***[DARTIS-CRAFT] VANILLA PLUS ULTRA:***

***QUESTBOOK***

***“Listen Up You Bunch of Newbies!***

***I’ll Show You What it Means to Go Beyond:***

***PLUS ULTRA!!!”***

***SECTION 1: VANILLA PLUS:***

**NOTES:**

* As you will find, this Modpack is heavily biased towards **World Exploration**, while offering an Enhanced Vanilla Experience. Meaning this Modpack contains features that I consider Vanilla should have. It also has extra features that will hopefully entice you towards my heavier Tech Based Modpack – Kakusei!
* In 1.12.2 the Vanilla Ender Dragon can be resurrected with 4 x End Crystals
* See **OBJECTIVE 0: FIRST MOVES** on where to start. The ***VANILLA VS MODDED 1-10*** is just extra info that can be handy.

***VANILLA VS MODDED 1: JEI***

* When accessing your inventory with **E**, you’ll see a panel on the right of the screen with every block in the game. Underneath this is a **Search Box**.
* This list and Search Box is the mod: **JustEnoughItems** *[otherwise known as* ***JEI****].* Use the **Search Box** to find **ANY Block or Item** in the Modpack and its **Crafting Recipe** just by Clicking that Item or Block in the List.
* If you start your search with **@** you can search **Mod Names** and find all **Crafting Recipes for that Mod** in one go ***[SEE: VANILLA VS MODDED 8 FOR EXAMPLES]***.

***VANILLA VS MODDED 2: JOURNEY MAP***

* In the Top Right of your Screen you’ll find a Mini Map of your surroundings. This Map will automatically update and expand as you explore. Access the entire Map with **J**.
* If you want to find your way back somewhere, place a Waypoint with **B** and name it, then choose a Color for it. This Waypoint can only be seen by you. It also will shine into the sky like a beacon and can be seen anywhere in game *[while in that Dimension].*

***VANILLA VS MODDED 3: KEEPING INVENTORY***

* This Mod enables the Keeping Inventory cheat permanently. Should also disable Mob Griefing *[such as Endermen carrying your Base’s Machines]*.

***VANILLA VS MODDED 4: CONTROLLING***

* As this one is a Settings Mod, there are no In-Game Recipes. It provides a Search Box and Search Options to the Controls Page of the Settings *[Access with ESC, Options, Controls. The Search Box is on the Bottom Left].*

***VANILLA VS MODDED 5: @HUNTINGDIMENSION***

**No Evil Mobs in the Overworld:**

* This Mod has a Config option to DISABLE Mob Spawning in the Overworld! So no Mobs will spawn in Caves or Overnight…
* The only exceptions to this are Spawners. They still work…

***VANILLA VS MODDED 6: IN-GAME MOD FEATURES***

* **@Quark** – Adds in “Quality of Life” features like: Sleep Voting *[as long as the majority (50% or higher) of players are sleeping, the night will progress]*, Fast Descent Down Ladders, RCLicking a posted Sign with an empty hand will let you edit that sign, RClicking Dirt with a Shovel creates a Path, to name some…
* **@TinkersConstruct** – This Modhas custom config edits allowing 1 Ore to 3 Ingot Processing *[The Smeltery specifically]* most of the time *[there are exceptions].* Other Ore Processing options in other Mods will generally only give you 1 Ore to 2 Ingots. A Vanilla Furnace will still give you 1 Ore to 1 Ingot.
* **@SimpleRPG** – As you kill mobs and mine, you will level up not only in Minecraft Enchantment Levels, but The SimpleRPG Mod as well; granting higher Strength and Health as you do…
* **@Titles** – As you achieve Advancements in game, you’ll unlock new Titles! These can be selected with NUM1 *[The 1 on the side Number Pad].* You can also find a Title Archive in Dungeon Loot Chests - these contain *purchasable* Titles! Buy with Archive Fragments *[also found in Dungeon Loot Chests]*. Store your Archive Fragments in your Title Archive by RClicking your Title Archive with your Archive Fragments on its immediate right.

***VANILLA VS MODDED 7: WORLD GEN MODS***

* **@Natura** – New Trees *[with wooden recipes like Stairs and Doors]*, plants and Mobs.
* **@RecurrentComplex** – New Village Buildings, random rock formations and some Iron “Meteors” *[Boulders filled with Iron Ore]*.
* **@Ruins** – Custom World Gen *[that I built or edited myself]* including: Trapped Dungeons *[with Powerful Customised Loot]* and Stargate Platforms *[allows transportation between discovered Stargates]*.

***VANILLA VS MODDED 8: MODS TO CRAFT WITH [SEE SIDE PROJECT 6]***

Search these **Mod Names** in **JEI** with an **@** *[as shown]* to find some interesting **Crafting Recipes**:

* **@AbsentByDesign** – Missing vanilla recipes *[Crafting Slabs, Stairs, Walls, etc with materials that Vanilla Minecraft doesn’t allow (such as Prismarine, Granite, etc) ]*.
* **@AdditionalLights** – Pedestals and Firepit Lighting.
* **@BiblioCraft** – Bookshelves *[Book Storage Cupboard]*, Tool Rack *[Tool & Weapon Storage Cupboard],* Usable: Tables, Chairs and more…
* **@CookingForBlockheads** – Multiblock Kitchen Items *[Benches, Stoves, Fridge, Cow in a Jar (infinite milk) ]*.
* **@IronChest** – Craft Bigger Chests with more expensive materials *[Iron, Gold, Diamonds]*
* **@Prefab** – You’ll start out with a Starting House blueprint.
  + Will give you a rather nice starting base to simply move into, complete with Chests, a Bed, Leather Armor, Stone Tools, Food, a Farm for Crops and a Ladder straight to Diamond Mining Level.
  + RClick on the ground to activate it.
  + Once Active, you can Click Preview to see what it will look like in the surrounding area..
  + Other blueprints *[including the Starting House]* are available to be built. Check them Out in **JEI**.
* **@Quark** – Mentioned Before. Also adds a Recipe for each of the Vanilla Wood types for Chests *[that can be placed next to each other without the need for Trapped Chests]* and Trap Doors.
* **@RedstonePaste** – Crafting Redstone with Slime Balls creates Sticky Redstone that can run up walls and on ceilings. Also allows crafting Sticky Redstone Repeaters and Comparators. All these can further be hidden by placing Vanilla Slabs on top of them.
* **@SecretRooms** – Adds in Camouflaged Blocks: such as **Secret Lever** *[Looks like a normal block (like Stone), but works as a Lever]*, **Secret Pressure Plate** *[Looks like a normal block (like Stone), but works as a Pressure Plate – There are even different types such as the* ***Secret Player Plate*** *that only Players can trigger]*, **One-Way Glass** *[Does what it says, makes a normal looking Block (like stone) from one side and Glass on the other that can see through to the other side]*, and more!
* **@Waystones** – These can be found around the world, or crafted yourself. RClicking one will activate it for yourself only. Once you have activated more than one, you can RClick one, and choose any other Waystone to travel to by teleportation. If you Place it yourself, you can choose both its Name and if it is active for everyone or just yourself.

