

# Project Cataclysm

## Team 31 - Sprint 1 Planning Document

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### Sprint Overview

During this sprint, we hope to build our base objects for the mod. This will include the ModItems and ModBlocks classes, which will further be composed of various new additional items and blocks. The items we implement in this sprint will likely be more straightforward than proceeding sprints, since we will need time to implement the base objects/templates/parents for creating new items. We will also need to learn the Fabric modding toolchain and many of its features, so there will be a bit of a learning curve while creating new additions.

**Scrum Master:** Jackson Bounds

**Meeting Plan:** Tuesday 3:30pm, Thursday 7pm, Sunday 10:30am

### Risk and Challenges:

We don't entirely know what to expect when creating this mod, adding basic items with few properties doesn't take too long with Fabric, but our team is still learning the Fabric toolchain, so more complicated items may be problematic and time-consuming. It is crucial, that during this sprint our team is able to use Fabric in-depth while making more simple items, so in feature sprints, when we create much more complex items, we will not have to worry about a lack of understanding of the Fabric toolchain and Minecraft APIs.

## Current Sprint Details

### User Story 3a, 3j, 3k:

As a player, I would like to be able to damage my opponent & the environment with a fire explosive.

As a player, I would like to be able to damage my opponent and/or the landscape with a larger version of TNT.

As a player, I would like to be able to damage my opponent and/or the landscape with a nuclear/massive explosive.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and block	1 hr * 3	Jackson Bounds
2	Create explosive parent object	4 hrs (once)	Jackson Bounds
3	Add block to registry	0.5 hr * 3	Jackson Bounds
4	Add crafting recipe for block	1 hr * 3	Jackson Bounds
5	Create explosion function	6 hrs * 3	Jackson Bounds
6	Test ignition, explosion effect, crafting recipe, and player damage	1 hr * 3	Jackson Bounds

### Acceptance Criteria:

- Given that the model and texture are properly implemented, the item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the block will be craftable with its own unique recipe.
- Given that the explosive block is properly linked to the TNT parent object, the explosive will be able to be ignited with the flint & steel item (right-clicked on explosive) or an activated redstone signal.

- Given that the fire explosive function is properly implemented, the fire bomb, after explosion, will ignite a large circle of fire around the explosive radius.
- Given that the larger TNT explosive function is properly implemented, the larger bomb, after, explosion, will leave a crater that is 2x the radius of base-game TNT.
- Given that the nuclear/massive explosive function is properly implemented, the nuclear/massive bomb, after, explosion, will leave a crater that is much larger than the radius of base-game TNT.

### User Stories 2b, 2c, 2d:

As a player, I would like to be able to damage my opponent with a rapid-fire machine gun. - Ryan Chang

As a player, I would like to be able to damage my opponent from a long-distance with a sniper rifle. - Jackson Douglas

As a player, I would like to be able to damage my opponent with a pistol. - Jackson Douglas

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and gun	3 hrs * 3	Jackson Douglas, Ryan Chang
2	Create crafting recipe functionality	1 hr * 3	Jackson Douglas, Ryan Chang
3	Create gun functionality: shooting, reload, reload hunger cost	4 hrs * 3	Jackson Douglas, Ryan Chang
4	Create functional ammo indicator tooltip	2 hrs * 3	Jackson Douglas, Ryan Chang

**Acceptance Criteria:**

- Given that the model and texture are properly implemented, the item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the gun will be craftable with its own unique recipe.
- Given that the weapons are implemented properly, when a user shoots at an enemy, the enemy receives the correct amount of damage and the correct damage indicator occurs.
- Given that the pistol is implemented properly, it shoots in a semi-automatic way with a medium fire rate.
- Given that the rapid-fire machine gun is implemented properly, it shoots in an automatic way with a fast fire rate.
- Given that the sniper rifle is implemented properly, it shoots one bullet at a time with a small pause between each shot.
- Given that the ammo indicator tooltip is implemented properly, the user will be able to see the remaining ammo in the clip on their HUD.

