MG Michele Gallagher

Sports Tournaments

IMPORTANT INSTRUCTIONS: Always use the 'EXIT COURSE' link in the upper right-hand corner of the course window when exiting to save your progress!
You will learn about concepts factors to consider when organizing, planning, and conducting, tournaments. You will also learn about types of tournaments.

- **Single Elimination** - Well known and very simple to design
- **Double Elimination** - Entries must lose two contests before elimination
- **Triple Elimination** - Entries must lose three contests before elimination
- **Round Robin** - Provides maximum participation
- **International Bracket** - Is a combination of a round-robin and single-elimination
- **Challenge or Extended** -Emphasize participation rather than winning

ORGANIZING SUCCESSFUL TOURNAMENTS

Overview Tournaments

- Factors in Tournament Organization
- Planning and Conducting Tournaments
- Brackets, Seeding ,& Byes

TYPES OF TOURNAMENTS

- Single Elimination Tournaments
- Double Elimination Tournaments
- Triple Elimination Tournaments
- Round Robin Tournaments
- International or Bracket Tournaments
- Challenge or Extended Tournaments

Overview Tournaments

MG Michele Gallagher

Tournaments began as a series of military exercises, probably of medieval French origin, in which knights fought one another to display their skill and courage. By the end of the 16th century, tournaments had become more pageantry than combat. The term is still used somewhat in this sense – for instance, the New Year's Day Tournament of Roses parade in Pasadena, California.

In the early 20th century, the word "tournament" also came to be applied to certain methods of conducting sports competitions. Today, sports tournaments are common practice in the Army, and there are some important factors a sports director or programmer needs to consider to make a tournament successful.

Factors in Tournament Organization

MG Michele Gallagher

A tournament is a series of contests in a sport or game, such as basketball, tennis, or esports, in which many people or teams take part, trying to win the championship. A league is a group of teams or individuals organized to compete against one another. Although the words are sometimes used interchangeably, the term tournament is the overall event you might choose to break down entries into leagues. League play is also sometimes used to refer to a season- or year-long tournament instead of a short-term tournament that takes place over a weekend.

An example of a league is an installation softball league. This league consists of unit-level teams that play each other at least once, but usually two to three times throughout the season. Usually, at the end of the season, the top four teams compete in a single- or double-elimination

tournament to determine the league champion. Another example is a holiday basketball tournament with all-star teams that compete over a weekend in a double-elimination format.

Potential Objectives in Conducting a Tournament

Today, the reasons for organizing tournament play are varied. Most often, tournaments are used to determine the ranking of participants or provide a structure within which ranking is possible. There are usually other objectives that may be affected by the availability of time and facilities.

The first and, by far, most important consideration in tournament planning is determining the tournament's objective(s) and need. There are several potential objectives in conducting a tournament:

- To determine a champion by the most valid means possible
- To determine a champion by the fastest means possible
- To determine the place rankings of the other entries
- To afford each team or individual maximum playing opportunities

- To schedule games based on competitive parity
- To encourage social interaction
- To schedule teams or individuals for an equal number of contests

Characteristics of Participants

When deciding what kind of tournament to offer, several items must be considered. First, it is critical to identify the target audience. Second, the tournament should focus on the participant groups and support the objectives while considering the intended audience's values, attitudes, and preferences.

Characteristics include:

- Age level (youth, adolescent, early adult, middle adult, later adult)
- Gender (men, women, co-recreational)
- Ability (beginner, intermediate, advanced)
- Interest (participant interest level for the sport)
- Attention span (youth – short, adult – long)
- The intensity of competition (competitive or informal)


5KG

Type of Event

The objectives, characteristics of the participants, and possibly, the spectators should determine the type of event.

- Individual sport – allows the individual to participate alone (singles tennis)
- Dual sport – requires another partner to participate (doubles tennis)
- Group sport – allows various-sized groups to participate(team free-throw shooting contest)
- Team sport – requires a specific number of players who play as a unit or organized team (flag football)Meet sport – organized competitions that include several events and are usually completed within a specified time, ranging from several hours to several days (swim meet)

- Special event – can be a once- or twice-a-year event (boxing smoker), a non-traditional event such as sports with a “twist” or new way of delivering the program (3 on 3 basketball tournament), or a combination of events
- Co-recreational – balanced programming area that emphasizes fun, team spirit, and social interaction with members of both genders

Time Constraints

Choosing the date and time is the next essential detail when planning a tournament. Sometimes, the date and time may be obvious, such as holiday tournaments. However, the date and time should best meet the objectives for which the tournament was organized.

When planning a tournament, consider the following time constraints:

- Length of time available to complete the tournament
- Dates, days, hours available
- Provisions for inclement weather, rescheduled games, and championship playoffs


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Facility, Equipment, and Personnel Requirements

Another consideration in the tournament planning process is determining what facilities and equipment are required and if and when they are available. Facility availability will be one of the biggest factors in determining the type of tournament you can offer and how many entries your tournament may accommodate. Personnel requirements must also be determined to ensure that the manpower needed, including sports officials and maintenance staff, is available.

The facility, equipment, and personnel requirements to consider include:

- Facility reservations
- Number of available facilities
- Availability of fields and courts
- Condition of facilities
- Availability of equipment
- Condition of equipment
- Accessibility to the locker room and other support facilities
- Adequate number of sports officials and supervisors

- Adequate number of personnel

Other Factors

There are several other factors to keep in mind when planning tournaments. For example, a budget provides a road map to help determine if the tournament will make money, break-even, or lose money. Additional factors to consider include:

- Budget restrictions Coaches' qualifications
- Administrative requirements
- Medical supervision
- Publicity and promotion
- Maintenance staff
- Spectators and crowd control

- Weather
- Food
- Lodging

Lesson 3 of 10

Planning and Conducting Tournaments

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The programmer must complete many other administrative activities to make a tournament run smoothly for all involved – players, officials, and spectators alike.

When thoroughly planned and conducted, participants' needs and interests are served, and resources are used wisely.

Participant Eligibility Requirements

To avoid confusion and

Budget

Every year, you develop or provide input for the Sports Program budget.

Tournament Timeframes

Establish the timeframe in which the tournament can

customer dissatisfaction, you must determine who is eligible to participate in your programs. In determining the eligibility requirements, answer the following questions:

- Who is allowed to play?
- Is eligibility outlined in Standard Operating Procedures (SOPs) or Letters of Instruction (LOI)?

Budget preparation and management require careful thought and planning. Anticipating income and expenses is not an easy "science;" however, identifying real needs goes a long way towards implementing a comprehensive sports program that our Soldiers desire and expect.

The sports program's annual operational budget includes:

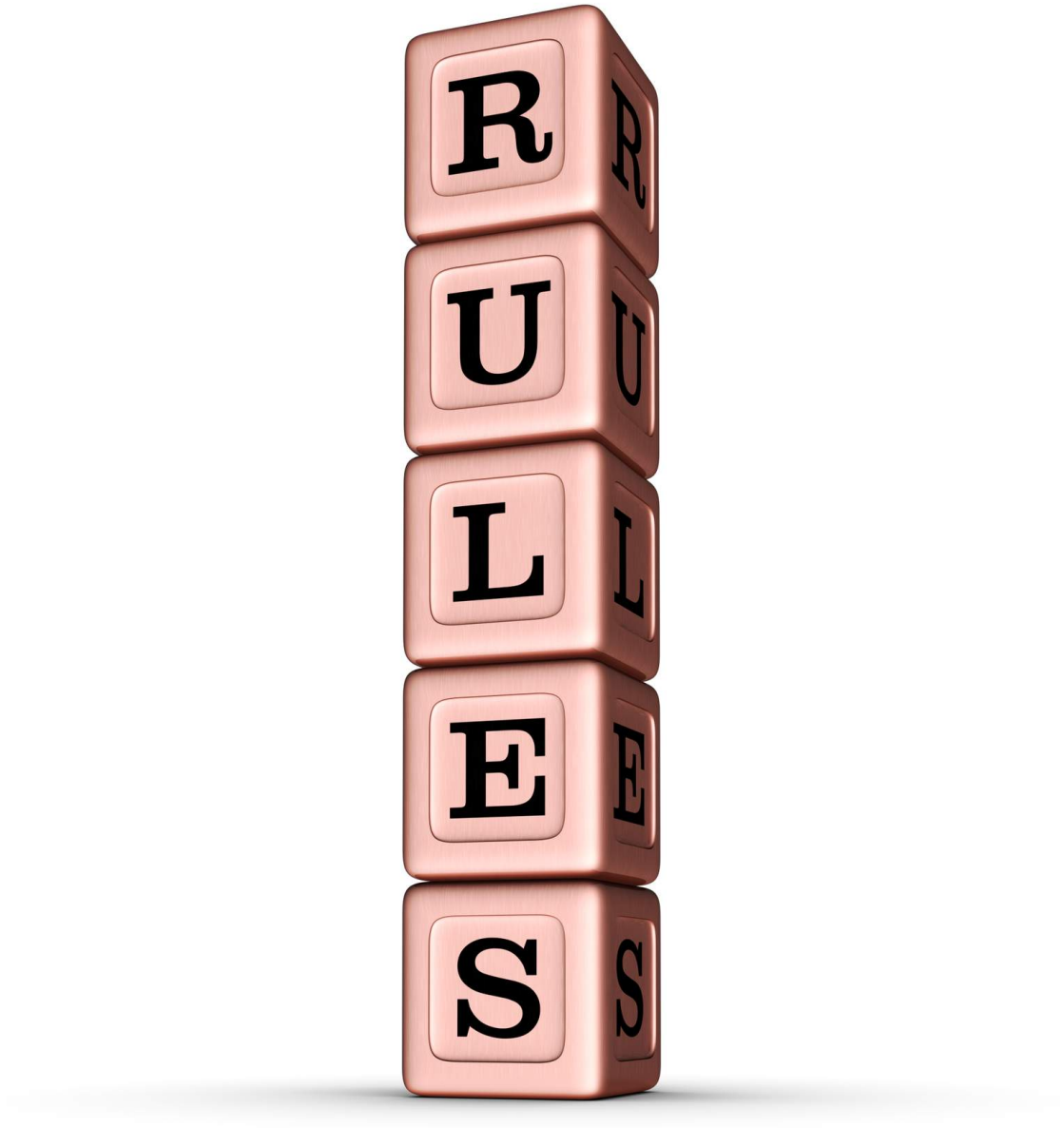
take place. There are several factors and specific elements of time for scheduling to consider. Here are some useful questions to guide you in your decision making:

- When are facilities available?
- What are the conflicts with facility use and other activities that will impact participation?
- When is play most

- What categories of competition (age, gender, units, installation, etc.) will be established?
- What are the enforcement considerations (team rosters, IDs, appeal procedures, etc.)?
- Programming costs for leagues & tournaments
- Associated supply and equipment expenses
- Publicity
- Awards
- Officials
- Off-base field rental insurance

convenient for participants?

- Should the tournament be conducted out of its traditional sports season?
- What time of year is best?
- Which days of the week are most usable?
- Which hours of the day are most usable?
- When are personnel available to manage the tournament?



Rules of Play

Identifying the rules of play to conduct the tournament is another essential consideration. Determining what rules are going to be used could impact the level of competition and total participation.

Therefore, ensure that the proper rules are selected for the sport. There are a few sources to find official rules (NCAA, AAU, High School) and single sports associations (ASA, USSSA, USGA, etc.).

In some instances, you may have to modify the rules (either official or sport-specific) to meet a specific objective or to solve a problem.
The reasons for modifying the rules include:

Administrative	Safety	Player Availability	
There may be limitations on equipment or facility setup. For example, a softball field may be too short in the left field. So, teams may receive credit for a double instead of a home run when the softball is hit over that	There may be safety issues for a player or facility. For example, a sports field may have had a hazard develop (e.g., excess water on a portion of the field that will	You may not have the required number of females or males. For example, coed softball rules require five males and five females. However,	You mo the if p are or you tha nor For exa ove bas ma allo bre

section of the fence.	only impact play on that section of the field) before the competition that cannot be fixed but is not dangerous enough to cancel the play.	you may want to use 6 and 4 or 7 and 3.	

Having the right equipment and supplies and making sure the facilities are ready to handle a tournament is very important to the success of your tournament.

Equipment and Supplies

Facility

Personnel

Determine the needs for a particular tournament (what supplies, balls, official equipment are needed).

Inventory equipment to see what you have on hand.

Purchase other supplies and equipment as needed.

Reserve facilities on the installation and off base if needed.

