

MONSTER A.I.

Basic Rules pt. 1

What is Monster A.I.

Monster A.I. is a ruleset for using automated enemies in your tactical tabletop role-playing games. Monster A.I. is highly compatible with many RPGs, and hackable to fit your favorite game systems and settings.

Monster A.I. is great for low-prep sessions, solo and GM-less gameplay, and for players who want their combat to feel more like Strategy RPG video games like Final Fantasy Tactics or Into the Breach.

These rules make it easy to program your own monsters to work with your preferred systems, whether you use d20s or no dice at all. This is made possible through Monster A.I.'s core rules for decision making: checking conditions, targeting, pathfinding, and maximizing the effectiveness of actions.

Monster A.I. assumes you play using a grid and miniatures, but with minor tweaks you can use Monster A.I. without a grid or entirely in theater of the mind.

Note: The rules make multiple references to a game master. In solo and GM-less games, the player(s) act as the GM.

Credits

Monster A.I. is a tabletop enemy A.I. tool designed by Victor A. Gonzalez, 2019. It takes inspiration from *Gloomhaven* by Isaac Childres and *Sword & Sorcery* by Simone Romano and Nunzio Surace.

The Monster Scheme

1 **Goblin Warrior**

2

3

4

If two or more allies died this round, this creature retreats. Summon 1d4 Goblins of any type next round. Perform this ability only once per combat.

1+ **Move**
Melee Attack +4 (1d6)

Target Priority: CLOSEST
Special Traits: Cowardly

Each monster's stats and behaviors are delineated by its scheme. Each scheme contains a monster's type (1), its stats and ability modifiers (2), its A.I. behaviors (3), and its target priority and special traits (4). Refer to the scheme for all of the monster's information and to decide how it acts and who it targets.

How the Monster Acts

The scheme contains a list of A.I. behaviors, each with a condition and a set of actions. Starting with the top A.I. behavior, **check to see if the condition can be fulfilled**. If not, move on to the next A.I. behavior.

A symbol indicates a special condition written in the text of the A.I. behavior. Special conditions are always italicized and usually begin with "If..."

A symbol with one or more numbers in it indicates a proximity condition. Check if there are targetable enemies that are within the indicated number of spaces away from the monster.

Once a condition has been fulfilled, if the A.I. behavior contains an action that requires a target (e.g. a Move, Attack, or Heal action), then **choose a target** for the monster's action.

When a monster performs a Move *without* performing any non-Move targeting actions *afterwards*, choose a target within a number of spaces equal to its Speed. When a monster performs any non-Move targeting actions *without* performing a Move *beforehand*, choose a target within a number of spaces equal to its Range. When a monster performs a Move *followed by* any non-Move targeting actions, choose a target within a number of spaces equal to its Speed plus its Range (this number is known as the monster's "effective range").

If there is more than one viable target, refer to the monster's **target priority** to choose the target. If there is still more than one viable target after checking the target priority, the game master chooses the monster's target.

If there are no targetable enemies within the monster's effective range, or if no conditions are fulfilled, the monster finds its closest enemy and **takes two Move actions** toward it. If there is more than one enemy that is closest to the monster, refer to the target priority rules.

Once a target has been selected or if no target was needed, **perform the actions in the behavior text in the order listed**. This process is done **for each individual monster**. It is possible for individual monsters of the same type to perform different A.I. behaviors from each other.

Example of Checking Conditions

If self or ally has less than half of its max HP,
Move
Ranged Heal 1d8
Charge ○ ○

1

Target all adjacent enemies.
Push 1
Daze (CON Check 11)

2+

Target Priority: LOWEST HP

1. The monster checks if it or any ally has less than half of its max HP. If that isn't the case, the monster moves on to the next A.I. behavior.

2. The monster checks if there are any targetable enemies within 1 space from the monster. This action targets all adjacent enemies. If there are no enemies within 1 space from the monster, the monster checks the next A.I. behavior.

3. The monster checks if there are any targetable enemies within its effective range (SPD + RNG). If there are multiple targetable enemies, this monster prioritizes the enemy with the lowest HP.