***VANILLA VS MODDED 9: INTERESTING TOOL MODS [SEE SIDE PROJECT 7]***

* + **@Chisel** – Craft a Chisel. Use it with RClick. Place a Block inside it. Take a Cosmetic version of that block out. The Pretties…
  + **@NotEnoughWands** – A large variety of Wands *[to be Built and found as Loot]* that consume Enchantment Levels to perform some useful actions. Such as **Building Wand** *[makes Building easier]*, **Capturing Wand** *[RClick on a Mob to Capture it. Shift+RClick to place it elsewhere]*, **Illumination Wand** *[Places Sources of Light]* and more…
  + **@PortalGun** – There are several types of Portal Gun. Each Type has its own “Frequency”. Players must agree not to use another’s Portal Gun type or risk wiping their Portal Placements. Click to place Type 1 Portal. RCLick to place Type 2 Portal. Walk into these portals to travel between them.

# VANILLA VS MODDED 10: STARTING ITEMS

* **As your start out, keep on the lookout for:**
* Sugar Cane
* Wood
* Cobblestone

**NOTE:** These will help craft your Basic Tinkers’ Construct Mod Tools & Weapons ***[SEE: OBJECTIVES 0, 1 & 2 AND SIDE PROJECT 3 [BONUS]*** *(Sugar Cane makes great Crossbow Bolt Cores; they’re called Reeds in the Mod)* ***]***

* Barley/Wheat
* Pigs
* Cows

**NOTE:** These will help you setup Starting Food ***[SEE: OBJECTIVE 3]***

* Rice

**NOTE:** You can craft Rice into Rice Dough then again into Paper

* Clay *[2 Stacks]*
* Sand *[over 2 Stacks]*
* Gravel *[2 Stacks]*

**NOTE:** These will let you build your Tinkers’ Construct Smeltery ***[SEE: OBJECTIVE 4]***

When you Spawn in the World, you will receive some custom items:

* + **@TheOneProbe** **– The One Probe** *[looks like a piece of Paper with a light blue dot on it]*
  + **@Prefab** **– Starting House** ***[SEE SIDE PROJECT 6: MODS TO CRAFT WITH]***
  + **@AkashicTome** **– Akashic Tome** ***[SEE SIDE PROJECT 7: INTERESTING TOOL MODS]***
  + **Several Mod Manuals** *[Books]*
  + **@Curio – Magnet Ring** ***[SEE SIDE PROJECT 8: CURIO]***
  + **@EnderStorage – Ender Pouch** ***[SEE SIDE PROJECT 9: @ENDERSTORAGE]***

# OBJECTIVE 0: FIRST MOVES

1. Your **Ender Pouch**’s Inventory is shared by all in the game, and technically all can access it at anytime. However, it can be used for additional storage while you find a place to set up. Decide ahead of time if your multiplayer game leans more towards friendly or pvp game play to know if others will leave your items alone.
2. Select your **One Probe**, Shift+RClick it.
   1. The One Probe shows details of what you are looking at *[eg: Oak Leaves, Pig, Creeper, etc]* along with other details *[like Required Harvest Tool, Tool Level & Remaining Health]*
   2. On the left you will see an in-game picture of a Pig
   3. Click anywhere on the edges of that picture to move the Box around. This box is the information mentioned above, and where you select the Box to sit will be where it appears during game play.
   4. Also, on the right are some options:
      * **Presets:** There are 4 to choose from. Which one you use doesn’t matter, just find one that you like.
      * **Scale:** there are 5 options. This refers to the Size of the Box appearing on your screen.
   5. Press ESC to continue.
3. Press **E** for Inventory.
   1. **Magnet Ring**:
      1. Now click the Ring in the top right corner of your Avatar screen.
      2. Click your Magnet Ring and place it in either of the two Ring slots in the new Inventory Screen *[this will draw in items nearby into your Inventory].*
   2. **Akashic Tome:**
      1. Click your **Akashic Tome** *[large brown book]* and craft it with each of your other **Manuals/Books** *[including your One Probe].* The Akashic Tome will store each of these inside itself.
         * RClick it to bring up all Manuals inside it.
         * Click one to use it.
         * Click the Manual in the distance *[not on anything]* to convert it back to the Akashic Tome.
4. **Starting Tools**:
5. Harvest 1 Tree of your choice, then press **E** and in your **Personal Crafting UI**, craft 3 Wood Logs into Wood Planks. Then use 4 of those to make a **Crafting Table**. It is recommended to craft your Crafting Table *again*, creating the **@TINKERSCONSTRUCT Crafting Station**.
6. Next up, using your **Crafting Station** use 2 Wood Planks to craft 1 **Stick** *[makes 4],* then make a **Wood Pickaxe** & **Wood Axe**. Use these to harvest all the Wood and Cobblestone they will give you *[should grant 60 of Wood Logs and Cobblestone].*

**NOTE:** Ignore **Step 5** *until* you find a place to set up. In the meantime, move onto **OBJECTIVE 1**.

1. Lastly, when you find a location to start building your base, you may use your @Prefab Starting House blueprint to instantly build a house; complete with Crafting Table, Furnace, Chests *[with Food, Stone Tools, Leather Armor, Cobblestone and Oak Wood]*, Bed and Ladder down to Diamond mining level with another Chest containing various Ores and more Cobblestone.
2. RClick on the ground to activate your chosen Blueprint.
3. Once Active, you can Click Preview to see what it will look like in the surrounding area.
4. Then RClick on the ground again *[yellow box is where you had it before]* and select Build.