Prepare the facility, including cleaning areas, marking fields, and providing scorers table.

Depending on the type and size of the tournament, personnel considerations are another important aspect needed to ensure success. To conduct a successful tournament, you will need to:

Identify the types of personnel needed (maintenance, crowd control, supervisor, officials, scorers, medical, photographer, Public Affairs Office).

Follow procedures to ensure that all necessary personnel is requested and available for the tournament.

Train volunteers and new employees.

Schedule personnel for day, place, and time.

Recognition

What are you going to base your recognition/awards on? Recognition is usually based on achievement, participation, and sportsmanship. However, initial tournament objectives and the budget will influence what type of recognition will be used.

Considerations:

- Positive aspects – Increases participation, publicity, and recipient satisfaction.

- Negative aspects – Expensive, risk of unethical behavior to get an award, takes away from the purpose of sports participation.
- Types – Trophies, medals, t-shirts, jackets, bags, and plaques
- Individual awards vs. team awards
- Other considerations – Are trophies rotated year to year? Will they be engraved? Will they be purchased or donated?

Publicity

Publicity involves the creation of advertisements, news, and information to attract attention through the media. Another part of publicity is promotion, which involves selling your program to potential participants. But, first, you will need to decide:

- Who the target population is and who has responsibility for the marketing tasks.
- When to publicize (frequency, how far in advance, publicity blitz before entry deadline).
- What information to communicate (what kind of event, eligibility, when, where, and entry information).
- Where to put the publicity (high traffic areas, AAFES/Commissary, off base, community events)
- How to disseminate (flyers, newspapers, radio, installation TV, posters, banners).

Unsportsmanlike Conduct

Unsportsmanlike conduct displayed by participants and fans can ruin a well-planned and well-conducted tournament. Well-established rules on conduct (what is

Protests

Depending on the importance of the tournament or the program's objectives, you will have to decide whether you will allow protests.

Protests can be very time-consuming and hard to

tolerated), penalties (player suspension, forfeiture), and enforcement procedures will assist in curbing possible unsportsmanlike instances.

However, comprehensive rules and procedures will not always eliminate unsportsmanlike conduct.

manage. Still, they allow participants a chance to establish fairness or correct a situation that impacts all participants throughout the rest of the tournament. Factors to consider concerning protests include:

- Types of protest – player

Up-front planning, including law enforcement intervention, can alleviate the escalation of this conduct.	eligibility, misinterpretation, or misapplication of a rule (Note: Never allow protests on judgment calls by officials!) • Procedures for protesting – notification of protest, protest format, to

whom to make the protest, verbal or written, decision-making process (officials, supervisor, protest board

- Penalties or action to take if the protest is upheld – team defaults all games, player disqualification

Tournament Risk Management

Risk management is neither complex nor costly. Risk management provides a feeling of ownership over the installation's safety program. A well-thought-out risk management program reduces the chance of "things" happening that can cause the sports program and the installation embarrassment and legal problems.

Remember, many sports activities, by nature, are high risk. Therefore, you should not eliminate these sports because there is a chance that something will happen.

However, accepting a certain level of risk does not mean that participants and spectators are not warned of the risks involved, nor does it mean that you shouldn't evaluate risks to determine what is acceptable and what should be reduced or alleviated.

Elements of Risk Management

A risk management program aims to provide a safe environment for spectators, participants, and employees. Risk management encompasses four elements:

1. Identification
2. Evaluation
3. Treatment
4. Implementation of risk management procedures

Risk Identification

It is almost impossible to identify all sources of risk in something as complex as a sports program; however, identifying risks in conducting a sports tournament is not as difficult. Employees need to be aware that they are responsible for the safety and actions of other employees, volunteers, participants, spectators, concessionaires, and any other personnel who are a part of a tournament.

There is a tendency to believe that safety is someone else's responsibility, such as maintenance staff or the Installation Safety Office. Thoughtful risk managers (ideally all employees) who constantly identify risks personalize the issues by remembering that their families may be next on the scene. They should ask, "What could I do to make this event a safe environment for my family?"

Risk Evaluation

When a risk is identified, evaluate it according to its severity and its frequency. As an example, a beach volleyball tournament has been planned. The beach volleyball court is located at a site with unlighted restrooms, and there is a steep dirt trail down the cliff from the parking lot to the court. Thus, there are three areas of risk: the trail, the volleyball court, and unlighted restrooms.

- The Trail: Low Frequency/High Severity
- Volleyball Court: High Frequency/Low Severity
- Unlighted Restrooms: Low Frequency/High Severity
- Volleyball Court: Low Frequency/Low Severity

In these examples, the initial risk management effort should be directed toward the trail safety first, then the unlighted restrooms. High severity significantly impacts the risk management plan. It only takes one incident on the trail or in the restroom to impact a program negatively. Since the trail is the only way to get to the courts, this risk needs to be fixed first. Then, address the lights in the restroom. However, the other risks that are identified should be addressed if possible.

The Trail: Low Frequency/High Severity Although the injuries on the steep trail are infrequent, a fall could result in severe injury or death, thus justifying repairs (possible steps and a guardrail). **Volleyball Court:** High Frequency/Low Severity On the beach volleyball court, the accident rate could be high, but the severity would be low (scrapes and twisted ankles), so nothing would be addressed here.

Unlighted Restrooms: Low Frequency/High Severity Unlighted restrooms could be very dangerous at night, even though the chance of risk is low. The solution could be to install lighting or play the tournament during daylight.
Volleyball Court: Low Frequency/Low Severity On the beach volleyball court, the bleachers, have a 2-foot section of a seat board that may cause some splinters for spectators. The accident rate could be low and the severity low, so there would be nothing addressed here. However, a five-minute sanding job by maintenance staff could rectify this problem quickly.

Risk Treatment

After you have evaluated the risk, determine the best way to alleviate it. There are four options available to treat risk: avoidance, reduction, retention, and transference.

Avoidance – Using the example of the beach volleyball court, you could close the existing trail to all use or design and relocate a new entrance to the court.

Reduction – Using the example of the trail, constructing a warning sign describing the dangers, or constructing a guardrail will reduce the possibility of accidents. Reduction programs decrease the chance of accidents; they do not prevent them.

Other methods of reducing risks include:

- Developing safety rules for tournaments.
- Conducting periodic safety inspections.
- Ensuring proper maintenance is scheduled and completed.
- Make certain all employees are trained in risk management.

Retention – Often, after an incident has taken place and is closely examined, it is determined that the incident resulted from either carelessness of those involved or an act of God/nature.

- Examples of carelessness include walking up bleacher steps while talking to someone and not watching where you are stepping. As a result, you trip, fall, and break your arm, or you spill a drink on the bleachers, and someone slips, falls, and hurts a knee.
- Examples of God/nature acts include people being hit by lightning or a building collapse due to a sudden storm.

A risk management program's most important safety tool is a knowledgeable and wise workforce that can mitigate foolish acts before they happen.

Transference – This method means transferring the responsibility to someone else. For example, you could transfer the entire facility to another agency or private contractor in the volleyball example. However, most Army installations maintain their own sports facilities utilizing sports maintenance personnel or Public Works, so transferring facilities to another agency or private contractor is unlikely.

One way to protect against inclement weather problems when conducting special outdoor sports tournaments is by obtaining "special weather insurance." Special weather insurance protects your investment in case the weather wreaks havoc with the tournament, causing cancellation. The Community and Family Support Center Risk Management Program (RIMP) provides more information on insurance guidelines.

Implementing Risk Management Procedures

You can utilize several tools to implement a risk management program. They include but are not limited to physical changes (repair and maintenance), signs, notices, brochures, announcements, news releases, and personal contact.

Training your entire sports staff to manage risk and assume responsibility for "fixing" identified risks is usually the most effective way to provide:

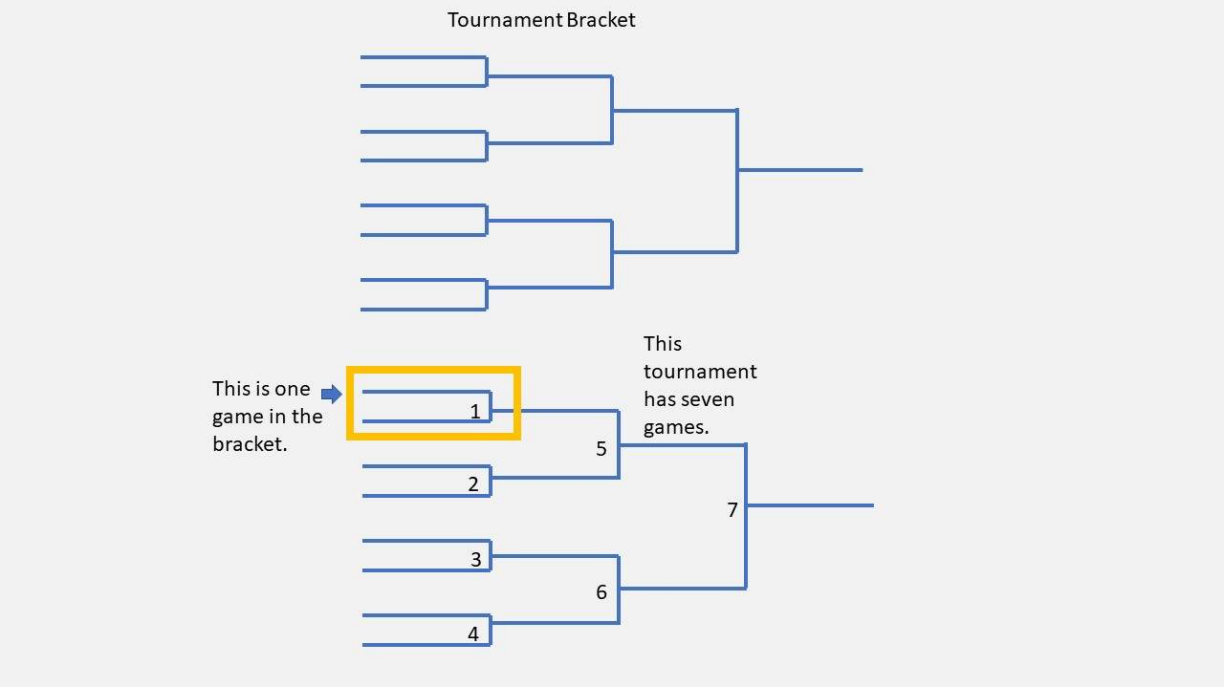
- Maximum protection for participants and spectators
- Adequate safeguards that protect your organization from unnecessary problems and possible litigation.

Lesson 4 of 10

Brackets, Seeding ,& Byes

MG Michele Gallagher

Brackets, seeding, and byes are important concepts to understand in preparing a successful tournament. By distributing strength through seeding and byes, you can achieve a fair tournament.



Bracket

Brackets

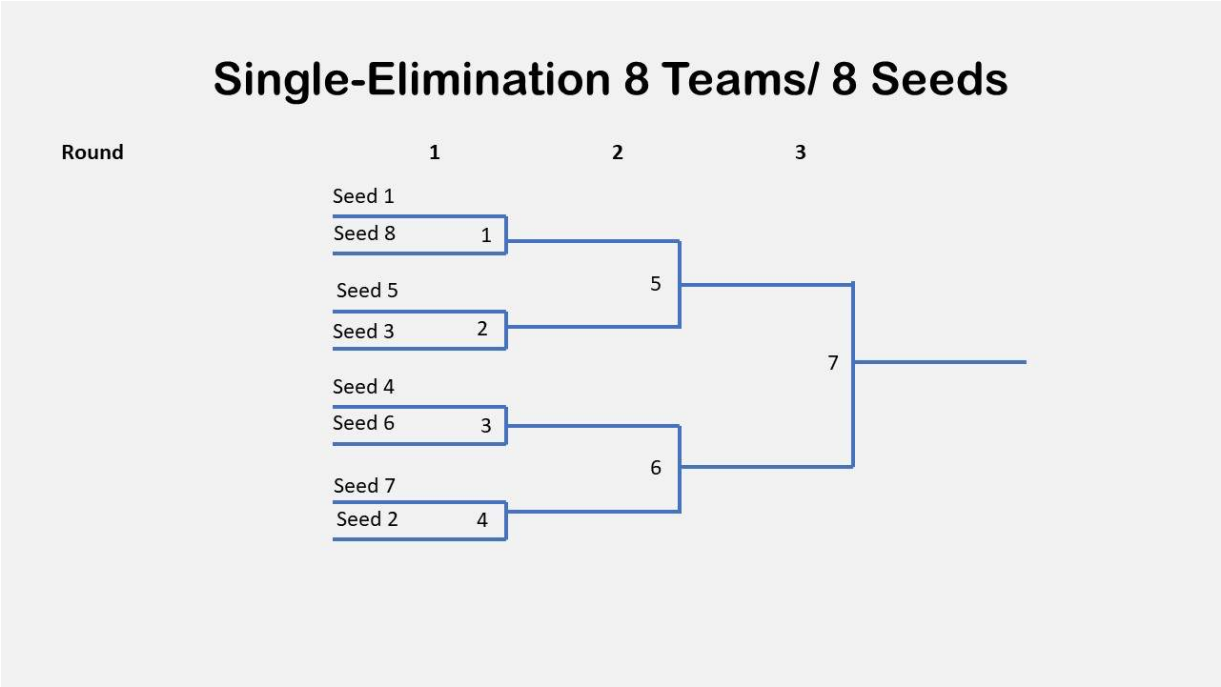
A bracket or tournament bracket is a tree diagram representing the series of games played during a knockout tournament. Different knockout tournament formats have different bracket layouts, which you will see in module 2.