4. If there are no targetable enemies within its effective range, the monster finds its closest enemy (regardless if that enemy is targetable). If there is more than one enemy closest to the monster, the monster prioritizes the enemy with the lowest HP. If the target priority does not break ties or does not apply to any of the viable targets, then the GM chooses the monster's target. Then the monster takes two Move actions toward it.

MONSTER A.I.

Basic Rules pt. 2

Movement

The monster may move up to a number of spaces equal to its speed. Monsters will avoid difficult and hazardous terrain unless there is no other path to hit their target. Monsters won't walk through their own traps unless forced. Monsters can move through their allies but not their enemies and may not end their movement in an occupied space.

When a monster performs a *Move without* taking a non-Move targeting action after its movement, the monster moves along the shortest path that is free of obstacles to get as close to its target as possible.

When a monster performs an Attack after its Move action, the monster will move as close as it needs to in order to hit its target. For **Melee Attacks with a single target**, the monster will move so that it ends its movement adjacent to its target (except in cases when a melee attack can reach further than 1 space away). For **Ranged Attacks with a single target**, the monster will move as few spaces as possible to get within range of its target to perform its attack. The same is true for **Heal actions** and most actions with a single target. This is as complex as movement gets in most basic situations.

(For rules about attacking and range, see the rules section **Attacks**).

Maximizing the Effectiveness

What happens when we add more complex rules? What happens when we include line of sight rules? Or attacks with multiple targets or an area of effect? Your game systems will undoubtedly have more complex rules than can be accounted for, which is why in complex situations the monsters always **maximize the effectiveness** of their A.I. behavior.

If a monster performs a **Move followed by a more complex Attack**, then the monster will always prioritize moving where it can **hit its target for maximum effect**. For example, if a monster performing a Move and then a Ranged Attack were to take disadvantage from being too close to its target, that monster will move away from its target until it can perform its attack without having to take disadvantage.

For **Area of Effect Attacks and Attacks with multiple targets**, the monster will move to a position where it can hit its target enemy and **as many other enemies as possible**. If a monster must choose between attacking its target without taking disadvantage or maximizing the effect of its attack on secondary enemies, the monster prioritizes attacking without disadvantage.

Apply this rule of "maximizing the effectiveness" to every action a monster takes where your systems see fit. For example, if you have a system for line of sight and taking cover in your game, moving to a position where the monster has L.O.S. to its target and is in cover would maximize the effectiveness of its action. The monster will always prioritize being able to hit its target over all other considerations.

Attacks

All Attacks have a range type (such as Melee or Ranged), a bonus to hit, and an attack value written in parentheses. All Attacks can only hit enemies within a number of spaces equal to the monster's Range stat (this is known as being "within range"). Whenever a monster attacks a target, roll a d20 against the target's defense (or its equivalent) to see if it hits. If it is successful, refer to the attack value to see how much damage gets dealt.

Some attacks can target multiple enemies or have an area of effect. In either case, the monster selects a target as usual and positions itself to hit its target and as many secondary enemies as possible. For attacks with multiple targets, perform separate attacks against each target. AOE attacks do not involve rolling to hit. Instead, roll for damage and/or apply an effect against each creature or space in the area of effect. AOE attacks may involve a saving throw written in parentheses. The primary target can be in any space within the area of effect, but must be within range of the attacker in order to be targeted. Only one of the spaces in the area of effect needs to be in range of the attacker, meaning that secondary enemies can be hit by an area of effect even if they are outside of the attacker's range.

Heal

Healing allows the target to gain hit points up to its maximum HP. All Heal actions and effects have a range type (Ranged, Self, or Adjacent Ally) and a heal value. Monsters performing a Ranged Heal can target itself or any ally within range, prioritizing the monster that has lost the most HP.

Additional Effects

Attacks often have additional effects that modify the Attack or apply status effects to the target(s). Many effects also have a saving throw written in parentheses. Effects that don't list a saving throw apply the effect on a successful hit. Some A.I. behaviors also apply effects without needing to Attack. In such cases, select a target just as you would with an Attack.

Daze: Dazed creatures have disadvantage on their attacks and saving throws until the end of their next turn.

Disarm: Disarmed creatures can't attack until the end of their next turn.