# OBJECTIVE 1: @TINKERSCONSTRUCT - TABLES & PATTERNS

# [Setup for Crafting Custom Tools and Weapons]

**Blank Pattern** x 10 *[Recipe Makes x 4; Make a total of 40]*

**Stencil Table** *[1 x Wood Planks [any] + 1 x Blank Pattern]*

**Pattern Chest** *[1 x Chest + 1 x Blank Pattern]*

**Part Builder** *[1 x Wood Log [any] + 1 x Blank Pattern]*

**Tool Station** *[1 x Crafting Table or Tinkers Crafting Table + Blank Pattern]*

**Armor Station** *[1 x Crafting Table or Tinkers Crafting Table + 4 x Blank Pattern]*

1. Place your Tables & Chest next to each other in this order *[in two lines]*

* Armor Station – Crafting Station – Tool Station
* Stencil Table – Pattern Chest – Part Builder

1. Place your Blank Patterns into your Stencil Table & make each of the following patterns:

* Pickaxe Head
* Shovel Head
* Axe Head
* Broad Axe Head
* Sword Blade
* Large Sword Blade
* Hammer Head
* Excavator Head
* Kama Head
* Scythe Head
* Tool Rod
* Tough Tool Rod
* Tool Binding
* Tough Tool Binding
* 1 x Sword Guard of your choice *[or all 3]*:
  + Hand Guard *[Long Sword - Long Attack Reach]*
  + Cross Guard [*Rapier – Attacks as fast as you click and ignores any Target Armor]*
  + Wide Guard *[Broadsword – Blocks and has Highest Damage]*
* Large Plate
* Knife Blade
* Bowlimb
* Bow String
* Arrow Head
* Arrow Shaft
* Fletching
* Polishing Kit
* Armor Trim
* Armor Plates
* Helmet Core
* Chestplate Core
* Leggings Core
* Boots Core

**NOTE:** Place each of these Patterns into your Pattern Chest as you go

# OBJECTIVE 2: @TINKERSCONSTRUCT – STONE LEVEL CUSTOM TOOLS

# [Custom Tools and Weapons]

1. Go to your Part Builder with some Cobblestone & Wood Planks to start with *[Metal Parts require a minimum of: the Smeltery, a Bucket of Lava, 3 x Aluminium Ore, 1 x Copper Ore, plus some Ore of what you want to make your Tools out of].*
2. Place your Cobblestone into the top right hand slot .
3. Select your Patterns on the right to place them in the top left hand slot, one at a time, and take each part from the far right slot:
   * Sword Blade
   * One Hand Guard, Cross Guard or Wide Guard
   * Pickaxe Head
   * 2 x Shovel Head
   * Axe Head
   * 2 x Tool Binding
4. Take out your Cobblestone and place in your Wood Planks and craft 4 x Tool Rods *[by also selecting the Tool Rod Pattern on the right].*
5. Next, go to your Tool Station and click each of these tool icons in the following order and shift click the required Tool Parts into the slots.

* Pickaxe *[Stone Pickaxe Head, Stone Tool Binding & Wooden Tool Rod].*
* Mattock *[Stone Shovel Head, Stone Axe Head & Wooden Tool Rod – Works on Dirt, Wood and acts as a Hoe with RClick].*

**NOTE:** Not great on Sand & Gravels.

* Shovel *[Stone Shovel Head, Stone Tool Binding, Wooden Tool Rod – For Dirt, Sand and Gravels].*
* Either a Long Sword, Rapier or Broadsword *[Stone Sword Blade, Stone Hand/Cross/Wide Guard, Wooden Tool Rod].*

1. This is the Order of making any Tinker Tools & Weapons.
2. You can upgrade your Tool Station to a Tool Forge by crafting it with 3 x Seared Bricks *[Block]* ***[SEE: OBJECTIVE 4: SMELTERY]***+ 4 x Metal Blocks *[Any]* ***[SEE SIDE PROJECT 3 (BONUS) ]****.*

**NOTE:** This allows crafting access to higher tier Tools and Weapons *[Like the Crossbow and Cleaver].*

1. Once you have a basic understanding of how to make the Parts into Tools, use the JEI *[Right Side of the Screen in Inventory or Crafting GUI]* and search for “Tool Rod”, “Pickaxe Head”, etc to find the best balance of Material Statistics *[ie: Durability, Mining Speed, Mining Level, Attack, etc]* and Material Modifiers *[Ecological, Dense, etc]* and aim to craft Tools & Weapons.

# OBJECTIVE 3: @BIRDSFOODS - TOASTED BACON HAMBURGER

# [Basic Custom Survival Food]

1. Harvest: Cows, Pigs, Wheat *[and/or Barley]*
2. Craft Wheat *[and/or Barley]* into Wheat Flour *[or Barley Flour]*
3. Craft Raw Beef into Raw Ground Beef *[x 2]*
4. Craft Raw Pork Chops into Raw Bacon *[x 2]*
5. Cook Flour into Bread *[1 Bread per 1 Wheat instead of 3 Wheat]*
6. Cook Raw Ground Beef into Burgers
7. Cook Raw Bacon into Bacon
8. Craft Bread into Empty Sandwiches *[x 2]*
9. Craft Empty Sandwich, Burger and Bacon into Bacon Hamburgers

**STATS:** 5 Hunger/10 Saturation

1. Cook Bacon Hamburgers into Toasted Bacon Hamburgers

**STATS:** 6 Hunger/12 Saturation

***SIDE PROJECT 1: ULTIMATE @BIRDSFOODS SANDWHICH - DAGWOOD***

***[Advanced Custom Survival Food]***

* 2 x Bread
  + Remember you’ll get 1 x Bread per Wheat if you craft it into Flour first
* 1 x Bacon
  + Craft Raw Pork Chops into Raw Bacon *[x 2]* then Cook it
* 1 x Cooked Egg
  + Cook an Egg
* 1 x Baked Potato
  + Cook a Potato
* 1 x Cheese
  + Crafted with Sugar + Milk Bottle

**NOTE:** Milk Buckets can be Crafted with 3 Bottles to make 3 x Milk Bottles each able to craft the same recipes as a Milk Bucket

* 1 x Sliced Steak
  + Cook Raw Steak, then Craft Steak into Sliced Steak *[x 2]*
* 1 x Fish Fillets
  + Cook Raw Fish or Raw Salmon, then Craft into Fish Fillets *[x 2]*
* 1 x Chopped Chicken
  + Cook Raw Chicken, then Craft into Chopped Chicken *[x 2]*