Seeding ranks players or teams by their ability.
When there are not enough teams or players for each bracket to compete in the first round, a **bye** occurs, and they move forward to the next round, game, or match.

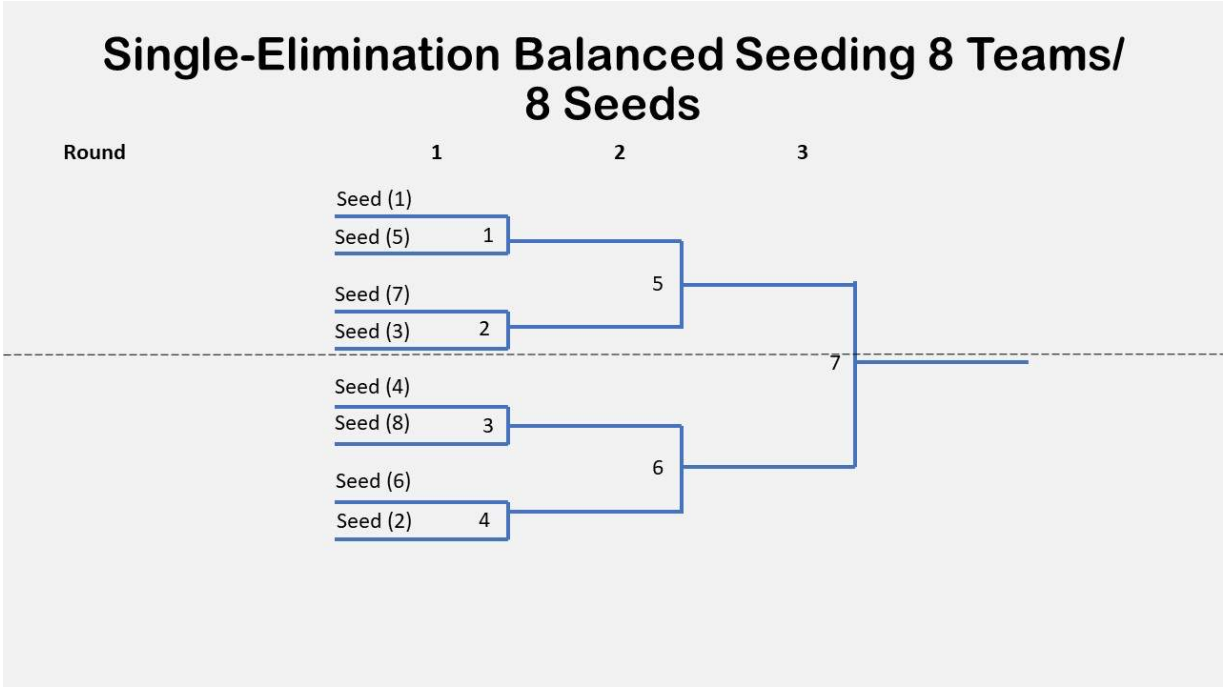
Seeding is defined as the process of ranking players or teams before the tournament according to their relative ability. Two principles guide this process.

1. The top two entries should meet in the final game; the logical extension is that the higher ranked an entry is, the closer it should come to the final game before being eliminated.
2. It should be equally difficult for entries of similar ability to achieve similar ends.

Although there is no requirement to have seeding, it helps to ensure a fairer tournament by distributing team strength throughout the draw. Of course, there may be upsets, but at least you can be assured that you have done your best to ensure a good tournament. Here is an example of seeding. Notice how the seeds are placed in the brackets—the first seed with the eighth seed.



Another method of seeding is called balanced or equitable seeding. In this method, the seeds are paired so that the numerical difference between the pairs is always the same.
For example, in an 8 seed tournament, the numerical difference is always 4.
1 vs. 5
7 vs. 3
4 vs. 8
6 vs. 2
Place the top seed, chosen by ability, previous performance, or ranking, in the top of the upper bracket and the second seed at the bottom of the lower bracket. Do not attempt to equalize the upper or lower brackets. This system is most justified for tournaments that do not have preliminary play built into the tournament structure.



Another method of seeding is called Best to Worst. In this method, the seeds are paired in such a way that the sums of the pairing are equal. To check the draw placement of seeds, those at the extreme of each bracket should equal a consistent number when totaled. For example, in an 8 team draw, the total is always 9.

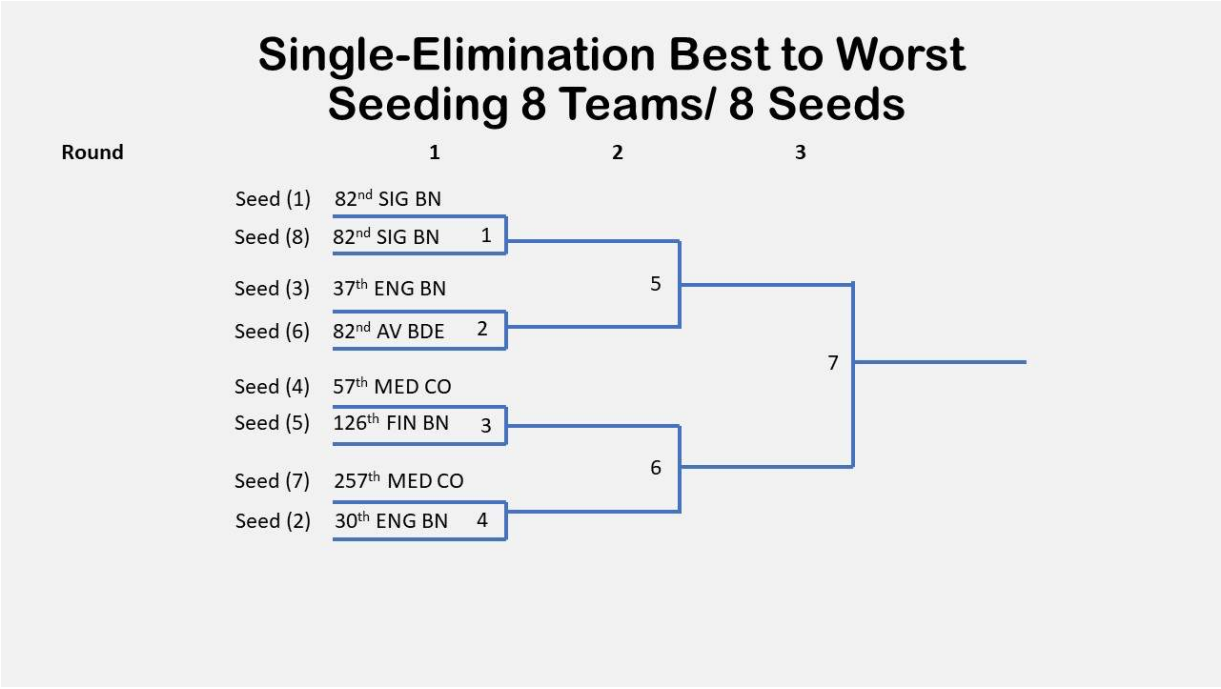
1 vs. 8

5 vs. 4

3 vs. 6

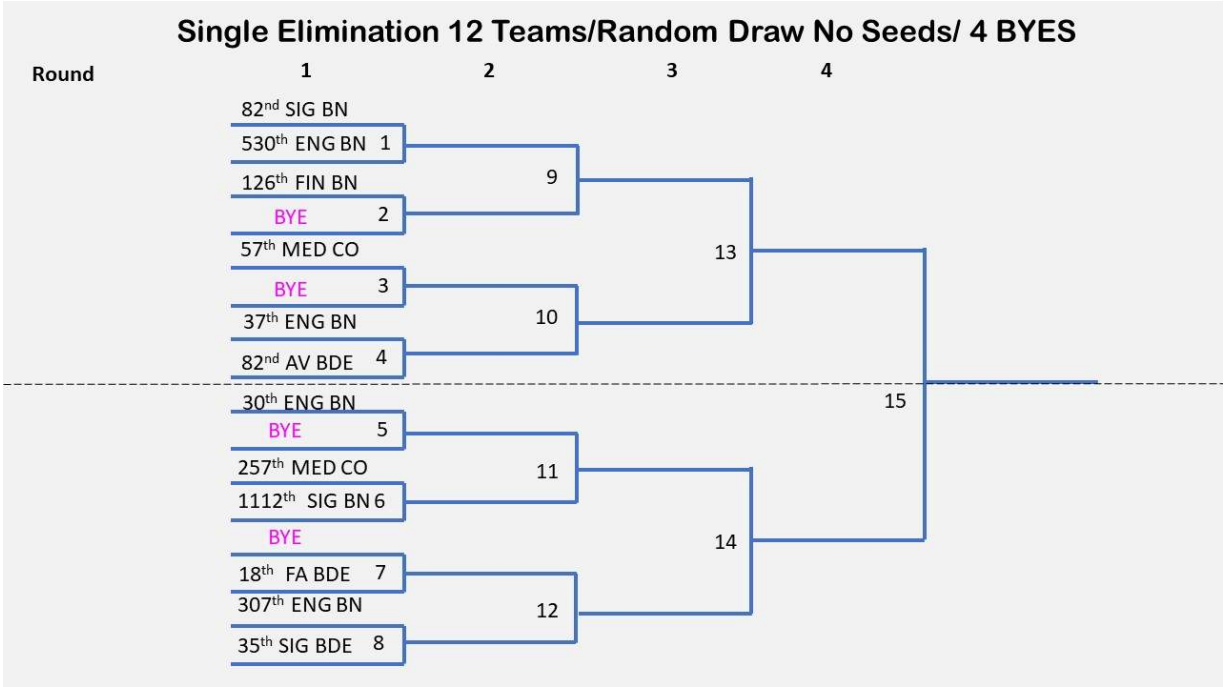
7 vs. 2

Place the first seeded entry on the top line of the upper bracket and the second on the bottom line of the lower bracket. Place the third seed at the bottom of the upper bracket, the fourth at the top of the lower bracket, and so on. This format is most useful for tournaments that incorporate preliminary play into their structure, such as a tournament following league play.



Sometimes, it is not apparent to the tournament coordinator how entries should be seeded. For example, there may be no record of past performance. In these cases, bracket position may be determined by a random **draw** or by order of entry (placing names in a hat and drawing one out at a time).

First, the byes are placed evenly between the upper and lower bracket. Then based on the luck of the draw or order of entry, place the remaining players or teams.

