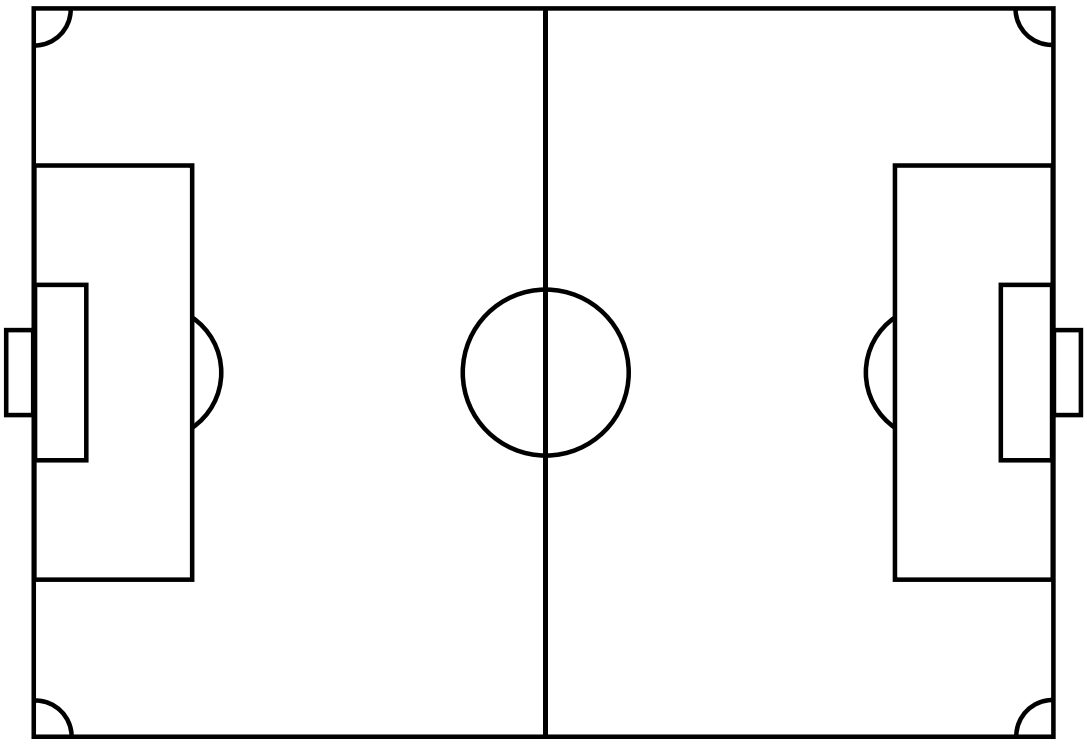
- Pressure, cover, balance (communication — verbal and visual).
- Team shape.
- Channeling — "make the game predictable."
- Man to man/zone/combination.
- Starting positions.
- Tracking.
- Decision making.
- Transition.
- Technique through tactical implications.

Suggested Session Progression

- 3v3, 4v4, 5v5, 8v8
- Use of neutral players.
- Use of targets.







10.11 9V9 => 11V11 — DEFENDING

In this session the focusis on how to organize the team defensively through the thirds of the field. The session also demonstrates the roles of individuals and groups through the thirds of the field and how they are tied together in the overall defensive plan.

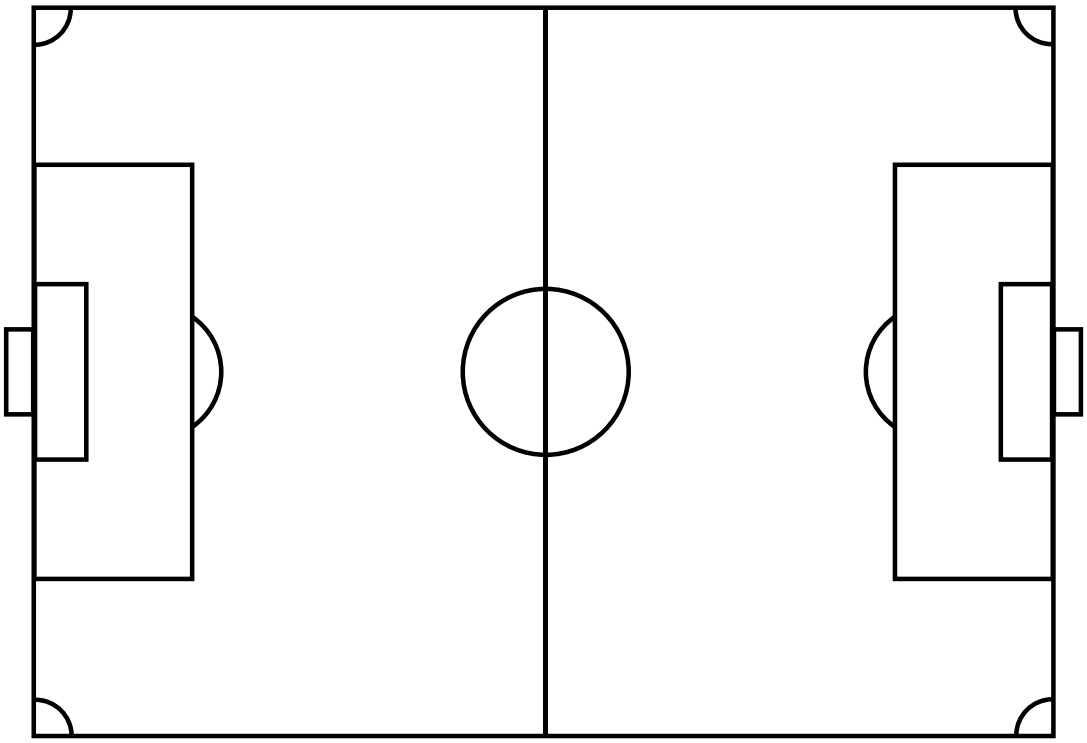
The organization of defending restarting will also be demonstrated.

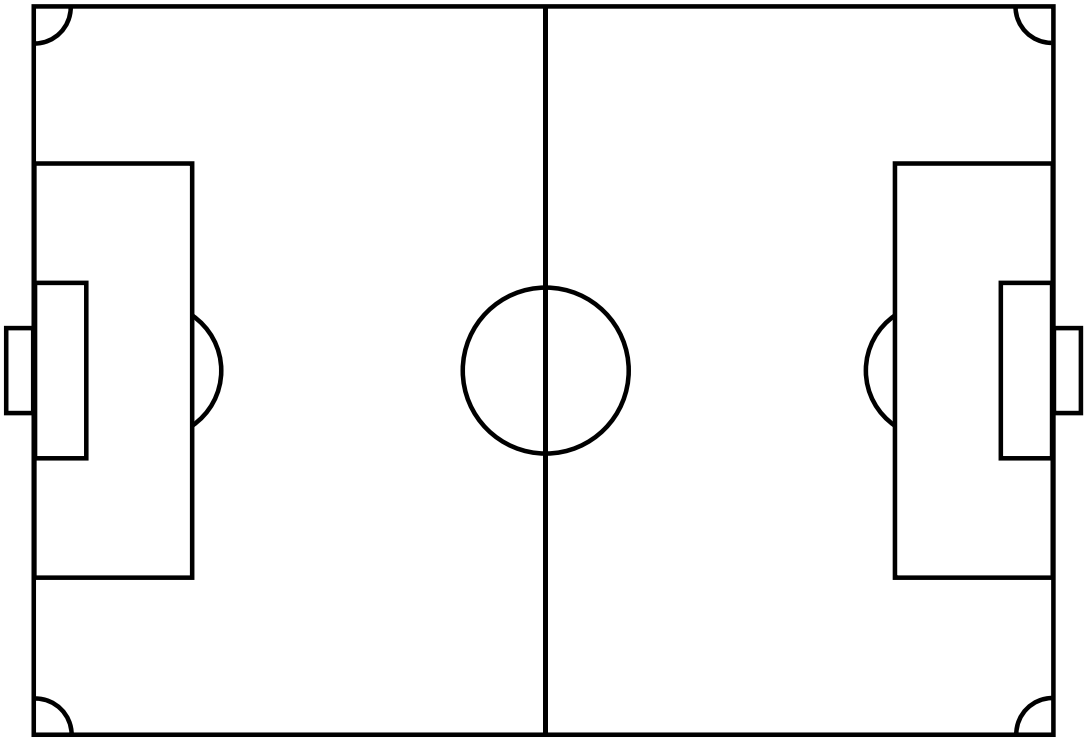
Major Coaching Points

- Role of the forwards in DEF (steering/channeling).
- Role of the midfield in DEF (starting positions, tracking, shape).
- Role of the back players in DEF (GK implications – starting positions, tracking, shape).
- Principles of DEF.
- Overall team shape (compactness).
- Zonal / man to man / combination /H.R. / L.R.
- Communication (verbal and visual).
- Transition.
- Technique through tactical implication.

Suggested Session Progression

- 9v9, 11v11.
- The purpose of 9v9 is to demonstrate how to organize team shape in defending though the thirds with a squad of 16-18 players.





10.12 9V9 => 11V11 — ATTACKING

In this session the focus will be on how to organize the attack through the thirds of the field. This session also demonstrates the roles of individuals and groups through the thirds of the field and how they are tied together in the overall attacking plan.

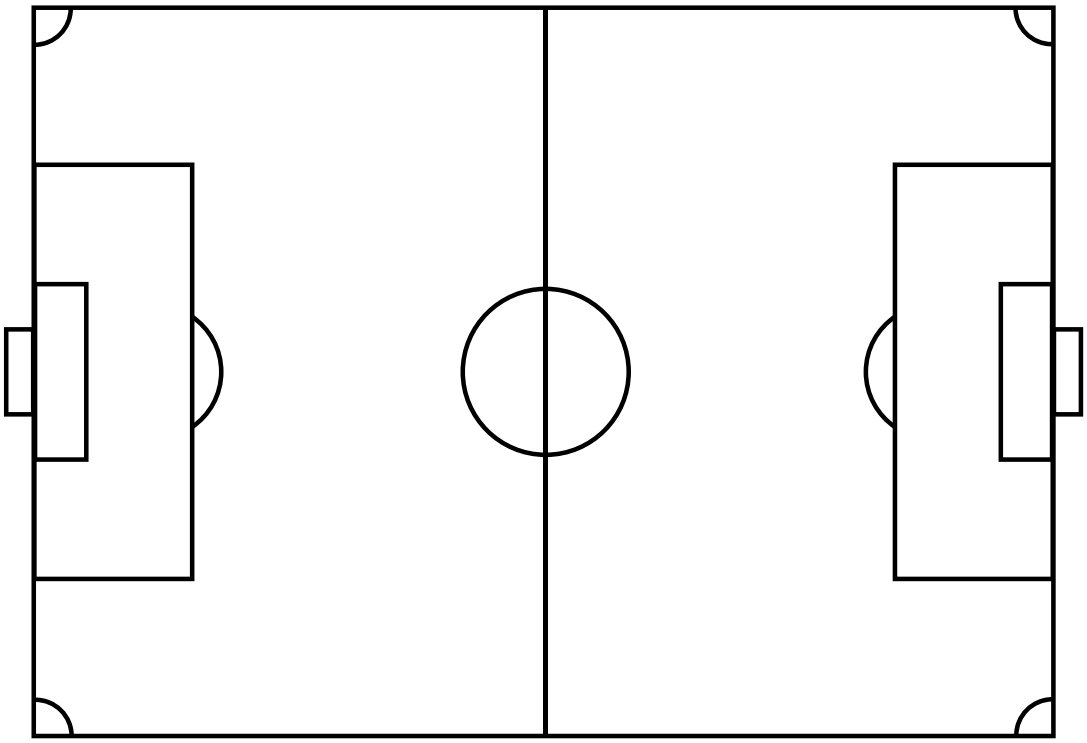
The organization of attacking restarts will also be demonstrated.

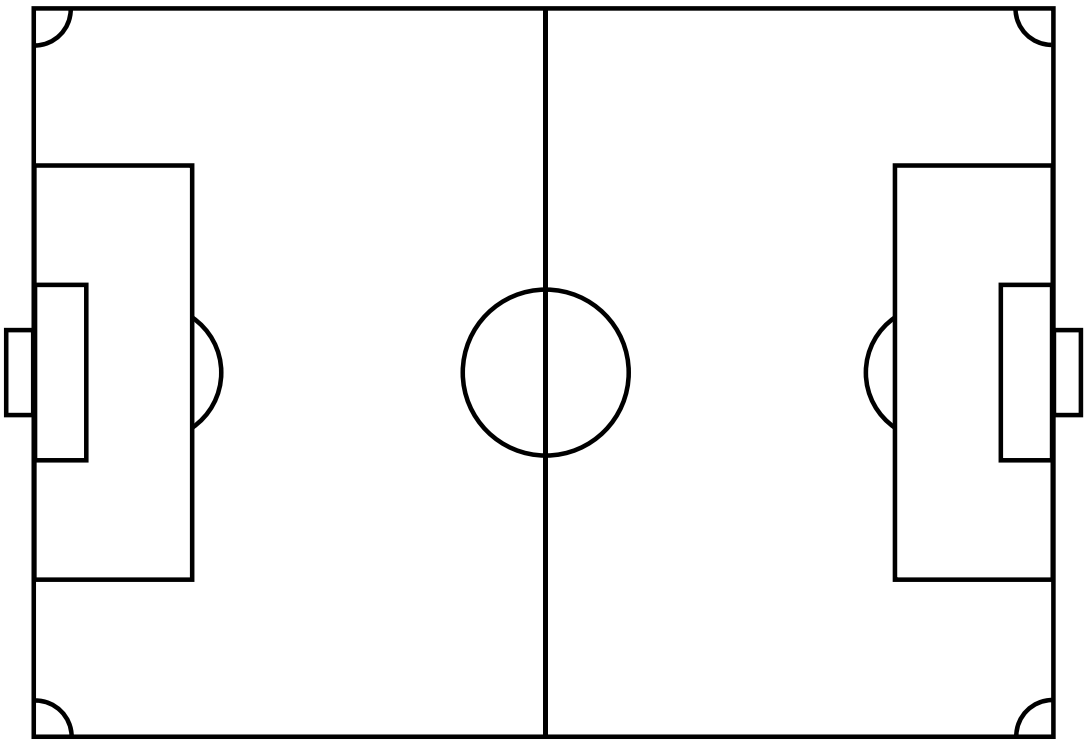
Major Coaching Points

- Role of the GK in attack (distribution, rhythm, pass back implication).
- Role of the back players in attack (safety / risk, shape).
- Role of midfield players in attack (shape, rhythm, support, connection).
- Role of forwards in attack (shape, timing of runs, improvisation).
- Principles of attack.
- Overall team shape (width, depth).
- Style.
- Communication (verbal and visual).
- Transition.
- Technique through tactical implication.

Suggested Session Progression

- 9:9, 11:0, 11:11
- The purpose of 9:9 is to demonstrate how to organize team shape in attack through the thirds, with a squad of 16-18 players.





Systems

11.0 RESTARTS

While statistics demonstrate the necessity for rehearsing offensive and defensive set plays, the length of the course does not permit a field and classroom session specifically for this aspect of the game.

The following outline will break down restarts into very general but important aspects of play. Candidates, you should look to identify tactical situations and how these situations effects individual responsibilities and overall team shape.

DEFENDING RESTARTS

In Our Attacking Third

- Respond quickly to the whistle.
- Recover behind and inside the line of the ball to the goal and opponents.
- Pressure immediate area around the ball.
- Compactness behind the ball.
- Proper depth to avoid one long ball, putting everyone out of the game.
- Appropriate match-ups – organization.
- Attack the ball.
- Goalkeeper starting position.

In the Middle Third

- Respond quickly to the whistle.
- Recover behind and inside the ball and opponent.
- Pressure to prevent short/quick restart.
- Pressure at ten yards to prevent driven services.
- General guideline – last line of defense should not be deeper than the edge of the penalty box.
- Appropriate match-ups – organization.
- Attack the ball.
- Goalkeeper starting position.

In Our Defending Third

- From the Flanks
  - Respond quickly to the whistle.
  - Recover behind and inside the ball and opponents.
  - Pressure the ball to avoid quick restart.
  - Pressure at ten yards to prevent driven services.
  - Defend spaces in the box.
  - Appropriate match-ups – organization.
  - Attack the ball.
  - Goalkeeper starting position.

- From Central (Shooting Distance)
  - Respond quickly to the whistle (direct or indirect).
  - Pressure to prevent quick shot at goal or pass.
  - Setting up a wall.
  - Numbers in the wall (2, 3, 4, 5 or more).
  - Organization of remaining players.
  - Attack the ball.
  - Goalkeeper starting position.

Defending Corners

Again, rehearsals under pressure ensuring that each player knows his/her role will help to eliminate goals from corners.

- Respond quickly to the whistle.
- Pressure at ten yards to prevent driven service and deal with short corner.
- Defend near post space.

- Defend far post space.
- Appropriate match-ups – organization.
- Defend spaces in and around the box.
- Attack the ball.
- Goalkeeper starting position (inswing/outswing).

Throw-Ins

Throw-ins should be treated like any free kick and the aforementioned guidelines apply.

In general most teams lose concentration when the ball goes out of play. However, from a defensive perspective this is an ideal opportunity to organize quickly and regain possession.

- Respond quickly to the referee's signal.
- Mark the thrower.
- Pressure opponents and lock up spaces around the ball.
- Maintain balance and shape.
- Attack long throws.

ATTACKING RESTARTS

In Our Defending Third

- Goal Kicks
  - Team shape.
  - Maintain possession (safety).
  - Short vs. long – possession/territory (explain).
  - Train Goalkeeper to take goal kicks.

- Free Kicks
  - Respond quickly to the whistle.
  - Maintain possession (safety).
  - Short vs. long –possession/territory.
  - Team shape – if long, allow time to organize.

- In the Middle Third
  - Respond quickly to the whistle.
  - Maintain possession.
  - Team shape – if long, allow time to organize.
  - Maintain balance to avoid counter.
  - Quality of service is the key.
  - Leave spaces alive to receive or attack the ball.

In Our Attacking Third

- From the Flanks
  - Respond quickly to the whistle.
  - Maintain possession.
  - Who should serve.
  - Organization of remaining players.
  - Maintain balance.
  - Target areas/timing of runs.
  - Quality of service.
  - Attack the ball.

- From Central (Shooting Distance)
  - Respond quickly to the whistle (direct or indirect).
  - Recognition of a quick free kick.
  - Selection of shooter(s) – quality.
  - Deployment of remaining players.
  - In the penalty area.
  - To maintain balance to prevent counter.

Corners Attacking

- Respond quickly to the whistle.
- Short or long.
- Election of server(s) – quality is key.
- Determine target areas.
- Deployment of players.
- Attack the ball.

Referees and the Laws of the Game

The following was written by Esfandiar Baharmast, Director of Officials and Alfred Kleinaitis, Manager of Referee Development and Education for the United States Soccer Federation:

Players, spectators, and coaches are all important in the game of soccer. Each looks at a match differently, usually based on their particular interest in the outcome. There is a fourth group of participants, however, and they also bring a unique view of the sport.

The referee, two assistant referees, and a fourth official are appointed to each match by the competition authority (the group authorizing the match) and their job collectively is to insure fair, safe, and enjoyable play within the Laws of the Game. Everyone else can be a partisan for a team, a player, a league, or a club. Everyone else can want someone to win or lose. It is this partisanship, with flag-waving, drum-beating, face-painting, parading, yelling, and so forth which brings so much excitement to the world's most popular sport.

Unlike almost everyone else, however, the officials must be neutral about the score. Their objective has less to do with any particular outcome and more to do with the process by which the game is played.

In the early years of soccer, there were no referees. If there was a dispute regarding some action by a player, the team captains were expected to resolve the matter "like gentlemen." Later, each team appointed a referee but they could decide matters only if players claimed a violation of the rules, and often these officials were required to stay outside the field of play. In fact, we get the term "referee" from this practice of having persons to whom a dispute would be "referred."

Eventually, as the sport became more popular and more widely played, it also became something less than entirely gentlemanly. Winning added prestige to the sponsoring club or town, it put money in the pockets of players (and those who bet on them), and the mutual trust on which the teams had relied to "work out" their disputes fell victim to the increased participation of players who did not share the "traditional values." To meet these new pressures, the referee became a neutral party, stayed on the field, and could assess penalties for rules violations on his or her own initiative. The modern role of soccer referee was fairly well settled by the late nineteenth century.

Referees, players, and coaches are alike at the highest competitive levels in the sense that they are all professionals. Each has also been given special training and needs special knowledge in order to do their job. This training and knowledge is somewhat different for each one so, in this, they are similar but not the same. What really sets the referee apart from everyone else is the fact that, of the three, only the referee must be neutral. What is meant here is that the referee is present to give objective decisions affecting play without regard to what players or teams are involved.

NEUTRALITY

To say that the referee is neutral is merely a recognition that he has been appointed to exercise certain powers and duties (discussed below) without favoritism for one side or another using both the Laws and Spirit of the Game. By "Spirit of the Game," we mean that referees have the larger purpose of protecting player safety, the fairness of the competition, and the enjoyment of the participants. What the referee cares most about is fair play and the opportunity for each player to display the skills which make soccer such an exciting sport.

Some interpret this to mean that the referee should call a roughly equal number of fouls for both teams (have you ever heard someone shouting "Call it both ways, ref!"?) or that the referee must respond to each situation on the field exactly the same way every time that same situation occurs. Nothing could be more untrue.

Counting fouls or penalty kicks for or against each side will only tell you about the players, not the referee. The referee can only respond to what players themselves do: if one team is committing more fouls than the other team, then it will experience more of the calls against it.

We also frequently hear calls for "consistency" even though this is usually a protest against a unliked decision. The problem is that every event on the field

doesn't stand entirely by itself. It occurs and must be handled in the context of everything that led up to it (including, possibly, events prior to the match itself).

That makes every event unique except in the most basic sense. A push, for example, is never just "a push" but something that involved two particular players occurring at a particular moment of play for a particular reason. Sometimes it is a foul and sometimes it isn't.

- In the tenth minute of the match, Smith makes contact with Jones and Jones falls to the ground. The referee has seen exactly what occurred and, despite calls for a foul, decides that the contact was entirely legal.

- In the thirty-fourth minute, Smith charges Jones again and, although this time Jones only stumbles, the referee sees the details of the contact, decides that Smith has indeed committed a foul, but concludes that it was trifling because of Jones' ability to play through it as though it hadn't even happened.

- In the seventy-fifth minute, when Smith pushes Barnes, a foul is called and play is stopped because Barnes is less skilled or the shove is more vigorous and Barnes, unable to overcome the action against him, sprawls on the ground and loses the ball to Smith.

- At the eightieth minute, Smith pushes Jones again. This time, although Jones stumbles and is clearly going to fall, he is able to pass the ball to his teammate Perez who has a possible shot on goal so the referee shouts out "Play on!" and does not stop play.

All four referee actions were different, but was the referee being inconsistent? No, because the consistency was based on standards and criteria which are more important than the individual actions. We want the referee to apply these standards and criteria consistently, not that the result is the same each time.

A good example of this is the push that occurs roughly in the middle of the field. Referees are specifically trained in the concept of defensive, middle, and attacking thirds of the field and advantage must be understood differently depending on where the event occurs. In the middle third, advantage might be used only about half the time (on average), depending on the severity of the foul and the need of the referee to protect player safety and/or establish his or her authority for game control purposes. Not all pushes (or other fouls) are created equal. The referee must "sort out" all the events on the field and decide where they fit in the "flow" of the match

because the response to each event depends on the referee's assessment of how the event and his or her reaction to it will affect the game's rhythm.

Any given match has a basic flow or tempo which is set by the players, the field conditions, the amount of preparation by the teams, and many other factors. That flow can change, often at the discretion of the players and coaches based on the strategies being pursued at any given moment. Sometimes, the flow or rhythm of the match is adversely affected by a foul or an act of gamesmanship (e.g., faking an injury). In such cases, it is the referee's job to select an action which is both proper (meaning, within the Law) and effective in restoring that flow.

Does this mean that what referees do might affect play? Of course this is what it means! That is the purpose. What referees do, however, is to restore a match to its natural flow when that flow has been upset through unfair actions by one or the other team.

KNOWLEDGE AND TRAINING

Referees are given special training not only in the Laws of the Game but also in procedures, mechanics, underlying principles, and guidance or instructions from the United States Soccer Federation (USSF). Moreover, they are required to update this training annually with in-service classes, written tests, assessments of on-field performance, and demonstrations of physical fitness and agility (less restrictive requirements apply for youth recreational soccer). Often, there are also annual minimum experience levels which must be maintained to insure that skills do not become rusty with disuse.

There is a lot more referees have to study and know than just the Lawbook (which is probably the most that players and coaches have even looked at). The Lawbook, of course, is easily obtained and, particularly in recent years following a general rewrite of the entire text that appeared in 1998, just reading it can provide many useful insights for coaches, players, and spectators. Achieving at least this level of familiarity with the Laws is useful. But there are many other areas considered part of the Laws of the Game which cannot be fully understood by reading the Lawbook alone.

USSF's National Referee Development Program has been responsible in recent years for many new publications (Guide to Procedures for Referees, Assistant Referees and Fourth Officials; Advice to Referees on the Laws of the Game, Guide to Fourth Officials, as well as a series of memoranda on specific topics or

answering specific questions). It has produced video training tapes on offside, serious foul play, and gamesmanship, including its newest and most ambitious general purpose videotape on The Myths of the Game. The program has prepared and distributed around the country instructor guides and visual aids to support the training of referees at all levels. Much of this material is delivered through professional, experienced instructors, certified specifically for this purpose, whose own training in turn is based on a detailed understanding of classic educational theories about how youth and adults learn and retain knowledge.

Annual recertification requirements emphasize, however, not just "book" learning but concrete skills in how this learning is applied on the field, in a game, with players. To support this objective, USSF has trained hundreds of assessors whose sole responsibility is to observe referees performing in real matches and to provide feedback both to the referees themselves as well as more confidentially to the Federation regarding the strengths being displayed and areas for potential improvement.

PROFESSIONALISM

Along with all the other elements of "professionalism" which we normally associate with such groups as doctors, lawyers, accountants, and coaches (knowledge, certification, annual training, commitment to providing service, etc.), referees also possess a formal code of conduct and a recognizable set of responsibilities with respect to the teams they officiate, the sport of soccer, the organization which assigns them to matches, their fellow officials, and themselves.

Among these responsibilities are staying fit, being up to date regarding the most current interpretations and modifications of the Law, being available for mentoring new officials, insuring complete preparation for each game assignment, supporting fellow officials in their official capacity, and knowing one's own skills and abilities sufficiently well to accept only match assignments which are appropriate.

It means completing all official reports quickly, neatly, and accurately; avoiding contacts, even otherwise innocent contacts, with players, coaches, and spectators which might give even the appearance of favoritism; staying calm even when being provoked; and closing out every assignment with a critical self-evaluation of strengths, weaknesses, and opportunities for improvement.

As referees gain experience, training, and skills, they are capable of undertaking more challenging assignments and are encouraged to confirm that increased ability

by certifying at higher referee grade levels. The referee program in the United States is based on three levels of certification. Each level has two grades associated with it, one generally for provisional or entry level status and the other indicating "fully qualified at that level." These levels are designated Referee, State Referee, and National Referee. A fourth level (FIFA) is a special designation for persons proposed by the United States for the international panel of officials and accepted by FIFA (the international governing body for soccer).

Roughly 94% of all referees in this country are certified at the entry Referee level and continue at that level throughout their careers. The remaining 6% represent the officials who are assigned matches at the highest competitive levels (regional and national youth tournaments, senior amateur leagues, national professional leagues, and, of course, international competitions). Above the entry Referee level, the training focuses on different elements of the sport and emphasizes the role of the referee as a manager of persons engaged in a contest rather than as a policeman enforcing the law.