**STATS:** 10 Hunger + 20 Saturation *[Eating this will make you nearly* **Invulnerable** *for a short while]*

# OBJECTIVE 4: @TINKERSCONSTRUCT – SMELTERY

***[3 Ingots for every Ore processed, not just 1; Alloying for stronger Metals; Consumes Lava]***

**MINIMUM MATERIALS:**

2 Stacks of Sand + 2 for Glass

2 Stacks of Clay

2 Stacks of Gravel

**CRAFT:**

Sand + Gravel + Clay *[Items]* into Grout *[x 2]*

**NOTES:**

* So you want 4 Stacks of Grout *[= 2 Stacks each of all 3 ingredients]* to cover everything at the basic level, including **SIDE PROJECT 3: BONUS**
* Craft as soon as you can as it will reduce 3 stacks into 2, saving Inventory Space

**SMELT:**

2 x Sand into 2 x Glass

4 Stacks (256) x Grout into 4 Stacks (256) x Seared Bricks *[Items]*

**CRAFT:**

1 x Smeltery Controller

8 x Seared Brick *[Items]* – Chest Pattern

2 x Seared Tanks

8 x Seared Brick *[Items]* – Chest Pattern

1 x Glass - Middle

2 x Casting Tables

7 x Seared Brick *[Items]* – Leggins Pattern

3 x Casting Basin

7 x Seared Brick *[Items]* – Cauldron Pattern

4 x Seared Drains

6 x Seared Brick *[Items]*

5 x Seared Faucets

3 x Seared Brick *[Items]* – Bowl Pattern

24 x Seared Bricks *[Block]* + extra 12 for each level higher you want to raise it

4 x Seared Brick *[Items]* – Stone Bricks Pattern

**SMELTERY CONSTRUCTION:**

1. Dig out a 3x3 hole in the floor and fill it with the Seared Brick *[Block]* to make a Base
2. Place the 2 x Smeltery Drains on the floor in-line with the 5x5 boarder of the 3x3 Base
3. In front of those Smeltery Drains, dig another hole and place the Casting Table & Casting Basin
4. While looking at your Smeltery Drains, hold Shift and RClick 1 x Seared Faucet onto them, so they sit above your Casting Basin & Casting Table
5. Complete the boarder of the Base by placing more Seared Brick *[Block]*s until you form a 5x5 Ring
6. On top of your Smeltery Drains, place a Seared Tank *[these will need to be filled with Lava to use the Smeltery]*
7. Next to the Seared Tanks, place your Smeltery Controller
8. Fill this current Ring level with more Seared Brick *[Block]*s

**OPTIONAL:** You can build this as high as you want – but doing so will only increase the amount of material you can hold at once

***OBJECTIVE 5: TINKER’S CONSTRUCT CASTS***

# [Accesses Next Tier Tinkers Tools and Weapons]

**NOTE: ALUMINUM BRASS ALLOYING RATIO:** 3 x Aluminum – 1 x Copper

**TIP:** Place a Chest next to your Smeltery for your Casts

1. To make Metal Parts you’ll need Aluminium Brass Casts for each Part you want to make
2. To make a Cast place each of your Parts *[eg: Stone Sword Blade, Stone Pickaxe Head, Stone Tool Rod, etc]* onto your Casting Table and pour Aluminium Brass onto it

**NOTE:** Each Castcosts 1 Ingot worth of Aluminum Brass. Making Casts like this *Consumes* the Part you used for it *[so use Cobblestone or Wood Parts]*

# OBJECTIVE 6: @TINKERSCONSTRUCT - BRONZE TOOLS

# [Equal to Iron’s Mining Level (Redstone); but with more Durability and Bonus Traits]

**NOTE: BRONZE ALLOYING RATIO:** 3 x Copper – 1 x Tin

Pickaxe Head: Bronze *[Dense]*

Tool Binding/Sword Guards: Wood *[Ecological]*

Tool Rods: Copper *[Well Established]*

1. Pour Bronze into each of the Casts you want to make *[Tool/Weapon Heads]* and collect them afterwards, storing your Casts In your Chest nearby

**TIP:** Make Ingot Casts By Pouring Aluminium Brass over an Ingot *[2 of these will come in handy]*. This will *Consume* your Ingots too…

1. For your Guard/Tool Bindings, use Wood *[This gives your Tools/Weapons Repair Over Time/Mending]*
2. For your Tool Rods, use Copper *[make in the Smeltery with a Tool Rod Cast]*
3. Return to your Tool Station with your new parts and craft your new Tools/Weapons the same way you made your Stone ones

**MODIFIERS:**

Once you’ve made each of your Tools/Weapons, place them back in your Tool Station/Forge in turn and add the following onto them *[if you have it]*

* 1 x Lapis *[for Pickaxe and Weapons; Adds the Luck/Looting I Modifier]*

**NOTE:** You also get free Lapis Points added to your Tool/Weapon the more it is used on the appropriate target

* 1 x Diamond *[for Pickaxe; Only Upgrades the Mining Level 1 Level, so can add the ability to mine Obsidian, ONLY if used on an Iron equivalent level Pickaxe, but with just one Diamond. So don’t make a Diamond Pickaxe or I will HUNT YOU DOWN!!! Not really lol]*

**Durability: 500|Mining Level: Diamond|Mining Speed: 6.8**

**SWORD STATS:**

Rapier *[Cross Guard]*: Durability: 522|Attack: 2.93|Ability: Spammable

Broadsword *[Wide Guard]*: Durability: 875|Attack: 5.5|Ability: Blockheads

Long Sword *[Hand Guard]*: Durability: 835|Attack: 5.4|Ability: Long Jumper

**TRAITS:**

Dense – Lasts Longer

Ecological – Repair over time

Well Established – Bonus XP

***OBJECTIVE 7: CONSTRUCT’S ARMORY:***

1. To start with, craft a Crafting Station with 4 x Blank Stencils to make an Armor Station. This will allow you to Craft the individual Armory Pieces
2. If you want to Modify your Armor Pieces, you’ll need to upgrade your Armor Station to a Armor Forge, with the same recipe as a Tool Forge, but using the Armor Station instead
3. Each Piece of Armor requires:

* 1 x Core *[Helmet Core, Chestplate Core, etc…]*
* 1 x Armor Trim
* 1 x Armor Plates

**NOTE:** The secret is to balance:

* High Defense Stats
* Great Traits
* And the Highest Toughness Level you can find