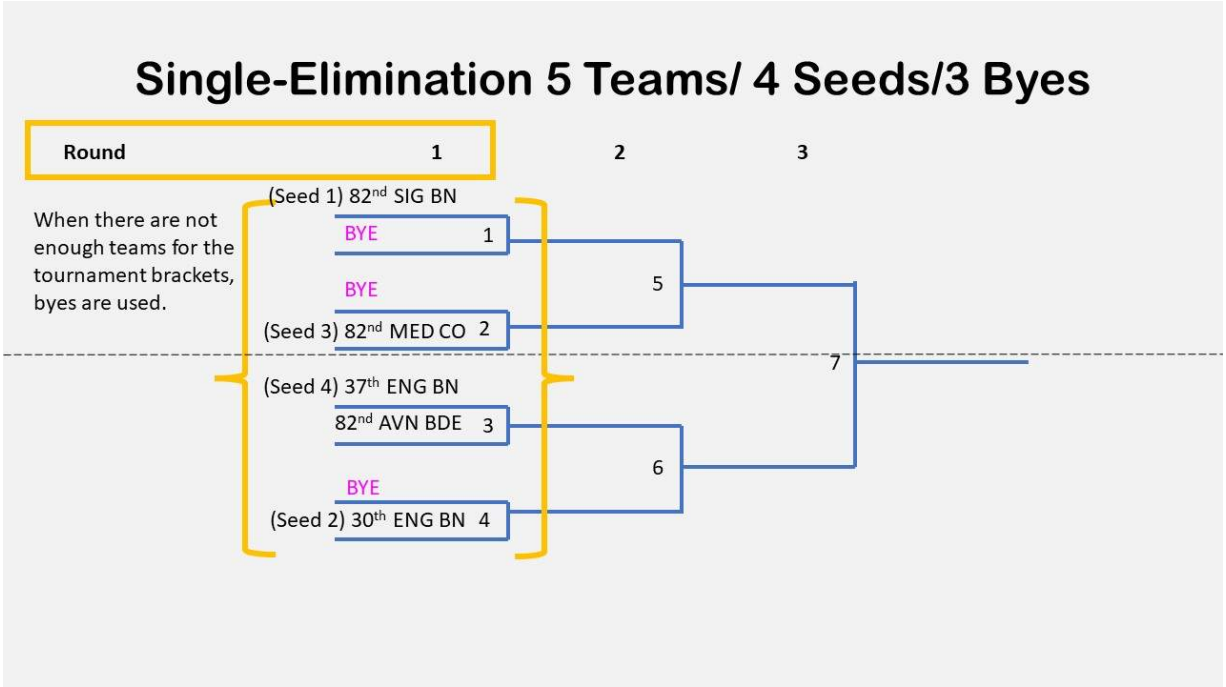


SEEDING AND BYES	SEEDING	BALANCED OR EQUITABLE SEEDING	BEST TO WORST SEEDING	RA

The first round of a single-elimination, double-elimination, or multi-level tournament is always calculated to the next-higher perfect power of two. In other words, the initial round allows for up to 2, 4, 8, 16, 32, or 64 entries.
What happens if there are fewer than 16 entries but more than eight entries? One or more entries will not have anyone to play in the first round; therefore, that entry receives a **bye.**

A bye occurs for two reasons. One is when there are fewer players or teams than spaces on the tournament bracket. The second is the top-ranked players or teams do not play in the first round but automatically advance to the second round.

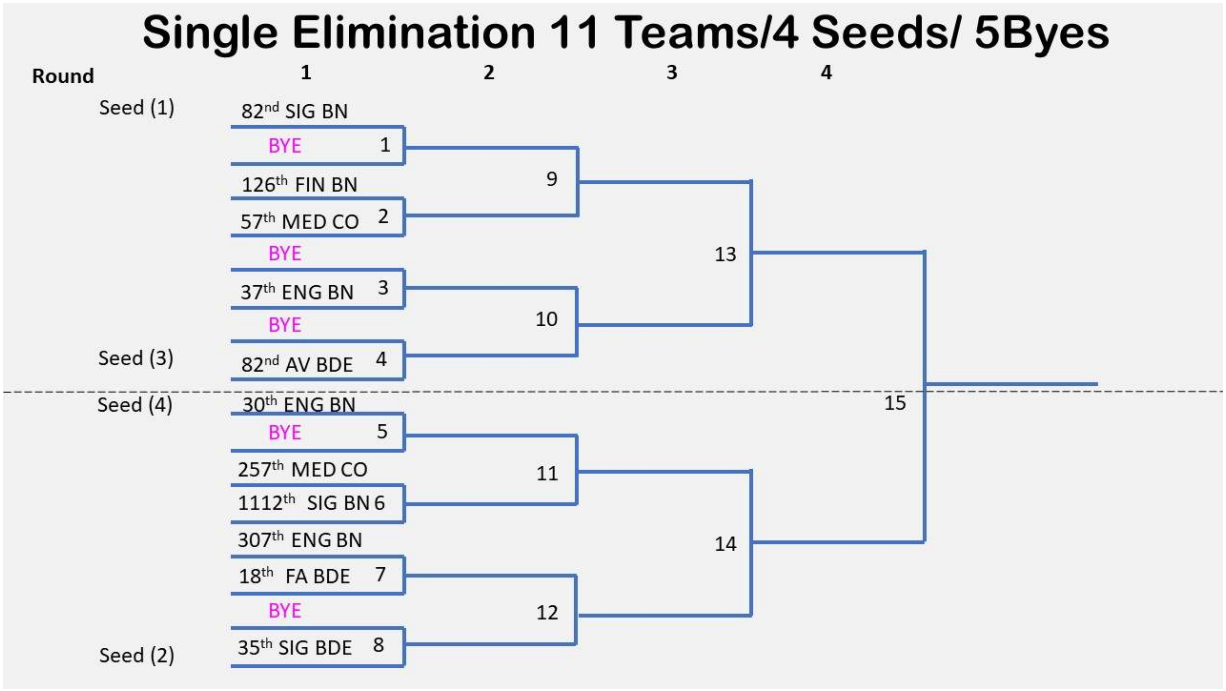
All byes must be placed in the first round. The number of byes should ensure that the number of players or teams is equal to a power of two (full brackets) in the second round. Place the byes as evenly as possible between the upper and lower brackets.



SEEDING AND BYES	SEEDING	BALANCED OR EQUITABLE SEEDING	BEST TO WORST SEEDING	RA

Grant seeded entry byes in order of their ranking. The first seed receives the first bye, the second seed receives the second bye, and so on. In other words, the placement of byes should complement the placement of the four seeded entries. The fifth bye can be placed in a number of ways.

In the example, the other seven team names were "placed in a hat". The 37th Eng BN was selected "from the hat" and given a bye. The other six teams were selected and placed in the bracket from top to bottom.


Single Elimination 11 Teams/4 Seeds/ 5Byes
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Seed (1)
82nd SIG BN
BYE
1
126th FIN BN
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57th MED CO
2
BYE
13
37th ENG BN
3
BYE
10
Seed (3)
82nd AV BDE
4
Seed (4)
30th ENG BN
15
BYE
5
257th MED CO
11
1112th SIG BN
6
307th ENG BN
14
18th FA BDE
7
BYE
12
Seed (2)
35th SIG BDE
8

Lesson 5 of 10

Single Elimination Tournaments

MG Michele Gallagher

A single-elimination tournament is well known and simple to design. All competitors compete in the first full round, with only the winners of each round competing in subsequent rounds. The winner of the final contest is the champion.

Take a look at how a single elimination works.

Advantages	Dis
The greatest appeal of the single-elimination tournament is its simplicity. Losers are eliminated, while winners advance to the next round until only one contestant is left, the tournament champion. The best use of this format is for playoff games at the end of a season or following a long tournament. It is also the most	The sev dis inh sin elir tou

appropriate format for a one-day tournament.

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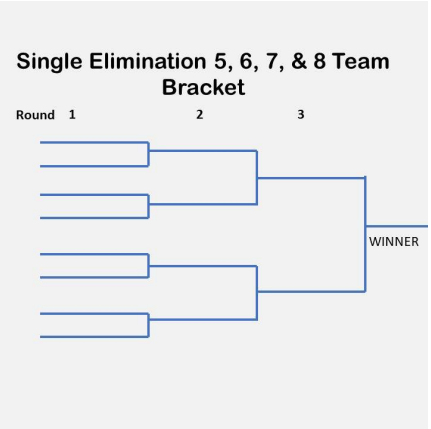
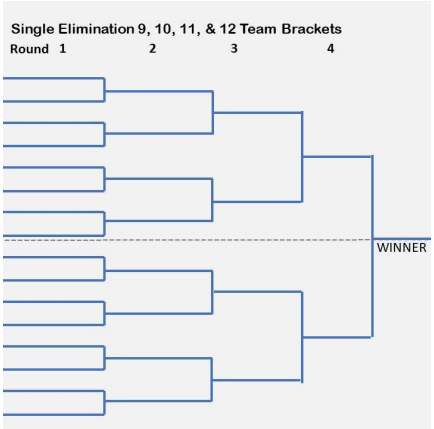
Additional advantages include: • Easily understood by competitors and spectators. • Determines champion in the shortest amount of time • Requires fewer facilities/officials/supervision/equipment • Accommodates a large number of entries • Interesting for spectators • Best for collision/contact sports	

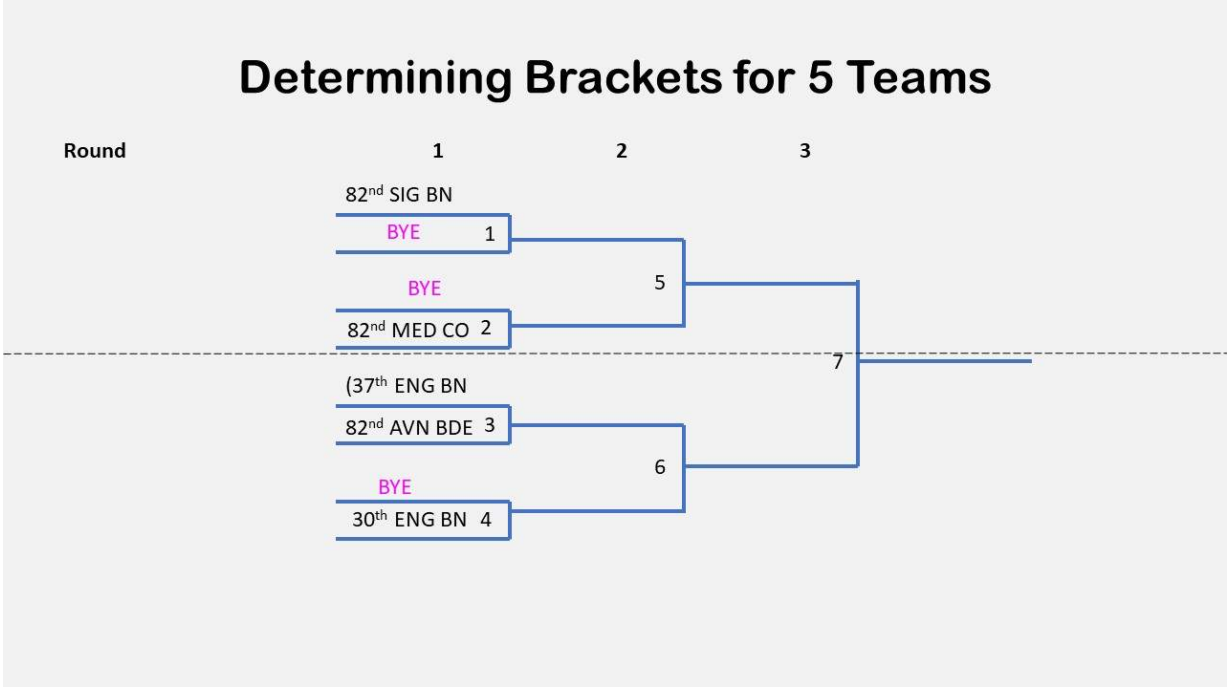
Formulas for Single-Elimination Tournaments

You need to know the number of teams or participants to determine the bracket format. Single-elimination tournament brackets are based on powers of 2 (2, 4, 8, 16, 32, 64, etc.) Therefore, always use the bracket format for the next highest power of 2.

Here are three examples.