COMPETITIVE LEVELS OF PLAY

At these higher competitive levels, the referee is more concerned about insuring a fair, equitable, and safe environment for the display of athletic skills. Instead of constant interventions to punish all infringements, the referee is sensitive to the needs of the players to "play through" potential violations of the Law. Instead of treating each match as an independent, separate event, the referee is aware of the background of the sport, the competition authority, the teams, and even the individual players so that the game has a context within which player and team actions can be better understood and thus handled more intelligently. Instead of only studying the Laws of the Game (even with all the additional materials related to the Laws), the referee also studies modern thinking about team strategies, player positioning, team formations, and how the game of soccer is responding to changes in the Law.

Rarer still is the referee who understands that he or she is a vital part of this dynamic sport. Such referees appreciate the tremendous opportunity they have to influence, subtly and quietly, the direction of soccer. While there are hundreds of international and national player "superstars," very few referee "superstars" are recognized. This is okay, but it doesn't change the fact that senior, experienced officials walk out on the field with the certainty that, today, for this game and these players, a fit, neutral, knowledgeable, professional referee will oversee play and create a climate in which two teams will contest for a win based on skills alone. All officials can be proud that they contribute to this certainty.

Appendix

THE FOLLOWING FORMS ARE CONTAINED IN THIS APPENDIX

U.S. Soccer National Coaching Schools
B License Evaluation Form
Final Field Test

Name: _____ **Date:** _____ **Course Site:** _____ **Grade:** _____

Topic: _____ **Start Time:** _____ **End Time:** _____

Criteria	**Grading**					**Comments**
I. Outline						
1. Reflects Topic	S			U		
2. Outline/Organization/Progression	S			U		
3. Appropriate Progression	S			U		
II. Candidate						
1. Appearance	S			U		
2. Voice	S			U		
3. General Attitude	S			U		
III. Presentation/Organization						
1. Organization/Equipment	S			U		
2. Organization/Field Space	S			U		
3. Organization/Players	S			U		
IV. Coaching Effectiveness (cannot receive a 5 in any category and receive a pass for the course)						
1. Teaching Ability	1	2	3	4	5	
2. Knowledge/Content/Clarity	1	2	3	4	5	
3. Recognizes moments to address decision making (tactics)	1	2	3	4	5	
4. Recognizes moments to address proper technique and its application	1	2	3	4	5	

Instructor Comments: _____

Instructor Name: _____ **Instructor Signature:** _____

Grading Scale: 1-very good, 2-good, 3-average, 4-below average, 5-fail, S-Satisfactory, U-Unsatisfactory

Pass = Candidate must wait a minimum of 1-year before eligible to attend USSF National 'A' License
3.2 Rule = Candidate must wait 3 years before eligible to attend USSF National 'A' License

"B" License Evaluation Form cont.

(significant coaching points)

Time of Action	Significant Moments	Comments

U.S. Soccer National Coaching Schools
B License Evaluation Form
Final Field Test

Name: _____ **Date:** _____ **Course Site:** _____ **Grade:** _____

Topic: _____ **Start Time:** _____ **End Time:** _____

Criteria	**Grading**					**Comments**
I. Outline						
1. Reflects Topic	S		U			
2. Outline/Organization/Progression	S		U			
3. Appropriate Progression	S		U			
II. Candidate						
1. Appearance	S		U			
2. Voice	S		U			
3. General Attitude	S		U			
III. Presentation/Organization						
1. Organization/Equipment	S		U			
2. Organization/Field Space	S		U			
3. Organization/Players	S		U			
IV. Coaching Effectiveness (cannot receive a 5 in any category and receive a pass for the course)						
1. Teaching Ability	1	2	3	4	5	
2. Knowledge/Content/Clarity	1	2	3	4	5	
3. Recognizes moments to address decision making (tactics)	1	2	3	4	5	
4. Recognizes moments to address proper technique and its application	1	2	3	4	5	

Instructor Comments: _____

Instructor Name: _____ **Instructor Signature:** _____

Grading Scale: 1-very good, 2-good, 3-average, 4-below average, 5-fail, S-Satisfactory, U-Unsatisfactory

Pass = Candidate must wait a minimum of 1-year before eligible to attend USSF National 'A' License
3.2 Rule = Candidate must wait 3 years before eligible to attend USSF National 'A' License

"B" License Evaluation Form cont.

(significant coaching points)

Time of Action	Significant Moments	Comments

U.S. Soccer National Coaching Schools

B License Evaluation Form

Final Field Test

Name: _____ **Date:** _____ **Course Site:** _____ **Grade:** _____

Topic: _____ **Start Time:** _____ **End Time:** _____

Criteria	**Grading**					**Comments**
I. Outline						
1. Reflects Topic	**S**			**U**		
2. Outline/Organization/Progression	**S**			**U**		
3. Appropriate Progression	**S**			**U**		
II. Candidate						
1. Appearance	**S**			**U**		
2. Voice	**S**			**U**		
3. General Attitude	**S**			**U**		
III. Presentation/Organization						
1. Organization/Equipment	**S**			**U**		
2. Organization/Field Space	**S**			**U**		
3. Organization/Players	**S**			**U**		
IV. Coaching Effectiveness (cannot receive a 5 in any category and receive a pass for the course)						
1. Teaching Ability	**1**	**2**	**3**	**4**	**5**	
2. Knowledge/Content/Clarity	**1**	**2**	**3**	**4**	**5**	
3. Recognizes moments to address decision making (tactics)	**1**	**2**	**3**	**4**	**5**	
4. Recognizes moments to address proper technique and its application	**1**	**2**	**3**	**4**	**5**	

Instructor Comments: _____

Instructor Name: _____ **Instructor Signature:** _____

Grading Scale: 1-very good, 2-good, 3-average, 4-below average, 5-fail, S-Satisfactory, U-Unsatisfactory

Pass = Candidate must wait a minimum of 1-year before eligible to attend USSF National 'A' License

3.2 Rule = Candidate must wait 3 years before eligible to attend USSF National 'A' License

"B" License Evaluation Form cont.

(significant coaching points)

Time of Action	Significant Moments	Comments

U.S. Soccer National Coaching Schools
B License Evaluation Form
Final Field Test

Name: _____ **Date:** _____ **Course Site:** _____ **Grade:** _____

Topic: _____ **Start Time:** _____ **End Time:** _____

Criteria	**Grading**					**Comments**
I. Outline						
1. Reflects Topic	S		U			
2. Outline/Organization/Progression	S		U			
3. Appropriate Progression	S		U			
II. Candidate						
1. Appearance	S		U			
2. Voice	S		U			
3. General Attitude	S		U			
III. Presentation/Organization						
1. Organization/Equipment	S		U			
2. Organization/Field Space	S		U			
3. Organization/Players	S		U			
IV. Coaching Effectiveness (cannot receive a 5 in any category and receive a pass for the course)						
1. Teaching Ability	1	2	3	4	5	
2. Knowledge/Content/Clarity	1	2	3	4	5	
3. Recognizes moments to address decision making (tactics)	1	2	3	4	5	
4. Recognizes moments to address proper technique and its application	1	2	3	4	5	

Instructor Comments: _____

Instructor Name: _____ **Instructor Signature:** _____

Grading Scale: 1-very good, 2-good, 3-average, 4-below average, 5-fail, S-Satisfactory, U-Unsatisfactory

Pass = Candidate must wait a minimum of 1-year before eligible to attend USSF National 'A' License
3.2 Rule = Candidate must wait 3 years before eligible to attend USSF National 'A' License

"B" License Evaluation Form cont.

(significant coaching points)

Time of Action	Significant Moments	Comments

U.S. Soccer National Coaching Schools
B License Evaluation Form
Final Field Test

Name: _____ **Date:** _____ **Course Site:** _____ **Grade:** _____

Topic: _____ **Start Time:** _____ **End Time:** _____

Criteria	**Grading**					**Comments**
I. Outline						
1. Reflects Topic	S		U			
2. Outline/Organization/Progression	S		U			
3. Appropriate Progression	S		U			
II. Candidate						
1. Appearance	S		U			
2. Voice	S		U			
3. General Attitude	S		U			
III. Presentation/Organization						
1. Organization/Equipment	S		U			
2. Organization/Field Space	S		U			
3. Organization/Players	S		U			
IV. Coaching Effectiveness (cannot receive a 5 in any category and receive a pass for the course)						
1. Teaching Ability	1	2	3	4	5	
2. Knowledge/Content/Clarity	1	2	3	4	5	
3. Recognizes moments to address decision making (tactics)	1	2	3	4	5	
4. Recognizes moments to address proper technique and its application	1	2	3	4	5	

Instructor Comments: _____

Instructor Name: _____ **Instructor Signature:** _____

Grading Scale: 1-very good, 2-good, 3-average, 4-below average, 5-fail, S-Satisfactory, U-Unsatisfactory

Pass = Candidate must wait a minimum of 1-year before eligible to attend USSF National 'A' License
3.2 Rule = Candidate must wait 3 years before eligible to attend USSF National 'A' License

"B" License Evaluation Form cont.

(significant coaching points)

Time of Action	Significant Moments	Comments

U.S. Soccer "B" License

Oral Examination – Critique Form

Candidate: _____ **Date:** _____

Site Location (i.e. school or field location, state): _____

Start Time: _____ **End Time:** _____

Instructor (print name): _____

Category: Tactics

Question: _____

_____

Grade: _____

Instructor Comments: _____

_____

_____

Category: Methods of Coaching

Question: _____

_____

Grade: _____

Instructor Comments: _____

_____

_____

Grading Scale: **1=Excellent** **2=Good** **3=Average** **4=Below Average** **5=Not Acceptable**

U.S. Soccer "B" License

Oral Examination – Critique Form

Candidate: _____ **Date:** _____

Site Location (i.e. school or field location, state): _____

Start Time: _____ **End Time:** _____

Instructor (print name): _____

Category: Tactics

Question: _____

_____

Grade: _____

Instructor Comments: _____

_____

_____

Category: Methods of Coaching

Question: _____

_____

Grade: _____

Instructor Comments: _____

_____

_____

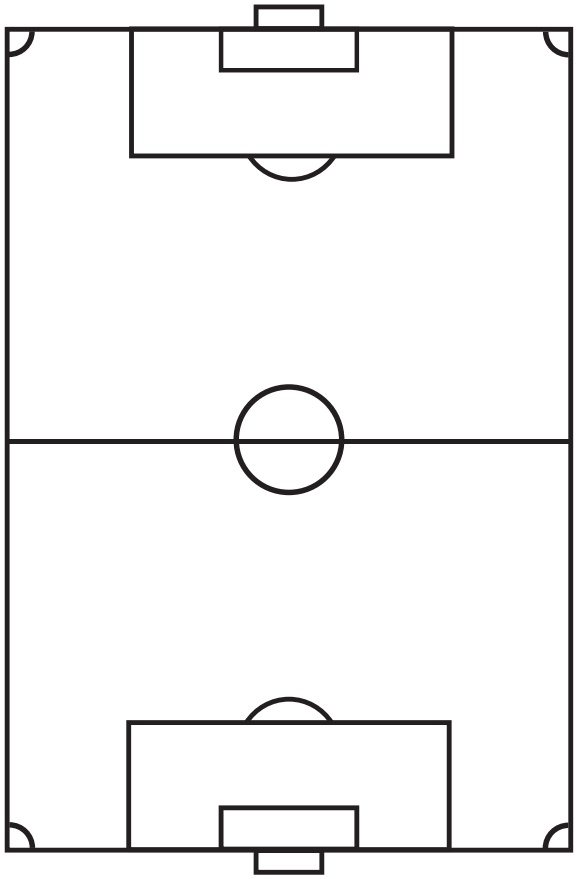
Grading Scale: **1=Excellent** **2=Good** **3=Average** **4=Below Average** **5=Not Acceptable**

APPENDIX B

US SOCCER MATCH LINE-UP

Match:_____ vs. _____

Date: _____



STARTERS (Name / Number)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

Substitutes (Name / Number)

12. _____
13. _____
14. _____
15. _____
16. _____

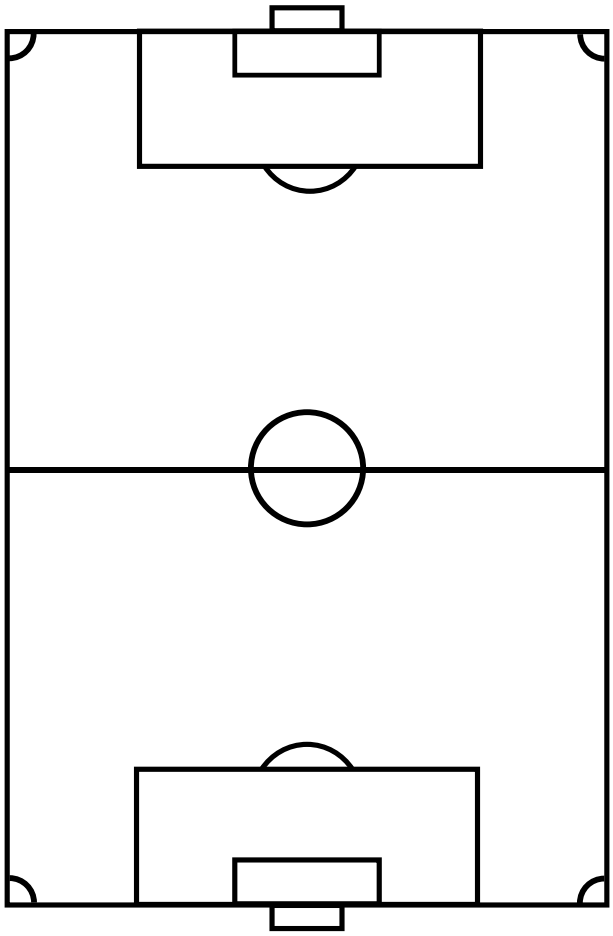
PROBLEMS IN ATTACKING	PROBLEMS IN DEFENDING

APPENDIX B

US SOCCER MATCH LINE-UP

Match:_____ vs. _____

Date: _____



STARTERS (Name / Number)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

Substitutes (Name / Number)

12. _____
13. _____
14. _____
15. _____
16. _____

PROBLEMS IN ATTACKING	PROBLEMS IN DEFENDING

3.2 RULE FOR "B" COURSE

The 3.2 Rule has been designed for determining which candidates are qualified at this time to continue to the next level of licensing.

In order to continue to the next level of coaching license without restriction, the following applies: a candidate must score less than a 3.2 average in the four (4) specified categories; tactics, methods and practical coaching of tactics and technique (*the practical coaching subject is weighted quadruple for the "B" License*). If your score in these four (4) categories is a 19 or less, the 3.2 Rule does not apply to you. However, if your score is 20 or greater a candidate must comply with the rules illustrated below. A candidate does receive scores in anatomy/physiology, care/prevention, laws and team management, however these scores are not included in the averaging. Candidates must also pass these tests in order to pass the course.

Should a candidates score be equal to or greater than a 3.2 and still pass the course, he/she is awarded the license. However, in order to continue to the next level course, the candidate has 2 options, 1) for the "B" candidate, after three years of practical coaching the candidate may continue to the next level or 2) audit the next higher level of licensing.

(SEE FOLLOWING FOR EXAMPLE)

EXAMINATION SUBJECTS

			3.2 RULE
I.	PRACTICE		
	A. Game Awareness	Adequate / Needs Improvement	
II.	THEORY		
	A. Tactics (oral)	3	3
	B. Methods of Coaching (oral)	3	3
	C. Team Management (written)	2	
	D. Laws of the Game (written)	2	
	E. Anatomy & Phy./Ex. Phy. (written)	1	
III.	METHODOLOGY		
	A. Practical Coaching (Tactics)	4 x2	8
	B. Practical Coaching (Technique)	3 x2	6
		TOTAL =	20/6
		Average for 3.2 Rule:	3.33

THE ABOVE GRADES ARE EXAMPLES ONLY

APPENDIX B

UNITED STATES SOCCER FEDERATION

LAWS OF THE GAME TEST

"B" LICENSE

The following questions are based on the latest edition of the Laws of the Game, published by Federation Internationale de Football Association (FIFA) and the Annual memorandum, published by the International Football Association Board, detailing changes to the Laws.

For statements **1 – 13**, please answer with either true (**A)** or false (**B**).

A = True
B = False

1.) The ball bounces off the post and back onto the field of a properly placed corner flag. Play should be stopped.

2.) A goal may be scored directly from a kick-off.

3.) If thermal shorts are worn, they must be of the same color as the shorts.

4.) At kick-off, the ball is in play immediately when it is played forward.

5.) A player may pass the ball to his own goalkeeper using the head or chest and, in this situation; the goalkeeper is allowed to handle the ball.

6.) A player has a broken arm, protected by a plastic cast. It is a responsibility of the referee to determine if the cast is dangerous to other players.

7.) During the game, a coach may give tactical instructions to his/her team, provided he/she is in their technical area.

8.) The ball is in play from a free kick when it is kicked and moves.

9.) The mark to indicate the minimum distance that shall be kept by opposing players at corner kicks must be outside the field of play.

10.) The referee should prevent any player who is bleeding from a wound from taking any further part in a match until the player has been adequately treated and the bleeding has stopped.

11.) The team that loses the coin toss prior to the game must take the kick-off.

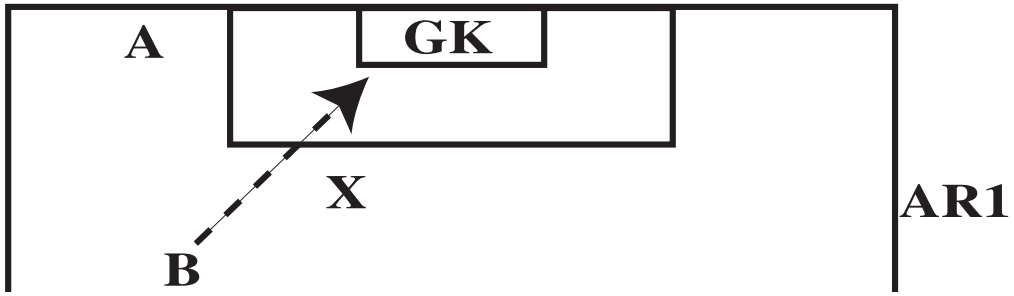
12.) The goalkeeper, after taking complete control of the ball with his hands, has six seconds to put the ball in play.

13.) It is not necessary to inform the referee when a goalkeeper is to be substituted.

Questions 14 – 17 describe situations for which a player may be guilty of an offside infraction. Assume in each situation that an Attacker **A** is to be judged of an offside infraction. Use the following responses to answer **Questions 14 – 17**:

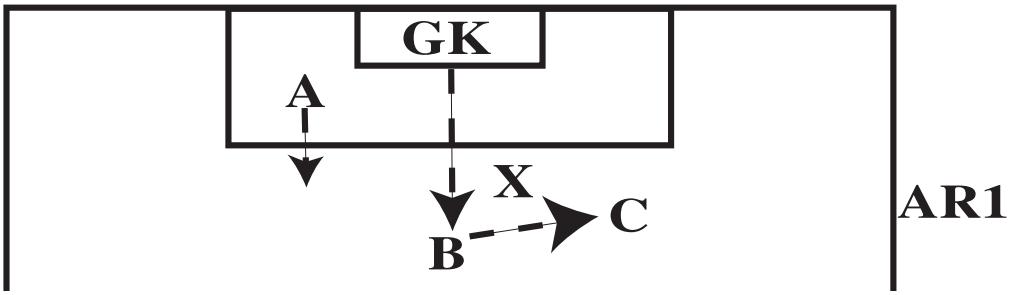
A = the player is guilty of offsides
B = the player is **NOT** guilty of offsides

14.) An attacking player **A** is injured and lying on the ground inside the field of play. Another attacker **B**, defended by **X**, shoots the ball towards the goal.

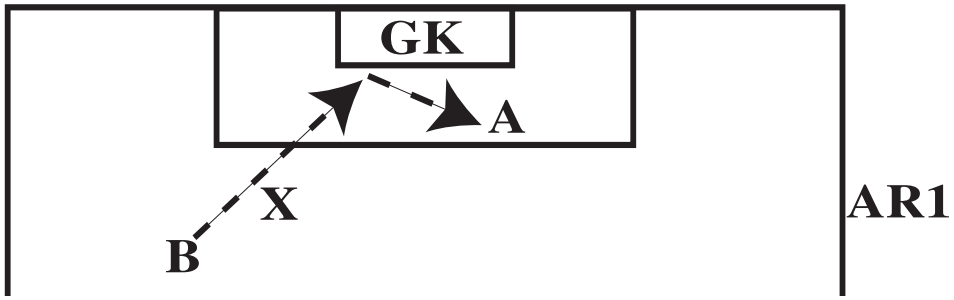


15.) Player **B** passes the ball to teammate **C**, who is being defended by player **X**. Player **A**, a teammate of **B** and **C**, is in an offside position.

16.) The ball is played to the goalkeeper by a teammate and since he could not use his hands, attacking player **A** challenged him. The goalkeeper kicks the ball and player **A** starts to run up the field. The ball is cleared to another attacking player **B** who then plays the ball to a teammate **C** who is being defended by **X**.



17.) The goalkeeper defects a shot on goal to attacker **A**.



For Questions 18 – 26, assume the game has been stopped because of the stated incident.
Use the following responses to indicate the appropriate restart.

a. Corner kick	b. Throw-in	c. Kick-off	d. Goal kick
e. Drop ball	f. Indirect Free Kick	g. Direct Free kick	h. Penalty kick

18.) The goalkeeper, in control of the ball with his hands inside the penalty area, falls down with a muscle cramp.

19.) Before a corner kick is taken, a player on the attacking team is sent off and shown a red card for punching an opponent.

20.) The ball enters the opponents' goal directly from a throw-in.

21.) The ball enters the opponents' goal directly from a corner kick.

22.) The goalkeeper moves right without stepping off the goal line before a penalty kick is taken and deflects the ball over the cross bar.

23.) The ball has passed over a touch line when the referee decides to suspend the game because of dangerous weather conditions. How should the game be restarted?

24.) From the kick-off, the ball is played forward and passes over a touch line without being touched by another player.

25.) An opponent takes a shot on goal and the goalkeeper controls the ball downward with his hands. The goalkeeper then dribbles the ball, with his feet, to the edge of the penalty area and picks up the ball.

26.) A defender purposely kicks the ball in the air towards his goalkeeper. The goalkeeper uses both hands to punch the ball away from the goal area.

Questions 27 – 32 describe incidents that according to the *Laws of the Game* may require the Referee to either caution (issue a yellow card) or send off the guilty player (issue a red card). Use these responses to answer the following questions.

a.	Caution and issue the guilty player a yellow card
b.	Send off and issue the guilty player a red card
c.	First show a yellow card and then send off and issue the guilty player a red card
c.	Neither a caution (yellow card) or a send off (red card) is required

27.) A goalkeeper, outside the penalty area, punches the ball with his fist to prevent a goal.

28.) A player fails to respect the required distance when play is restarted with a corner kick.

29.) At a stoppage, the referee instructs a player, who is not wearing shin guards, to leave the field. The player leaves, puts on his shin guards, and re-enters the field while the ball is in play and without the referee's permission.

30.) In a hard fought, emotional match, a free kick is awarded to the visiting team with about 2-minutes left to play in the game. One of the defenders picks up the ball and carries it 10 yards to his defensive position and drops it.

31.) A defender leaves the field of play in an attempt to put an attacker in an offside position.

32.) A player shows dissent, but does not use profane or abusive language towards a decision of the referee.

APPENDIX B

Name _____

Answer Sheet
"B" License

Item	Answer	Notes
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		

Offside

14		
15		
16		
17		

Restarts

18		
19		
20		
21		
22		
23		
24		
25		
26		

Misconduct

27		
28		
29		
30		
31		
32		

APPENDIX B

"B" LICENSE FITNESS AND PHYSIOLOGY TEST

Please write your answers on a separate sheet of paper or use the back of this sheet.

1. Name the two types of endurance and describe each.

2. What is the purpose in Recovery Training and why is there a need for it?

3. What is the difference between Aerobic High Intensity Training and Aerobic Low Intensity Training?

4. Name the three types of Interval Training Methods and give an example of each using a ball.

5. What is the Interval Training Principle?

6. Name and define the four types of Speed required of a soccer player.

7. Why is Starting Speed so important and how can you train for it?

8. Name three of the principles that should be observed when training for Speed. Why should these principles be observed?