**NOTE:** Steel seems to have the highest Toughness Level at 4.5, but has average Durability and Modifiers

**NOTE:** Armor Trims are the only pieces that do NOT grant Stat Modifiers, Only Trait Modifiers – So go for a material with Ecological – like Vibranium or even Wood

**STARTER SET:**

Dwarf Star Alloy Core Set *[one Core for each of the Armor Pieces]*

Steel Plates

Wood Trims

***OBJECTIVE 8: @RUINS x @HEROESEXPANSION***

***[Super Hero Power Sets Hidden in World Gen]***

* This Modpack puts great emphasis on World Exploration. One such Mod is **@Ruins**.
* This Mod adds in World Gen that I have customized. Among my “TML”s *[The files Ruins uses to generate in the World]* there is a number of *Trapped* Dungeons *[You have been warned]*.
* One such Dungeon has a Chest inside it containing an Injection granting one of a number of Marvel and DC Comics Super Hero Power Sets:
  + Superman – Flight, Strength, Heat Beam, Freeze Breath, etc…
  + Captain Marvel – Flight, Strength, Photon Beams, etc…
  + Black Panther – Strength, Absorb Kinetic Energy, etc…
  + Spiderman – Web Slinging, Web Flight, etc…
  + …And more!
* Simply hold RClick to give that Power Set to yourself. Also, Doing so with an empty Injection will remove that Power Set from yourself

**NOTE:** Only1 Power Set at a time. As you use your Power Set’s Abilities, you will level up in this mod, this unlocks higher abilities.

* **TIP:** Look out for Dark Oak Planks in a + formation in the ground…

# SIDE PROJECT 2: @RUINS x @SGCRAFT

***[Travel between Stargates across Infite Distances & Dimensions]***

* As I said, this Modpack puts great emphasis on World Exploration. Before discussing **@Ruins** again, we need to cover **@SGCraft** or as its called, **Stargate Network**.
* If you don’t know about Stargate, it’s a TV Franchise centered around a Device called a Stargate.
* Each Stargate has its own Address *[like a Phone Number]*, it is made up of a combination of 9 Letters and Numbers. By RClicking on a Gate you find, you will see its Address.
* But in order to *use* that address, you will need a second Gate’s Address.
* By RClicking on the Black Pedestal in front of the Gate, you can manually type in any Gate’s Address. This will allow you to go into the Gate and come out at the Gate you dialed.
* To make this easier, you can find *[Custom Loot]* or build *[Recipe in* ***JEI****]* a Personal Dialing Device. This will allow you to Shift+RClick a Gate and *SAVE* that Address by naming it. Simply RClick near a Gate and select that Name to dial that Gate without needing to type the Address in manually.

**WARNING:** When the Gate finishes Dialing, the Wormhole will explode out of the Gate. This will be Fatal if you’re in front of it when this happens.

**WARNING:** Walking into an Active Iris will kill you immediately.

* Normally, **@SGCraft** will only generate Stargates in Villages & Temples. Here **@Ruins** comes in again. With some help of my Online Friends, We made a Stargate Platform TML for Ruins to generate. Now, these Platforms will be found Everywhere, and in Every Dimension!
* Look below for more info on the **@SGCraft** Mod:

**BASICS:**

Each Gate needs:

1 x Stargate Base

7 x Stargate Chevron Blocks

8 x Stargate Ring Blocks

1 x Stargate Controller

And yes you can Craft these instead of just finding them…

**TOOLS:**

**GDO**

Remote Iris Control

**Personal Dialing Device *[PDD]***

Shift+RClick to store current Gate Address

RClick, then Click stored gate address to dial

**Configurator**

Complete control over gate functions *[Creative Only]*

**Tollan Phase Shift Device**

Walk through any Base’s Incoming Iris *[Creative Only; Must deactivate Outgoing Iris to leave though]*

**ZPM**

Rare Loot Chest Find

Contains over 2,000,000,000 RF in non-replenishing Power

Use in ZPM Machines to transmit power

**EXTRAS:**

**Iris Upgrade**

Needed for Base Security. Any GDO can remotely disable it

**ZPM Console**

Wirelessly power Gates *[unneeded – Power consumption disabled on Config Level]* However, You may be able to use RF Power Mods to Transfer the RF to your Base

**Chevron Upgrade**

Allows cross dimension dialing *[Unneeded – built into Gates on Config level]*

**SG Power Unit**

Use RF to power Gate *[unneeded – Power consumption disabled on Config Level]*

**BONUS:**

If your Stargate has access to the Sky during a Thunderstorm, there is a 5 in 100 chance that, while dialing another Gate can be *Struck by Lightning* and the Destination Gate will be changed to ANY discovered Gate – Including some hidden ones…

# SIDE PROJECT 3: ULTIMATE TINKERS TOOLS!

*Do you know of a better configuration? Let us know!!!*

# NOTES:

Use either a Hammer from **@LucraftCore** *[crafting]* or a Pulverizer from ***@*ThermalExpansion** *[Machine Processing – Attained in* ***OBJECTIVE 12: @THERMALEXPANSION****]*

**NOTE: STEEL BLEND ALLOYING RATIO:** 1 Pulverized Iron + 4 Pulverized Coal *[Not Charcoal]*

**NOTE: ADAMANTIUM BLEND ALLOYING RATIO:** 1 Vibranium Dust + 2 Steel Blend

# Pickaxe Group Project!

# Head: Adamantium or Uru [2,500|Cobalt|15|Sharp or Super Heavy]

**Tool Rod:** Adamantium *[x4|+2,000|Sharp]*

**Binding:** Vibranium *[+400|Dense|Ecological|Lightweight]*

**Stats:**

**Durability:** 13,000|**Mining Level:** Cobalt|**Mining Speed:** 15

# Sword Group Project!

**Sword Blade:** Uru *[16,300|Super Heavy]*

**Tool Rod:** Adamantium *[x4|+2,000|Sharp]*

**Guard:** Vibranium *[+400|Dense|Ecological|Lightweight]*

**Guard Embossment:** Manyullyn *[Cold-Blooded]*

**Sword Option’s Stats:**

**Rapier** *[Cross Guard]***:** Durability: 55,500|Attack: 22|Ability: Spammable

**Broadsword** *[Wide Guard]***:** Durability: 55,500|Attack: 39|Ability: Blockheads

**Long Sword** *[Hand Guard]***:** Durability: 55,500|Attack: ?|Ability: Long Jumper

**Traits:**

**Super Heavy:** Only **@LucraftCore** Super Heroes *[with Strength; from* ***@HeroesExpansion***

***(SEE OBJECTIVE 8)*** *]* can lift this

**Alien:** Stats will be adjusted by a total of 800 points, randomly

spread across all Categories *[for better or worse]*

**Sharp:** Bleeding Effects

**Dense:** Longer Lasting at Low Durability

**Ecological:** Self Repair

**Cold-Blooded:** Extra Damage to Targets with Full Health

***SIDE PROJECT 3 [BONUS]: @TINKERSCONSTRUCT – TOOL FORGE***

***[Access to Higher Tier Tools & Weapons]***

1. Harvest & Craft your Tool Station with 4 Blocks of any Metal *[use your most common Metal]* and 3 Seared Brick *[Blocks]*
2. Look up **Tool Forge** in **JEI** for Recipe
3. Now you can Craft Crossbows, Cleavers and more!