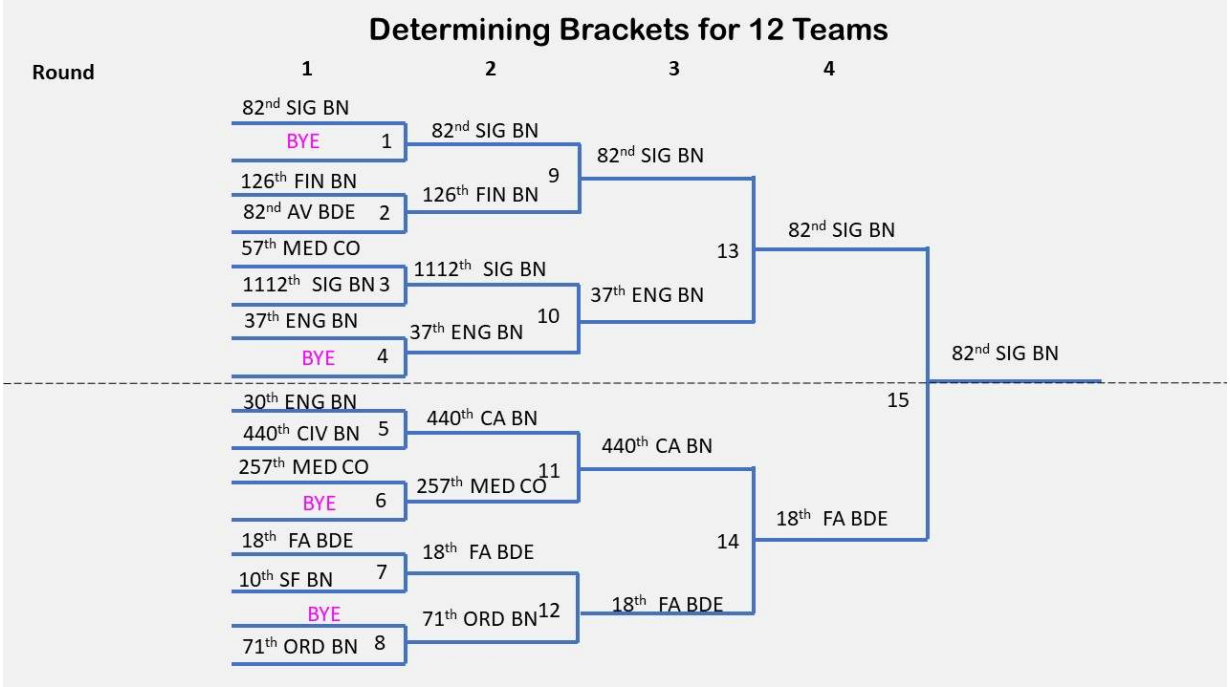




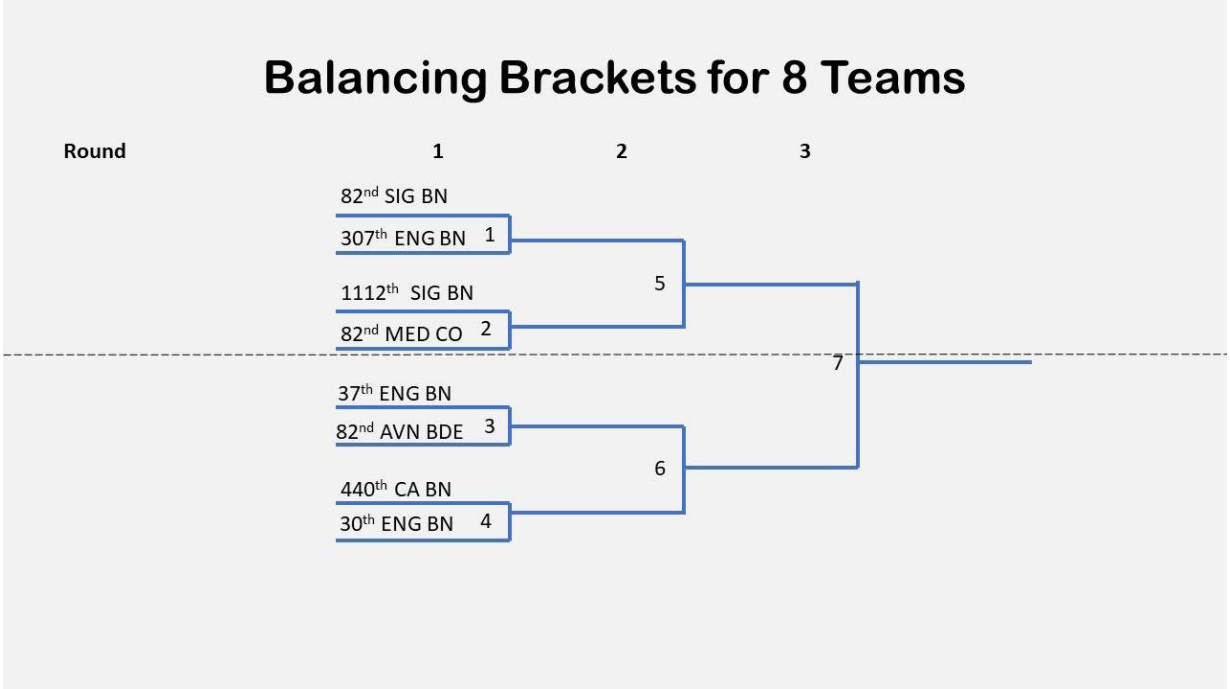
Another example, for five teams in the tournament, you have to use the bracket format for the next highest power of 2; since the 4 team bracket is not large enough, use an 8 team bracket (2 x 2 x 2 = 8). **Byes** are used to complete the first round of the bracket when there are too few teams or players.

Determining Brackets for 12 Teams

If you have a 12 team tournament, you will have to use the next highest power of 2 for the 16 team bracket (2 x 2 x 2 x 2 = 16). Use byes for the first round when there are not enough teams or players.



Balance the brackets by distributing the number of teams equally in the upper and lower halves of the bracket. Equal distribution should occur through the final round.



FORMULAS | NUMBER OF GAMES | NUMBER OF ROUNDS | NUMBER OF BYES | NUM RO

Utilizing the appropriate formulas will allow you to determine the other variables needed for bracket development. For example, "N" represents the number of entries registered in a tournament when using formulas.
The other variables are:

- The number of entries (N)
- The number of games in the tournament
- The number of rounds
- The number of byes
- The number of first-round games
- The number of days needed to conduct the tournament

FORMULAS | NUMBER OF GAMES | NUMBER OF ROUNDS | NUMBER OF BYES | NUM RO

The formula for determining the number of games is:
N - 1 = number of games
If N = 27 entries, then the number of games equals 26 (27 - 1 = 26).

FORMULAS | NUMBER OF GAMES | NUMBER OF ROUNDS | NUMBER OF BYES | NUM RO

Establish the number of rounds for the tournament by determining the **power** of 2 that equals or exceeds the number of entries.
For example, to calculate the number of rounds for 27 entries, determine the power of 2 that equals or exceeds 27. In this case it is 2^5, or 32 (2 x 2 x 2 x 2 x 2 = 32).
N = 27 entries (27 falls between 16 and 32)
2^2 = 2 x 2 = 4
2^3 = 2 x 2 x 2 = 8
2^4 = 2 x 2 x 2 x 2 = 16
2^5 = 2 x 2 x 2 x 2 x 2 = 32 (**5th powe**r of 2) or 5 rounds

FORMULAS | NUMBER OF GAMES | NUMBER OF ROUNDS | NUMBER OF BYES | NUM RO

Since single-elimination tournaments are based on powers of 2 when the number of entries equals a power of 2, no byes are needed in the first round. When the number of entries does not equal the power of two, it is necessary to determine the number of byes that are needed. The number of byes is determined by subtracting the number of entries from the next highest power of 2.

The formula is:
Next higher power of 2 – N (number of entries) = number of byes.
For example, if there are 27 entries in a single-elimination tournament, the next highest power of 2 is 32 (2^5).
In this case, subtract the number of entries (27) from 32 to determine the number of byes.
32 - 27 = 5 byes

FORMULAS	NUMBER OF GAMES	NUMBER OF ROUNDS	NUMBER OF BYES	NUM RO

You can determine the number of first-round games by either subtracting the next lowest power of 2 from the number of teams in your tournament or by subtracting the number of byes from the number of teams and dividing by 2.
N - next lower power of 2 = number of first round games
27 - 16 = 11 first round games
or
N - byes divided by 2 = number of first-round games

(27 - 5)/2 = 11 first round games

Determining the Number of Tournament Days

To determine the number of days a tournament will run, use the determined number of rounds and the number of games in the first round.

In the previous example with 27 entries, we determined this tournament will consist of 5 rounds with 11 games scheduled in the first round.

The first step is to lay out the rounds (5 in our example).

Then enter the number of games (11 in our example) under round one and enter 1 under the final round regardless of the number of rounds (round 5 in our example).

Next list the number of games for each round in descending power of 2, starting with the power of 2 that is less than but closest in value to the first-round games.

Round	1	2	3	4	5
Games	11	8	4	2	1

To determine the number of games to play each day, you must consider several variables such as the number of fields, courts, officials available, and the number of games the teams can play each day. We plan for 5 games per day in our example, with each team playing only 1 game per day. Based on this information, we will determine the total number of tournament days."

The formula for determining the number of days required to play each round is:

The number of games/number of games per day = the number of days to complete the round.

Round	Formula
1	11 games/ 5 games per day = 2.2 or 3 days
2	8 games/ 5 games per day = 1.6 or 2 days
3	4 games / 5 games per day = 0.8 or 1 day

4	2 games / 5 games per day = 0.4 or 1 day
5	1 game/ 5 games per day = 0.2 or 1 day
In this example, the total days to complete the tournament is 3 + 2 + 1 + 1 +1 = 8 days	

Practical Exercise

You're planning a single-elimination tournament, and six teams have entered. Utilize the formulas for single-elimination tournaments answer the questions below. The formulas are:

- N (number of entries) – 1 = number of games
- Power of 2 that equals or exceeds the number of entries
- Next higher power of 2 – N = number of byes
- N (number of entries) – next lowest power of 2 = number of first-round games **OR**
- N (number of entries) – byes divided by 2 = number of first-round games

What is the total number of games?

Type your answer here

SUBMIT

How many rounds?

Type your answer here

SUBMIT

How many byes?

Type your answer here

SUBMIT

How many games are in the first round?

Type your answer here

SUBMIT

Procedures for Preparing the Draw/Bracket

Implementing the single-elimination tournament is straightforward. Once the number of entries is determined, preparing the draw/bracket can be accomplished by following these procedures:

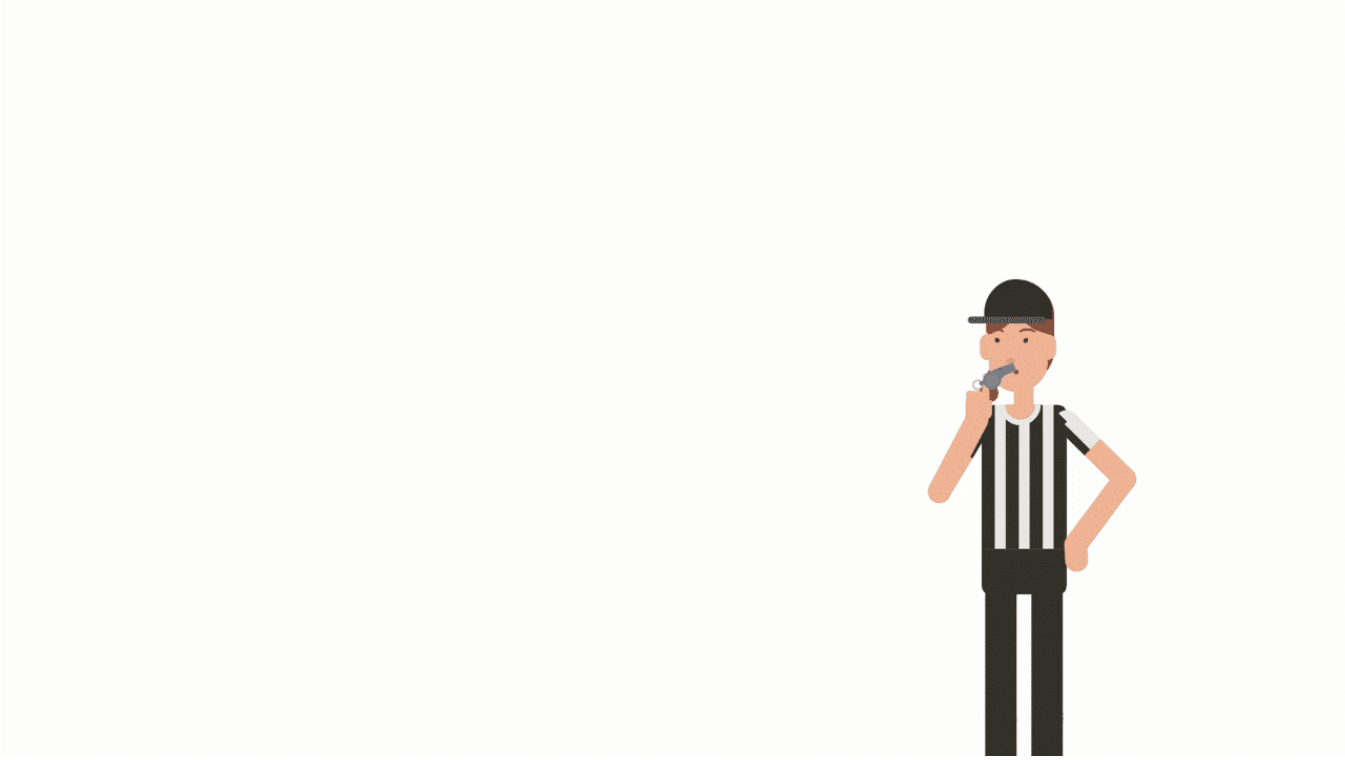
- Select the appropriate size bracket sheet.
- Determine the “seeds,” if seeding is used.
- Place the “seeds.”
- Determine the number of byes.
- Place the byes.
- Determine the number of games.
- Determine the order of play.
- Label the date, time, and location.