9. What is the difference between Speed Endurance Production Training and Speed Endurance Maintenance Training?

10. What is the importance of Flexibility and Agility for a soccer player and when and how can it be trained?

11. Name and describe three training effects that occur to the cardiovascular system due to exercise.

12. What are the three food sources that supply energy for the body?

Name: _____

Topic: _____

Technique

Technical Warm-up	Organization	Key Coaching Points
Small-Sided Activity		
Expanded Small-sided Activity		
7 v 7 to Big Goals		

Cool-Down

Name: _____

Topic: _____

Technique

Technical Warm-up	Organization	Key Coaching Points
Small-Sided Activity		
Expanded Small-sided Activity		
7 v 7 to Big Goals		

Cool-Down

Name: _____

Topic: _____

Technique

Technical Warm-up	Organization	Key Coaching Points
Small-Sided Activity		
Expanded Small-sided Activity		
7 v 7 to Big Goals		

Cool-Down

Name: _____

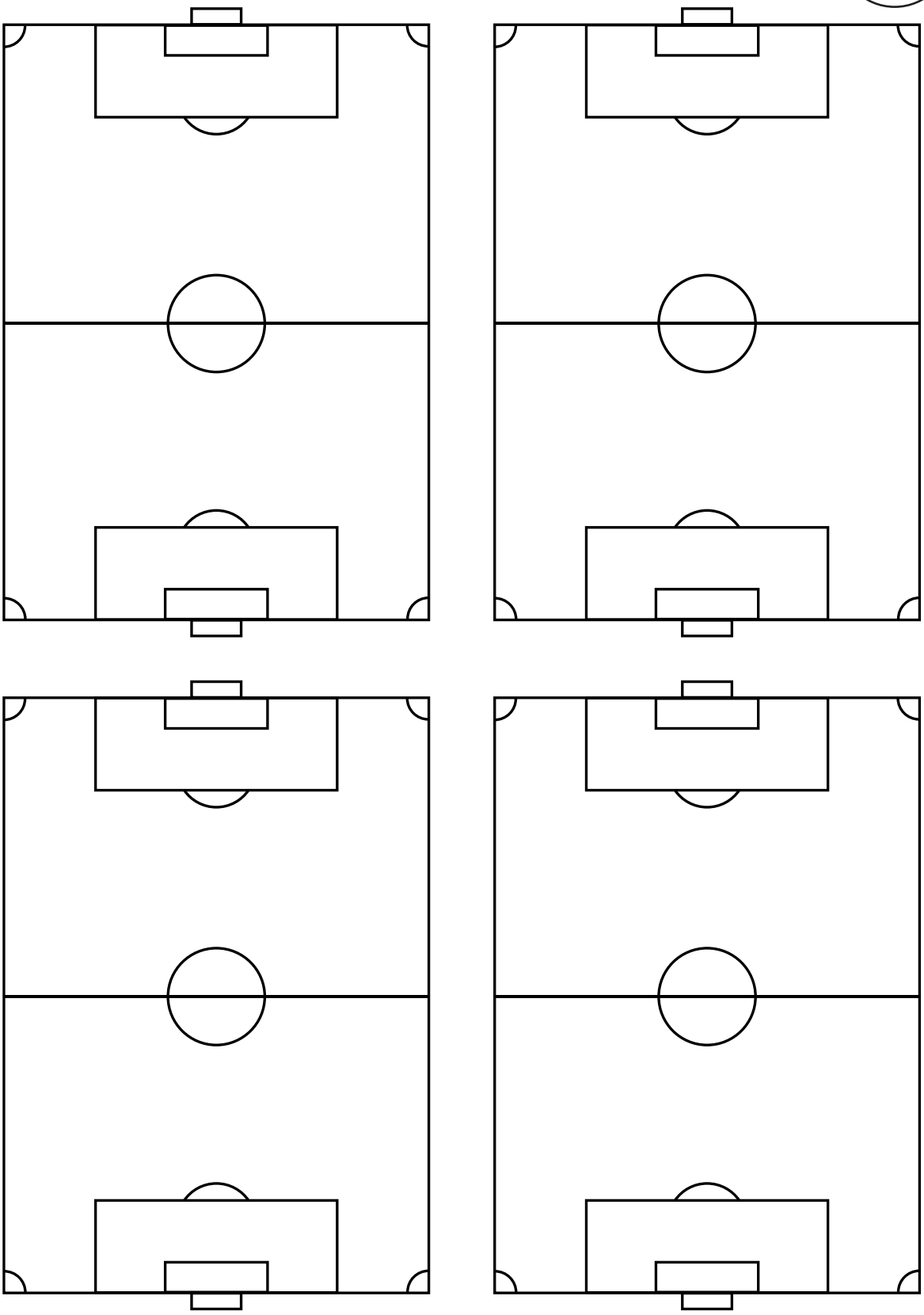
Topic: _____

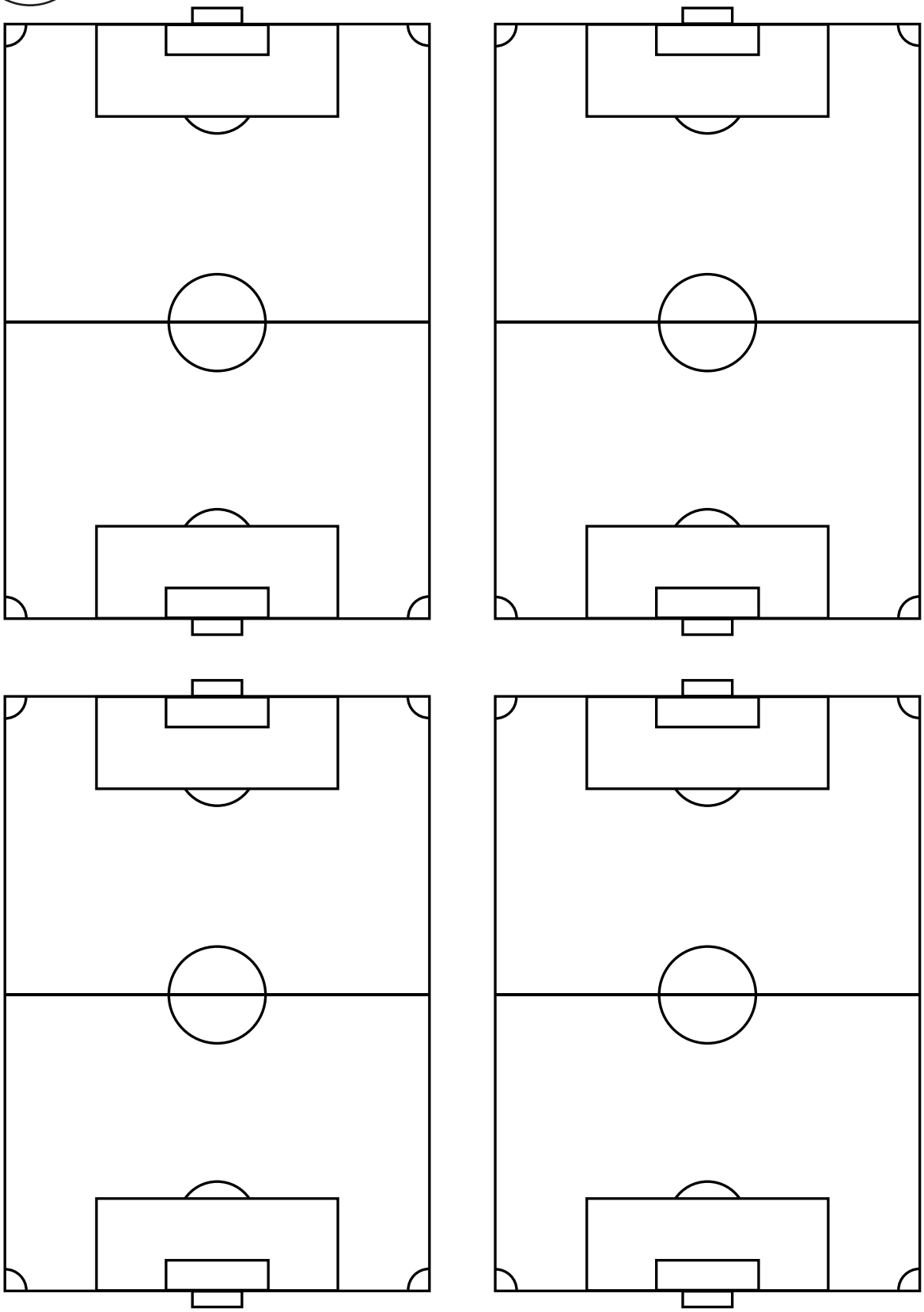
Technique

Technical Warm-up	Organization	Key Coaching Points
Small-Sided Activity		
Expanded Small-sided Activity		
7 v 7 to Big Goals		

Cool-Down

APPENDIX B





APPENDIX B

LESSON PLAN

NAME: _____ DATE: _____

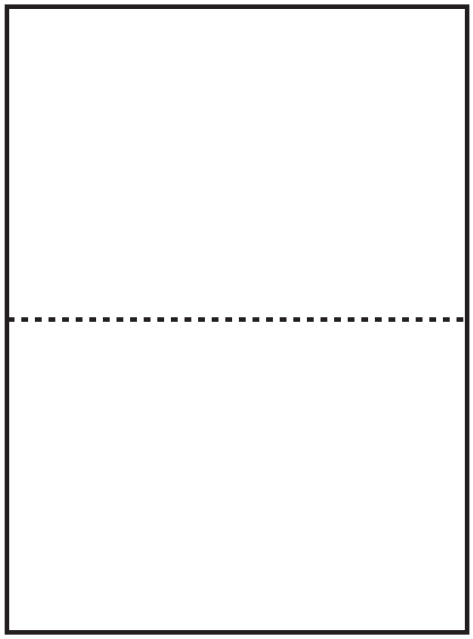
TOPIC: _____

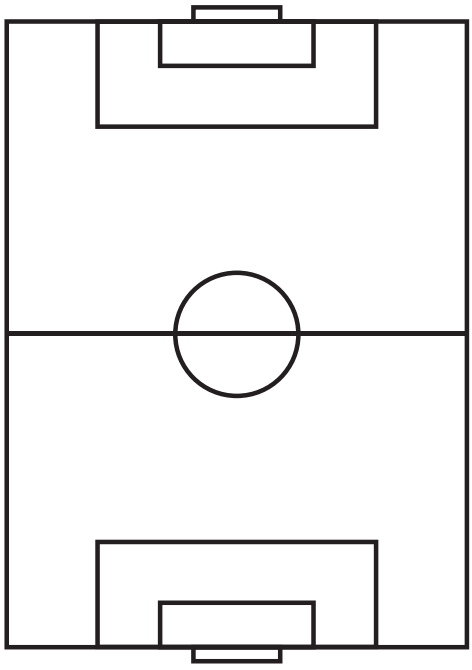
SESSION OBJECTIVE: _____

_____

EQUIPMENT NEEDS

OUTLINE / COACHING POINTS: _____





PRACTICE GROUPS / TEAMS

K

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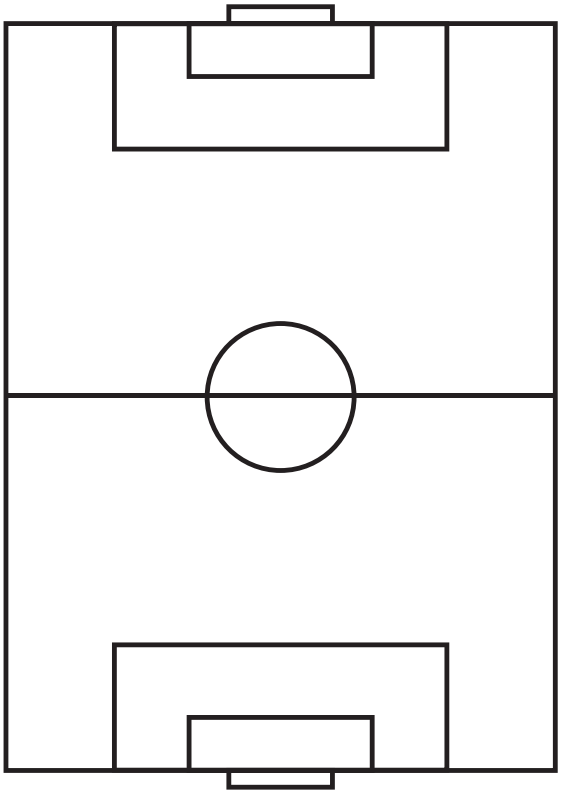
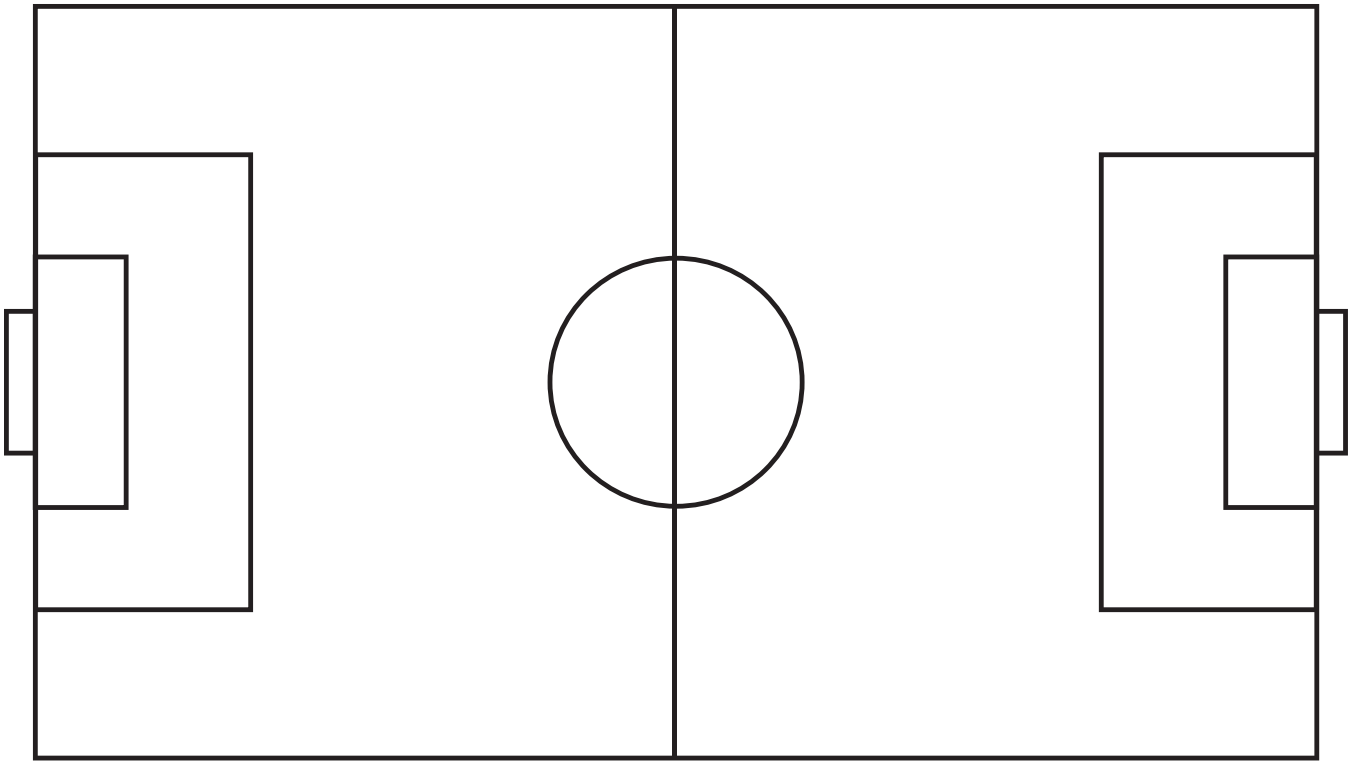




APPENDIX B

LESSON PLAN

NAME: _____ DATE: _____

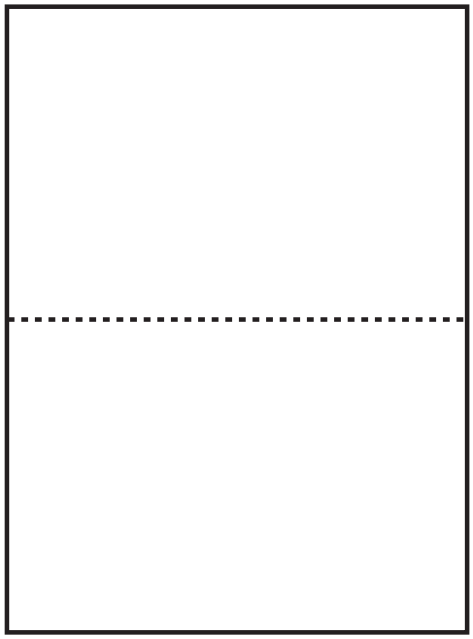
TOPIC: _____

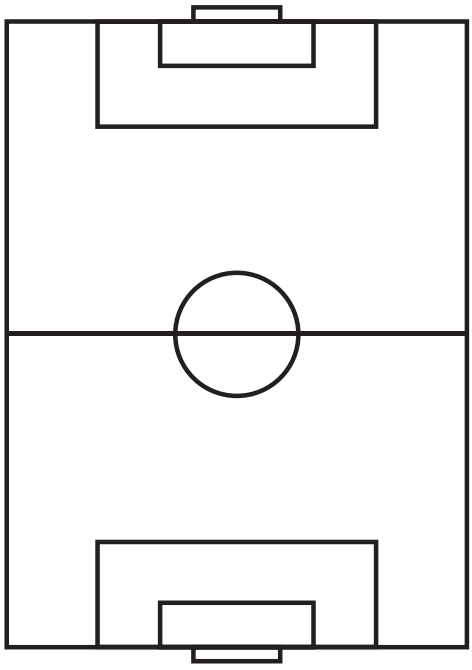
SESSION OBJECTIVE: _____

_____

EQUIPMENT NEEDS

OUTLINE / COACHING POINTS: _____





PRACTICE GROUPS / TEAMS

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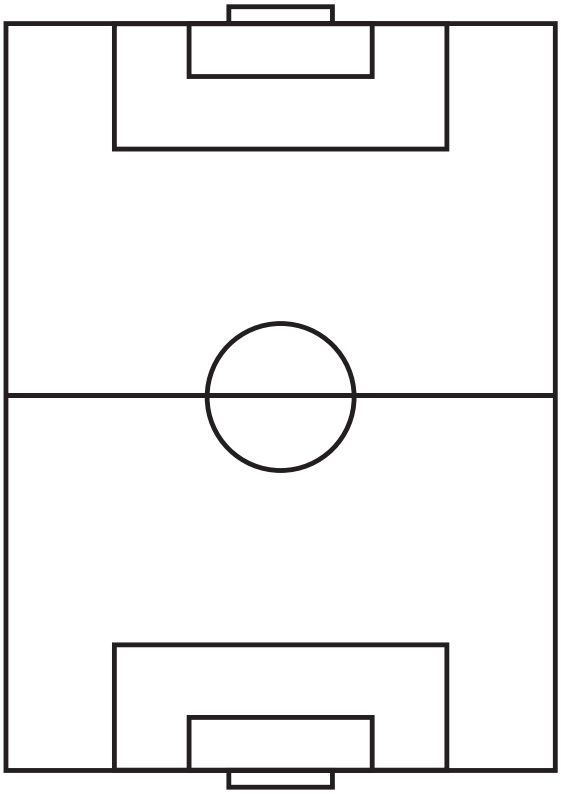
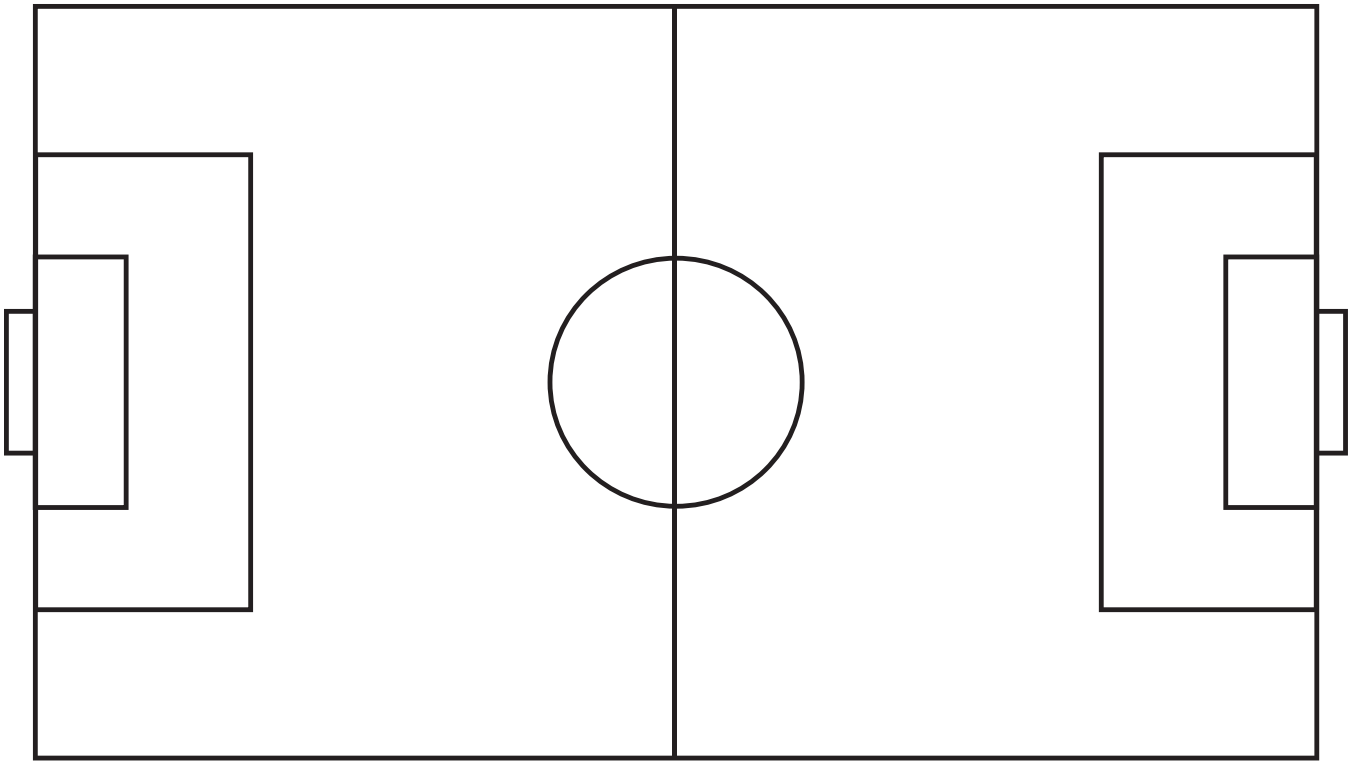




APPENDIX B

LESSON PLAN

NAME: _____ DATE: _____

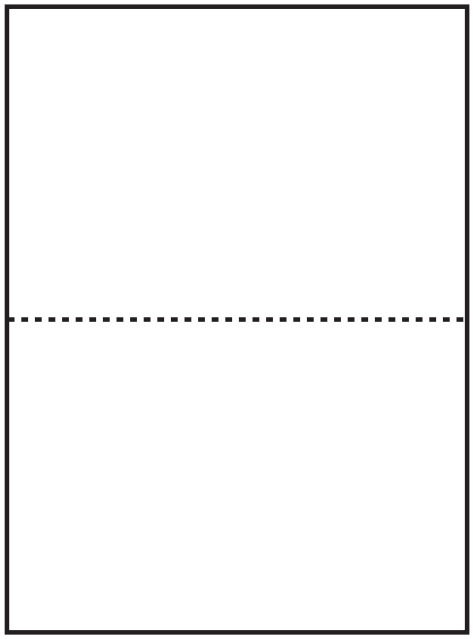
TOPIC: _____

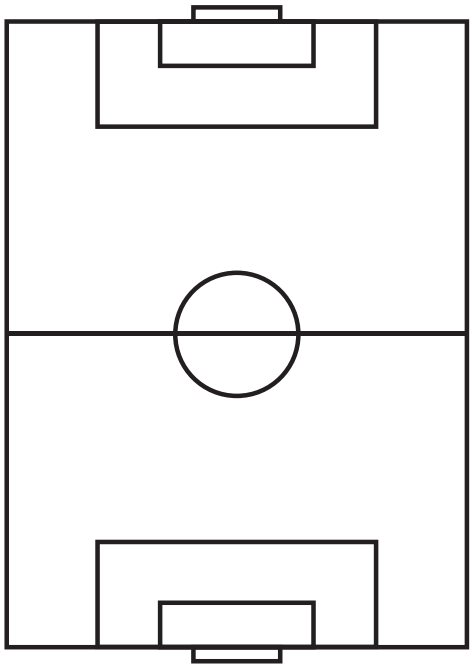
SESSION OBJECTIVE: _____

_____

EQUIPMENT NEEDS

OUTLINE / COACHING POINTS: _____





PRACTICE GROUPS / TEAMS

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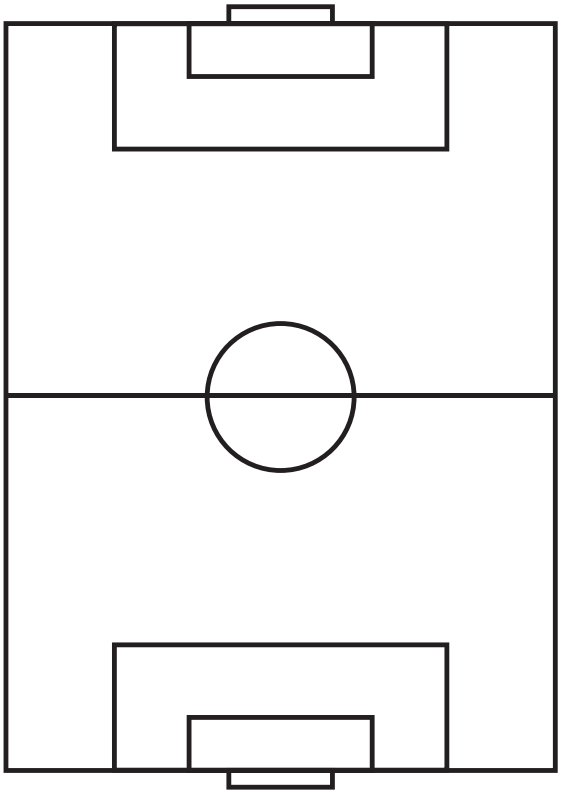

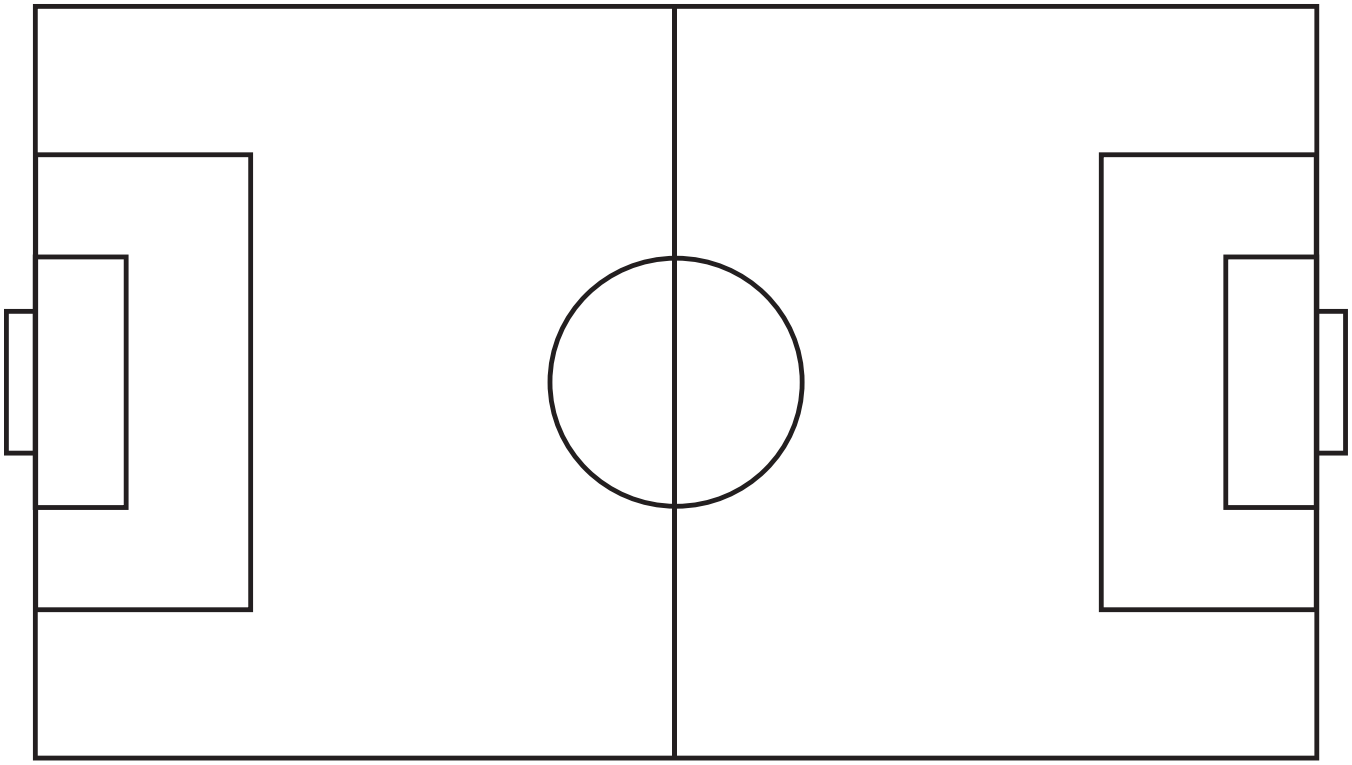

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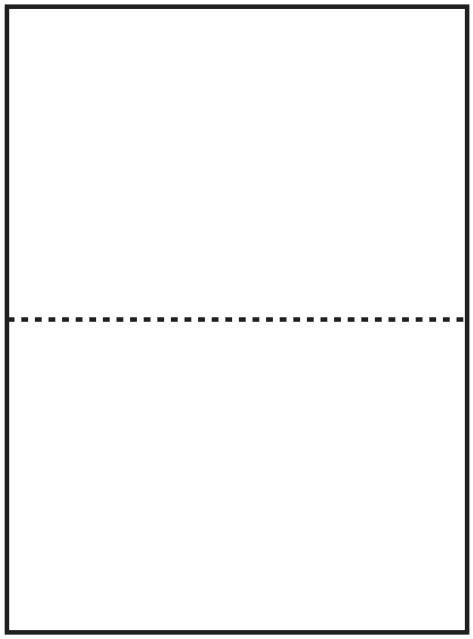