Immobilize: Immobilized creatures can't move until the end of their next turn.

Pull X: The target is moved X spaces toward its attacker. The target must move closer to the attacker with each space that it is forced to move.

Push X: The target is moved X spaces away from the attacker. The target must move farther away from the attacker with each space that it is forced to move.

Retreat: Remove the creature from play.

Shield X: Prevent X damage from all attacks dealt to this creature until the start of its next turn.

Stun: Stunned creatures can't move or perform any actions until the end of their next turn.

Summon: Create one or more creatures in an available space closest to the summoner.

Target X: This attack targets X number of enemies within range. Perform separate attacks on each target.

MONSTER A.I.

Basic Rules pt. 3

Charge

Charges act as cooldown timers for a monster's abilities. Actions with the keyword **Charge** have a series of circles that represent charges. When a monster resolves an action with the Charge keyword, lightly fill in all of the circles with a pencil. Monsters cannot perform A.I. behaviors that contain any charges until all charges are removed; skip these A.I. behaviors as though their conditions cannot be fulfilled. At the beginning of each round, remove a charge from all A.I. behaviors that have at least one charge by erasing one of the filled-in circles.

Turn Order

Before combat, form a turn order deck comprising of each monster type and each player and NPC represented in combat. At the beginning of each round, shuffle the turn order deck, then reveal cards from the top to determine who takes their turn. When a monster turn card is drawn, all monsters of the same type take their turns individually. The GM decides the order in which individual monsters act. Alternatively, you can assign a number to each individual monster of the same type and activate them in ascending order.

Turn cards may also **add a bonus** to some monsters' actions that round when they are drawn in a specific order (denoted with ⚡). Some A.I. conditions activate if the turn card is drawn in a specific order (denoted with ◀▶).

Special Traits

Special traits are a monster's passive abilities and special rules. Some traits are typical of a faction of monsters, while others distinguish monster types through their unique abilities.

Aim for the Head: This creature dies instantly to critical hits.

Boss Resistance: This creature has advantage on all saving throws.

Cowardly: This creature retreats if it becomes terrified.

Ethereal: Attacks with magic weapons have advantage against this creature.

Evasive: Attacks have disadvantage against this creature.

Explode X: When this creature dies, it deals X damage to each creature adjacent to it.

Floating: This creature is unaffected by difficult or hazardous terrain.

Flying: This creature cannot be attacked by melee attacks and is unaffected by difficult or hazardous terrain.

Frenzy X: If this creature misses its attack, it deals X damage to each adjacent creature.

Haste: Set aside all turn cards belonging to creatures with Haste before shuffling the turn order deck. Shuffle the remaining cards together, then cut them in half. Shuffle all the turn cards that were set aside into one of these stacks (if the stacks are uneven, shuffle these cards into the smallest stack). Then put the stack containing the cards with Haste *on top* of the other to form the turn order deck.

Immunity: This creature is immune to specific types of damage (e.g. fire or magic) or status effects.

Inspiring: Allies adjacent to this creature have advantage on their attacks.

Intangible: This creature can move through walls and obstacles, but may not end its movement in a space with a wall or obstacle.

Intimidate: Enemies adjacent to this creature have disadvantage on their attacks.

Invulnerable: This creature cannot take damage and isn't affected by status effects.

Resistance: This creature has advantage on saving throws against specific types of damage or status effects.

Resurrect: When this creature dies, it comes back to life with half its max HP (rounded up) in 1d4 rounds.

Retaliate: When this creature is attacked, it performs a bonus Attack against its attacker. Creatures with a Range of 1 may only retaliate against attackers in an adjacent space. Creatures with a Range greater than 1 may not retaliate against attackers in an adjacent space. A monster retaliates with its weakest attack, without applying additional effects. Creatures may retaliate only once per round.

Slippery: This creature will disengage as a bonus action any time it moves.

Test Morale: When this creature is below half its max HP, perform a saving throw (WIS check 10). On a failed save, this creature retreats. This creature does this only once per combat.

Weakness: This creature has disadvantage on saving throws against specific types of damage or status effects.

Ambiguity

If there is ever a situation where it is unclear how the monster should act or how certain rules interact with each other, the GM has final say on what occurs.