Double Elimination Tournaments

MG Michele Gallagher

The top level of the double-elimination tournament is much the same as a single-elimination tournament; however, each team is eliminated after **two losses**.

The first time an entry loses a game, the entry moves down to the appropriate position on the lower level or losers' bracket. An entry that loses in the winners' bracket is scheduled to play other losers in a losers' bracket. Play continues until there is a winner of both brackets. These two winners are matched to determine an overall winner. If the champion of the losers' bracket defeats the champion of the winners' bracket, an additional contest is required because both have one loss.



Double Elimination

The double-elimination tournament is one of the fairest types of a tournament because each entry must be defeated twice before being eliminated. It provides at least twice as much participation as the single-elimination tournament.

Advantages	Disadvantages
The best use of this format is where time and playing areas are limited, but participation	The primary disadvantage of the double-elimination tournament could be the long length of time

and final standings are important.	required to complete it. In addition, this format is generally not the best for one-day or preliminary tournaments, such as before league play.
Other advantages of double-elimination tournaments: • Allows for comebacks after an “upset.” • Better for ranking entries • Less emphasis on proper seeding • Holds participant and spectator interest for a longer time	Additional disadvantages of double-elimination tournaments: • Complicated to show graphically • More time/facilities/support required • Unequal number of games played by teams • Little flexibility in schedule • Little flexibility for entry

- Hard to plan for a championship game

When determining tournament brackets, it is important to have all teams or participants registered in the tournament. Double-elimination tournaments are also based on powers of 2 and use the bracket format for the next highest power of 2. The same number of teams should be in the upper and lower half to keep the bracket balanced from the second to the final round. However, this may not be true for the first round because of possible “bye” games.

FORMULAS	NUMBER OF GAMES	NUMBER OF ROUNDS	NUMBER OF BYES	NUM RO

When using formulas to determine the other bracket variables, "N" represents the number of entries registered. There are several variables in scheduling a double-elimination tournament. They are:

- The number of entries (N)
- The number of byes
- The number of rounds
- The number of days needed to conduct the tournament
- The number of games needed to be played each day of the tournament

FORMULAS	NUMBER OF GAMES	NUMBER OF ROUNDS	NUMBER OF BYES	NUM RO

The formula for determining the number of games is:
2N - 1 ("If" game) where N = number of entries
If N = 13 entries, then the number of games equals 2(13) - 1 = 26 – 1 = 25 games.

FORMULAS	NUMBER OF GAMES	NUMBER OF ROUNDS	NUMBER OF BYES	NUM RO

Establish the number of rounds for the tournament by first determining the **power** of 2 that equals or exceeds N (number of entries)." The number of rounds for 13 entries is calculated as follows:
N = 13 entries (13 falls between 8 and 16)
$2^2 = 2 \times 2 = 4$
$2^3 = 2 \times 2 \times 2 = 8$
$2^4 = 2 \times 2 \times 2 \times 2 = 16$ (**4th power** of 2) or 4 rounds

Since this is a double-elimination tournament, there will be twice the number of rounds. Therefore, for 13 entries, there will be a total of 8 rounds (4 rounds x 2 = 8).

FORMULAS	NUMBER OF GAMES	NUMBER OF ROUNDS	NUMBER OF BYES	NUM RO

Double-elimination tournaments are based on powers of 2. That is, when the tournament size is equal to a power of 2 (2 entries, 4 entries, 8 entries, 16 entries, 32 entries, 64 entries, etc.), no byes are needed in the first round.

When the number of entries does not equal power of 2, it is necessary to determine the number of byes that are needed. For example, in a double-elimination tournament with 13 teams, take the next highest power of 2 and subtract 13 from it. There will be 3 byes for the tournament.

16 (next higher power of 2) - 13 = 3 byes

FORMULAS	NUMBER OF GAMES	NUMBER OF ROUNDS	NUMBER OF BYES	NUM RO

You can determine the number of first-round games by either subtracting the next lowest power of 2 from the number of teams in your tournament or by subtracting the number of byes from the number of teams and dividing by 2.
N - (next lower power of 2) = number of first round games 13 - 8 = 5 first round games

or
N - byes divided by 2
(13 - 3)/2 = 5 first round games

Practical Exercise

You're planning a double-elimination tournament, and ten teams have entered. Use the following formulas to complete the practical exercise:

- 2xN (number of entries) – 1 = number of games
- Power of 2 that equals or exceeds the number of entries
- Next higher power of 2 – N = number of byes
- N (number of entries) – next lowest power of 2 = number of first-round games or
- N (number of entries) – byes divided by 2 = number of first-round games

What is the total number of games?

Type your answer here

SUBMIT

How many rounds?

Type your answer here

SUBMIT

How many byes?

Type your answer here

SUBMIT

How many games are in the first round?

Type your answer here

SUBMIT

Procedures for Preparing the Draw/Bracket

Implementing the double-elimination tournament is the same as for the single-elimination tournament. Once the number of entries is determined, preparing the draw/bracket can be accomplished by following these procedures:

- Select the appropriate size bracket sheet
- Determine the “seeds” if seeding is used
- Place the “seeds.”
- Determine the number of byes
- Place the byes
- Determine the number the games
- Determine the order of play
- Label the date, time, and location

Triple Elimination Tournaments

MG Michele Gallagher

Triple-elimination tournaments go one step beyond double-elimination tournaments. Entries must **lose three** contests before removal from the tournament. The tournament bracket can be looked at as three individual single-elimination brackets.

- A loss in the top bracket moves to the middle bracket, and a loss in the middle bracket leads to a drop to the lower bracket.
- After entry into the lower bracket, a subsequent loss eliminates an entry from the tournament.
- The winner of the lower bracket still has the opportunity to challenge the upper-bracket winner for the championship.

The triple-elimination tournament provides three times as much participation as the single-elimination tournament, so it is one of the fairest types.

Advantages	Disadvantages
Each entry must be defeated three times before being eliminated; the chance is the best team will be the champion, which	The primary disadvantage of a triple-elimination tournament is it takes more time, facilities, and support to

lessens the emphasis on proper seeding.	complete it. A larger number of entrees equates to a larger number of games and rounds. This format is generally not the best for a one-day tournament nor preliminary tournaments, such as before league play.
Additional advantages of triple-elimination tournaments include: • Provides three times as much participation • Allows for comebacks after an “upset.”	Additional disadvantages of triple-elimination tournaments include: • Complicated to show graphically • Unequal number of games played by teams

• It cuts down on forfeitures, so it is a good format for league play	• Little flexibility in schedule • Little flexibility for entry

Triple-elimination tournaments are based on powers of 2, so the tournament bracket should be balanced so that, from the second round through the final round, the same number of teams will be in the upper half of the brackets as in the lower half of the brackets.

A balance of teams may not be true for the first round due to the possible presence of "bye" games.

Always use the bracket format for the next highest power of 2. For example, if a triple-elimination tournament has 14 teams, you will need to find the first power of 2 greater than 14.

- 2 x 2 = 4
- 2 x 2 x 2 = 8
- 2 x 2 x 2 x 2 = 16

In this case, a 16-entry bracket would be used.

FORMULAS	NUMBER OF GAMES	"IF GAME" NUMBER OF...	NUMBER OF ROUNDS	NUM

Variables to Consider In formulating triple-elimination tournaments, "N" represents the number of entries. Therefore, when drawing tournament brackets, it is important to have all teams or

participants registered in the tournament to know the total number of entries. Then, you use the appropriate formula to determine the other variables.
These variables are:

- The number of games played to complete the tournament.
- The number of rounds.
- The number of byes.
- The number of first-round games.

The formula for determining the number of games is:
3N – 1 ("If game")

If N = 10 entries, then the number of games equals 3(10) - 1 = 29 games.

Establish the number of rounds for the tournament by determining the number of times 2 is multiplied to equal or exceed the number of games (N).
N = 10 entries (falls between 8 and 16)
2 x 2 = 4
2 x 2 x 2 = 8
2 x 2 x 2 x 2 = 16 (**4th power** of 2) or 4 rounds

Since this is a triple-elimination tournament, there will be a triple number of rounds. Therefore, for 10 entries, there will be a total of 12 rounds (4 rounds x 3 = 12).

FORMULAS	NUMBER OF GAMES	"IF GAME" NUMBER OF...	NUMBER OF ROUNDS	NUM

The formula for the number of rounds without an “if game” is:
3 x (power of 2 equal to or next greater than N).
If N = 10, the number of rounds without an “if game” equals 12 (3 x 4 = 12).

The formula for the number of rounds with an “if game” is:

3 x (power of 2 equal to or next greater than N) + 1

If N = 10, the number of rounds with an “if game” equals 13 (3 x 4 = 12 + 1 = 13).

FORMULAS	NUMBER OF GAMES	"IF GAME" NUMBER OF...	NUMBER OF ROUNDS	NUM

A “bye” game in a triple-elimination tournament only occurs in the first round. Byes are generally awarded to the highest seeded teams.
Since triple-elimination tournaments are based on powers of 2, when the tournament size exactly equals a power of 2 (2 entries, 4 entries, 8 entries, 16 entries, 32 entries, 64 entries, etc.), there will be no byes in the first round.
When byes are required, determine the number by subtracting the number of teams in the tournament (N) from the next greater power of 2.

Next greater power of 2 - N = number of byes

For example, in a triple-elimination tournament with 10 teams, take the next greater power of 2 (16 in this example) and subtract 10 (number of entries) from it.

16 (next higher power of 2) - 10 = 6 byes

FORMULAS	NUMBER OF GAMES	"IF GAME" NUMBER OF...	NUMBER OF ROUNDS	NUM

To determine the number of days for a tournament, you will need to know the number of teams in the tournament and the number of games that are played each day of the tournament. The formula for determining the number of first-round games is:
N - next lower power of 2 = number of first-round games For example, if N = 10, then the number of first-round games equals 2 (10 - 8 = 2).

You can also solve for the number of first-round games by using the number of byes.
N - Byes/2 = number of first-round games 2

For example, if N = 10 and the number of byes have been determined to be 6, then the number of first-round games equals 2

(10 - 6)/2 = 2 first round games

Practical Exercise

You're planning a triple-elimination tournament, and nine teams have entered. Use the formulas for triple-elimination tournaments and answer the questions below.

What is the total number of games?

Type your answer here

SUBMIT

How many rounds?

Type your answer here

SUBMIT

How many byes?

Type your answer here

SUBMIT

How many games are in the first round?

Type your answer here

SUBMIT

Procedures for Preparing the Draw/Brackets

Once the number of entries is determined, preparing the draw/brackets can be accomplished by following these procedures:

- Select the appropriate size bracket sheet.
- Determine the “seeds,” if seeding is used.
- Place the “seeds.”
- Determine the number of byes.
- Place the byes.
- Determine the number of games.
- Determine the order of play.
- Label the date, time, and location on the bracket sheet.

Round Robin Tournaments

MG Michele Gallagher

The round-robin tournament provides maximum participation because each entry plays against every other entry an equal number of times. The winner of the round-robin tournament is usually determined by the won and lost records. The participant or team with the best record or win-lose percentage is declared the winner.

Advantages	Disadvantages
Round-robin tournaments are among the most popular types of tournaments because they provide maximum participation for the entries. Teams play the games on their	The primary disadvantage of a round-robin tournament is the length of time it takes to complete. Because it is the most time-consuming of all tournaments, using this tournament is not advisable when a championship has to be

schedule until they have no more games left to play. This differs from elimination tournaments, where an entry must win to keep playing. The round-robin format is best for league play and whenever true standings are essential.	determined in a short amount of time.
Additional advantages • They are easily organized and administered. • Allow for complete pre-	Additional disadvantages • More time/facilities/support required • Many forfeits may occur during the last rounds

scheduling • Participants know opponents and game times in advance • Emphasis is on maximum participation for an extended time • Produce the truest champion • Determines ranking • Allow for flexible scheduling • Seeding is not required • Everyone plays everyone	• Participant interest may be hard to maintain • A tournament or league can end in a tie • There is usually no championship game

When drawing tournament brackets, it is important to have all of the teams or participants registered in the tournament. In addition to the number of entries represented by N in the formulas, there are several variables that a sports programmer needs to know to schedule a round-robin tournament. They are:

- The number of games played in the league/tournament.
- The number of games per entry.
- The number of rounds.
- The number of games per round.
- Win/loss percentages.