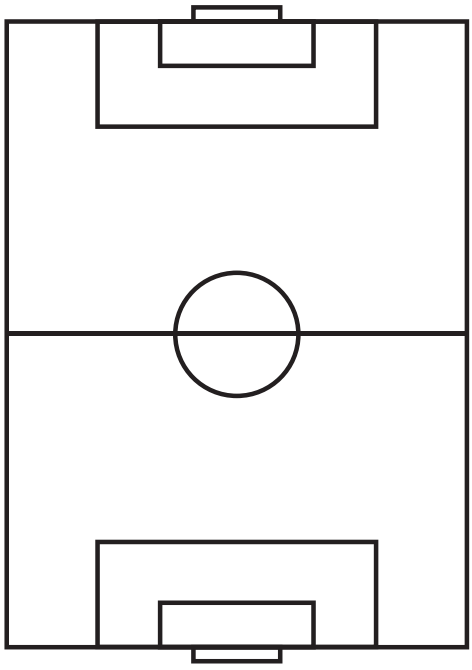

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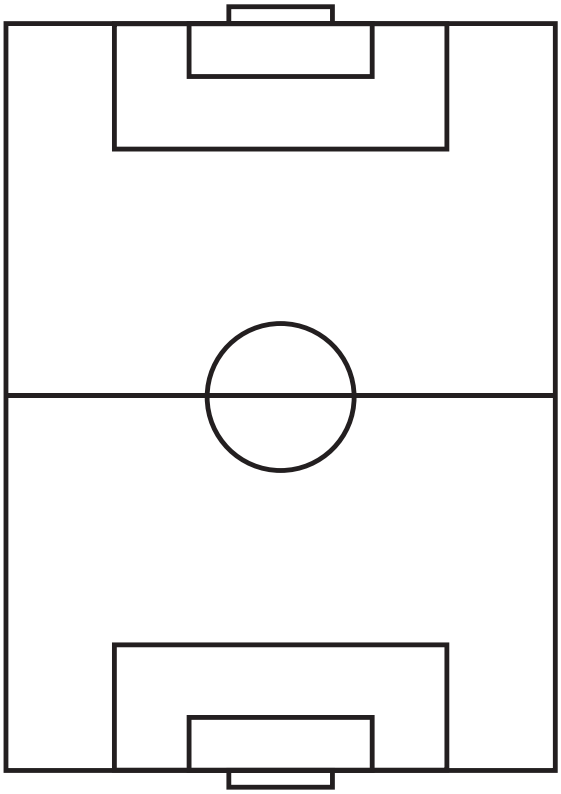

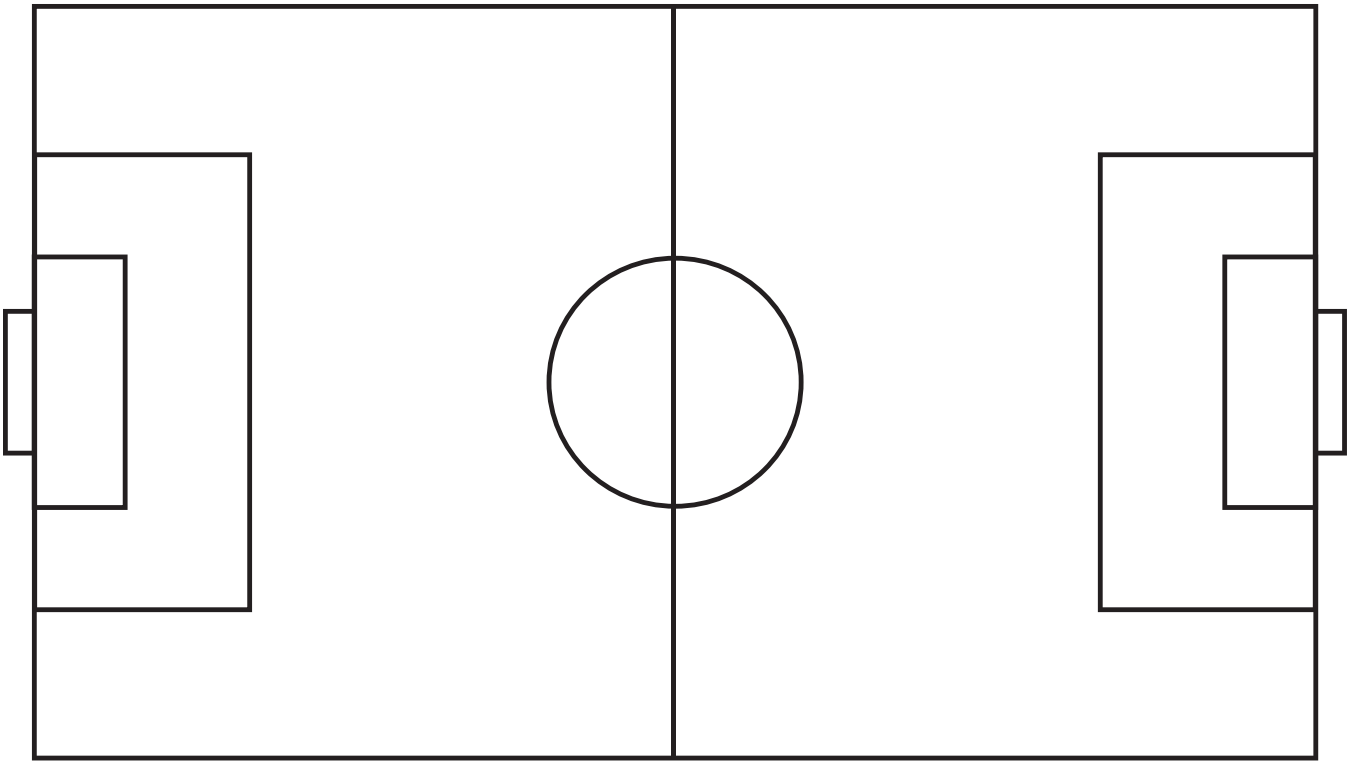

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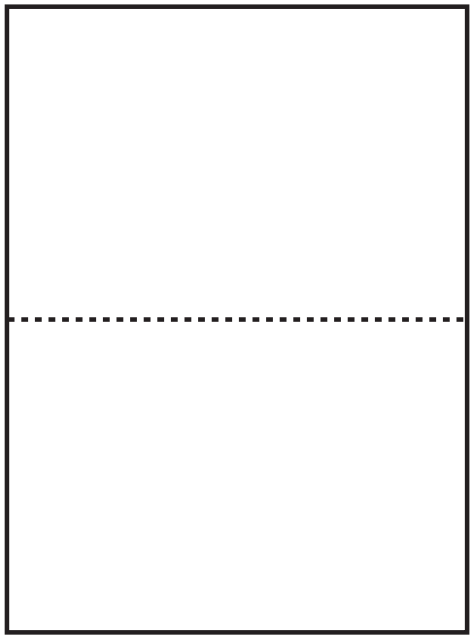

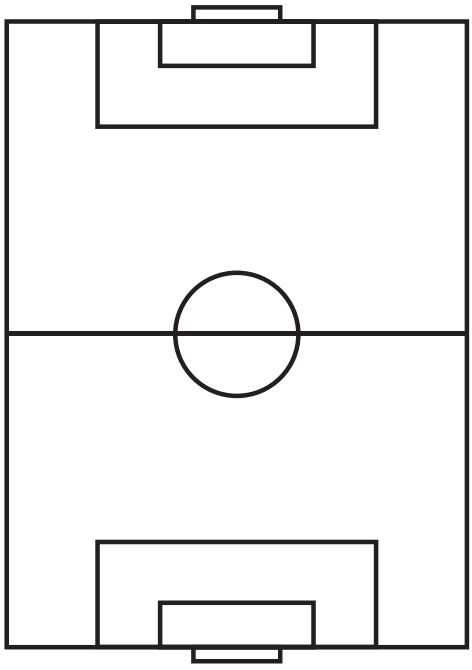

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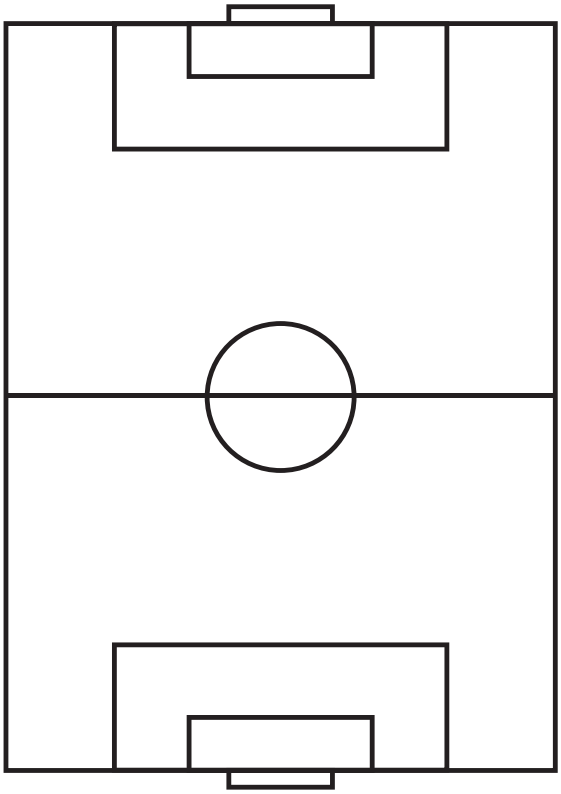

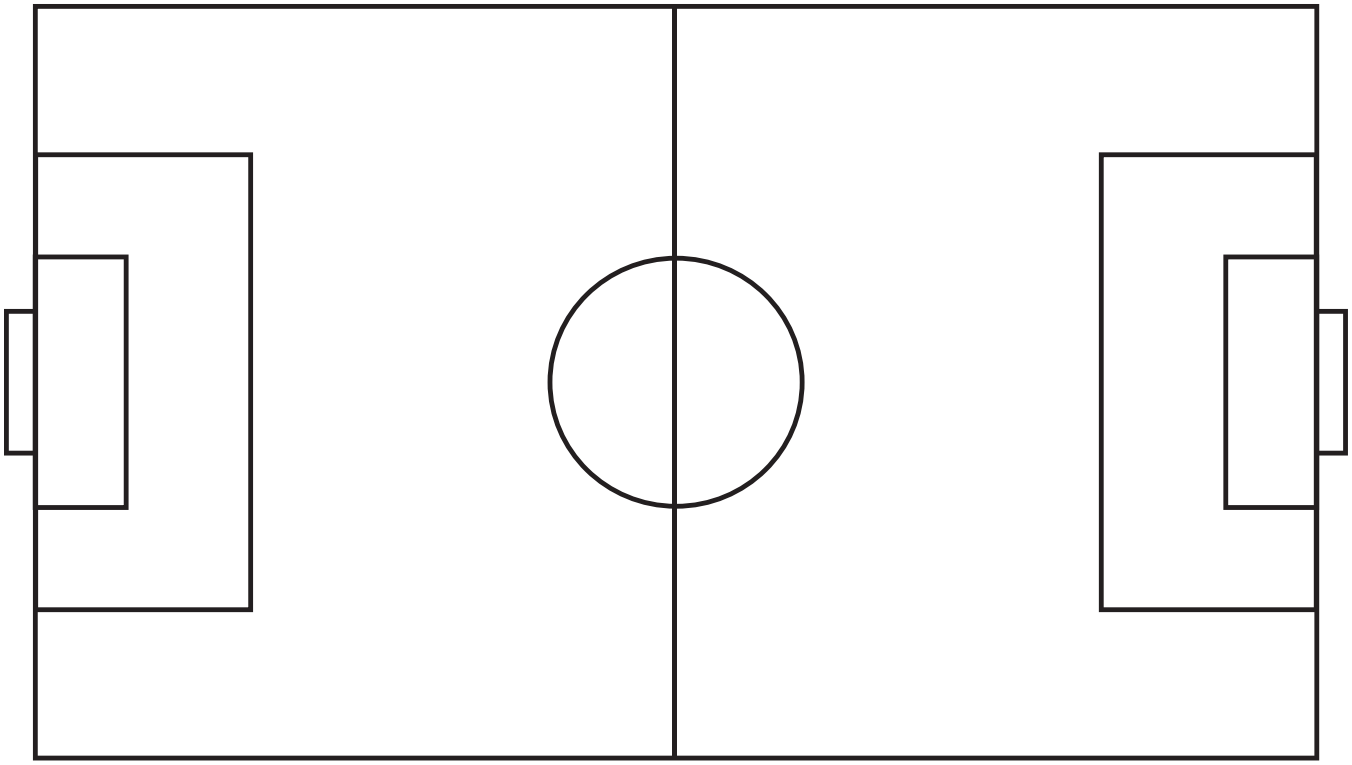

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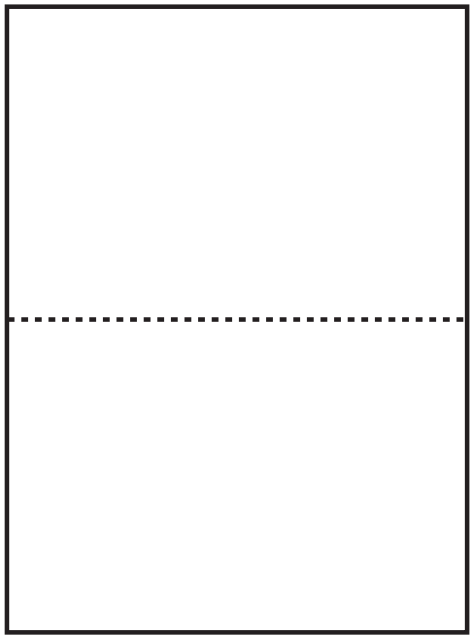

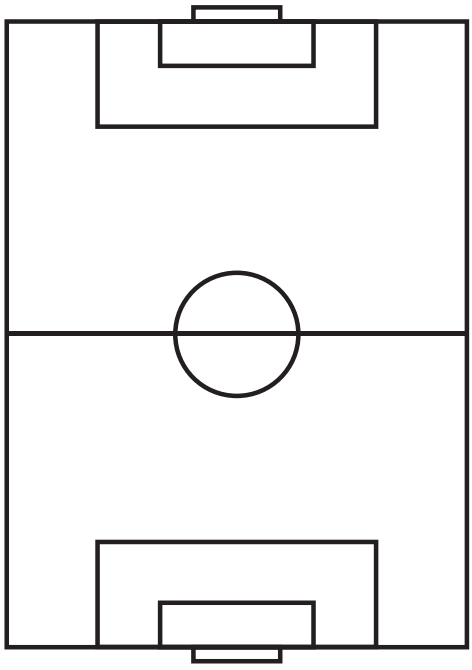

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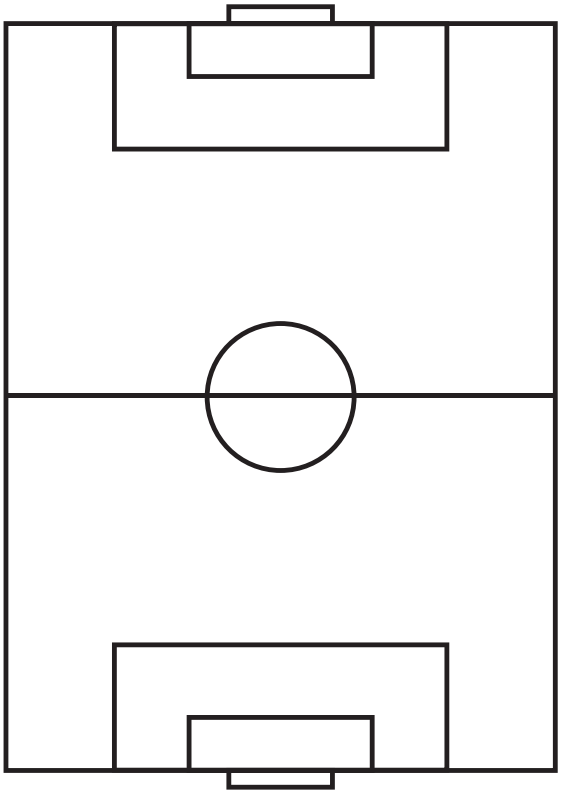

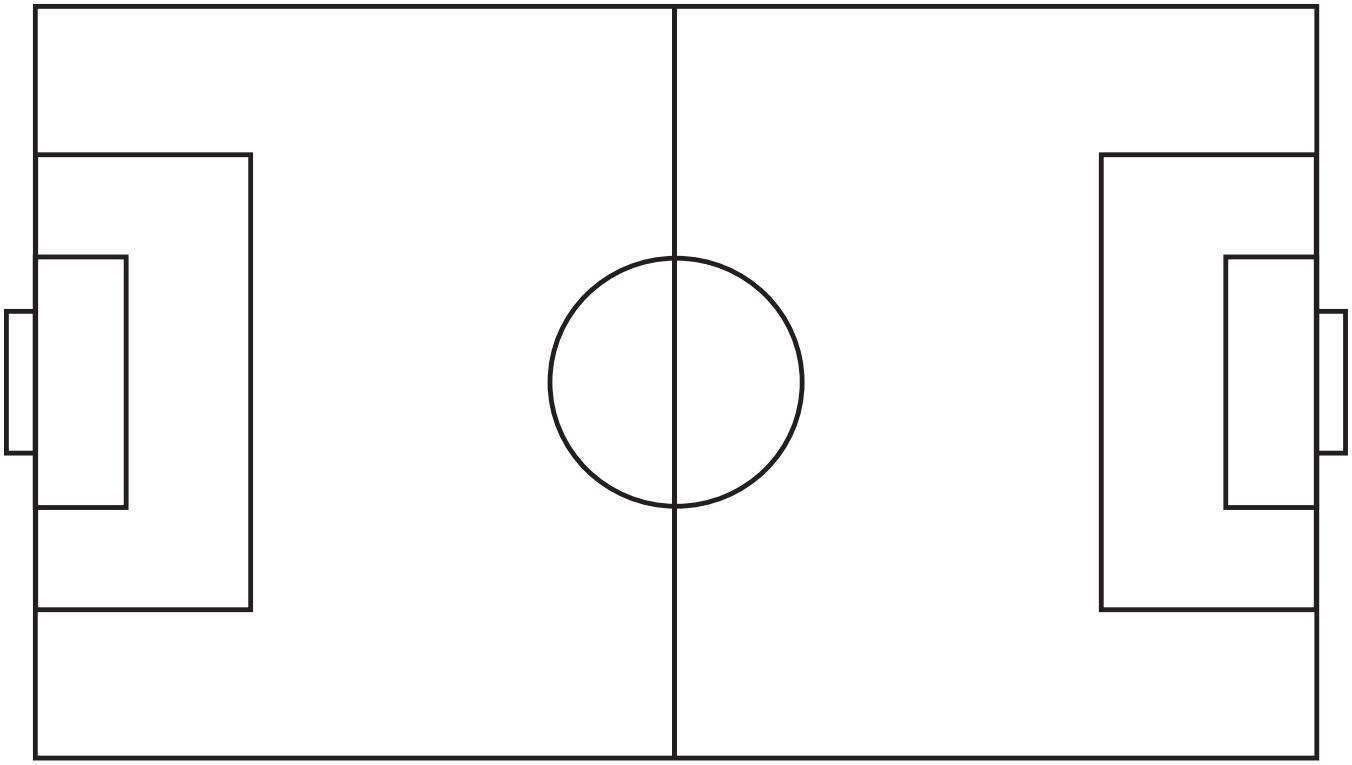

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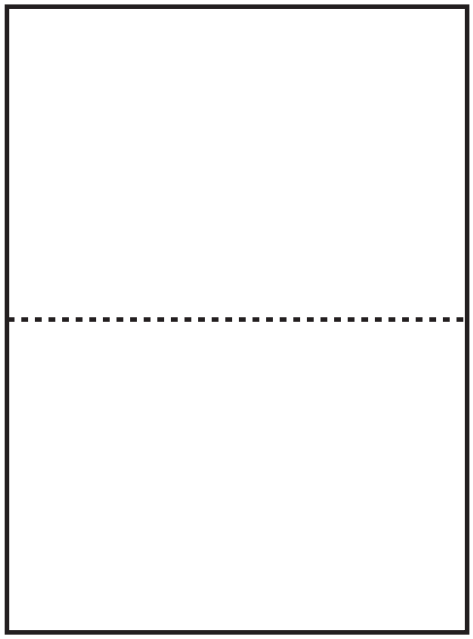

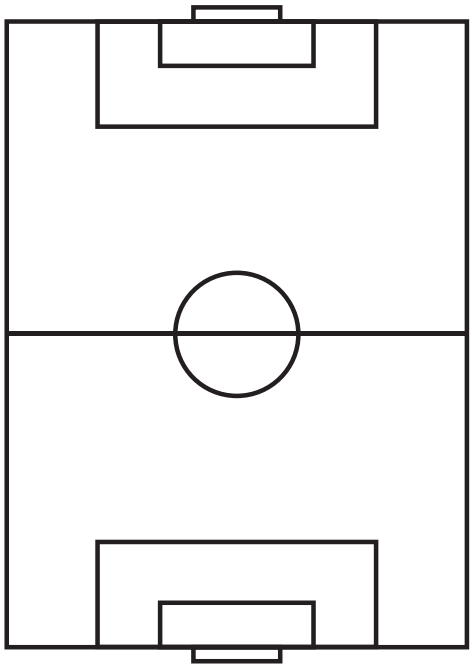

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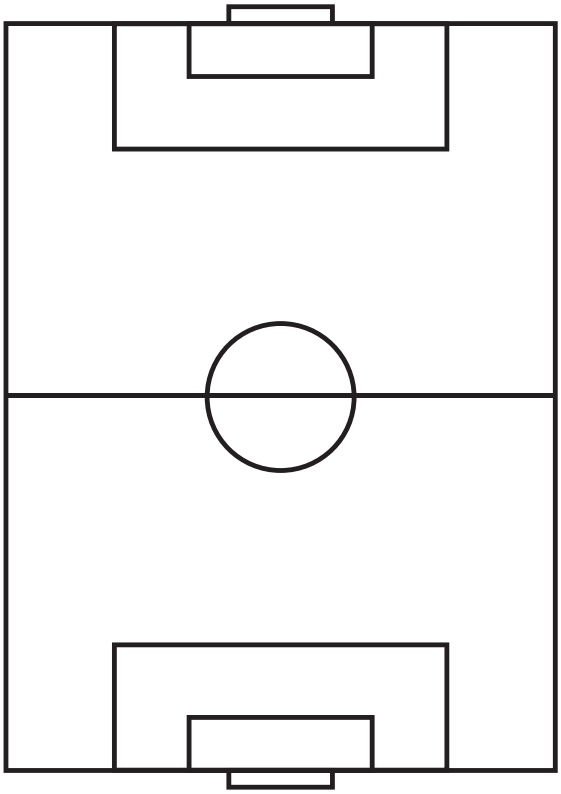

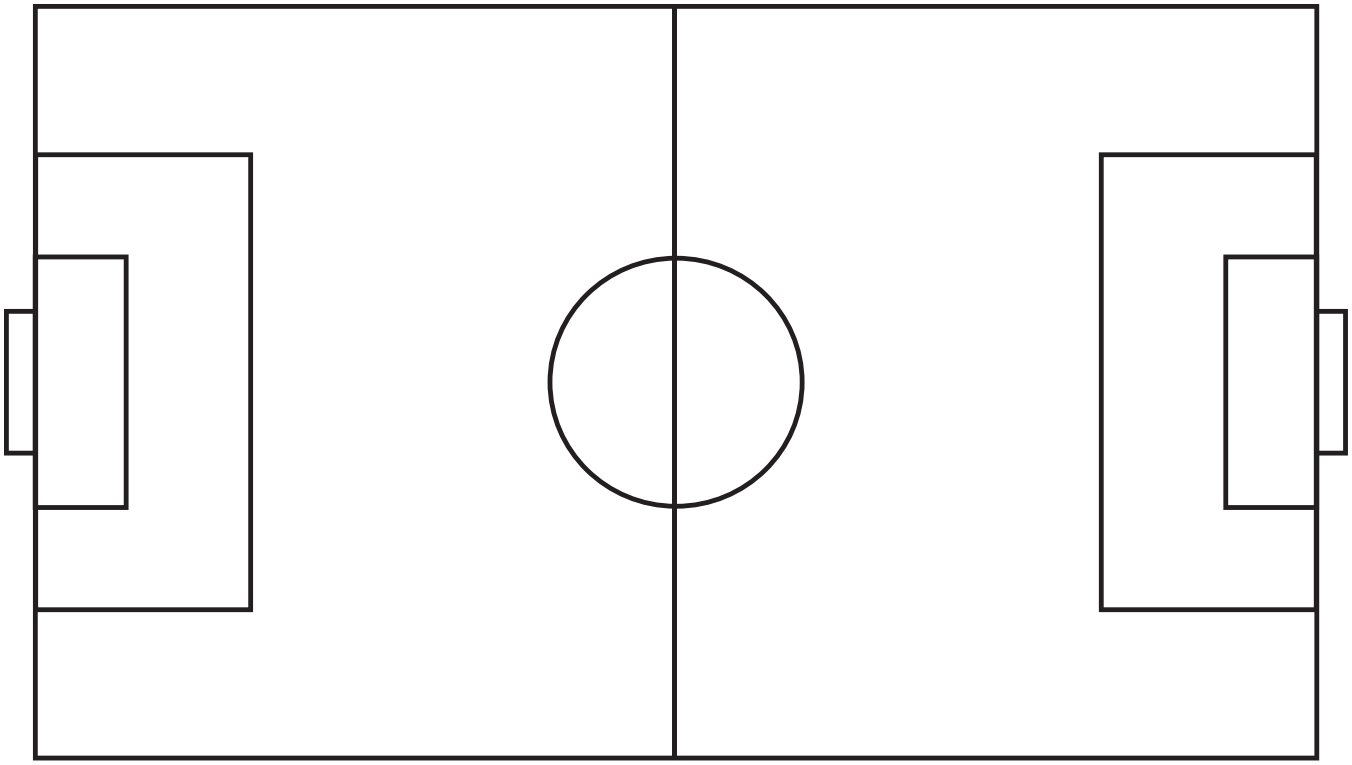

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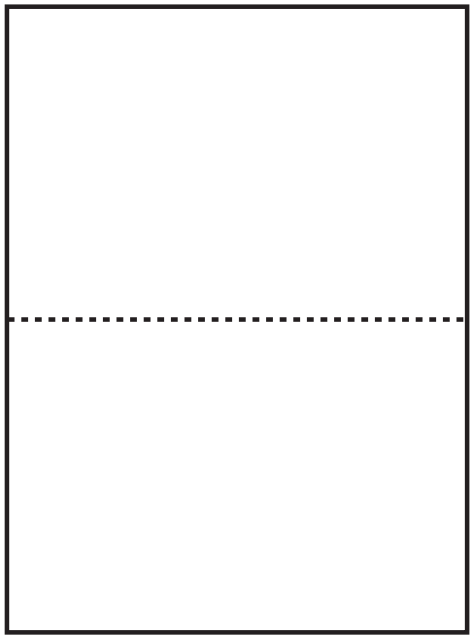

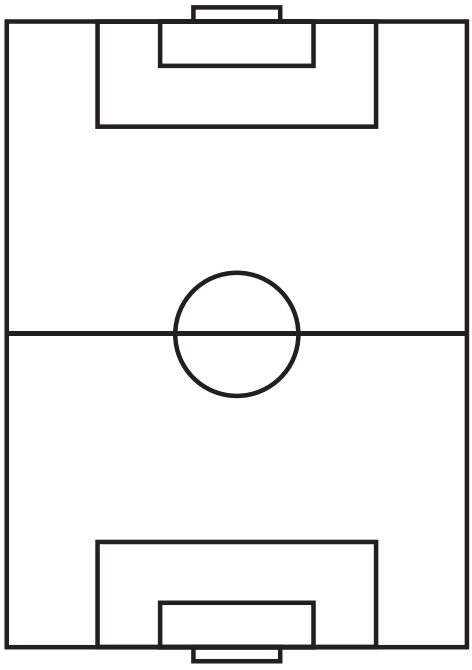

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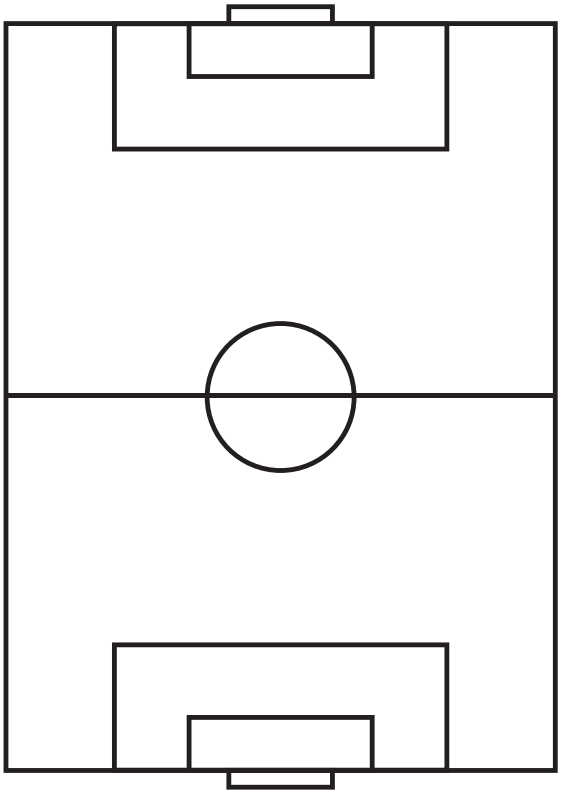