# Crossbow Group Project!

**Bowlimb:** Uru *[Durability: 16,300|Draw Speed: 0.17|Range: 12|*

*|Bonus Damage: 20|Alien, Super Heavy]*

**Tough Tool Rod:** Adamantium *[x4|+2,000|+600|Sharp]*

**Tough Binding:** Vibranium *[+400|Dense, Lightweight, Ecological]*

**Bowstring:** String *[x1]*

**Bolt Core:** Reeds *[Sugar Cane] [x1.5|+20|Breakable]*

**Bolt Metal:** Uru *[2 x Ingots] [Alien, Super Heavy]*

**Stats:**

**Crossbow:** Durability: 69,800|Draw Speed: 0.34|Range: x12|Bonus Damage: 30

**Bolt:** Durability *[Ammo]*: 2010|Attack: 50.3| Accuracy: 100%

**Traits:**

**Super Heavy:** *Only Lucraft Super Heroes (with Strength) can lift this*

**Alien:** *Stats will be adjusted by a total of 800 points, randomly*

*spread across all Categories – for better or worse*

**Dense:** *Longer Lasting at Low Durability*

**Ecological:** *Self Repair*

**Lightweight:** *Faster Mining Speed*

**Sharp:**  *Bleeding Effects*

**Modifiers:**

**Bolt:** Direct Dark Steel Upgrade *[Instantly collect your sniped loot]*

# Cleaver Group Project!

**Large Sword Blade:** Uru *[Durability: 16,300|Damage: 40|Alien, Super Heavy]*

**Large Plate:** Adamantium *[Durability: +2,500|Damage: 20|Sharp]*

**Tough Tool Rod 1:** Vibranium *[Durability: 1,000|Modifier: x2|Dense, Lightweight,*

*Ecological]*

**Tough Tool Rod 2:** Manyullyn *[Durability: 250|Modifier: 0.5|Cold-Blooded]*

**Stats:**

Durability: 40,000|Bonus Speed: 10%|Damage: 48.63|Beheading II

**Traits:**

**Super Heavy:** *Only Lucraft Super Heroes (with Strength) can lift this*

**Alien:** *Stats will be adjusted by a total of 800 points, randomly*

*spread across all Categories – for better or worse*

**Dense:** *Longer Lasting at Low Durability*

**Ecological:** *Self Repair*

**Lightweight:** *Faster Mining Speed*

**Sharp:**  *Bleeding Effects*

**Modifiers:**

**Beheading:** *Ender Pearl + Obsidian x 8*

**NOTE:** Each Level of Beheading adds 10% chance of getting Mod’s Heads as drops, and Cleaver’s get a extra level for free – Beheading II! And every time you add an Ender Pearl & Obsidian *[consuming a Modifier]*, you’ll gain another 10%!! And it can be Stacked more than once!!!

***SIDE PROJECT 4: TINKERS EMBOSSMENT:***

Each Embossment Requires:

* Green Slime Crystal
* Blue Slime Crystal
* Magma Slime Crystal
* Block of Gold
* Another Tinkers Tool Part for the Tool/Weapon you’re wanting to Emboss *[eg: Binding for Pickaxe, Guard for Sword, etc…]*

Doing this will allow you to use a better statistical part *[eg: sugar cane for bolts for +20 ammo]* to make the weapon/tool; then add a better Modifier Part onto it *[eg: Wooden Arrow Shaft for Ecological – Repair over time/Mending].*

**NOTE:** Only 1 Embossment per Tool

***SIDE PROJECT 5: ULTIMATE CONSTRUCT’S ARMORY SET:***

Uru Core Set *[one Core for each of the Armor Pieces]*

**NOTE:** Requires Strength from LucraftCore

Vibranium Trims

Adamantium Plates

**MODFIERS:**

* **All Armor:**
  + Add a Steel Polishing Kit to add Toughness of 4.5 to your Armor *[Requires 1 for each Armor Piece, costs 2 Ingots each in the Smeltery] [Requires 1 x Sand to add it]*
  + Add a Diamond, to increase the Toughness Stat by an additional 2 and give a boost to Durability *[If you add this* before *the Polishing Kit, the Kit will* override *the Toughness Stat, instead of Stacking it]*.
  + Add 1 x Resistance Plate to reduce all Damage
  + Add 1 x Emerald to add 50% Extra Base Durability *[only when you have nothing else to Modify your Armor with]*
* **Leggings:**
  + Add 1 x Traveller’s Belt [Storage] for an extra Hotbar to swap between

**NOTE:**  I use one Hotbar for Mining, and one for Combat, in that all Mining and Combat Tools, Weapons, additional Armor and Food/Potions are stored in separate Hotbars

* **Leggings & Boots Options:**
  + Add 1 x Invisible Ink to make them render invisible – cosmetic change only
* **Chestplate Options:**
  + Make 2 Chestplates – or just choose one
    - Mining Ability Set
      * Add 1 x Invisible Ink to render it invisible
      * Add 1 x Knapsack for extra inventory storage
      * Add 1 x Gauntlet of Far Reach to mine up to 7 blocks away
    - Combat Ability Set
      * Add 1 x Cloak of Invisibility to allow you to toggle full invisibility for yourself
      * Add 1 x Gauntlet of Power to increase Attack Damage
* **Helmet Options:**
  + Make 2 Helmets – or just choose one
    - Mining Ability Set
      * Add 1 x Traveller’s Goggles [Night Vision]
      * Add 2 x Glass *[side by side]* and 1 x Prismarine Crystal to your Helmet to add temporary underwater breathing
    - Combat Ability Set
      * Add 1 x Travellers’ Goggles [Soul Sight] to see any mob or player when they move
      * Add 2 x Glass *[side by Side]* and 1 x Prismarine Crystal to your Helmet to add temporary underwater breathing

**SIDE PROJECT 5 *[BONUS]:***

There are lots of Materials to craft Armor, Tools and Weapons *[using the Vanilla Recipes]* in this Modpack *[Copper, Bronze, even Emerald]* – Aim to build an Armory Room with 1 of every type! **@BiblioCraft** even has Armor Stands and Sword Pedestals to display these great builds!