The formula for determining the number of games for a single round-robin (where each entry plays other entries one time) is:
N(N-1)/2 = the number of games (single round-robin)
If N = 7 entries, then the number of games is 21.

7(7-1)/2 = the games (single round-robin)

The formula for determining the number of games per team is:
N - 1 = number of games each entry will play
If N = 7 entries, then 6 games are played by each entry.

7-1= 6 games played for each entry

FORMULAS	NUMBER OF GAMES	NUMBER OF GAMES PER ENTRY	NUMBER OF ROUNDS	NUM P

The number of rounds for the tournament is determined by the number of entries. If the number of entries is an odd number, then the number of rounds will be the same as the number of entries.

N = number of rounds (when N is an odd number)

For example, if N = 7, then the number of rounds is 7.
If the number of entries is an even number, the formula is:

N - 1 = number of rounds (when N is an even number)

For example, if N = 6, then the number of rounds is 5 (6 -1).

FORMULAS	NUMBER OF GAMES	NUMBER OF GAMES PER ENTRY	NUMBER OF ROUNDS	N GAM

The number of games per round for the tournament is also determined by the number of entries. There are two formulas that need to be used: one for an even number of entries and one for an odd number of entries.

When the number of entries is an **even number**, the formula is:
N = games per round

If N = 6, then the number of games per round equals 3.
N/2 = the number of games per round

When the number of entries is an **odd number,** the formula is:

(N-1)/2 = games per round

If N = 7, then the number of games per round equals 3.
(7-1)/2 = 3 games per round

FORMULAS	NUMBER OF GAMES	NUMBER OF GAMES PER ENTRY	NUMBER OF ROUNDS	N GAME

The winning percentage will help identify a winner. The formula is:
Games won / Games played = winning percentage

If the number of games won is 5 and the number of games played is 6, then the winning percentage is .833.
5/6 = .833 winning percentage

Practical Exercise

You're planning a round-robin tournament, and five teams have entered. The top team won three games, and the worst team won one game. Use the formulas for round-robin tournaments and answer the questions below.

What is the total number of games?

Type your answer here

SUBMIT

How many rounds?

Type your answer here

SUBMIT

How many games per round?

Type your answer here

SUBMIT

What is the winning percentage of the best team?

Type your answer here

SUBMIT

What is the winning percentage of the worst team?

Type your answer here

SUBMIT

Procedures for Round-Robin Tournament Scheduling

While the round-robin tournament is more complex than single-, double-, and triple-elimination tournaments, a successful round-robin tournament can be accomplished by following these procedures:

- Develop a master calendar that indicates playing dates, times, and facilities.
- Create a tournament schedule or calendar that depicts when the tournament is scheduled, ensuring that "no play" dates are designated. Be sure to allocate additional playing dates for practices, rescheduling, tiebreakers, and potential playoffs.
- Set up the pairings.

How to Set Up the Pairings

One way to set up pairing is to list the teams in one column in descending order and the second column in ascending order.

Round 1	Round 2	Round 3	Round 4	Round 5
1- 6	1-5	1-4	1-3	1-2
2-5	6-4	5-3	4-2	3-6
3-4	2-3	6-2	5-6	4-5

When arranging games for even entries, keep the number 1 entry constant and rotate the other entries. Arrange all of the entries in pairs and two vertical columns as shown.

Another way is to use a Bracket generator website, Tournament Bracket/Round Robin Generator. The results using the generator are seen below.

Round Robin 6 Teams

Round 1

1. 18th FA BDE 4. 30th ENG BN	2. 257th MED CO 5. 44th MED CMD	3. 67th MED CO 6. 82nd SIG BN

Round 2

1. 18th FA BDE 2. 257th MED CO	3. 67th MED CO 4. 30th ENG BN	6. 82nd SIG BN 5. 44th MED CMD

Round 3

1. 18th FA BDE 3. 67th MED CO	6. 82nd SIG BN 2. 257th MED CO	5. 44th MED CMD 4. 30th ENG BN

Round 4

1. 18th FA BDE 6. 82nd SIG BN	5. 44th MED CMD 3. 67th MED CO	4. 30th ENG BN 2. 257th MED CO

Round 5

1. 18th FA BDE 5. 44th MED CMD	4. 30th ENG BN 6. 82nd SIG BN	2. 257th MED CO 3. 67th MED CO

Arranging Pairs for the First Round with Uneven Entries

When arranging games for an uneven number of entries, place a stationary bye in the upper-left position and rotate the numbers counterclockwise, beginning with number 1, below the bye. Then, arrange all of the entries in pairs and two vertical columns as shown.

Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7
BYE-7	BYE-6	BYE-5	BYE-4	BYE-3	BYE-2	BYE-1
1-6	7-5	6-4	5-3	4-2	3-1	2-7
2-5	1-4	7-3	6-2	5-1	4-7	3-6
3-4	2-3	1-2	7-1	6-7	5-6	4-5

Assuming that one game is played per day and teams can play one game per day, you can determine the total number of days the tournament will last. The number of teams playing, the number of games played per day, and the number of games a team can play is important variables that must be addressed when completing any tournament draw.

Obtain subsequent round pairings by rotating numbers counterclockwise around the number located in the upper left position of the column. Place each number against the bye as you progress through the 7 rounds.

Below is an example using the Tournament Bracket/Round Robin Generator.

Round Robin – 7 Teams

Round 1	1. 18th FA BDE 5. 44th MED CMD	2. 257th MED CO 6. 82nd SIG BN	3. 67th MED CO 7. 37th ENG BN	4. 30th ENG BN BYE
Round 2	1. 18th FA BDE 2. 257th MED CO	3. 67th MED CO 5. 44th MED CMD	4. 30th ENG BN 6. 82nd SIG BN	7. 37th ENG BN BYE
Round 3	1. 18th FA BDE 3. 67th MED CO	4. 30th ENG BN 2. 257th MED CO	5. 44th MED CMD BYE	7. 37th ENG BN 6. 82nd SIG BN
Round 4	1. 18th FA BDE 7. 37th ENG BN	3. 67th MED CO BYE	7. 37th ENG BN 2. 257th MED CO	6. 82nd SIG BN 5. 44th MED CMD
Round 5	1. 18th FA BDE BYE	7. 37th ENG BN 4. 30th ENG BN	6. 82nd SIG BN 3. 67th MED CO	5. 44th MED CMD 2. 257th MED CO
Round 6	1. 18th FA BDE 7. 37th ENG BN	6. 82nd SIG BN BYE	5. 44th MED CMD 4. 30th ENG BN	2. 257th MED CO 3. 67th MED CO
Round 7	1. 18th FA BDE 6. 82nd SIG BN	5. 44th MED CMD 7. 37th ENG BN	2. 257th MED CO BYE	3. 67th MED CO 4. 30th ENG BN

International or Bracket Tournaments

MG Michele Gallagher

An international or bracket tournament is a combination of a round-robin and single-elimination tournament. First, the entries are divided into two or more groups. Round-robins are played in each group to rank the entries. The top finishers are then grouped or seeded into a single-elimination tournament. The winner of the single-elimination tournament is the champion.

Advantages	Disadvantages
The primary advantage of the international or bracket tournament is the flexibility in scheduling. Other advantages include the following: • Increased participation	The main disadvantage of international or bracket tournaments is, if there are too many entries, problems could arise due to the increased time needed to complete the tournament. Other disadvantages include the following:

- Reduced number of games
- Flexibility for entries
- A champion is determined

- More time/facilities/support for more entries
- Possibility of a tie
- Not easily understood by competitors and spectators

Formulas for International or Bracket Tournaments

Since this type of tournament is a combination of a round-robin and single-elimination tournament, the formulas utilized are the same as for those tournaments.

First Part Formulas

The first part of an international tournament is a round-robin draw. After that, there are usually many teams, and these teams play in several qualifying round-robin groups, tournaments, or leagues.

Let's say that 35 teams are playing in five 7-entry single round-robin qualifying groups. Every team will play six games within their respective group. Thus, at the end of a single round-robin play, five group winners will move to a single-elimination tournament to determine the champion.

FORMULAS FOR THE FIRST PART:	NUMBER OF GAMES PLAYED	GAMES PER ENTRY	NUMBER OF ROUNDS	N GAM

Variables to Consider – When drawing a round-robin tournament schematic, it is important to have all of the teams or participants registered in the tournament so that you know the number of entries. The number of entries is represented by N in the formulas. It is used to solve the other variables that a sports programmer needs to know to schedule a round-robin tournament. They are:

- The number of games played in the league/tournament.
- The number of games per entry
- Then the number of rounds.
- The number of games per round
- Win/loss percentages.

FORMULAS FOR THE FIRST PART:	NUMBER OF GAMES PLAYED	GAMES PER ENTRY	NUMBER OF ROUNDS	N GAME

Determine the Number of Games in a Group/League/Tournament – The formula for determining the number of total games in the qualifying groups is:
N(N-1)/2 = number of games (single round-robin)
If N = 7 entries for each of the five qualifying groups, then the number of games per group equals 21.

7(7-1)/2 = 21 games played in each group in a single

Since there are five qualifying groups, the total number of games in the qualifying piece of the international or bracket tournament equals 105 games.

21 games x 5 groups = 105 games

FORMULAS FOR	NUMBER OF		NUMBER OF	N

THE FIRST PART:	GAMES PLAYED	GAMES PER ENTRY	ROUNDS	GAME

Determine the Number of Games Per Team – The formula for determining the number of games per team is:

N – 1 = Number of games each entry will play

If N = 7 entries, then 6 games are played by each entry within each qualifying group.

7 – 1 = 6 games played by each entry

FORMULAS FOR THE FIRST PART:	NUMBER OF GAMES PLAYED	GAMES PER ENTRY	NUMBER OF ROUNDS	NUMB P

Determine the Number of Rounds – The number of rounds for each group is determined by the number of entries. If the number of entries is odd, the number of rounds will be the same as the number of entries.

If N = 7, then the number of rounds played in each group is 7.

If the number of entries is an even number, the formula is:

N – 1 = number of rounds (when N is an even number)

If N = 6 entries, then the number of rounds is 5 (6 -1 = 5).

FORMULAS FOR THE FIRST PART:	NUMBER OF GAMES PLAYED	GAMES PER ENTRY	NUMBER OF ROUNDS	N GAME

Determine the Number of Games Per Round – The number of games per round for each group is also determined by the number of entries. There are two formulas that may be used: one for an even number of entries and one for an odd number of entries.

When the number of entries is even, the formula is:

N = games per round 2 If N = 8, then the number of games per round equals 4.

8/2 = 4 games per round

FORMULAS FOR THE FIRST PART:	NUMBER OF GAMES PLAYED	GAMES PER ENTRY	NUMBER OF ROUNDS	N GAME

Determine Winning Percentages – Winning percentages will help identify a winner. The formula is:
Games won/ Games played = winning percentage

If the number of games won is 5, and the number of games played is 6, then the winning percentage is .833.

5/6 = .833 winning percentage

Practical Exercise

You're planning an international or bracket tournament, and four leagues of eight teams have entered a single round-robin league. The top team won 6 games, and the worst team won 3 games. The top 2 teams in each league will compete in a single-elimination tournament (8 teams) to determine the overall champion. Use the formulas for the round-robin portion of the international or bracket tournament and answer the questions below.

What is the number of games played by each team?

Type your answer here

SUBMIT

What is the total number of games per league?

Type your answer here

SUBMIT

What is the total number of games to complete the tournament?

Type your answer here

SUBMIT

How many rounds are there for each league?

Type your answer here

SUBMIT

What is the winning percentage of the best team?

Type your answer here

SUBMIT

What is the winning percentage of the worst team?

Type your answer here

SUBMIT

Second Part Formulas

Single-Elimination Tournament In an international or bracket tournament, round-robins are played within each group to rank the entries. The top finishers are then placed or seeded into a single-elimination tournament. Depending on the number of group winners, a single-elimination tournament is then played to determine the champion. The formulas for this part of an international or bracket tournament are the same as for a stand-alone single-elimination tournament.

