

## Plants vs Zombies - User Manual

### INTRODUCTION

In this game, there will be a human player and a computer player. They play the role of Homeowner/Zombie respectively.

1. At the start of the game, a game menu is displayed and the human player is asked to enter his/her name. The name may contain spaces and should contain at least one alphabet.
2. The human player is asked to which role (Homeowner or Zombies) he would like to play. The computer player will play the remaining role.
3. After setting up, a battle field is prepared with 6 (height) x 10 (width) grids, and the game begins.

## PLANTS AND ZOMBIES

The homeowner can grow plants while the zombie army can produce zombie warriors in each round.

Different plants and zombies have different attributes, e.g. damage, HP, attack range, and cost.

Plants have different attack range, while zombies can only attack plants one grid in front of them (i.e. the attack range of the zombies is one grid).

Details are shown in the following tables.

Plant	Abbreviation	Damage	HP	Attack Range	Cost (number of sun)	Remark
Peashooter	PS	3	5	5	1	
Bonk Choy	BC	5	7	1	3	
Threepeater	TP	5	5	5	5	
Wall-nut	WN	0	9	0	3	
Sunflower	SF	0	5	0	1	Generate additional sun in every round

Zombies	Abbreviation	Damage	HP	Attack Range	Cost (number of coin)	Speed
Basic Zombie	BZ	3	7	1	1	3
Buckethead	BH	3	9	1	5	3
Football	FB	1	9	1	5	5
Conehead	CH	5	7	1	3	1

## BASIC RULES

### INITIAL STATE

The homeowner starts with 10 HP and 10 sun, while the zombie army starts with 10 coin.

Behaviour of plants and zombies:

- The zombie army can produce at most one zombie warrior at each of the rightmost grids of the battle field. (Therefore, at most 6 zombie warriors can be produced in a round).
- The zombies move from the right to the left.
- Each grid can only be occupied by one plant or zombie.
- In every round, each zombie moves according to its speed. If there is any object (plants or zombies) in its path, it will be blocked.
- Zombies can attack the homeowner if it reaches the right of the leftmost grids.
- The homeowner can grow plants on any empty grid excluding the rightmost ones of the field.
- The plants cannot move.
- The plants can only attack zombies to the right of them.
- The zombies can only attack plants to the left of them.

### EVENTS IN EACH ROUND

- The homeowner gains 2 sun. The zombie army gains 2 coin.
- Each plant will attack the nearest zombie warrior in its attack range.
- If there is any plant in the front grid of the zombie, the zombie will attack the plant; otherwise it will move forward.
- Any zombie in the right of the leftmost grids of the battlefield will attack the homeowner.
- The zombie army produces zombies and the homeowner grows plants.

### WINNING CONDITION

The homeowner loses when he is killed ( $HP \leq 0$ ). The zombies lose if the homeowner survives after 10 rounds.