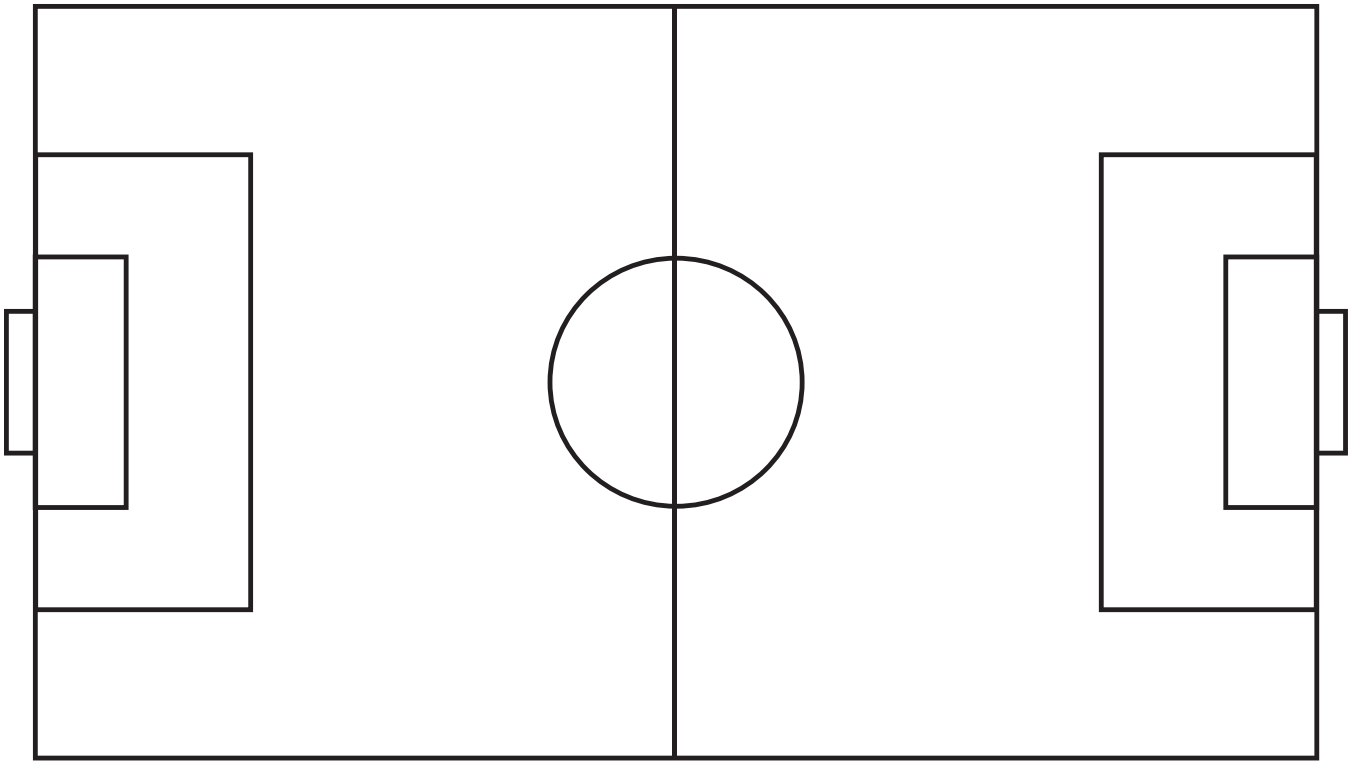

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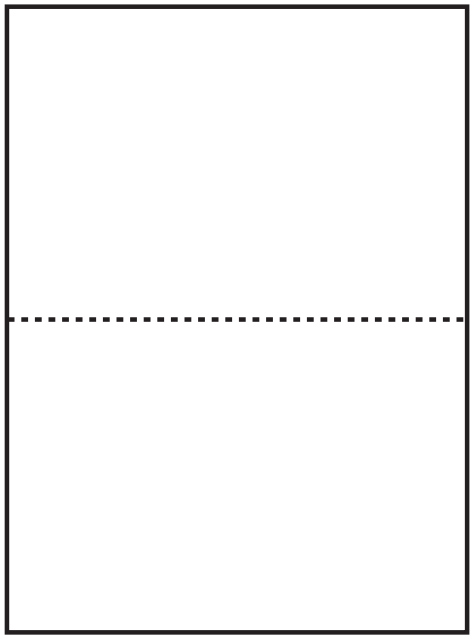

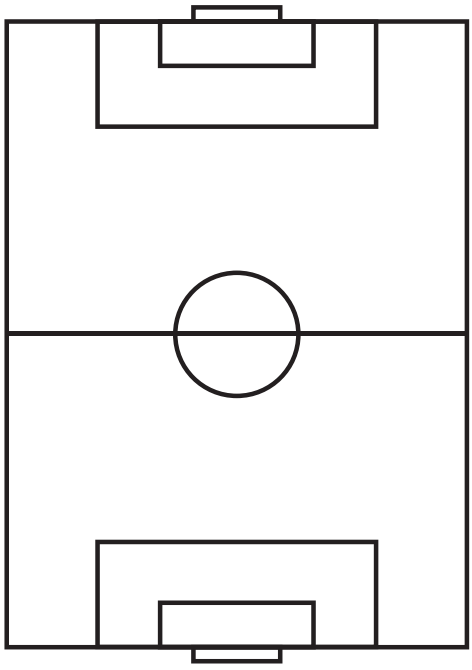

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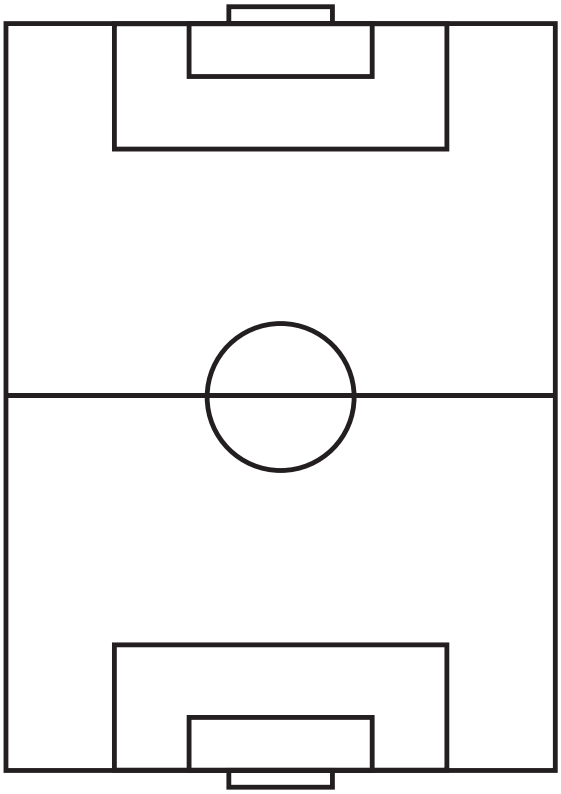

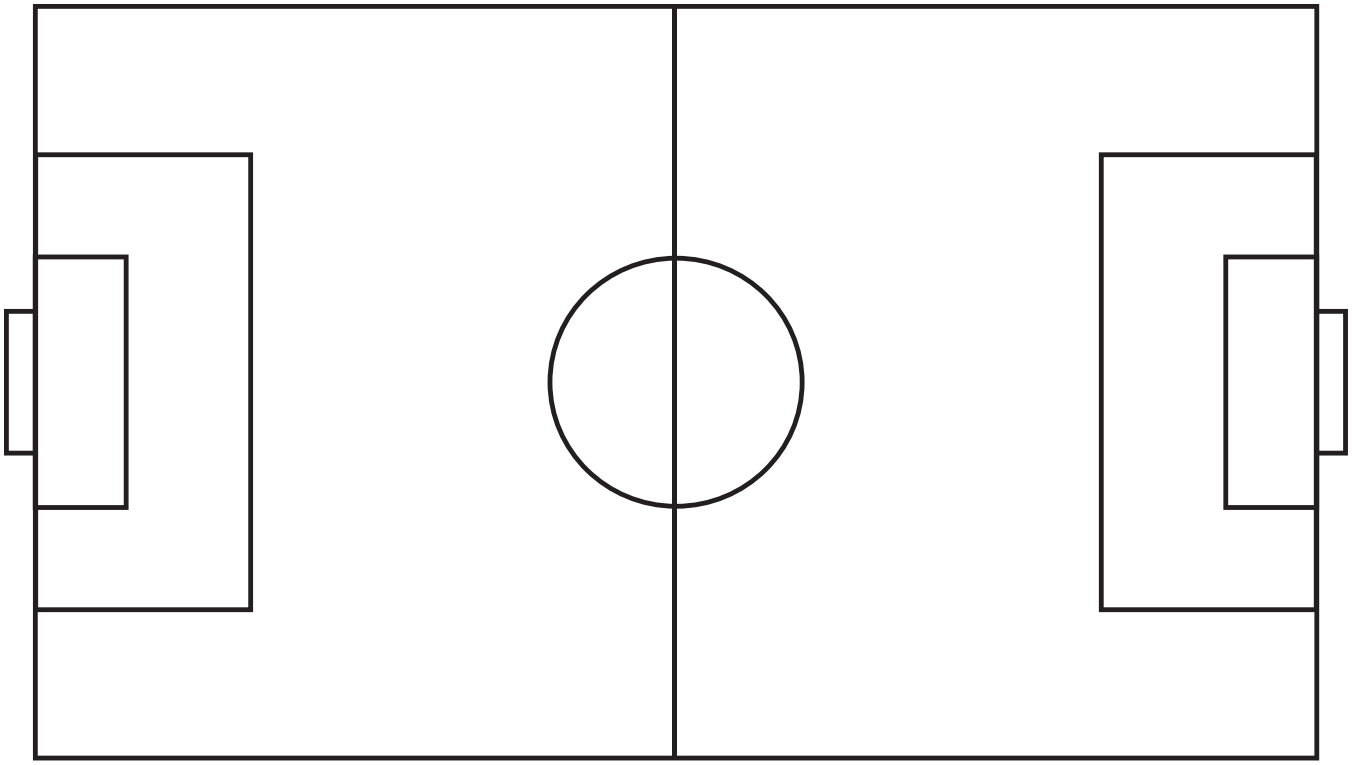

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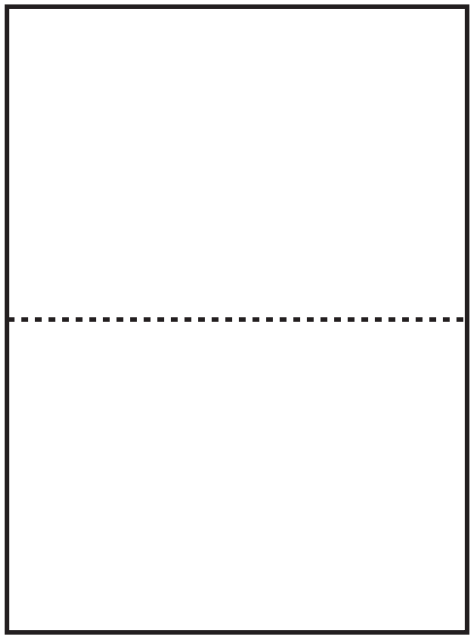

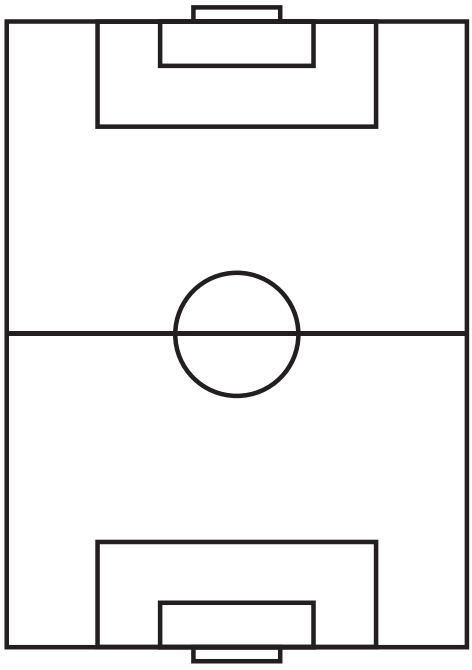

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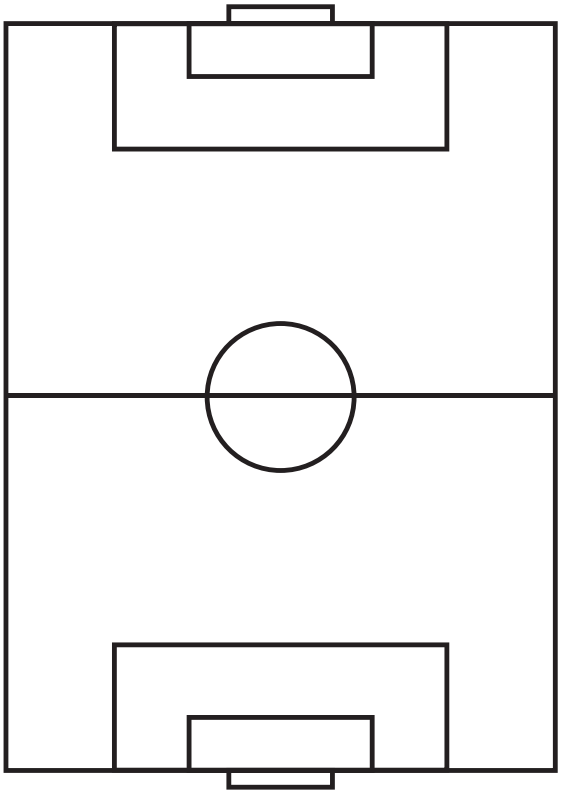

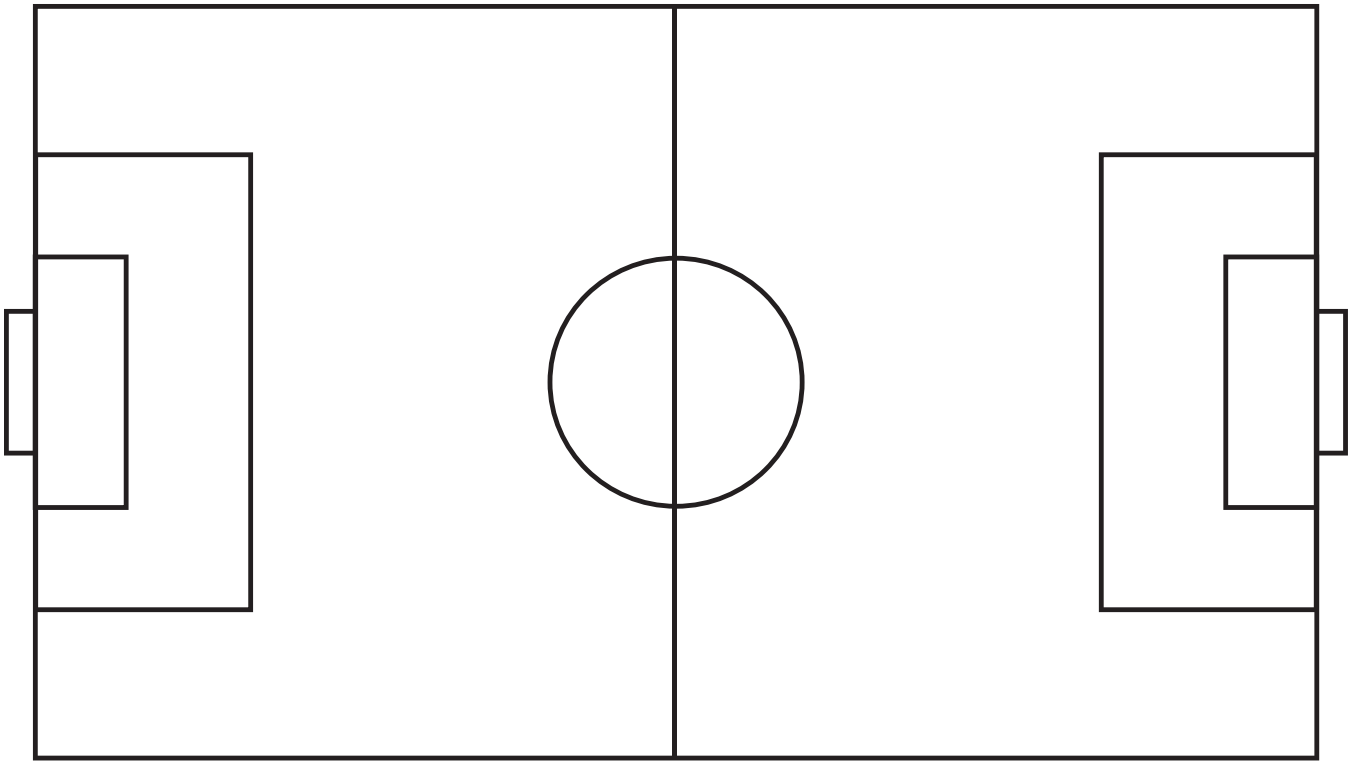

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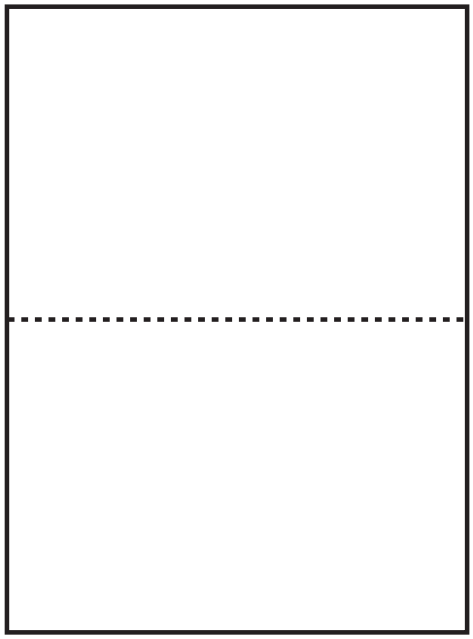

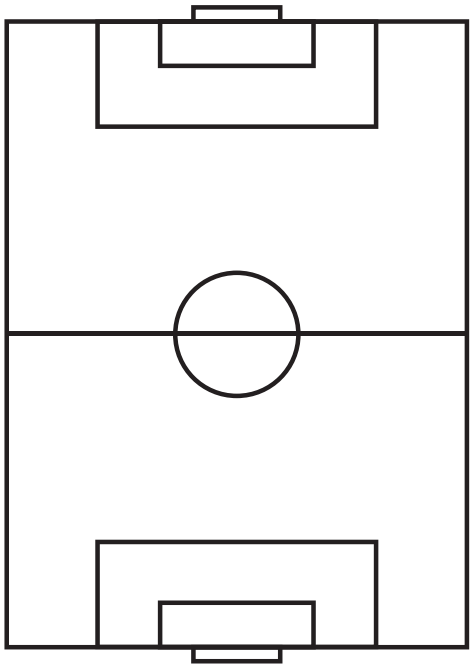

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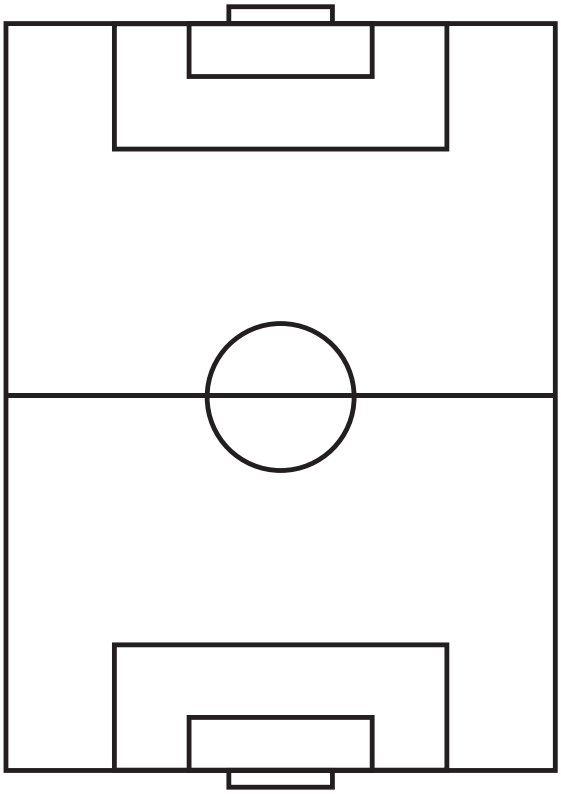

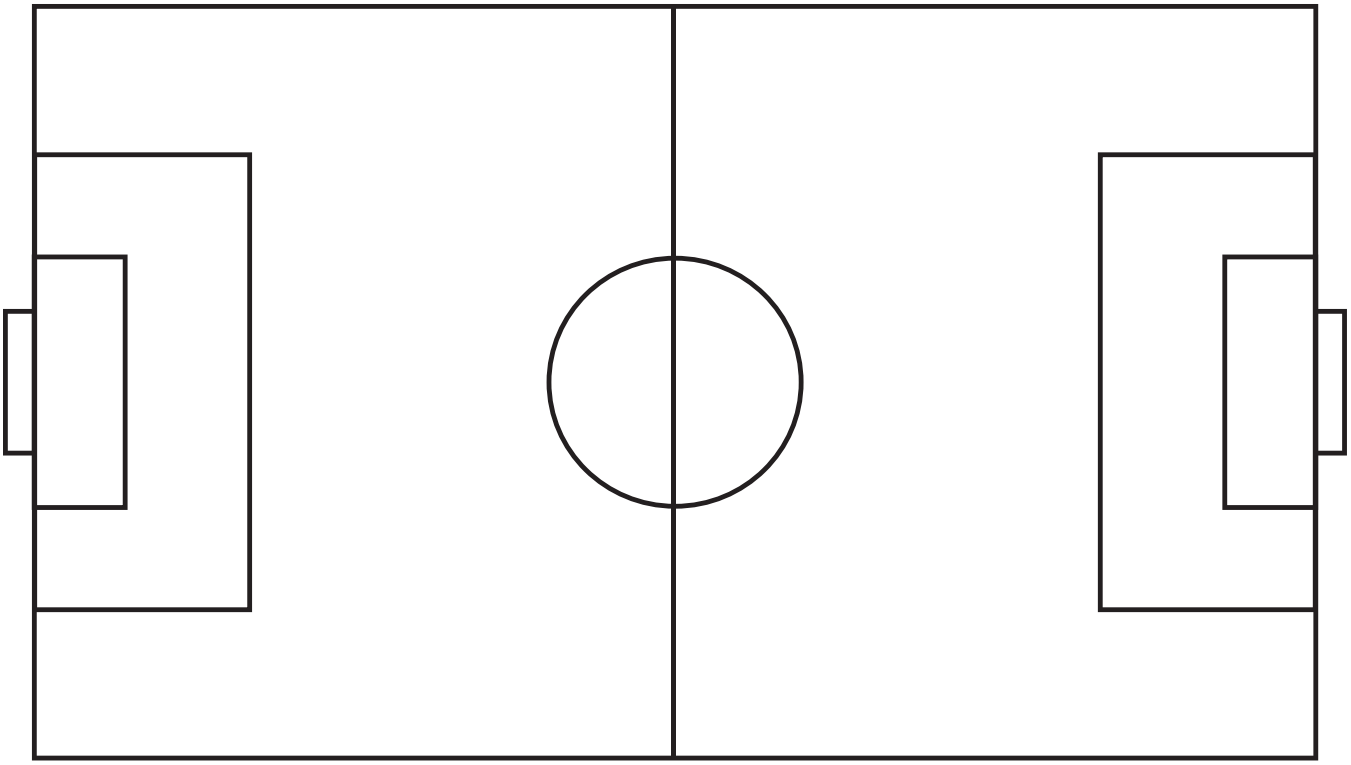

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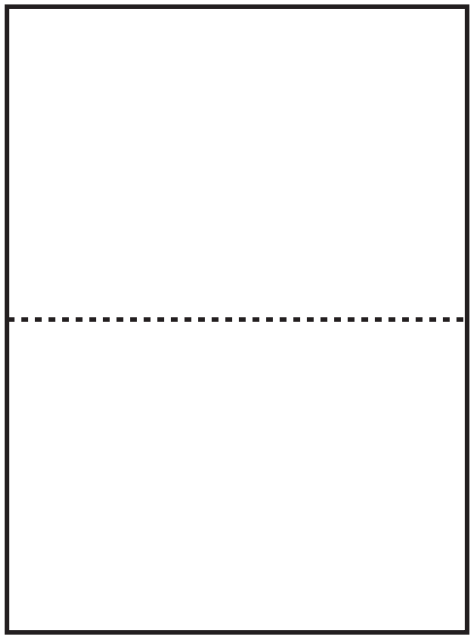

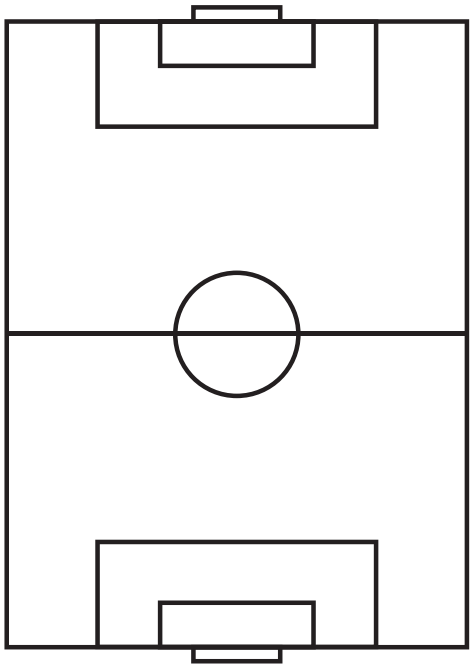

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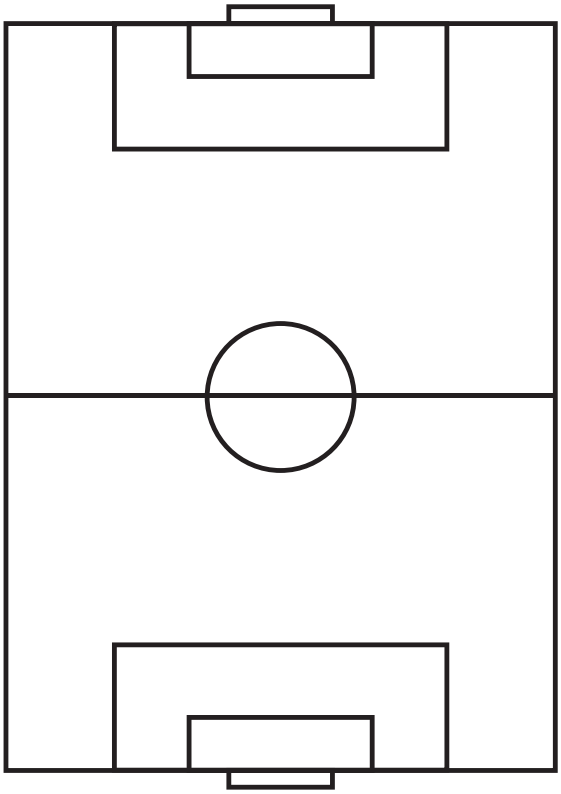