Tips and Variant Rules

Converting Proximity Numbers to Other Distances: 1 space equals 5' or close. 2-6 spaces equal 10'-30' or near. 7+ spaces equal 35'+ or far.

Playing with Open Information: The players can play with the monster A.I. schemes open to everybody. This allows for GM-less gameplay, however playing with total transparency makes it easier to plan around the monsters' turns. You may prefer to play this way as it creates puzzle-like combat situations.

Build Encounters with Multiple Types of Enemies: Monsters have different behaviors that synergize with each other. Building encounters with diverse enemies will encourage players to use different tactics. Combined with interesting environments and hazards, differentiated enemies help create more compelling combat scenarios and more tactical considerations for the players.

Narrative Gameplay: Monster A.I. produces automatons for tactical combat. If this is unconvincing to narrative styles of gameplay, you can still play with Monster A.I. using the rules for decision making. Decide the monster's actions using the sets of conditions and then interpret its actions without using the pathfinding and action rules in pt. 2 of the Basic Rules.

MONSTER A.I.

Example of Play

For this example, four player characters are facing off against Wargs, an Orc Shaman, and Goblin Warriors.

We begin by forming the turn order deck consisting of one turn card for each of the player characters and one turn card for each monster type present in combat, for a total of seven turn cards. Wargs have a special trait called Haste which means their turn card gets shuffled into the top half of the turn order deck at the beginning of every round.

We are now ready to begin combat! We reveal the top card of the turn order deck. When a monster turn card is revealed, each monster of that type will take its turn individually. We can assign a number to each individual monster and have them take their turns in ascending numerical order, or just decide the turn order ourselves. We keep revealing turn cards and taking turns in this way until the turn order deck runs out and everyone has taken a turn. Then we shuffle the turn order deck and a new round begins.

Let's take a look at the Warg monster scheme (pictured above right).

The first A.I. condition is a special condition that asks to check "If the Warg has 10 or less HP". If this were true, the Warg performs a Heal on itself (more on healing later). Then we shade in the three charge circles. Wargs cannot perform this A.I. behavior again until all charges have been removed. At the beginning of every round, we erase one of the charges.

Warg

If Warg has 10 or less HP,
Heal self 1d8+1
Charge ○ ○ ○

1+

Move
Melee Attack +4 (1d6+2)
Immobilize (STR Check 12)

Target Priority: HIGHEST HP

Special Traits: Haste, Slippery

The next A.I. condition is a proximity condition of 1 or more. We check to see if there are any targetable enemies within the Warg's effective range.

Wait, why do we check the Warg's effective range? First, the Warg is performing a Move and then an Attack, so we use its effective range to target an enemy. Second, if there were no enemies within the Warg's effective range, it would have to take two Move actions towards its closest enemy instead of performing this A.I. behavior.

The Warg's effective range is 11 (its Speed stat of 10 plus its Range stat of 1). Let's assume there is more than one targetable enemy within 11 spaces of the Warg. We use the Warg's target priority to choose which of our available targets the Warg targets with its actions. The Warg's target priority is the enemy with the highest HP. If more than one

of the available targets was tied for highest HP, we would choose which of those becomes the Warg's target.

The Warg is performing a Move and then a Melee Attack. The Warg moves along the shortest path to its target so that it ends its movement adjacent to it. It then performs a Melee Attack by rolling 1d20 and adding 4 to the result, and comparing its roll to the target's defense stat. On a hit, it rolls 1d6 and adds 2 to the result to determine how much damage it deals with its attack. In addition, on a successful hit this attack deals the status effect Immobilize. The target must pass a Strength saving throw against a 12 in order to avoid this effect.

Let's look at one more monster, the Orc Shaman, to see how it acts on its turn.

Orc Shaman

If self or ally has less than half of its max HP,
Move
Ranged Heal 1d8
Charge ○ ○

Target all adjacent enemies.
Push 1
Daze (CON Check 11)

2+

Move
Ranged Magic Attack +3 (1d10)
Roll 1d4 for effect:
1: Nothing 2-3: Heal self 2
4: Disarm (STR Check 12)

Target Priority: LOWEST HP


The Orc Shaman's first condition says "If self or ally has less than half of its max HP". If this were true, because it is performing a Move and then a Ranged Heal, we would look for targets (including itself) within the Orc Shaman's effective range of 9.