**User Story 6a:**

As a player, I would like for mobs to drop new items upon being killed.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture item	2 hr	Eric Li
2	Add functionality for the item dropping from mobs	2 hr	Eric Li
3	Add crafting recipe for block created from item	1 hr	Eric Li
4	Create model and texture for block	2 hr	Eric Li

**Acceptance Criteria:**

- Given that the model and texture are properly implemented, the item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the block will be craftable with its own unique recipe.
- Given that the item dropping functionality is implemented, the item will drop when mobs are killed by the player.

**User Story 6b:**

As a player, I would like to find and mine a new ore block for a new crafting material

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for ore block	2 hr	Eric Li
2	Create model and texture for ore item	2 hr	Eric Li
3	Add crafting recipe for ingot item	1 hr	Eric Li
4	Add natural generation of ore	3 hr	Eric Li

**Acceptance Criteria:**

- Given that the model and texture are properly implemented, the item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the ingot will be craftable with its own unique recipe.
- Given that the generation of the ore is implemented correctly, the ore block will be found underground similarly to diamond ore.

**User Story 6c, 6d:**

As a player, I would like to be able to protect myself with a personal shield that can only block certain weapons.

As a player, I would like to be able to place down a larger shield that is capable of blocking all weapons.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture items	3 hrs * 2	Eric Li
2	Add functionality for the shields blocking damage and knockback	4 hrs * 2	Eric Li
3	Add crafting recipes	1 hr * 2	Eric Li

#### Acceptance Criteria:

- Given that the model and texture are properly implemented, the item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the block will be craftable with its own unique recipe.
- Given that the personal shield is implemented, the player will be able to use the personal shield to block weaker weapons.
- Given that the large shield is implemented, the player will be able to use the large shield to block all weapons.

#### User Story 1d:

As a player, I would like to be able to craft weapons using a custom crafting table.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture item and block	2 hr	Eric Li
2	Add new crafting UI	2 hr	Eric Li
3	Add functionality for crafting items	3 hr	Eric Li

4	Add functionality for creating new recipes	3 hr	Eric Li
5	Add crafting recipe	1 hr	Eric Li

### Acceptance Criteria:

- Given that the model and texture are properly implemented, the item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the block will be craftable with its own unique recipe.
- Given that the crafting UI is implemented, the player will see a 5x5 crafting grid with an output.
- Given that the crafting functionality is implemented, the player will be able to craft new items with the new 5x5 grid.
- Given that the crafting functionality is implemented, developers will be able to create new 5x5 recipes for the new crafting table.

### User Story 5a, 5b, 5c:

As a player, I would like to use magic to swap x/y/z coordinates with another player/mob. - Ryan Chang

As a player, I would like to use a magic weapon to summon a stone/dirt wall in front of my body. -Ryan Chang

As a player, I would like to be able to use magic that can steal health from the opponent. -Jackson Douglas

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and wand	1 hr * 3	Ryan Chang, Jackson Douglas
2	Add crafting recipe for block	1 hr * 3	Ryan Chang, Jackson Douglas

3	Create spell functionality: effect, cooldown	4 hrs * 3	Ryan Chang, Jackson Douglas
3	Create functionality to switch between spells	2 hrs * 3	Ryan Chang, Jackson Douglas
4	Create spell notification that tells you what spell is selected	2 hrs * 3	Ryan Chang, Jackson Douglas

**Acceptance Criteria:**

- Given that the model and texture are properly implemented, the item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the wand will be craftable with its own unique recipe.
- Given that the “switch” spell is implemented correctly, when the user uses it on the target, the user and target will switch x/y/z coordinates. After the switch, the user and target will maintain the direction they were facing before the switch occurred.
- Given that the “mud wall” spell is implemented correctly, when the user uses the spell, a 6x5 dirt/stone wall will appear 2-3 blocks in front of them.
- Given that the “steal” spell is implemented correctly, when the user uses the spell on a target, the user will steal 1 to 4 hearts from the target depending on RNG.



## Remaining Backlog

### Functional Requirements

#### 1. General

- a. As a player, I would like to be able to craft new weapons.
- b. As a player, I would like to be able to craft new explosives.
- c. As a player, I would like to be able to craft new defensive items.
- d. As a player, I would like to be able to craft weapons using a custom crafting table.
- e. As a player, I would like to craft weapons through new specific item/block/mob interactions.

