



1 Overview.....

Mallard Madness, the 2018 Bear Metal Summer Camp game, invites two *Alliances* to use their strategy and skills to herd *Ducklings* in their *Crates*, and gain *Ownership* of the *Mallard*.

Each two-Team Alliance maddens in two ways:

Herd *Ducklings*. There are 60 *Ducklings* arranged on the front side of the *Field*, within the *Pond*, that teams can collect and deposit into their *Pen* or *Crates*.

Move the *Mallard*. There two *Mallards* in the center of the *Pond* that teams can battle over to gain *Ownership* of. A *Mallard* is considered *Owned* if it is fully within an *Alliance's Pen* or *Crate*.

2 Field Layout.....

See figure on the right

Robots begin located against their *Alliance Station* wall.

All 60 *Ducklings* begin located within the *Pond*.

Two *Mallards* begins located in the center of the *Pond*.

Each *Alliance* has three *Crates* located in the corner of their *Pen*. Two (2) short *Crates* and one (1) tall *Crate*.

3 Gameplay and Scoring.....

The teams have two minutes (120 seconds) to complete objectives and score points as follows:

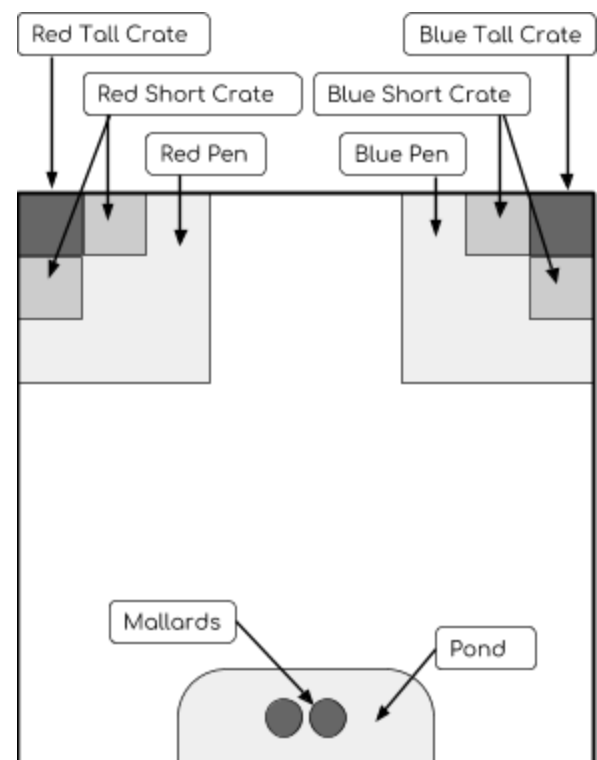
- A *Duckling* in a *Pen* is worth one (1) point.
- A *Duckling* in a short *Crate* is worth five (5) points.
- A *Duckling* in a tall *Crate* is worth ten (10) points.
- An *Alliance* with *Ownership* of a *Mallard* receives thirty (30) points.
- An *Alliance* that places a *Mallard* in one of their *Crates* receives an additional thirty (30) points.

The *Alliance* with the higher number of points wins the match.

4 Ranking System.....

Teams are ranked and ties are handled in the following order:

1. Average *Match* score
2. Average *Mallard* score
3. Average *Duckling* score
4. Least *Penalties*



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5 Rules and Penalties.....

<G01> Be Safe. If at any time the *Robot* operation is deemed unsafe, it may be immediately stopped. The *Team* might need to make it safe before playing another match. **Penalty:** Warning.

<G02> Stay Inside. If at any time the *Robot* makes contact with anything outside the *Field*, it may be immediately stopped. **Penalty:** Warning.

<G03> Not too Many People. Each *Team* can only have three (3) people in the *Alliance Station* at any time. **Penalty:** Minor.

<G04> Start Against the Wall. At the beginning of a *Match*, each *Robot* must begin in contact with the wall in front of its *Alliance Station*. The match will not start until this is fixed. **Penalty:** Warning.

<G05> Begin Small. At the beginning of a *Match*, each *Robot* must not exceed a cube with 18 inches on every side. Once the *Match* begins, the *Robot* may expand to any size unless restricted by other rules. **Penalty:** Warning.

<G06> Score is Official After. The official score is calculated once all objects come to rest or five seconds after the *Match*, whichever comes first. The live score and the official score may vary during the match. **Penalty:** None.

<G07> Don't Touch it. During a *Match*, everyone is prohibited to make contact with the *Field* or *Robots*. First occurrence will result in a warning, with any following instances resulting in a *Minor Penalty*. Contact with the *Field* or *Robots* for safety reasons will not result in a warning nor *Penalty*. **Penalty:** Minor.