When healing, monsters prioritize the target that has lost the most HP. Once the Orc Shaman has its target, it moves along the shortest path to its target until it is within range. If it was targeting itself, or its target was already within range, the Orc Shaman would not move. Once it is within range, the Orc Shaman performs a Ranged Heal by rolling 1d8 to determine how many hit points its target heals.

The next condition is a proximity condition of 1 space. Check to see if any targetable enemies are within 1 space of the Orc Shaman. If this were true, the Orc Shaman targets all enemies adjacent to it. Each target is pushed 1 space away from the Orc Shaman. They are also dealt the status effect Daze unless they pass a Constitution saving throw against an 11.

The last condition is a proximity condition of 2 or more. Since the Orc Shaman is performing a Move and then a Ranged Attack, we check to see if there are any targetable enemies within the Orc Shaman's effective range. The Orc Shaman prioritizes the target with the lowest HP. It then moves along the shortest path to its target until it is within range to perform its Attack. On a successful hit, we roll 1d4 to add an additional effect to the attack.

Bosses

A  icon on a monster scheme indicates that monster type is a boss. Bosses are more powerful than normal creatures. It is recommended that you have only one boss monster in an encounter, with additional non-boss monsters filling out the ranks.

Optionally, you may add additional boss turn cards to the turn order deck. This is great for facing off against lone boss monsters, or to increase the encounter's challenge at any point during combat.

Errata

Changes introduced in Monster A.I. Version 1.25:

- A shorter name.
- A new card-based turn order system and changes to A.I. conditions that used to activate based on initiative.
- Rebalanced enemy stats, effects, attack values, and special traits.
- Small quality of life edits and some fixed typos.
- Significant changes to the rules for Charge, Daze, Haste, and Retaliate.

Changes introduced in Monster A.I. Version 1.3:

- A new Example of Play page.
- Rebalanced enemy attack values and effects.
- Significant revisions to the rules for targeting and range in sections “How the Monster Acts” and “Attacks”.
- Clarification and revisions in the “Designing A.I. Conditions” section of the Program Your Own A.I. page.
- Minor changes to the rules for Inspiring, Intimidate, and Retaliate.
- Small quality of life edits.

Example Encounters for a Party of 4 Players

Level 1 Encounters

4 Goblin Warriors	1 Goblin Hag
2 Goblin Archers	3 Goblin Warriors
1 Goblin Thief	1 Warg and 1 Goblin Torcher OR 2 Wargs
3 Goblin Warriors	1 Goblin Hag (plus extra boss turn cards)
1 Warg	2 Goblin Thieves
1 Goblin Torcher	1 Orc Shaman
2 Goblin Archers	

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GOBLINS

Level 1



Rules Reference

Cowardly: This creature retreats if it becomes terrified.

Daze: Dazed creatures have disadvantage on their attacks and saving throws until the end of their next turn.

Evasive: Creatures have disadvantage on attacks against this creature.

Explode 3: When this creature dies, it deals 3 damage to each creature adjacent to it.

Haste: (See Special Traits section of Basic Rules for complete Haste rules.)

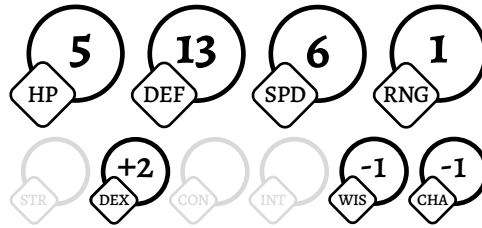
Retreat: Remove the creature from play.

Set Fire: Creatures that start their turn on or move onto a space that is on fire take 1d4 fire damage. Fires last 2 rounds.

Slippery: This creature will disengage as a bonus action any time it moves.

Wither 2: Withered creatures have -2 attack damage. Wither gets removed by any heal effect but no life is gained.