***OBJECTIVE 9: ENGINEER’S WORKSHOP REBORN***

***[Storage, Crafting & Smelting – in a Single Block]***

**Build a Workshop Table:**

* 5 x Cobblestone
* 3 x Wood Planks
* 1 x Blank Upgrade
* 2 x Stone/Andesite/Granite/Diolite or their Polished versions
* 2 x Wood Planks

This Block can store a total of 4 of the following 3 Vanilla Blocks – Chest, Crafting Table and Furnace

Which of the 3 you use, is up to you.

**EXAMPLES:**

2 x Chests, Crafting Table & Furnace

4 x Chests

4 x Furnaces

The benefits of this go beyond simply having them in a single block.

**Furnaces:** The Workshop Table has a **Fuel** source. Adding Coal/Charcoal into here will instantly consume it and store it as fuel. And the Furnaces only consume this fuel when needed – rather than having to get the most out of an active Coal like a Vanilla Furnace.

**Upgrades:** There are a heap of different Upgrades to add into your Workshop Table *[some for the Table, some for specifically Crafting Tables, Furnaces or Chests]*. One such upgrade *[Queuing Upgrade]* allows Furnaces to Process more than one item *[one after the other]*. Another *[Storage Upgrade]* adds extra Storage Slots to your Crafting Table.

***OBJECTIVE 10: HUNTING DIMENSION***

***[Dimension just for Mob Hunting]***

1. Build a securable room for the Portal *[The Portal will randomly spawn a Mob from the Hunting Dimension, so you don’t want that roaming your base]*
2. Craft 3 Hunting Dimension Frames
3. Assemble the Portal just like a Nether Portal
4. Finally, RClick the bottom of the Portal Frame with any Sword *[Vanilla or Modded]* to activate it.
5. Whenever you want to travel to the Hunting Dimension to Farm Mobs, stand in the Portal and Crouch with Shift

**NOTE:** The Mobs here are Stronger, have more Armor; but also have more Loot!

**REMEMBER:** Create a Waypoint with B to find your way back to the Portal, or you may be stuck here

Lastly, have fun exploring!

# SIDE PROJECT 6: MODS TO CRAFT WITH

# [Reminder from Vanilla vs Modded: 8]

**@AbsentByDesign:**

Missing vanilla recipes *[Crafting Slabs, Stairs, Walls and Fences with materials that Vanilla Minecraft doesn’t allow (such as Stone, Prismarine, Granite, Brick, etc) ]*

**@AdditionalLights:**

Pedestal and Firepit Lighting

**Stone Bricks Standing Torch – L:**

2 x Stone Bricks

1 x Coal or Charcoal

**Stone Bricks Fire Pit – L:**

6 x Stone Bricks

1 x Coal or Charcoal

And more…

**@BiblioCraft:**

**Bookshelves *[Book Storage Cupboard]:***

6 x Wood Planks

3 x Wood Slabs

**Tool Rack *[Tool & Weapon Storage Cupboard]***

8 x Wood Slabs

1 Iron Ingot

**Tables *[that can display items]:***

3 x Wood Slabs

2 x Wood Planks

**Chairs *[that you can sit in]:***

Wool

Wood Slab

Pressure Plate

2 x Sticks

**Chair Backs *[to add to your Chairs]:***

Wool

Wood Slab

**Dinner Plate *[to display your Steak and Veg]:***

3 x Quartz Slabs

and more…

**@CookingForBlockheads:**

Multiblock Kitchen Items:

**Cooking Table *[Crafting Table for Food]:***

3 x Stone

5 x Terracotta

1 x Cooking for Blockheads II (Manual)

2 x Crafting Tables

2 x Diamonds

1 x Cooking for Blockheads I (Manual)

Cook a Book

**Kitchen Counter *[any Food items stored can be crafted with from the Cooking Table]*:**

3 x Stone

5 x Terracotta

1 x Chest

**Kitchen Cabinet *[any Food items stored can be crafted with from the Cooking Table]*:**

5 x Terracotta

1 x Chest

**Fridge *[any Food items stored can be crafted with from the Cooking Table; can also be stacked 2 high to increase storage]*:**

1 x Chest

1 x Iron Door

**Oven *[Cooks Food]*:**

3 x Glass

5 x Iron Ingot

1 x Furnace

**Cow in a Jar *[infinite milk]:***

Drop an Anvil on top of a Cow that’s standing on top of a Milk Jar.

Milk Jar:

7 x Glass

1 x Milk Bucket

1 x Wood Planks

**Fruit Basket *[displays Food items]:***

2 x Wood Planks

1 x Pressure Plate

**Kitchen Floor *[connects all Kitchen Blocks into a Multiblock Structure]:***

2 x Block of Quartz

2 x Block of Coal

And more…

**@IronChest:**

**Iron Chest *[2 x Chest Sized]:***

1 x Chest

8 x Iron Ingot

**Gold Chest *[3 x Chest Sized]:***

1 Iron Chest

8 Gold Ingot

**Diamond Chest *[4 x Chest Sized]:***

6 x Glass

2 x Diamond

1 x Gold Chest

And more, like: Iron/Gold/Diamond Shulker Chests

**@Prefab:**

* Blueprints that will automatically build the structure you choose.
* You’ll start out with a **Starting House** Blueprint.
  + Will give you a rather nice starting base to simply move into, complete with Chests, a Bed, Leather Armor, Stone Tools, Food, a Farm for Crops and a Ladder straight to Diamond Mining Level
* RClick on the ground to activate your chosen Blueprint.
* Once Active, you can Click Preview to see what it will look like in the surrounding area.
* Other blueprints *[including the Starting House]* are available to be built:
  + **Moderate House**
    - 3 x **Starting House**
      * 1 x Crafting Table
      * 1 x Clock
        + 4 x Gold Ingot
        + 1 x Redstone
      * 1 x Furnace
      * 2 x Compressed Stone
        + 9 x Stone
      * 1 x Bed
      * 3 x Bundle of Timber
        + 9 x Wood (Logs)
  + **Produce Farm:**
    - 4 x Pallet of Bricks
      * 9 x Pile of Bricks
        + 9 x Bricks
    - 2 x Double Compressed Dirt
      * 9 x Compressed Dirt
        + 9 x Dirt
    - 2 x Water Buckets
    - 1 x Double Compressed Glowstone
      * 9 x Compressed Glowstone
        + 9 x Glowstone
* And heaps more!