Single-elimination tournaments are based on powers of 2, so the tournament bracket should be balanced so that, from the second round through the final round, the same number of teams will be in the upper half of the brackets as in the lower half of the brackets. A balance of teams may not be true for the first round due to the possible presence of "bye" games.

Always use the bracket format for the next higher power of 2. For example, when you have five teams in the tournament, use the next higher power of 2 bracket for 8 teams. When you have 12 teams in the tournament, use the next higher power of 2 bracket for 16 teams.

FOMULAS	NUMBER OF GAMES	NUMBER OF ROUNDS	NUMBER OF BYES	NUM RO

Variables to Consider – When using formulas to determine variables for a single-elimination tournament, the number of entries is represented by N. This number is determined after the qualifying round-robin tournament. The other valuables that you will determine are:

- The total number of games in the tournament.
- The number of rounds.
- The number of byes.
- The number of first-round games.
- The number of days needed to conduct the tournament.

FOMULAS | NUMBER OF GAMES | NUMBER OF ROUNDS | NUMBER OF BYES | NUM RO

Determine the Number of Games – The formula for determining the number of games in a single-elimination tournament is:
N - 1 = number of games If N = 5, then the number of games is 4 (5 - 1 = 4).

FOMULAS | NUMBER OF GAMES | NUMBER OF ROUNDS | NUMBER OF BYES | NUM RO

Determine the Number of Rounds – Establish the number of rounds for the single-elimination tournament by determining the power of 2 that equals or exceeds the number of entries.

If N = 5, the power of 2 is raised three times to exceed the number of entries (2 x 2 x 2 = 8). There will be 3 rounds for 5 entries.

FOMULAS | NUMBER OF GAMES | NUMBER OF ROUNDS | NUMBER OF BYES | NUM RO

Determine the Number of Byes – Single-elimination tournaments are based on powers of 2. That is, when the tournament size is a power of 2 (2 entries, 4 entries, 8 entries, 16 entries, 32 entries, 64 entries, etc.), there will be no byes used in the first round.
A bye game in a single-elimination tournament only occurs in the first round, and byes are generally awarded to the highest-seeded teams. Entries that receive first-round byes will play their first game in the second round.

Byes are determined by taking the number of teams in the tournament and subtracting that number from the next higher power of 2.
Next higher power of 2 - N = the number of byes
If N = 5, then the next higher power of 2 is 8. Subtract 5 from 8, and the number of byes is 3.

8 - 5 = 3 byes for the single-elimination tournament

FOMULAS	NUMBER OF GAMES	NUMBER OF ROUNDS	NUMBER OF BYES	NUM RO

Determine the Number of First Round Games – The formula for determining the number of first-round games in a single-elimination part of the international or bracket tournament is:
N - next lower power of 2 = number of first-round games

If N = 5, the next lower power of 2 is 4 (2 x 2). Subtract 4 from 5, and the number of first-round games is 1.

Another formula to calculate the number of first-round games is: (N - Byes)/2 = number of the first-round games.
(5 - 3)/2 = 1 first round game

FOMULAS	NUMBER OF GAMES	NUMBER OF ROUNDS	NUMBER OF BYES	NUM RO

In determining the number of days a single-elimination tournament will run, you need to know the number of teams in the tournament, the number of games played each day, and the number of games a team can play each day. You will also need to determine the number of first-round games.

Enter the number of first-round games under round 1 and always enter 1 game in the last round. Once the number of first and last games is listed, list the number of games in each round. Start with the next to the last round, and work your way back toward the first round. The number of games per round is always a multiple of 2.

Round	1	2	3

Games	1	2	1

Now let's assume teams can play one game per day, and your facility can handle two games per day. Based on this information, determine the total number of days the tournament will last.

Round	1	2	3
Games	1	2	1
Days	1	1	1

In total, it will take 3 days to determine a champion.

Practical Exercise

After the initial single round-robin portion (4 leagues with 8 teams each) of the international or bracket tournament, each league will conduct a single-elimination tournament for the top two teams to determine the overall champion. Utilize the formulas for the single-elimination portion of the international or bracket tournament and answer the questions below.

What is the total number of games played?

Type your answer here

SUBMIT

How many rounds will there be?

Type your answer here

SUBMIT

How many byes will there be?

Type your answer here

SUBMIT

How many games are in the first round?

Type your answer here

SUBMIT

Procedures for International or Bracket Tournament Scheduling

The procedures for scheduling an international or bracket tournament **are the same** as for **round-robin and single-elimination** tournaments. Implementing the round-robin tournament is more complex than the single-elimination tournament. A successful round-robin tournament can be accomplished by following these procedures:

- Develop a master calendar that indicates playing dates, times, and facilities.
- Arrange all entries in pairs and two vertical columns.
- List the numbers consecutively down the first column and then continue up the second column.

Create a tournament calendar that depicts when the tournament is scheduled, ensuring that "no play" dates are designated. Be sure to allocate extra playing dates for practices, rescheduling, tiebreakers, and potential playoffs.

If you need a refresher on Single Elimination procedures, click the button on the right.

SINGLE ELIMINATION

If you need a refresher on Round Robin procedures, click the button on the right.

ROUND ROBIN

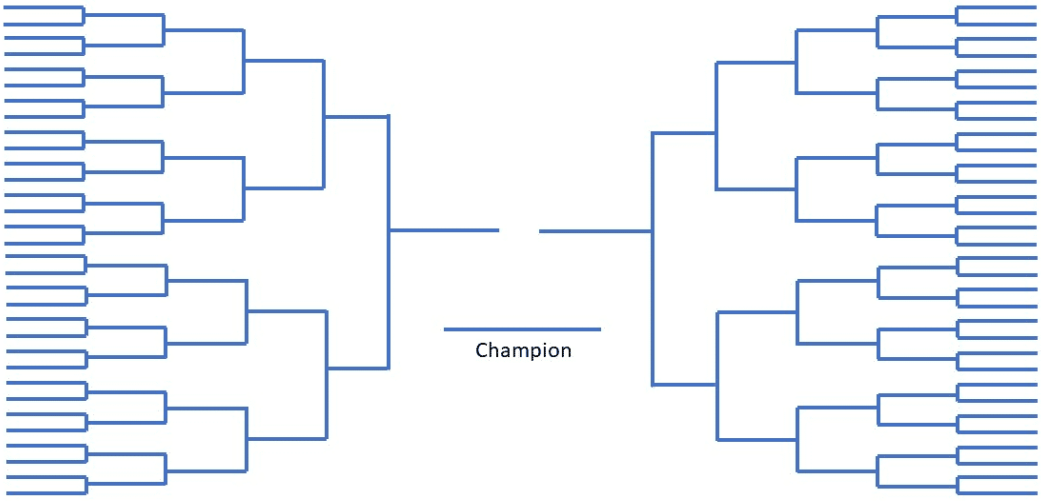
The second part of an international or bracket tournament is the single-elimination draw. Implementing the single elimination is straightforward. Once the number of entries is

determined for the initial round-robin portion, preparing the draw/bracket can be accomplished by following these procedures:

- Select the appropriate size bracket sheet.
- Determine the “seeds,” if seeding is used.
- Place the “seeds.”
- Determine the number of byes.
- Place the byes.
- Determine the number of games.
- Determine the order of play.
- Label the date, time, and location on the bracket sheet.

64 TEAM BRACKET FORMAT | 60 TEAM BRACKET FORMAT

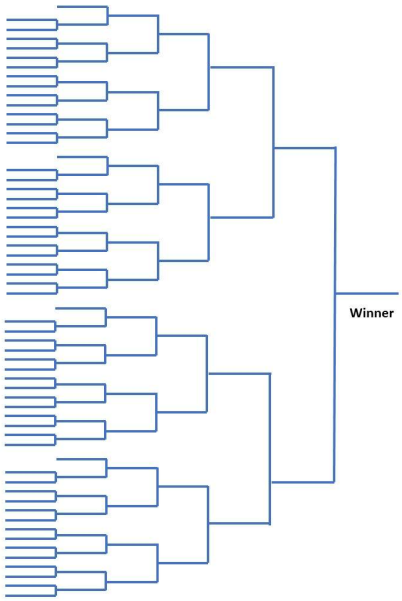
The image below is of a large bracket format for 64 teams.



64 TEAM BRACKET FORMAT

60 TEAM BRACKET FORMAT

The image below is of a large bracket format for 60 teams.


Winner

Challenge or Extended Tournaments

MG Michele Gallagher

Challenge or extended tournaments emphasize participation rather than winning. Contestants issue and accept challenge matches from each other with the ultimate goal of winning all challenges and advancing to the top of the tournament structure. This type of tournament is used primarily with individual and dual sports but can be used in team sports. Challenge or extended tournaments have proven to be an excellent design for individuals with busy and fluctuating schedules.

Advantages	Disadvantages
Challenge or extended tournaments, as the name implies, can go on indefinitely, and the number of games could be unlimited. The best use of this format is for individual sports in recreational settings	The primary disadvantage of challenge or extended tournaments is that they depend on the player's challenge initiative. When an instant champion is desired, using this

conducted over any length of time.	tournament format is not advisable.
Additional advantages • The number of games per entry could be unlimited. • Little supervision is required. • A champion is determined. • Emphasis is on maximum participation for an extended time. • No one is eliminated. • The ranking is determined. • Flexible scheduling is possible.	Additional disadvantages • It could go on forever unless time limits are set. • All entrants may not participate. • An uneven number of games is possible. • May continually challenge the leader.

Ladder Format

The objective is to work your way up the ladder by winning games against those on higher rungs.

Ladder Tournaments

The ladder tournament is probably the most common challenge or extended tournament. This tournament format looks like a ladder with an entry on each rung.

Contestants are listed at random or by a method of seeding (reverse seeding). The listing temporarily ranks the contestants' ability or performance relative to others on the ladder. Winners move up, and losers move down. The tournament usually continues for a month or several months. Twelve entries is a good limit to keep the duration. For more entries, divide them into ability groups and have more than one ladder.

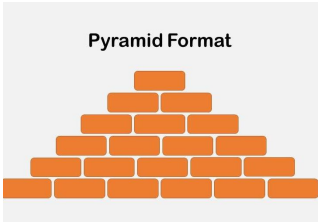
The following are suggested rules for ladder tournaments:

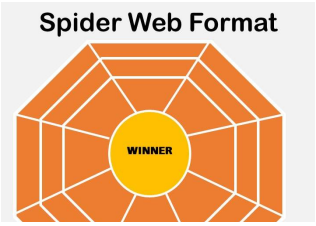
- Participants can only challenge one or two positions above them. If the challenger wins, the two contestants change places. For example, if #6 beats #4, #6 moves up to the #4 position, and #4 moves down to the #6 position. Or, if the challenger wins, #6 moves down to the #4 position, #4 moves up to the #5 position, and #5 moves up to the #6 position.
- Each player must play a match each week or else move down a position
- Provide a set of rules, and a player contact list for every entry

There are **two types** of ladders:

Informal – Players are responsible for making challenges and moving positions.

Formal – The event director coordinates play, and the tournament can be one day, two days, or longer.





This type of tournament is similar to the ladder tournament, except that many participants may be on the same level. As in the ladder tournament, entries can only challenge one or two levels up from their position. The advantage is that, instead

A variation of the pyramid tournament is a spider web tournament. The advantage of the spider web is that it can accommodate more contestants in its diagram. The disadvantage, however, is that, as the center or winner’s

of a single player at the bottom, several players share that position.

position is approached, the number of contestants remains the same as in the outer ring, which forces the player in the center to play numerous matches.

Accumulation Tournaments

Accumulation tournaments allow participants to earn points, miles, or other established distances, established numbers, or targets. Participants may compete against themselves or others.

For example, in "Run for Your Life," participants earn awards for completing 50 miles, 100 miles, etc. In Bowl 10,000 Pins, participants earn awards for knocking down predetermined numbers of bowling pins.

Procedures for Conducting Challenge or Extended Tournaments

Once the number of entries is determined, preparing the draw/bracket for a challenge or extended tournaments can be accomplished by following these procedures:

- Select suitable material that allows easy removal/changing of entry positions (e.g., whiteboard, dry erase markers).
- Determine and place the “seeds” if seeding is used.
- Establish rules and regulations before starting the tournament, including specific sport rules, ways to challenge, and the number of contests to be played.
- Ensure that the positions of participants are consistently updated.• Add new entries to the lowest position.
- Establish a completion date of the tournament.
- Determine the winner by ranking.
- Label the date, time, and location on the bracket sheet.

THIS CONCLUDES THE OVERVIEW OF SPORTS TOURNAMENTS. THANK YOU!