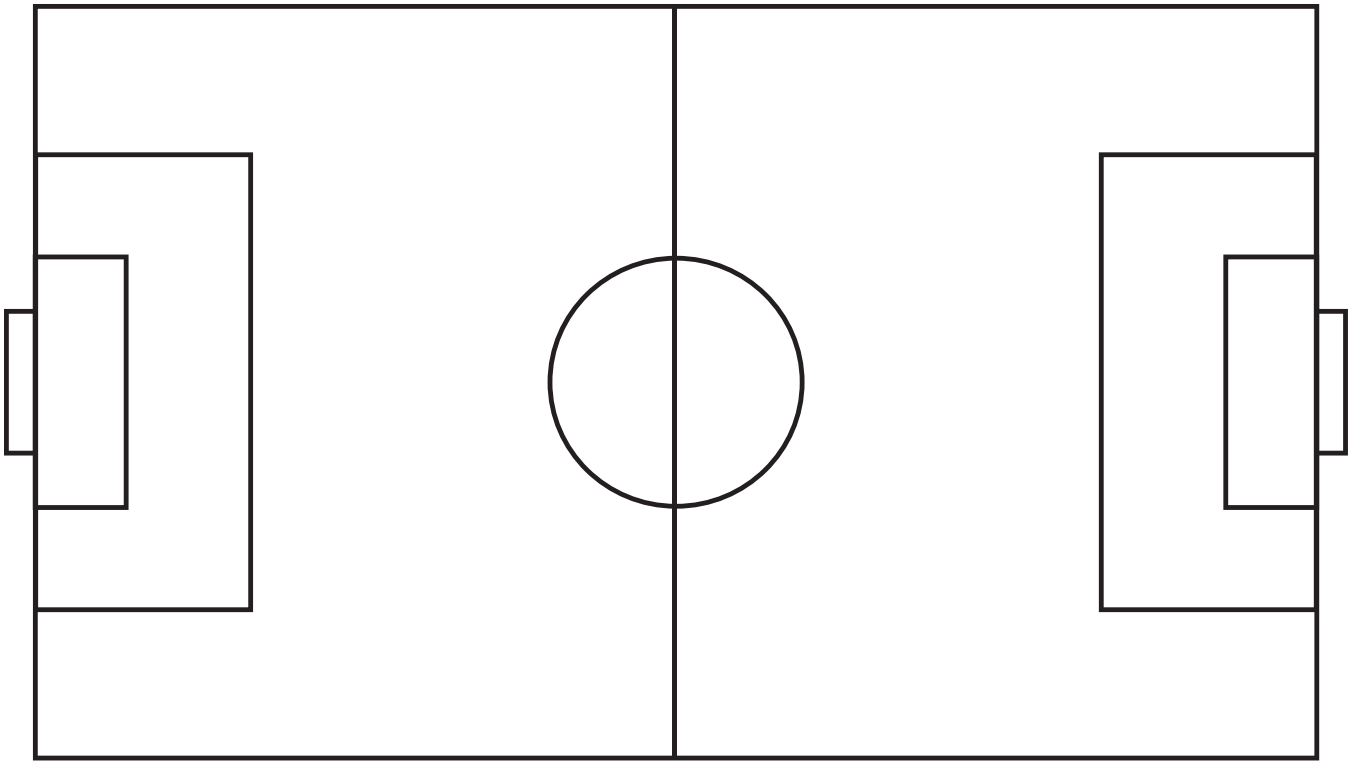

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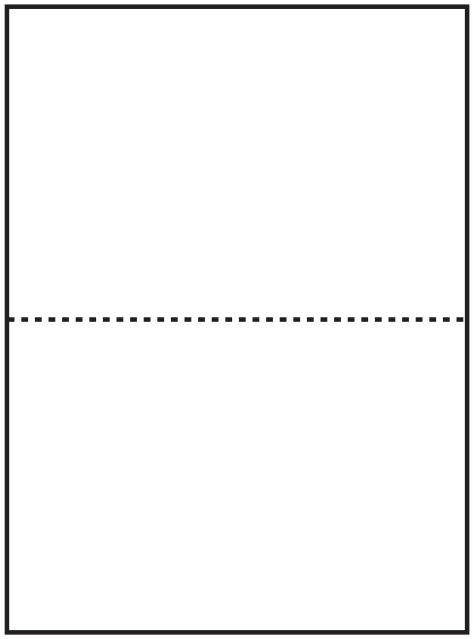

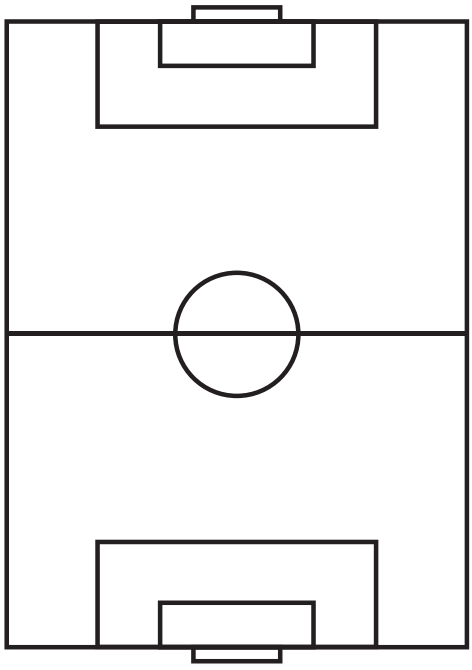

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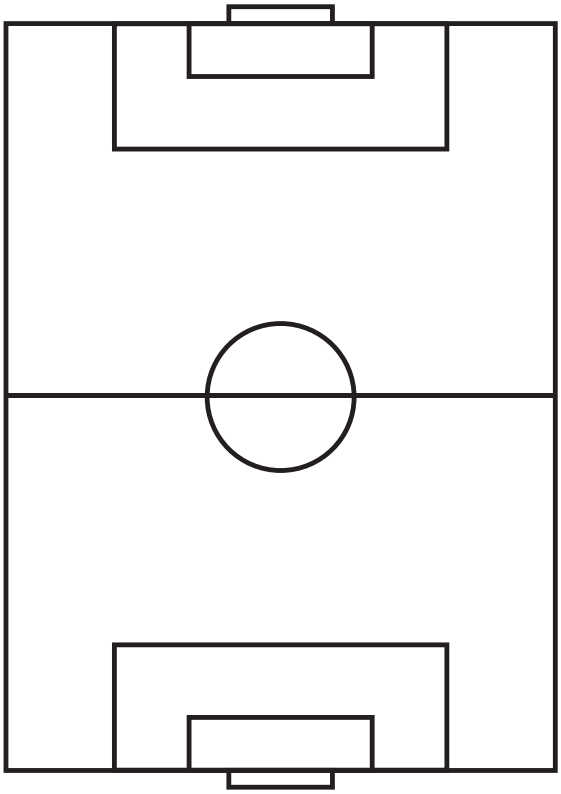

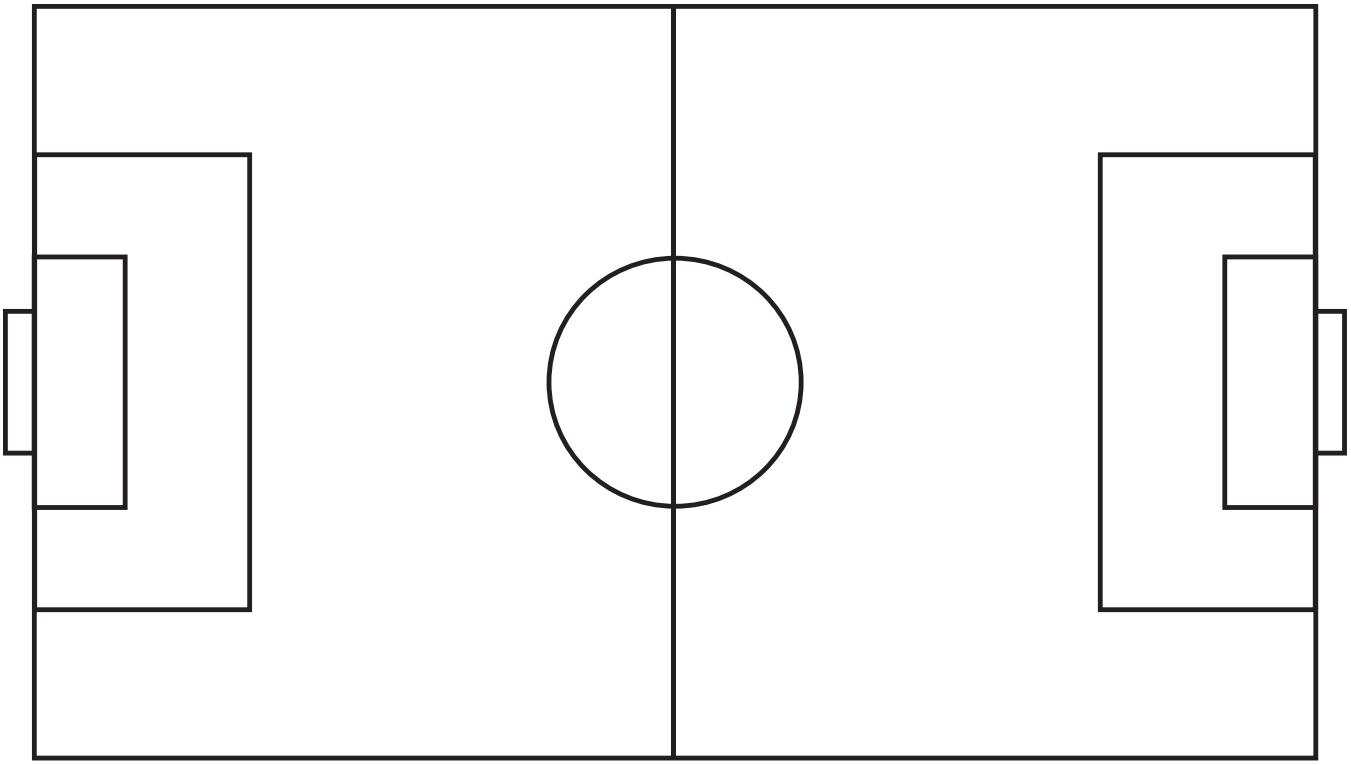

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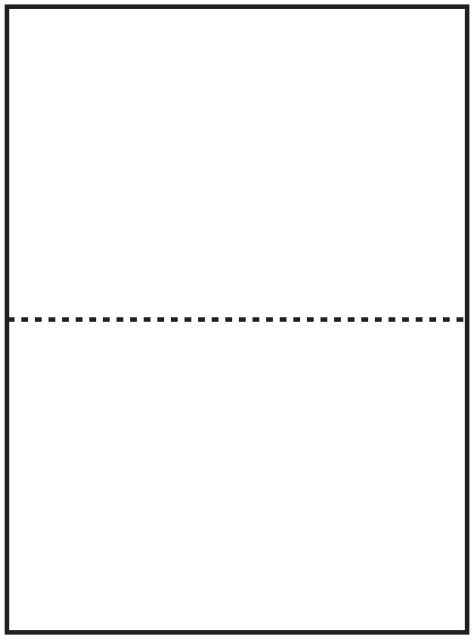

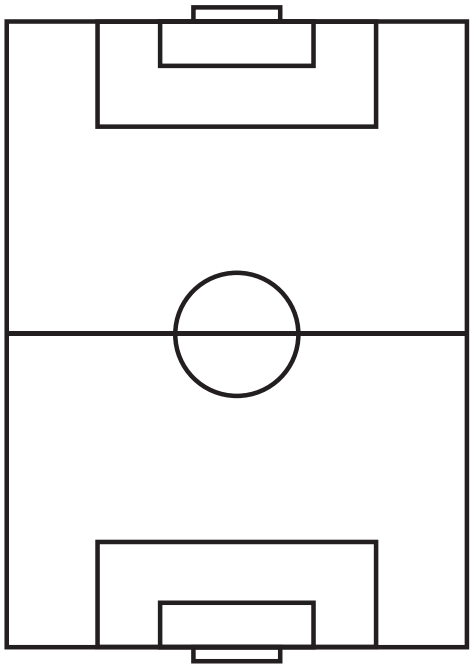

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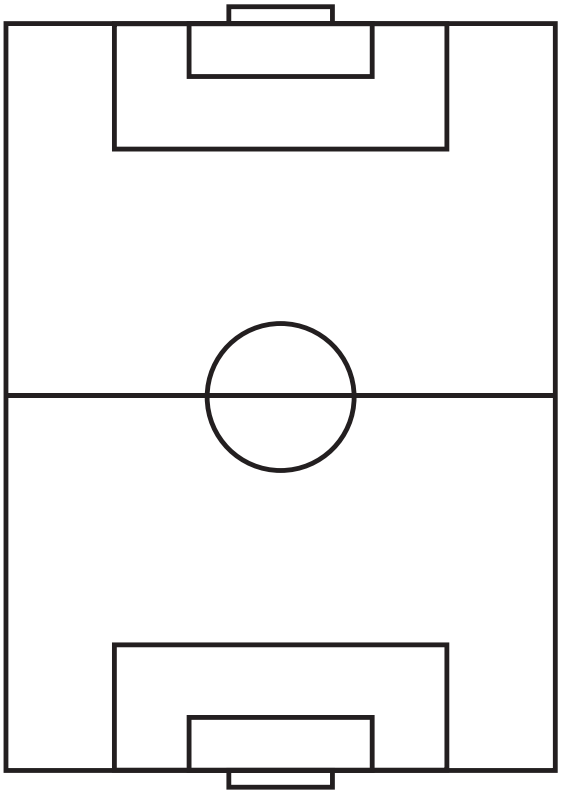

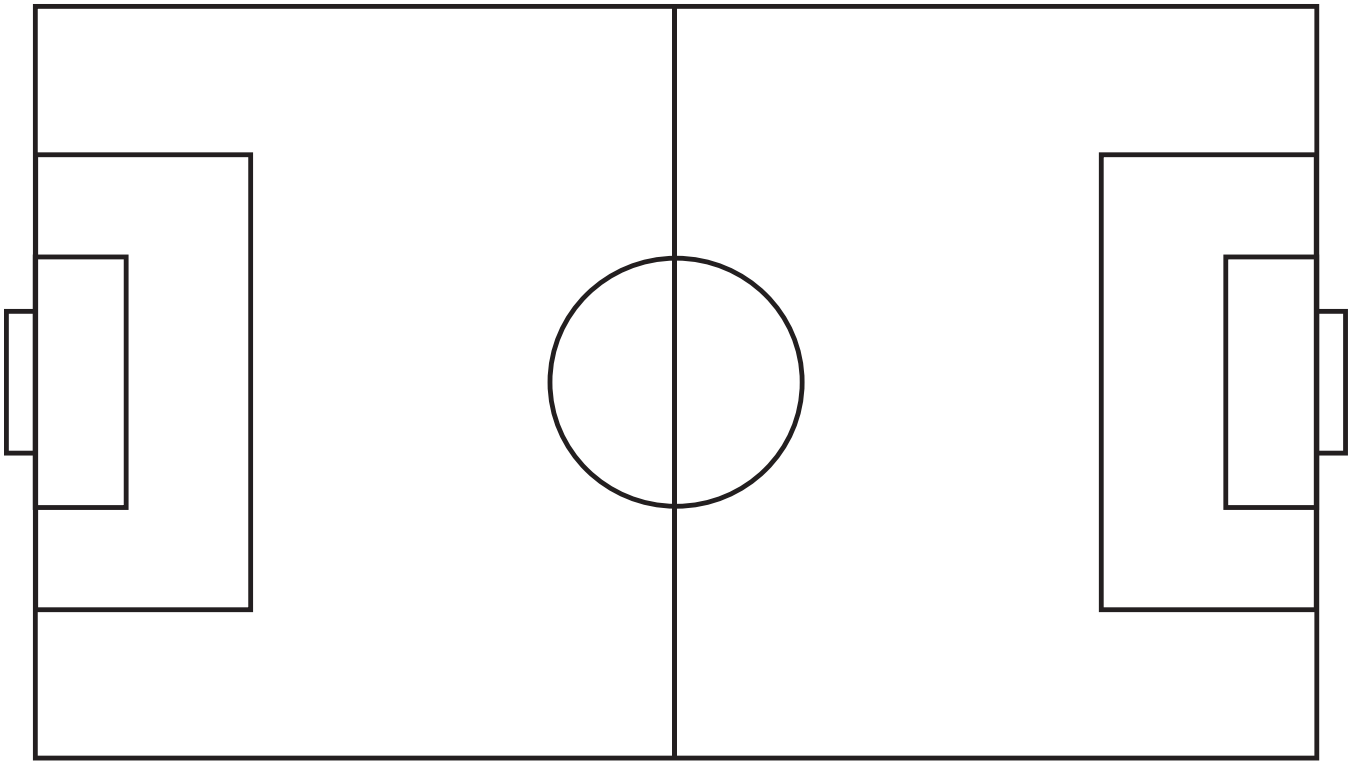

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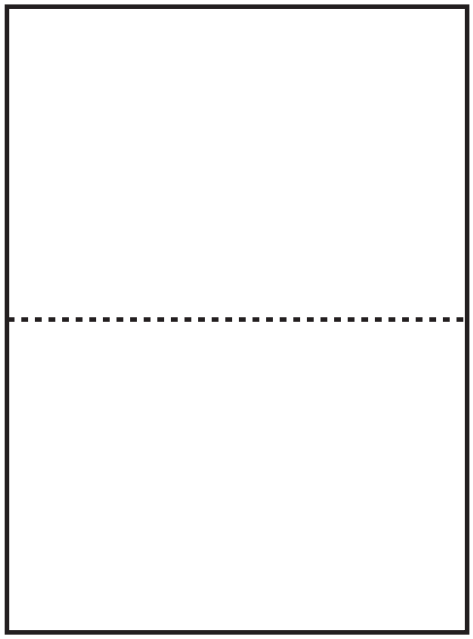

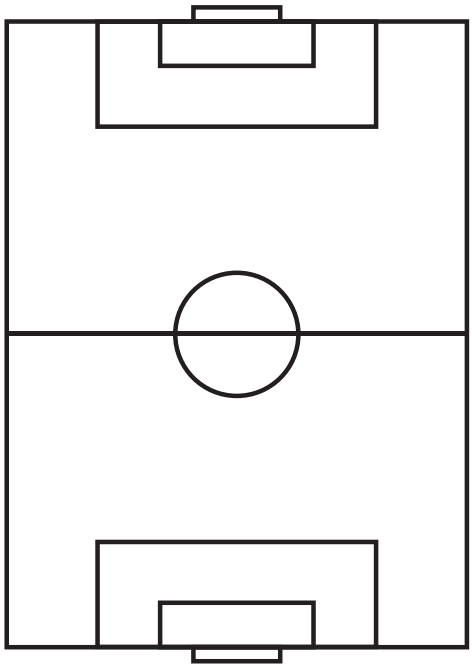

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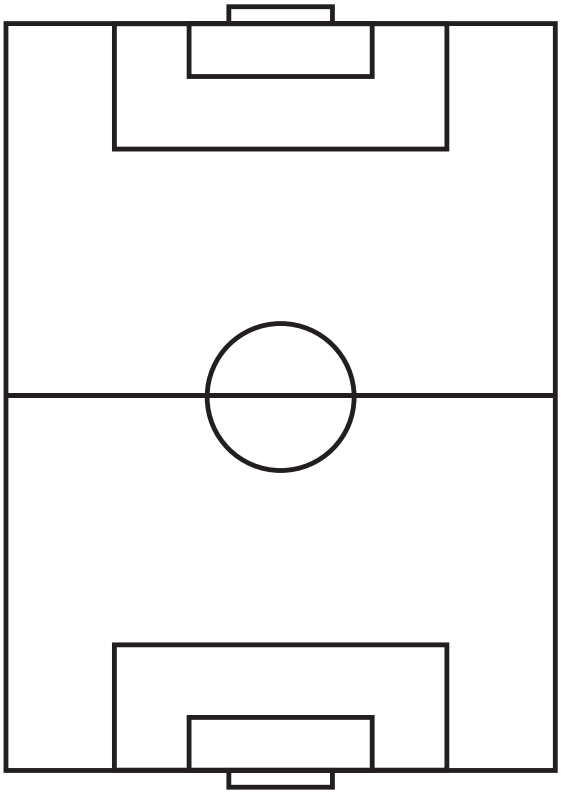

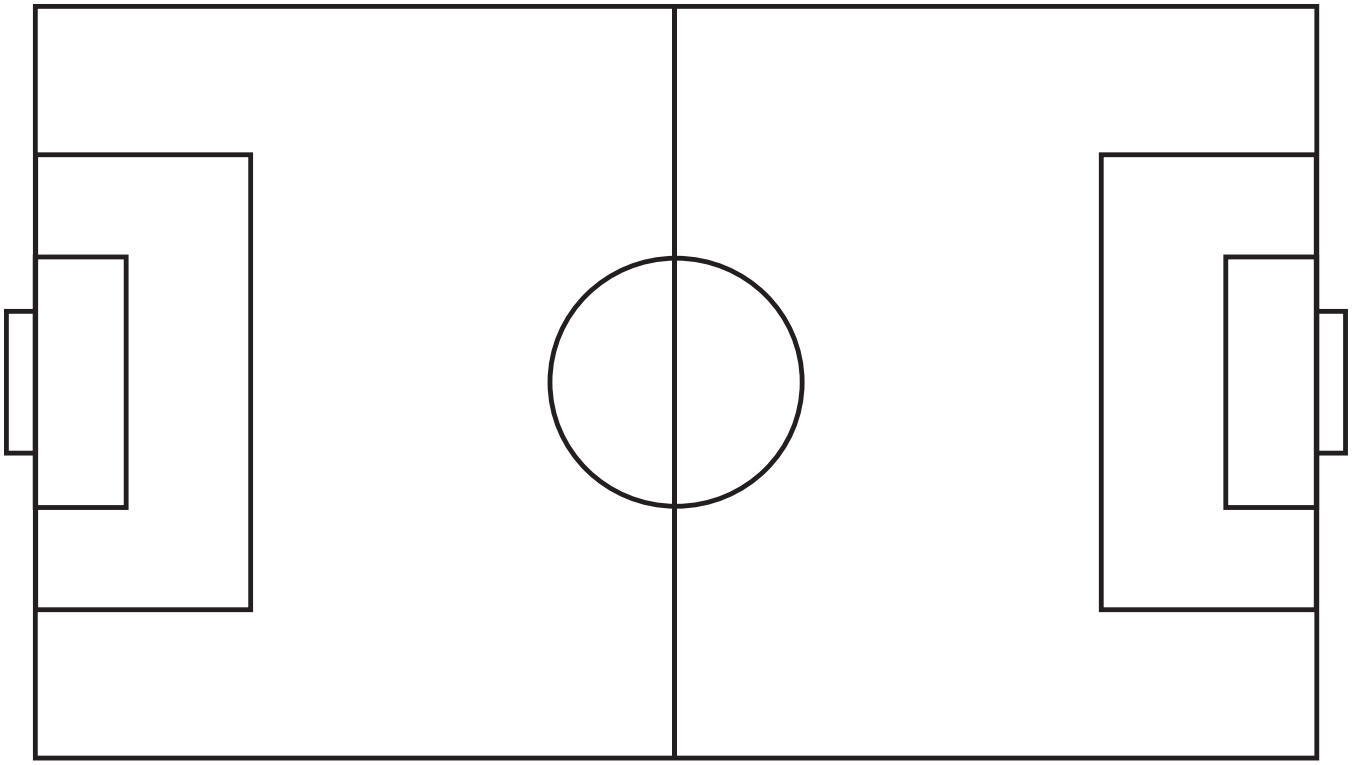

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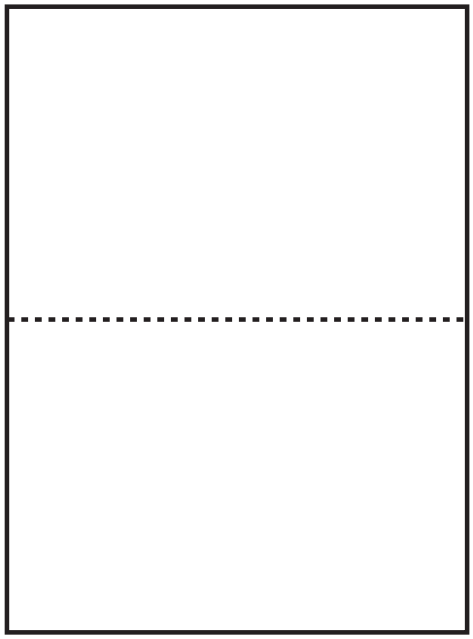

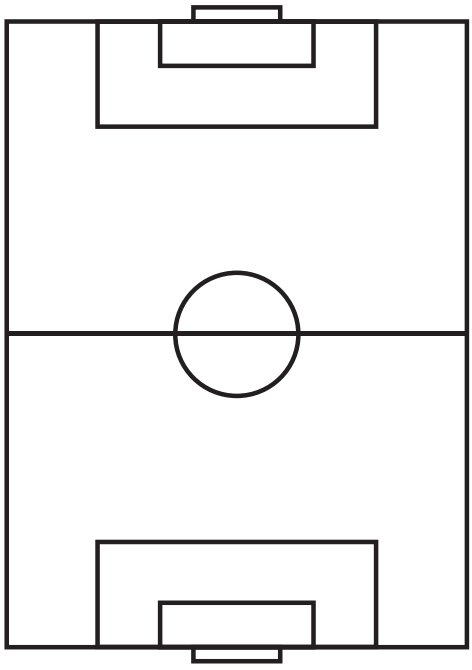

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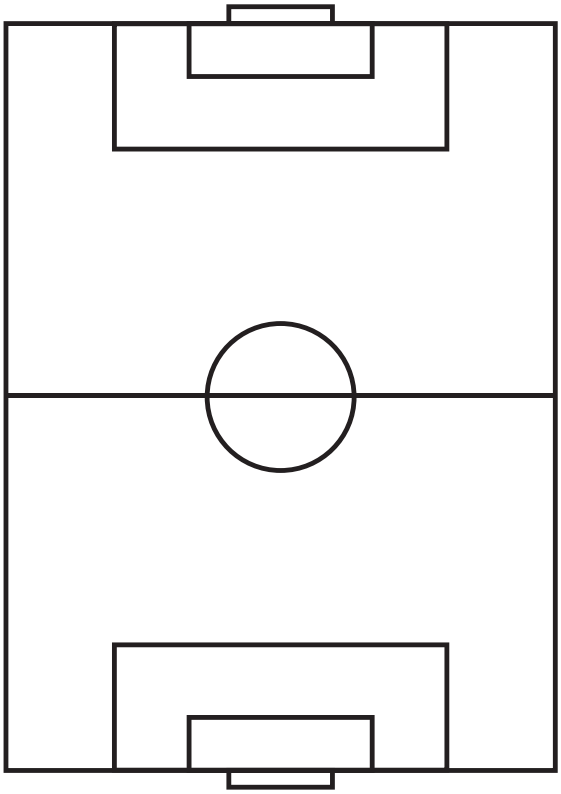