Goblin Warrior



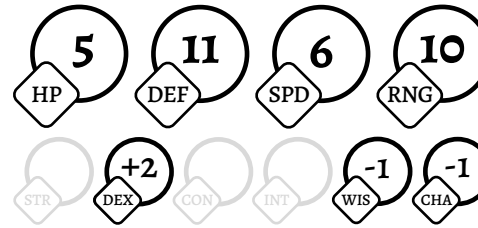
If two or more allies died this round, this creature retreats. Summon 1d4 Goblins of any type next round. Perform this ability only once per combat.



Move
Melee Attack +4 (1d6)

Target Priority: CLOSEST
Special Traits: Cowardly

Goblin Archer



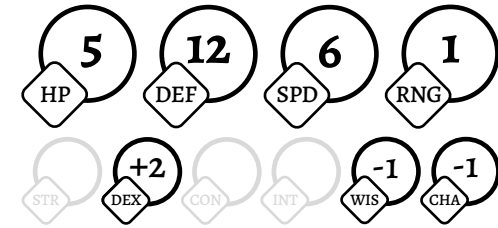
Move
Ranged Attack +4 (1d6-1)
(minimum 1 damage)
Create a 1d6 damage trap with Immobilize in an adjacent space closest to an enemy.



Move
Ranged Attack +4 (1d6-1)

Target Priority: CLOSEST
Special Traits: Cowardly, Slippery

Goblin Thief



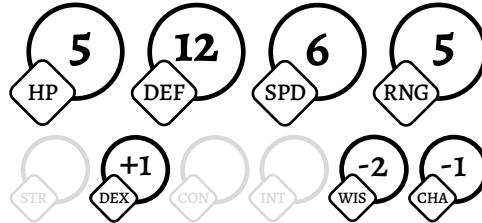
If this creature's turn card gets drawn first,
Move
Steal 3d6 gold from target enemy. Retreat at the start of its next turn. Each Goblin Thief may do this only once per combat.



Move
Melee Attack +4 (1d6-1)
Daze (DEX Check 12)

Target Priority: MOST GOLD
Special Traits: Cowardly, Evasive, Haste, Slippery

Goblin Torcher



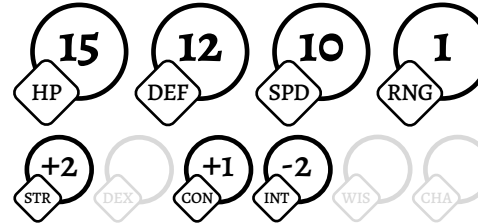
Melee Attack +3 (1d6)
Target 2
Set fire to targeted spaces.



Move
Ranged AOE Attack
Set fire to an area with a 1 space radius.
Charge 3

Target Priority: CLOSEST
Special Traits: Cowardly, Explode 3

Warg



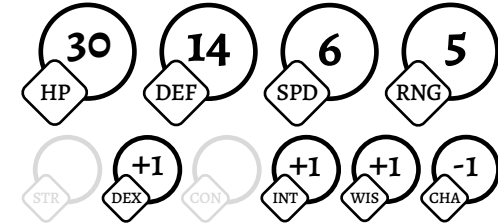
If Warg has 10 or less HP,
Heal self 1d8+1
Charge ○○○



Move
Melee Attack +4 (1d6+2)
Immobilize (STR Check 12)