<G08> Robots Grasping Game Elements. *Robots* may not grab, grasp, and/or attach to any *Game Elements* nor *Field* structure other than *Ducks*. First occurrence will result in a warning, with any following violations resulting in a *Major Penalty*. **Penalty:** Major.

<G09> Blocking and Pinning. A *Robot* cannot *Block*, *Pin*, or *Trap* an opposing *Alliance Robot* for more than five (5) seconds. Some contact may rise from normal gameplay. If this contact is deemed deliberate or chronic, the offending team will receive a *Major Penalty*. **Penalty:** Major.

<G10> Keep the Game Elements Inside. A *Robot* may not deliberately remove *Game Elements* from the *Field* during a *Match*. *Game Elements* that unintentionally fall outside the field will be returned to the *Field* at the earliest, safe opportunity. **Penalty:** Minor.

<G11> Stay Together. *Robots* may not deliberately detach parts during a *Match*. **Penalty:** Minor.

<G12> Game Elements in Contact with Robots. If a *Duck* is in contact with a *Robot* at the end of a *Match*, it will be counted for its normal value according to section 3. **Penalty:** None.

<G13> Fully Inside for Points. A *Duck* must be fully inside a *Pen* to be counted as in that *Pen*. **Penalty:** None.

<G14> Match Replay. Matches are replayed at the discretion of the Head Referee only for a failure of a *Game Element* that would likely impacted which *Alliance* won the *Match*. **Penalty:** None.

<G15> Be Nice. Egregious behavior at the field, pits, or stands, as determined by the referees, will result in a *Major Penalty*. Subsequent violations will result in *Team* disqualification. **Penalty:** Major.

<G16> Unlimited Possession. A *Robot* may *Possess* any number of *Ducks*. **Penalty:** Minor.

<G17> Descoring. Once a *Robot* places a *Duck* into a *Crate*, it cannot be deliberately removed from the *Crate*. A *Robot* may remove *Ducks* from a *Pen* unless restricted by other rules. **Penalty:** Minor.

<G18> Flipping is for Fools. A *Robot* cannot intentionally flip another *Robot*. A *Robot* that is accidentally flipped will not be righted by field personnel nor be considered a field fault. **Penalty:** Major.

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6 Game Definitions.....

The following definitions and terms are used in Mallard Madness.

Alliance - A grouping of two *Teams* that work together for a given match. *Alliances* are designated “red” or “blue”.

Alliance Station - The area where the *Alliance* occupies during a match to drive their *Robots*.

Block / Blocking - Preventing an opposing *Alliance Robot* from accessing an area or *Alliance* specific Game Element for an extended period of time by obstructing ALL paths of travel to an object or area.

Crate - A standard 13" milk crate. A short *Crate* is 11" tall. A tall *Crate* is 22" tall.

Duck - A *Duckling* or a *Mallard*.

Duckling - A 2" rubber duck. The appearances of the *Ducklings* vary and do not affect scoring.

Field - The 12ft x 12ft field and all *Game Elements* described in official field documents.

Game Element- Any item *Robots* interact with to play the game. This year's *Game Elements* include: *Ducks*, and *Crates*.

In (Inside) / Fully In (Inside) - An object that has crossed the vertical sides of a *Zone*. An object that is entirely inside the vertical sides of a *Zone* is said to be *Fully Inside*.

Mallard - A 5" rubber duck. The Mallard, *anas platyrhynchos*, is a breed of dabbling duck.

Match - A head-to-head competition between two *Alliances*. A *Match* consists of a two minute (120 seconds) driver-controlled period.

Owned / Ownership - A *Duck* is considered owned if it is fully in a *Pen* or *Crate*.

Pen - A *Zone* defined by tape corresponding to the *Alliance* color.

Penalty - The consequence imposed for a rule or procedure violation that is identified by a referee. When a *Penalty* occurs, points will be awarded to the *Alliance* that did not incur the *Penalty*. *Penalties* are either *Minor Penalties* (ten (10) points) and *Major Penalties* (forty (40) points). See section 1.5 for list of rules and penalties.

Pin / Pinning - Preventing the movement in ALL directions of an opposing *Alliance Robot* while it is in contact with the Field Wall, one or more Game Elements, or another Robot.

Pond - A *Zone* defined by white tape located against the *Field* perimeter, audience side.

Possess / Possessing - An object is considered to be *Possessed* by a *Robot* if it follows the movements of the *Robot*.

Score / Scoring - *Robots* earn points for their *Alliance* by performing specific actions outlined in section 3.

Team - The camp attendees that work together to build a *Robot* to play *Mallard Madness*.

Trap / Trapping - See *Block / Blocking*

Zone - The volume defined by an infinitely tall vertical projection normal to the *Field* from the tape. The tape that defines a *Zone* is included in the *Zone*. The *Pens* and *Pond* are *Zones*.