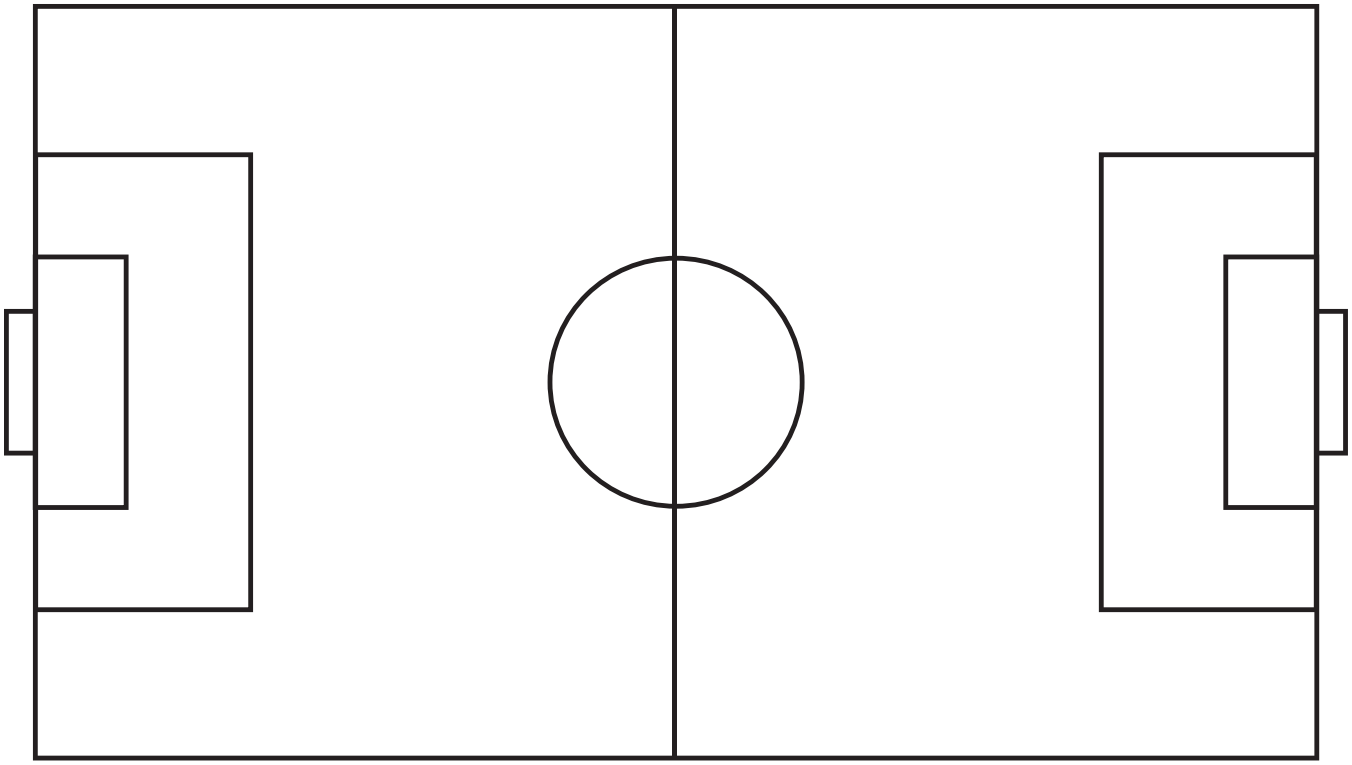

APPENDIX B

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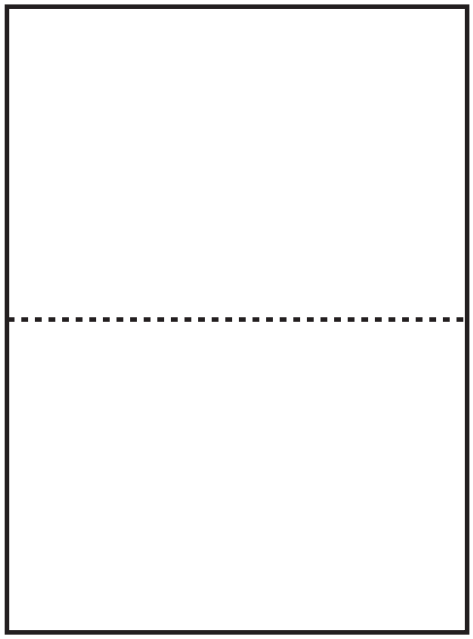

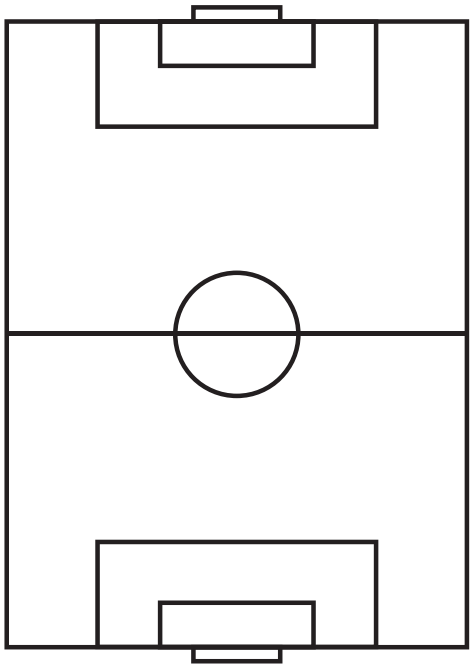

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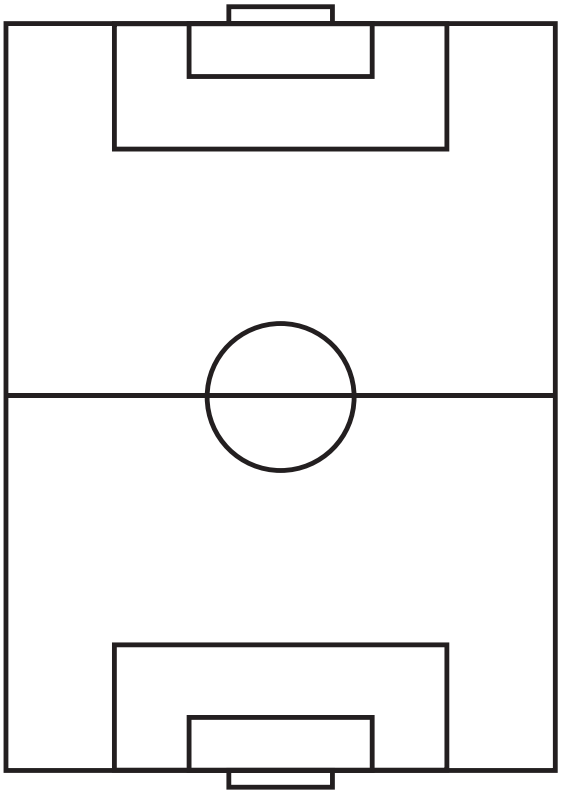

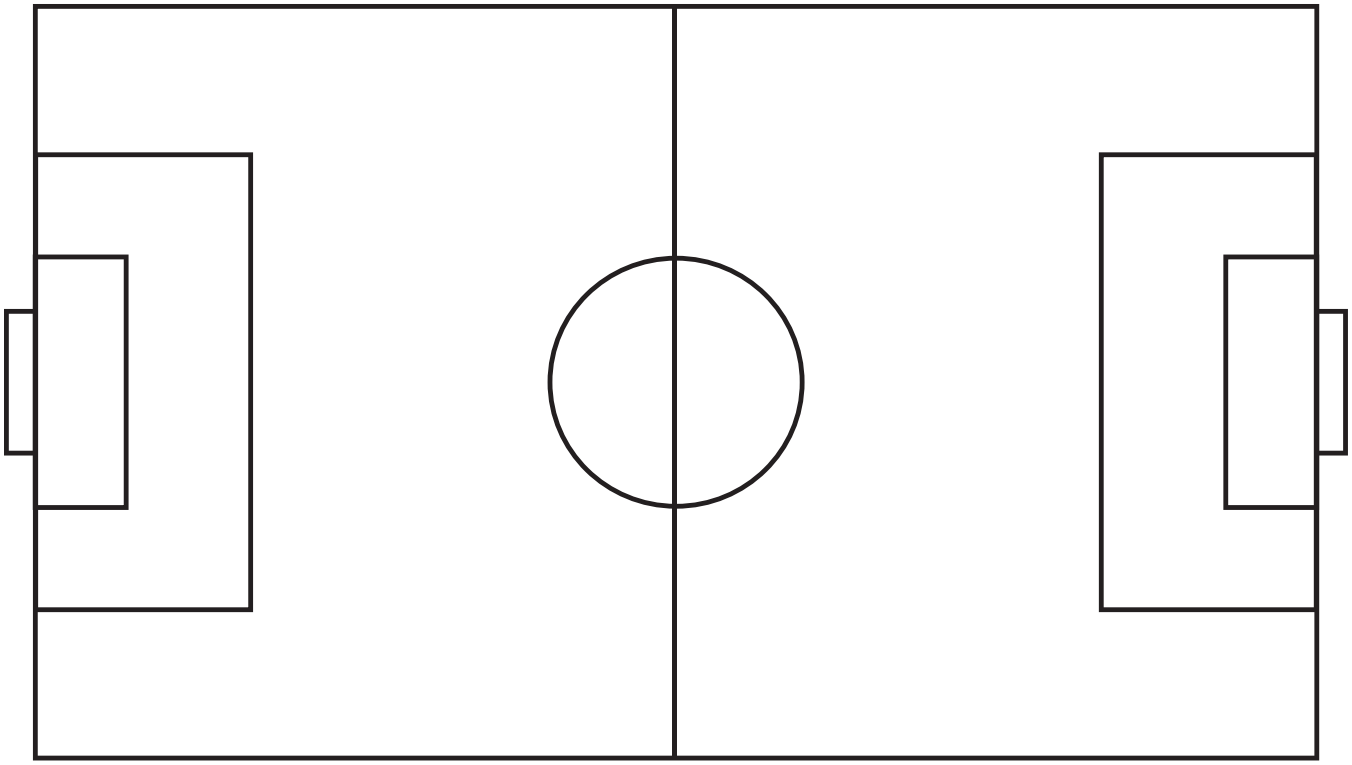

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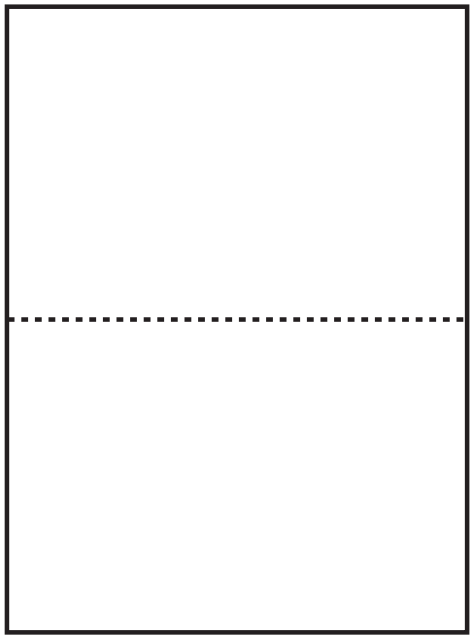

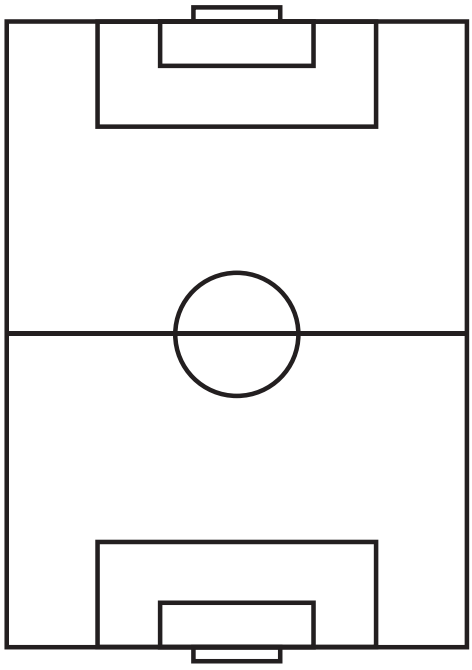

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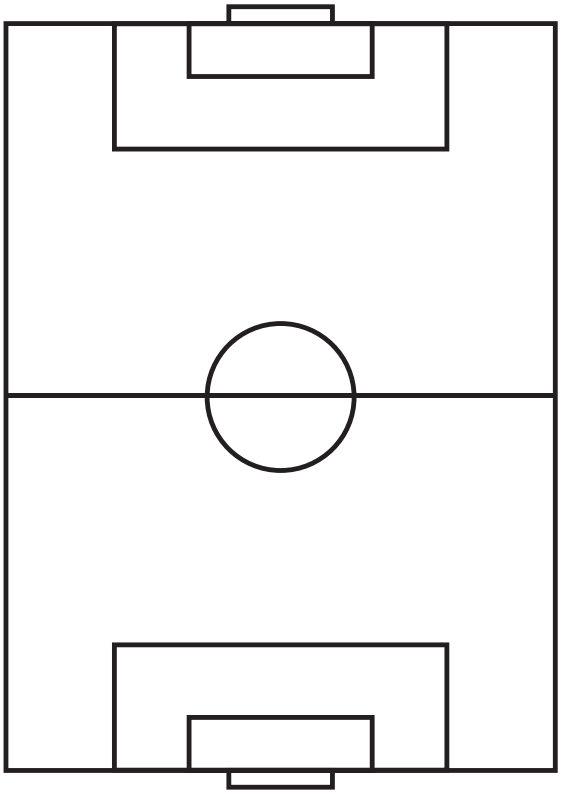

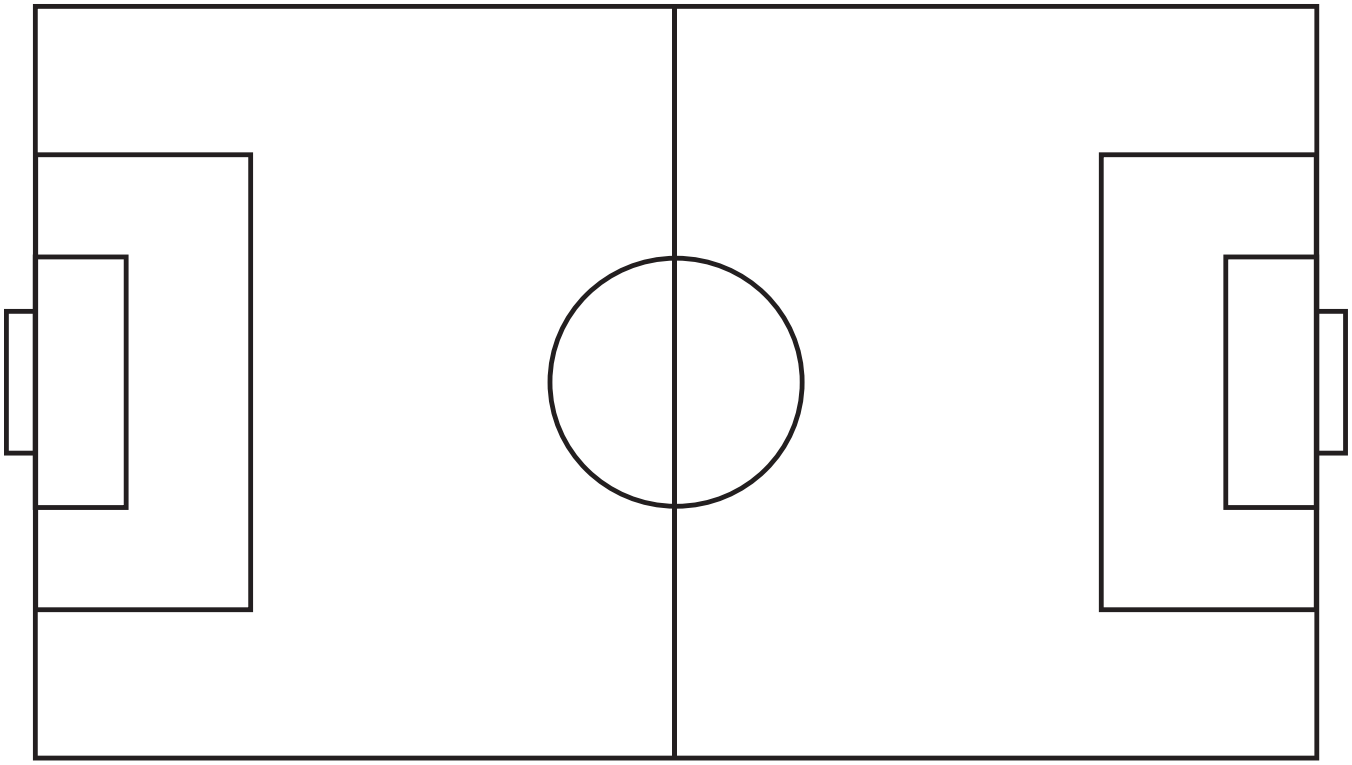

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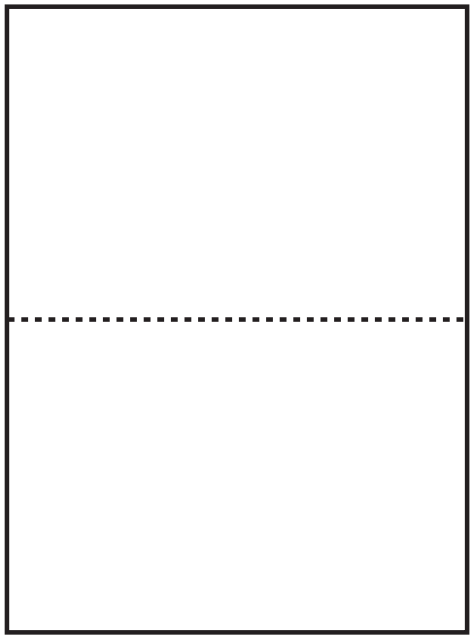

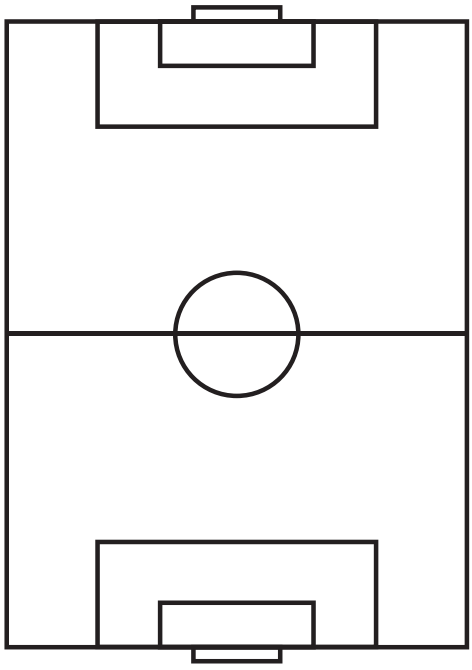

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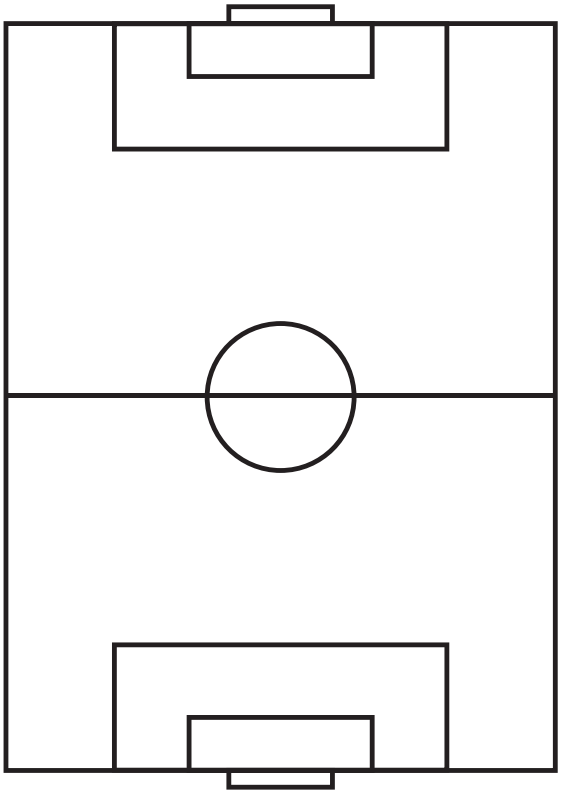

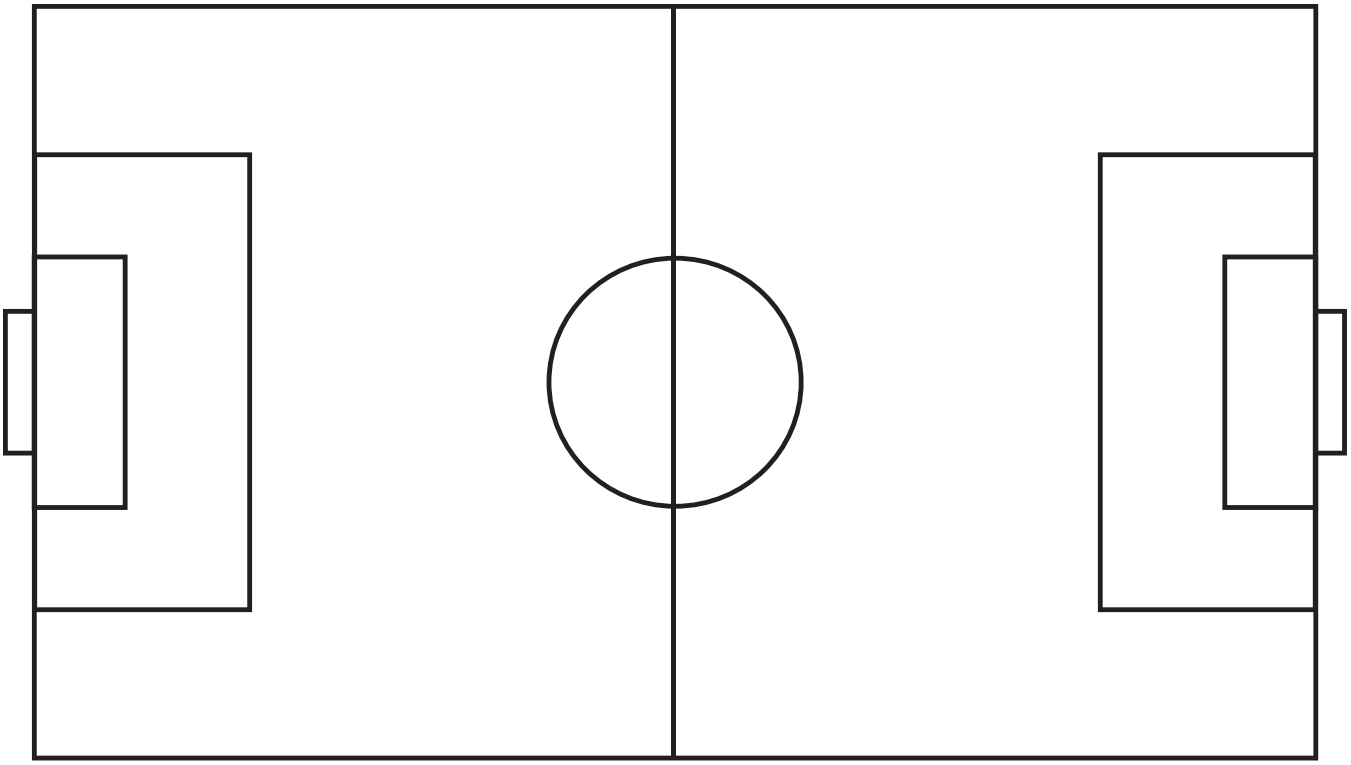

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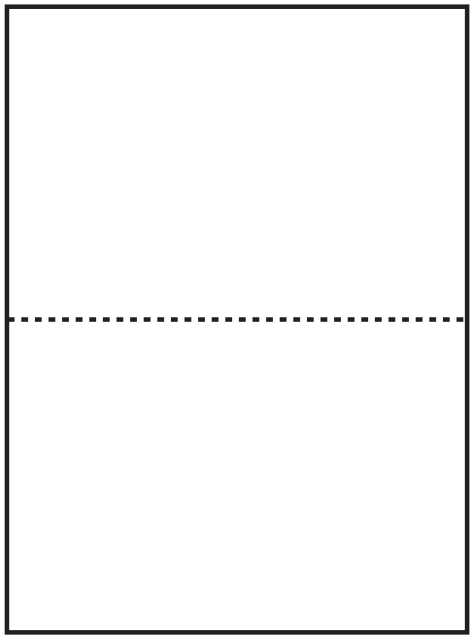

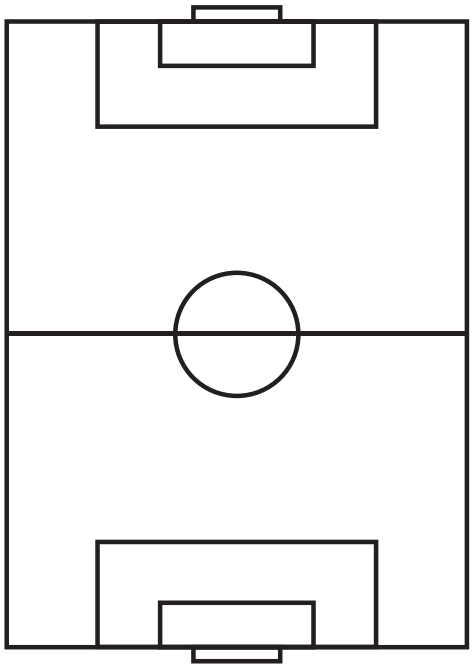

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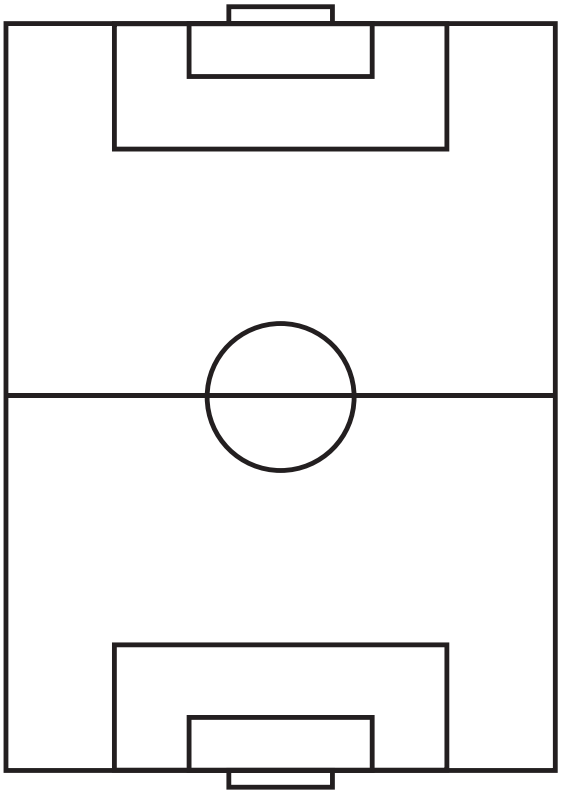

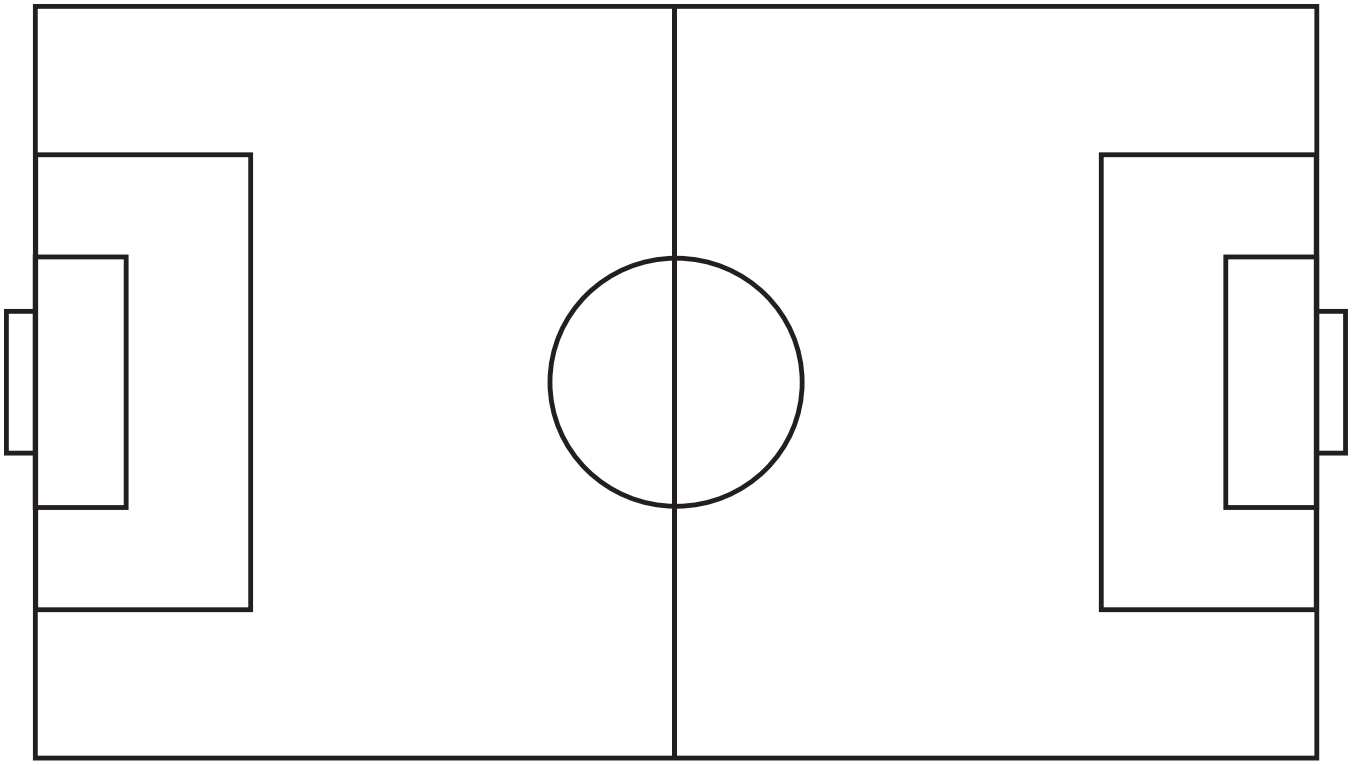

2006 Youth Soccer Heat & Hydration Guidelines

OVERVIEW

The popularity of soccer among American youth is at an all time high. Nearly 14 million young athletes (13,832,000[1]) under the age of 18 in the United States are playing soccer from the recreational through the elite levels.