Target Priority: HIGHEST HP
Special Traits: Haste, Slippery

Goblin Hag



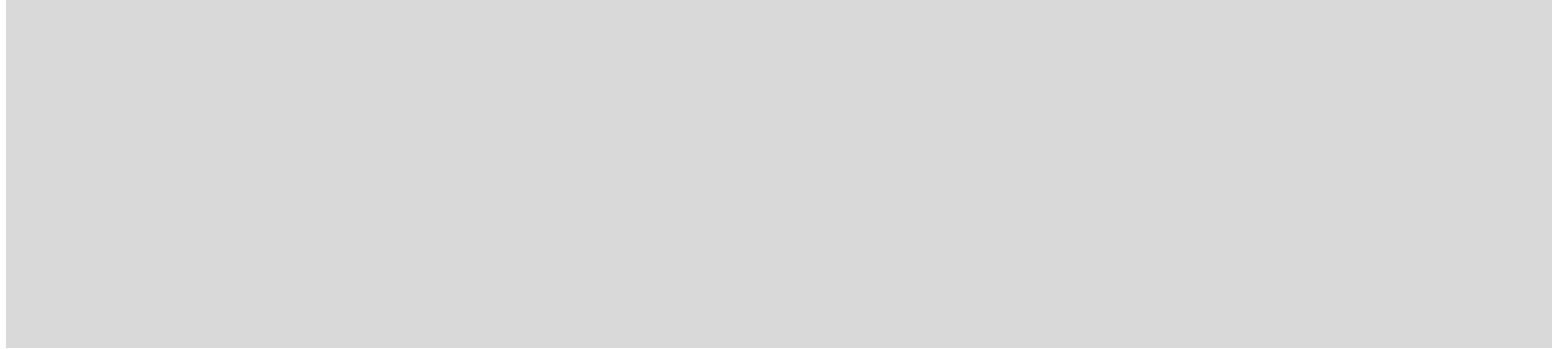
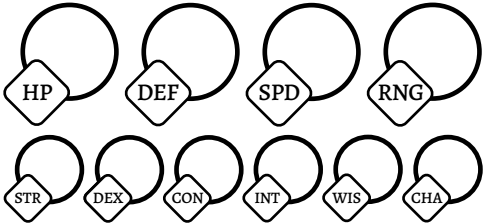
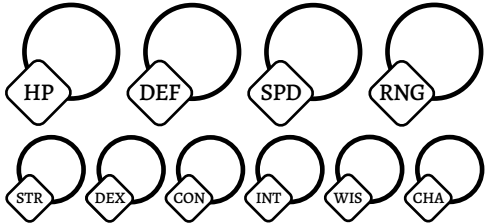
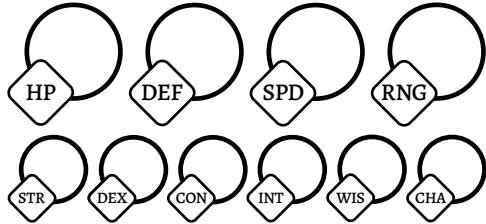
Melee Attack +3 (1d6+2)
Target 2
Wither 2 (CON Check 13)



Move
Ranged Attack +3 (1d8)
Pull 4 (STR Check 13, Pull 2 instead on a successful save)

Target Priority: CLOSEST
Special Traits: Allies get +1 attack damage.

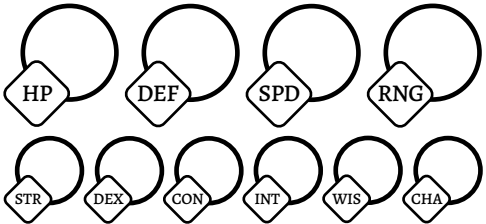
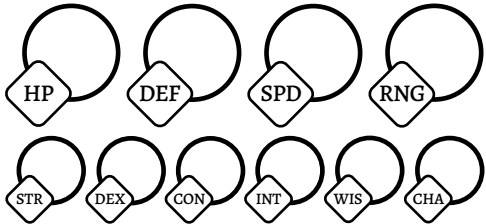
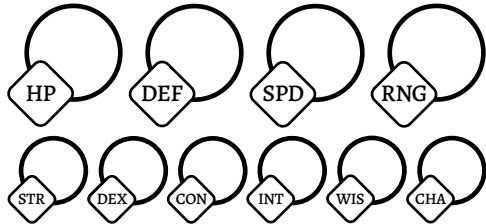
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MONSTER A.I.



Target Priority:
Special Traits:

Target Priority:
Special Traits:

Target Priority:
Special Traits:




Target Priority:
Special Traits:


Target Priority:
Special Traits:

Target Priority:
Special Traits:

Goblin Warrior


 *If this turn card is one of the last two to be drawn, add Push 1 to all Goblin Warrior attacks this round.*

Goblin Archer

 *If this turn card is one of the last two to be drawn, add Push 1 to all Goblin Archer attacks this round.*

Goblin Thief

Haste

 *If this creature's turn card gets drawn first*

Goblin Torcher

Warg

Haste

Goblin Hag

Goblin Hag

Goblin Hag