#### 2. Firearms

- a. As a player, I would like to be able to damage my opponent from a short-distance with a shotgun.
- b. As a player, I would like to be able to damage my opponent with a rapid-fire machine gun.
- c. As a player, I would like to be able to damage my opponent from a long-distance with a sniper rifle.
- d. As a player, I would like to be able to damage my opponent with a pistol.
- e. As a player, I would like to be able to damage my opponent and/or the landscape with a bazooka.
- f. As a player, I would like to be able to damage my opponent with a gun that sprays bullets wildly.
- g. As a player, I would like to be able to damage my opponent with a laser rifle/weapon.
- h. As a player, I would like to be able to propel myself in any direction with a recoil gun.

#### 3. Explosives

- a. As a player, I would like to be able to damage my opponent & the environment with a fire explosive.
- b. As a player, I would like to be able to summon lightning with a lightning explosive.

- c. As a player, I would like to be able to slow my opponent & spread snow/ice with an ice explosive.
- d. As a player, I would like to be able to cause floods with a water explosive.
- e. As a player, I would like to be able to plant trees and flowers with a nature explosive.
- f. As a player, I would like to be able to damage my opponents with poison using a gas bomb.
- g. As a player, I would like to be able blind my opponents with a light-bomb.
- h. As a player, I would like to be able to throw my opponent & blocks into the sky with an air explosive.
- i. As a player, I would like to be able to create hills with an earth explosive.
- j. As a player, I would like to be able to damage my opponent and/or the landscape with a larger version of TNT.
- k. As a player, I would like to be able to damage my opponent and/or the landscape with a nuclear/massive explosive.
- l. As a player, I would like to be able to entrap my opponent with a black hole bomb.
- m. As a player, I would like to be able to entrap my opponent with a web cage/web bomb.
- n. As a player, I would like to drown/entrap my opponent with a water cage.
- o. As a player, I would like to be able to hinder my opponent's movement with a stun bomb.
- p. As a player, I would like to be able to damage my opponents and/or the landscape with a cluster bomb.
- q. As a player, I would like to be able to disable and/or disarm explosives.

#### 4. Missiles

- a. As a player, I would like to be able to launch missiles from a launching-platform with attached explosives from the mod.
  - b. As a player, I would like to be able to launch missiles from a launching-platform at specific coordinates.
  - c. As a player, I would like to be able to launch a missile from a launching-platform with a redstone signal.
  - d. As a player, I would like to be able to launch a missile from a launching-platform with remote control.
  - e. As a player, I would like to be able to launch a missile from a launching-platform that follows my opponent (if time allows).
  - f. As a player, I would like to be able to launch a heat-seeking missile from a launching-platform that ignores “undead” enemies (if time allows).
  - g. As a player, I would like to be able to launch missiles of varying tiers using different tiered launching-platforms (if time allows).
  - h. As a player, I would like to be able to launch a missile at my opponent’s current location (in game-coordinates) (if time allows).
5. Magic
- a. As a player, I would like to use magic to swap x/y/z coordinates with another player/mob.
  - b. As a player, I would like to use a magic weapon to summon a stone/dirt wall in front of my body.
  - c. As a player, I would like to be able to use magic that can steal health from the opponent.
  - d. As a player, I would like to use weapons from popular TV series and movies (if time allows).
  - e. As a player, I would like to be able to teleport between two places using a gun capable of placing two portals (if time allows).
6. Miscellaneous

- a. As a player, I would like for mobs to drop new items upon being killed.
- b. As a player, I would like to find and mine a new ore block for a new crafting material
- c. As a player, I would like to be able to protect myself with a personal shield that can only block certain weapons.
- d. As a player, I would like to be able to place down a larger shield that is capable of blocking all weapons.
- e. As a player, I would like to track players using radar (if time allows).
- f. As a player, I would like to defeat my opponents with Purdue-related weaponry (if time allows).
- g. As a player, I would like to battle Purdue Pete himself as a enemy-NPC (if time allows).