The rapid growth of youth soccer participation in recent years, coupled with an increased need for qualified and certified coaches, has made ensuring the safety of youth soccer players more important than ever before. Moreover, new youth soccer research from the University of Connecticut and serious cases of heat illness in other sports over the past few years has prompted the U.S. Soccer Federation to issue an updated version of its "Youth Soccer Heat Stress Guidelines." The aim is to help parents, young athletes and coaches understand one of the most common and most preventable sports injuries: heat related illnesses, including dehydration, heat cramps, heat exhaustion and heat stroke. The following information and youth heat stress guidelines provide suggestions for preventing the potentially dangerous and sometimes deadly effects of playing in hot or humid conditions.

PHYSIOLOGICAL FACTORS THAT PUT YOUNG ATHLETES AT RISK

Heat induced illness is one of the most preventable sports injuries. Parents, young athletes and coaches need to understand the factors that put children and adolescents at risk for heat related illness and take steps to prevent it.

Children face unique stresses when they exercise in the heat. Like adults, young players may have trouble adapting to the demands of soccer practice and game situations played in high temperatures. Problems can be made worse when the young player is dehydrated.

Here are physiological/psychological reasons placing children at risk:

1) Children absorb more heat from a hot environment because they have a greater surface area to body mass ratio than adults. The smaller the child, the faster they absorb heat.[9]
2) Children and adolescents may have a reduced ability to lose heat through sweating.[2]
3) During prolonged exercise, children and adolescents frequently do not have the physiological drive to drink enough fluids to replenish sweat losses.[3,4]

4) Youth athletes may be more easily distracted when they should be resting and rehydrating.
5) Some youth athletes may be under intense pressure to make a competitive squad and may not want to report feelings of heat distress or take the appropriate amount of time to rehydrate.

FACTORS THAT PUT YOUNG SOCCER PLAYERS AT RISK

Several soccer specific factors place young players at risk for heat illness, however, these risks can be reduced with the close attention of medical staff (i.e. athletic trainers), parents, young athletes and coaches. These soccer specific factors are:

1) Limited stoppage time during matches.
2) Young soccer players are not encouraged to use the limited stoppage time they have for fluid consumption.
3) Games are held outdoors, often in high temperatures and humidity, on large fields that offer little or no shade. Heat radiated by the sun is a major component of heat stress. This is complicated by limited access to shaded areas for players to use between halves or between games.
4) Young players fail to drink enough fluids at tournaments and summer camps where numerous games and practices take place each day.
5) Games and practice sessions when players are confronted with extreme hot and humid conditions.

Additional Factors to Consider

- Communication between playing fields and medical tents at tournaments is sometimes inadequate.
- Many teams fail to recognize the importance of using light colored, loose fitting uniforms[5] or products made of modern moisture management fabrics.
- Referees could be unaware of the importance of fluid breaks or that they have the authority to briefly suspend play for a fluid break.
- Mental alertness and skill performance declines with dehydration[6] and could be a factor in injuries occurring late in matches and training sessions.

HEAT ILLNESS PREVENTION TECHNIQUES

Acclimatization to the heat is an important factor in preventing heat illness. The rate of acclimation for children is slower than that of adults.[7] A child needs as many as 8 to 10 days (45 60 minutes/day) in the new climate to acclimate sufficiently. Such exposures can be taken at a rate of one per day or one every other day. A majority of the benefits of acclimatization occur in the first 4-6 days and should be considered an absolute minimum amount of time for children to get used to the heat before beginning intense practice and game situations. During the acclimation process, it's important to practice the methods prescribed and to drink adequate amounts of fluid to build the body's fluid volumes. Lack of acclimatization can be a problem for a team flying to a new, more environmentally stressful location.

When a child becomes acclimated, their sweat rate and total sweat losses increase. When they exercise, they begin to sweat sooner and produce more sweat than before becoming acclimated. Evaporation of sweat is how the body loses heat and this change in sweating allows the child to lose more heat into the environment through evaporation. When a child becomes acclimated and their sweat rate increases, it's important that the child drink sufficient fluids to replace the increased sweat losses and stay hydrated. Medical staff, parents, players and coaches must understand that thirst is not a good indicator of a child's fluid needs,[8] so children need to drink on a schedule (see FLUID GUIDELINES below).

Children should choose clothing that is light colored and lightweight that facilitates evaporation of sweat. Parents and coaches should encourage breaks in a shaded area whenever possible, especially during tournaments, multi game, and multi practice days. It's important to be aware of high temperatures and humidity and, if possible, move practice and game times to cooler portions in the day, such as morning and dusk. Additionally, competitive rules need to be relaxed during hot weather playing conditions, such as allowing a 5 minute break in the middle of each half, allowing water bags to be carried by players during play, or shortening each half and adding that time to halftime for a longer break. Practices must be modified based on conditions. Use frequent rest breaks to lower core temperature and provide ample time to rehydrate.

FLUID GUIDELINES

The U.S. Soccer Federation provides these guidelines to help parents, players and coaches prevent dehydration and heat illness in young athletes who are active in the heat:

1) Encourage each player to weigh before and after activity to determine how much fluid was lost during activity.[9] If a player is lighter after activity then encourage a little more fluid consumption during the next practice/game. If the player is heavier after activity then encourage a little less fluid during the next practice/game. Players should try to limit fluid losses to 1-2% of body weight or less.

2) According to the American Academy of Pediatrics:[10]
   - Before prolonged physical activity, the child should be well hydrated.
   - During the activity, periodic drinking should be enforced even if the child does not feel thirsty. Each 15 20 minutes the child or adolescent should consume:
     - 5 ounces of fluid for a player weighing 90 lbs or less
     - 9 ounces of fluid for a player weighing more than 90 lbs.

The medical research further suggests:
   - To ensure that the child is not dehydrated before the start of the practice session or game, the child should drink 12 16 ounces of fluid approximately 30 minutes before getting to the field.
   - Once the activity is over, players should drink water or a sports drink every 15 to 20 minutes for the first hour after activity. The rate of fluid ingestion is generally 16 to 20 oz of fluids for each pound of weight lost. Volume overload can make it difficult for some athletes to fully rehydrate between multiple sessions within a single day. The goal is to begin training each day at the same weight.
   - Recent research[11] shows that adolescent males typically lose 33 to 50 oz per hour when performing intense soccer practices/games in the heat, while younger males and females will lose from 20 to 30 oz per hour.

3) Teach the youth soccer player to monitor their own hydration status with the following tip: If their urine (during flow, not once the urine is diluted in the bowl) is a pale yellow like lemonade then they are likely pretty well hydrated. If their urine is dark yellow like apple juice, then they are likely dehydrated. This is an easy and accurate way to assess hydration status and it gets the kids involved on a personal level.

4) Kids need to drink enough of the right fluids to minimize fluid losses during activity.
   - Flavored beverages that contain sodium (sports drinks) are preferable because the child may drink more to stay better hydrated.

- Research shows that lightly sweetened and flavored non carbonated beverages, like sports drinks, are preferred during exercise and are consumed in greater volumes than water,[12] diluted fruit juice[13] or carbonated beverages.[14]
- Research shows that fluids containing sodium chloride (sports drinks) increase voluntary drinking by 90%, compared to drinking plain water3.

5) In addition to replacing fluid, children also need to replace the electrolytes, such as sodium, that are lost through sweat. Electrolyte replacement is important to stimulate an adequate thirst mechanism,[15] help the body hold on to fluid,[16] help prevent muscle cramps[17] and to maintain sodium levels in the blood.[18]

6) Immediately before and during activity, children should avoid fruit juices, carbonated beverages, caffeinated beverages and energy drinks.
   - Fruit juices have a high sugar content that can slow fluid absorption, cause an upset stomach,[19] and may also lack sodium.
   - Carbonated beverages, such as soft drinks, can reduce voluntary drinking due to stomach fullness, throat burn when gulping[20] and lack sodium.
   - Energy drinks should be avoided because many contain caffeine and may have high carbohydrate concentrations which slows the emptying of fluids from the stomach.[21]

7) Be sure that each child uses their own beverage container that they can keep cool during the practice. An individual container allows monitoring fluid consumption more accurately, can be filled with beverage of personal preference, will help avoid the spread of germs and viruses, and the cool fluid will be replenished at a better rate than a container that sits out in the sun.

Additionally, dehydration also hinders exercise performance. The dehydrated player will have to work harder to maintain the same level of intensity than their hydrated teammate.

SIGNS OF DEHYDRATION AND HEAT ILLNESS[22, 23]

Unchecked dehydration increases the risk of heat illness. Heat illnesses are three separate degrees of severity: muscular heat cramps, heat exhaustion, and heat stroke, the most serious and deadly heat illness. The symptoms outlined below are not always additive and do not necessarily occur in an orderly, predictable progression. A young athlete could experience heat stroke in absence of other indicators.

Dehydration
Dehydration during exercise is a common problem. Some young athletes can begin to suffer the consequences of dehydration if they become dehydrated by just 2 percent of their body weight during exercise in the heat. That's why it's important to recognize the warning signs:

- Noticeable Thirst
- Irritability
- Decreased performance
- Fatigue
- Weakness
- Nausea
- Headache
- Muscle cramping
- Dark yellow urine (or no desire to urinate)
- Lightheaded feeling or dizziness
- Difficulty paying attention

Treating the symptoms of dehydration is crucial in preventing more serious conditions such as heat exhaustion.

1) Rest the player in a cool place
2) Provide a sports drink containing electrolytes
3) Prevent dehydration in the future by insuring the player consumes fluids before, during and after exercise (educate everyone and allow ample time to rehydrate)

Heat Cramping
Muscle cramping can be associated with exposure to excessive heat. Painful involuntary whole body muscle cramps are often associated with loss of fluids and sodium. Some of the signs and symptoms of muscle cramps include:

- Muscle spasms
- "Knotting" of muscles and muscle pain
- Excessive sweat loss
- Excessive saltiness of sweat over the skin or visible dried salt on the skin
- Excessive dehydration

To treat a young athlete suffering from muscle cramps:

- Have them drink fluids with electrolytes, like a sports drink
- Gently stretch and massage cramped muscles
- Have them rest in a cool, shaded area
- Apply ice to the cramped area
- Consider additional sodium in palatable food source, like pretzels, etc.

Heat Exhaustion
As a child becomes dehydrated, the likelihood of heat exhaustion may increase if left untreated. Eventually, fatigue and exhaustion occur because the cardiovascular system can no longer support both exercise and control the core body temperature. Common symptoms of heat exhaustion are:

- Dizziness & fatigue
- Feeling chilly
- Rapid pulse

Treatment of heat exhaustion is similar to that of dehydration and should take place immediately. This treatment includes:

- Rest the child in a cool, shaded and place ice cold towels on them
- Drink a sports drink that contains electrolytes
- Have the child lie down with legs elevated to promote circulation

Athlete should begin to feel better relatively soon, if not, assume heat stroke and treat as an emergency

Heat Stroke
Heat stroke is a medical emergency. It can result in death when not recognized promptly and treated properly. Exertional heat stroke occurs when the thermoregulatory system is overwhelmed, fails to act in an appropriate manner, or both. Damage to critical organs can occur if the organs remain overheated for an extended period of time, hence the need for rapid cooling. If rapid cooling does not occur, the cellular damage to the organs could be extreme and have fatal consequences. Symptoms and results of heat stroke include:

- Very high core body temperature (measured rectally because other sites are not valid immediately following intense exercise in the heat.[24])
- Altered CNS function (i.e. confusion, unconsciousness, altered mental status, feeling out of sorts, extreme lethargy)

• An otherwise healthy athlete collapses during intense exercise in the heat

If an accurate temperature can not be obtained, rely on CNS function. Relying on an inaccurate temperature device or site could delay treatment. Remember, athletes get better relatively quickly with heat exhaustion, but they get worse with heat stroke. It is important to remember that heat stroke must be treated immediately by doing the following:

• SEEK MEDICAL ATTENTION IMMEDIATELY. Heat stroke is a medical emergency. Always transport a suspected exertional heat stroke to the hospital! It is probably safe to say that you are not qualified to treat exertional heat stroke.

• Immediately begin to cool the victim down by whatever means possible
    1) An ice bath is preferable due to the superior cooling rates (holding head out of bath)
    2) Ice packs over as much as body as possible
    3) A cool shower
    4) Cool, wet towels
    5) Water spray

APPENDIX B

CONSULTANT & LEAD RESEARCHER

Douglas J. Casa, PhD, ATC, FACSM, University of Connecticut

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NUTRITION TIPS AND EATING SURVIVAL GUIDELINES FOR SOCCER

Leslie Bonci, M.P.H., R.D. - Director - Sports Medicine Nutrition Program
University of Pittsburgh Medical Center Health System
(412) 432-3674 or email: boncilj@msx.upmc.edu

GOALS OF FUELING FOR SPORT

Foods that taste good

Foods that are affordable

Foods that are easily available

Foods that provide optimal fuel for performance and recovery

Consuming foods that enable the body to fulfill nutrient requirements

SPECIFIC NUTRIENT REQUIREMENTS:

CALORIES: MINIMUM: Weight (pounds) x 21-27 = number of calories per day

PROTEIN: Weight (pounds) x 0.7 = grams of protein per day

FAT: Weight x 0.45 = grams of fat per day

CARBOHYDRATE: MINIMUM: Weight (pounds) x 4= grams of carbohydrate per day

IN SEASON: Weight (pounds) x 5= grams of carbohydrate per day to OPTIMALLY achieve maximal glycogen storage to enhance performance and delay fatigue

MEAL FREQUENCY

Small, more frequent meals will give you consistent energy and digest more quickly to provide available fuel for your body

5 or more eating episodes per day EVERY 3-4 hours

CARBOHYDRATE NEEDS

The optimal fuel for EXERCISE

Intense training depletes carbohydrate stores resulting in poor performance and increase fatigue

Need to consume carbohydrate with every meal

Needs increase with increased training:

3 grams/lb body weight for 1 hour training
4.5 grams/kg body weight for 2 hours training
5 grams /kg body weight for 3 hours training
6 grams /kg body weight for 4 + hours training

SOURCES:

Bread	Bagels	Muffins*	Pita	English muffins*	
Tortillas	Rice	Pasta	Cereals	Crackers*	Pretzels
Cookies*	Potatoes	Fruit	Candy*	Popcorn	Fruit Juices
Vegetables	Soda	Chips*	Cereal bars		Sports Drinks

*** May be Higher in fat**

DURING exercise: 30-60 grams of carbohydrate per hour

5-10 ounces of sports drink every 15-20 minutes OR 2 gels per hour

AT THE HALF:

A handful of gummi bears, or a Rice Krispie treat, or a packet of honey work well too

AFTER EXERCISE:

CARBOHYDRATES should be consumed within 15 minutes after workouts or meets

Athlete exercising hard for > 90 minutes should eat or drink 50-100 grams of carbohydrate

GOOD CHOICES:

25 oz sports drink
8 oz Gatorade Energy Drink
3 granola or cereal bars
1-1/2 cups sweetened cereal
16 oz fruit punch or Lemonade
1/2 cup jelly beans or gummy type candy

PROTEIN NEEDS

Body can't use more than 1 gram of protein per pound body weight!

Not immediately available as an energy source for exercise

Important for recovery AND to boost the immune system

SOURCES

Chicken	Turkey	Eggs	Cheese*	Milk*
Shellfish	Soy burgers	Dried beans	Nuts and nut butters*	

***Higher fat protein sources**

FAT REQUIREMENTS

Do need to consume enough, it is a good source of calories!

Too much can cause cramps

Not enough can cause you to fatigue more quickly

TRY to limit high fat foods before and during exercise

A MALE ATHLETE'S GUIDE TO PROPER FUELING

1) Composition of the diet for optimal performance
Carbohydrate: 60% Protein: 15% Fat: 25%
The following tables give lists of carbohydrate, protein and fat food choices.
Carbohydrate food choices contain 50 grams of carbohydrate
Protein food choices contain 20 grams of protein
Fat containing food choices have 10 grams of fat

To construct a diet for optimal performance, CIRCLE the choices you like from each list and try to have a food from each category every time you eat.

Weight	Calories	Carbohydrate selections	Protein selections	Fat selections
130	2990	9	5.5	8
135	3105	9	6	8.5
140	3220	9.5	6	9
145	3335	10	6	9
150	3450	10	6.5	9.5
155	3565	10.5	7	9.5
160	3680	11	7	10
165	3795	11	7	10.5
170	3910	12	7.5	10.5
175	4025	12	7.5	11
180	4140	12.5	8	11
185	4255	13	8	11
190	4370	13	8.5	11.5
195	4485	13.5	8.5	11.5
200	4600	14	9	12

CARBOHYDRATE	PROTEIN	FAT
A large bagel	A computer mouse size:	A tablespoon of peanut butter
1-1/2 cups pasta	Piece of chicken	1/4 cup of nuts
1 cup of rice	Piece of beef	2 pats of butter
A cup of Cheerios	Piece of fish	2 tsp of mayonnaise
A low-fat fruit muffin	A 3 oz can of tuna	2 tsp of oil
2 cups of oatmeal	3/4 cup of cottage cheese	2 strips of bacon
1 cup of applesauce	1 soy burger	2 Tablespoons cream cheese
A large baked potato	1-1/2 cups pinto beans	4 Tablespoons sour cream
1 cup of corn	3 slices of cheese	1 Tablespoon of regular salad dressing
5 fig bars	3 thin slices of lunch meat	

1-1/2 cups of grapes
1-1/2 English muffins
4 ,4-inch diameter pancakes
1 cup pudding
2 handfuls of pretzels
2 cups of juice
1-1/2 cups frozen yogurt
32 oz sports drink
2 packets flavored oatmeal
25 animal crackers
2 bananas
2 cups of grapes
10 large marshmallows
Licorice, 1 2 oz package
3/4 cup granola
2 cereal bars
20 jelly beans
16 oz lemonade/fruit punch
1-1/2 cups sweetened cereal
1/2 bag of microwave low-fat popcorn
1 Pop Tart
15 vanilla wafers
1/2 cup raisins

3 eggs
A mayonnaise jar lid sized:
Hamburger or Turkey burger
3/4 cup egg substitute
8 oz tofu

2 Tablespoons of Light salad dressing

HIGH FAT CARBOHYDRATE FOODS

Try to limit! Not as performance boosting!

Doughnuts
Ice cream
Most cookies
Chocolate
Chips
French fries

DOUBLE DUTY FOODS:
Carbohydrate + protein

Yogurt 8 oz container = 50 grams carbohydrate + 12 grams of protein

Sports bars: (Clif, PowerBar, Gatorbar)

Certain beverage supplements: Gatorade Nutrition Shake, Boost

Milk: 16 ounces chocolate milk = 50 grams carbohydrate, 16 grams protein

Cheese pizza (2 slices = 80 grams of carbohydrate, 16 grams of protein!)

FOODS TO LIMIT BEFORE AND DURING EXERCISE:

Chips	French Fries	Pizza	Burgers
Ice cream	Doughnuts	Chocolate	Nuts
Nut butters	Fried meats	Bologna, salami, pepperoni	

PRE WORKOUT MEALS

3 hours before	2-3 hours before	1-2 hours before*
Pasta	Bagels	Cereal bar
Stir-fry	Crackers	Pretzels
Sandwiches	Pretzels	Fruit drink
Fajitas	Smoothies	Toast
Eggs and toast	Cereal and milk	*Instant breakfast*
Chicken, potato and vegetables	Waffles/pancakes	Nutrition shake
	Pasta salad	

*** Liquid meal options for players with nervous stomachs or for those who don't like the feeling of food in the gut during exercise**

Shake or smoothie

Carnation Instant Breakfast: 1 packet — Milk: 8 oz.
Nonfat dry milk powder: 1/4 cup — Juice: 8 oz.

CARBS: 86-101 grams **PROTEIN:** 20 grams **FAT:** depends on milk used

OR

Dry pudding mix: 1/2 packet — Milk: 8 oz.
Non fat dry milk powder: 1/4 cup — Juice or fruit: 8 oz. or 1 piece

CARBS: 86-101 grams **PROTEIN:** 20 grams **FAT:** depends on milk used

OR

Non fat dry milk powder: 1/4 cup — Milk: 8 oz.
Yogurt: 8 oz. Juice: 4 oz. Fruit: 1 piece

CARBS: 103 grams **PROTEIN:** 24 grams **FAT:** depends on milk used

QUICK MEALS

Peanut butter and jelly sandwich with milk or a container of yogurt

Toasted cheese sandwich

Scrambled egg burritos

Fried egg sandwich on a bagel or toast

Smoothies

Cereal with yogurt, nuts and fruit

SNACKS:

Dry cereal, nuts and dried fruit

Bagels with cheese or peanut butter or cream cheese

Frozen yogurt

Oatmeal with fruit, non fat dry milk powder, sugar and walnuts or other nuts added

Cereal bars with milk or yogurt

A DAY OF EATING TO MEET NUTRITION GOALS

130 pound soccer player:
650 grams of carbohydrate per day:

BREAKFAST:
Large glass of juice - 12 ounces
A large bowl - 2 fist sized amounts of cereal with low-fat milk
TOTAL CARBS: 130 grams

MID-MORNING:
A cereal bar
TOTAL CARB: 27 grams

LUNCH:
1 - 12 ounce glasses of lemonade or fruit punch
A hoagie with turkey or ham, cheese, lettuce and tomato
Frozen yogurt - 2 scoop
TOTAL CARBS: 141 grams

MID-AFTERNOON
A bag of pretzels and 16 oz sports drink

TOTAL CARBS: 55 grams
DURING PRACTICE:
12 oz sports drink
A small handful of gummi bears
TOTAL CARBS: 55 grams

POST PRACTICE:
20 ounce bottle of orange juice
2 ounce bag of goldfish crackers
TOTAL CARBS: 75 grams

DINNER MEAL
Large plate of pasta - 3 fists worth - with sauce
A piece of chicken, fish, steak, or cheese, cottage cheese or eggs - palm size
Salad with dressing and/or cooked vegetables
12 ounce milk
TOTAL CARBS: 102

EVENING SNACK:
Trail mix with cereal, raisins and nuts- 1 cup total
TOTAL CARBS: 60

GRAND TOTAL FOR THE DAY: 645 grams CARBOHYDRATE

UP YOUR FLUID INTAKE

Fluid needs = **body weight x .67** for the number of ounces you require daily

How should you drink?
Early and often
Gulps are better than sips or water bottles
Swallow, don't spit
Put the fluid in your body, NOT on your head
Cool fluids are better than cold

What should you drink?
Not just alone
Sports drinks during exercise
Milk, juice, soup, Popsicles, gelatin, fruits, vegetables, fruit ices

How much should you drink?
NIGHT BEFORE: 16 ounces of water **BEFORE** bed

MORNING OF PRACTICE: 16 ounces of water **AS SOON AS** you get up and if practice is later in the day another 17 ounces 2 hours before practice

Pre-exercise - 6-8 ounces of water, OR sports drink - 15 minutes before exercise

Try to avoid carbonated beverages or caffeine

NO fruit juices before exercise - can cause loose stools and gas

DURING PRACTICES: 4-8 ounces every 15 minutes - water and sports drinks - Alternate between the two

AFTER PRACTICES: 24 ounces of fluid for every pound lost!

WITHIN 2 hours after exercise!

Best choices - post exercise: Sports drinks, Lemonade, fruit punch, or concentrated carbohydrate drinks (GO!, Gatorade High Energy drink)

Not recommended post exercise: carbonated beverages (hard to drink enough to replace the fluid the body has lost), alcohol (delays recovery)

FOR OPTIMAL HYDRATION PRE-GAMES
Try to drink 1-2 extra glasses of fluid the night before and morning of games

SPECIFIC FLUID GUIDELINES:
BEFORE, DURING AND AFTER EXERCISE:

TIME	VOLUME	TIME FRAME
BEFORE	17 ounces 8 ounces	2 hours before exercise 15 minutes before exercise
DURING	20-40 ounces/hour Ideally sports drink!	
AFTER	24 ounces per pound ASAP For every pound you lose	

NOTE: Since alcohol is dehydrating - AVOID within 72 hours before or after training or games to minimize the chance for dehydration

SODIUM is an extremely important nutrient to keep fluid balance and prevent muscle cramping!

If your sweat stings your eyes, or you look "crusted" after workouts, you may be a salt "loser"

Make it a point to salt your food, or use sauces such as Soy, hot sauce or Worcestershire sauce or eat pickles, pretzels

BEST WAYS TO REPLACE SODIUM AND POTASSIUM POST EXERCISE:

Orange juice and salted pretzels

A baked potato with ketchup or salt on it

A nectarine and some Chex mix

A mix of dried apricots and salted nuts

A banana and some salted popcorn

A.10 U.S. Soccer Contact Information

Coaching Department

U.S. Soccer Coaching Dept.
1801 S. Prairie Ave
Chicago, IL 60616
312-808-1300 p
312-808-9708 f
coaches@ussoccer.org
www.ussoccer.com

Replacement License Information

Information on obtaining a replacement License should be directed to U.S. Soccer Offices.

Ticketing Information

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U.S. Soccer Ticketing Department
312-528-1290
tickets@ussoccer.org

A.11 Professional Leagues and Organizations

Federation Internationale de Football Association [FIFA]
FIFA Headquarters
41-43-222-7777 phone . . . . . 41-43-222-7878 fax . . . . . www.fifa.com

Confederation of North, Central American and Caribbean Association Football [CONCACAF]
212-308-0044 phone . . . . . 212-308-1851 fax . . . . . www.concacaf.com

Professional Leagues
Major League Soccer (MLS)
Main Phone: 212-450-1200 . . . . . Main Fax: 212-450-1300 . . . . . www.mlsnet.com

United Soccer Leagues (USL)
[First Division, Second Division, Premier Development League, W-League, Super Y-League]
813-963-3909 phone . . . . . 813-963-3807 fax . . . . . www.uslsoccer.com

Youth and Adult
U.S. Youth Soccer
800-4SOCCER phone . . . . . 972-334-9960 fax . . . . . www.usyouthsoccer.org
972-334-9300 phone

American Youth Soccer Organization [AYSO]
800-USA-AYSO phone . . . . . 310-643-5310 fax. . . . . www.soccer.org

Soccer Association for Youth [SAY Soccer]
513-769-3800 phone . . . . . 513-769-0500 fax . . . . . www.saysoccer.org

U.S. Club Soccer
843-429-0006 phone . . . . . www.usclubsoccer.org

U.S. Adult Soccer Association [USASA]
317-541-8564 phone . . . . . 317-541-8568 fax . . . . . www.usasa.com

Other Numbers
U.S. Olympic Committee [USOC]
719-866-4500 phone . . . . . 719-632-1035 fax . . . . . www.usoc.org

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