**@Quark:**

Among other Quality of Life things via its Configs, it adds a Recipe for each of the Vanilla Wood types for Chests *[that can be stacked side by side without needing a Trapped Chest in between]* and Trap Doors.

**@RedstonePaste:**

* **Sticky Redstone *[can run round corners, up walls and on ceilings]*:**

1 x Redstone

1 x Slime Ball

* **Sticky Repeater *[that can also be placed on walls and ceilings]*:**

1 x Redstone Repeater

1 x Slime Ball

* **Sticky Comparator *[that can also be placed on walls and ceilings]*:**

1 x Redstone Comparator

1 x Slime Ball

* All these can further be hidden by placing Slabs on top of them.

**@SecretRooms:**

Uses Camouflage Paste to create Secret Blocks:

8 x any Dye of same colour

1 x Sand, Dirt or Clay

* **Secret Lever *[Looks like a normal block (like Stone), but works as a Lever]:***

1 x Lever

4 x Camouflage Plaste

4 x Wool or Rotten Flesh

* **Torch Lever *[Looks like a Torch, also a Lever]:***

1 x Torch

1 x Lever

* **Secret Pressure Plate** ***[Looks like a normal block (like Stone), but works as a Pressure Plate]:***

1 x Wooden Pressure Plate

4 x Camouflage Paste

4 x Wool or Rotten Flesh

* **Secret Player Plate *[Looks like a normal block (like Stone), but works as a Pressure Plate that only Players can trigger]:***

1 x Stone Pressure Plate

4 x Camouflage Paste

4 x Wool or Rotten Flesh

* **One-Way Glass** ***[Makes a normal looking Block (like stone) from one side and Glass on the other that can see through to the other side]:***

6 x Glass

3 x Camouflage Paste

**@Waystones:**

* These can be found around the world, or crafted yourself.
* RClicking one will activate it for yourself only.
* Once you have activated more than one, you can RClick one, and choose any other Waystone to travel to by teleportation.
* If you Place it yourself, you can choose both its Name and if it is active for everyone or just yourself.
* Craft a Waystone:

3 x Stone Bricks

3 x Obsidian

1 x Warp Stone

4 x Purple Dye

4 x Ender Pearl

1 x Emerald

# SIDE PROJECT 7: INTERESTING TOOLS

# [Reminder from Vanilla vs Modded: 9]

**@Chisel:**

Craft a Chisel:

1 x Iron Ingot

1 x Stick

1. Use it with RClick
2. Place nearly any Block inside it
3. Take a Cosmetic version of that block out. *[The Pretties]*…

**@AkashicTome:**

Craft an Akashic Tome *[you will Spawn with one]*:

1 x Book

1 x Leather

3 x Paper

1 x Bookshelf

6 x Wood Planks

3 x Book

1. Craft it with any Manuals you receive
2. Use RClick to select any Manual
3. Use RClick to use that Manual
4. Use Click in the distance to convert it back to the Akashic Tome

**@NotEnoughWands:**

A large variety of Wands *[to be Built and found as Loot]* that consume Enchantment Levels to perform some useful actions.

* + **Building Wand** *[makes Building easier]*
  + **Capturing Wand** *[RClick on a Mob to Capture it. Shift+RClick to place it elsewhere]*
  + **Illumination Wand** *[Places Sources of Light]*
  + **Teleportation Wand** *[teleport a short distance]*
  + and more…

**@PortalGun:**

* There are several types of Portal Gun.
  + Each Type has its own “Frequency”.
  + Players must agree not to use another’s Portal Gun type or risk wiping each other’s Portal Placements.
  + Click to place Type 1 Portal.
  + RCLick to place Type 2 Portal.
  + Walk into these portals to travel between them.
  + Craft a Portal Gun:

5 x Iron Ingot

2 x Obsidian

1 x Diamond

1 x Minature Black Hole

1 x Nether Star

8 x Ender Pearl Dust

Smelt an Ender Pearl

# SIDE PROJECT 8: CURIO

***[Flight Alternative + Extras]***

**INFUSION:**

1 x Infusing Table

* 1 x Enchantment Table
* 1 x Each of:Fire, Water, Air, Earth & Mystical Crystals

To Level Up your Mystical Crystals: RClick one into the Infusing Table, then you must also RClick 0-8 Lapis depending on the Level of Crystal you require:

0 Lapis: Level 5 Crystal

1 Lapis: Level 10 Crystal

2 Lapis: Level 15 Crystal

3 Lapis: Level 20 Crystal

4 Lapis: Level 25 Crystal

5 Lapis: Level 30 Crystal

6 Lapis: Level 35 Crystal

7 Lapis: Level 50 Crystal

8 Lapis: Level 100 Crystal

RClick to Start, Shift+RClick to remove the last added item.

You also need the corresponding Experience Levels collected for the Infusion.

**BASE CRAFTING INGREDIENTS:**

Fire Crystal Shard: Nether

Earth Crystal Shard: Forests

Air Crystal Shard: Mountain Tops

Water Crystal Shard: Floor of Large Bodies of Water

Mystical Crystal: Ore found near Diamond Ore

Ring: 4 x Gold Nuggets

Amulet: 4 x Leather

Belt: 3 x Leather, 1 x Iron Ingot

Tiara: 4 x Gold Nuggets

**OTHERS:**

Curious of Curio *[Instruction Manual]*:

1 x Mystical Crystal, 1 x Book

Pedestal *[Display any item; also shares item’s effect to the Player who placed it up to 25 blocks]*:

2 x Level 20 Mystical Crystals, 1 x Glass, 4 x Polished Diorite

**BAUBLE ITEMS:**

**Amulet of the Fiery Core *[Fire Protection; Limited Durability]*:**

1 x Amulet, 1 x Level 20 Mystical Crystal, 2 x Fire Crystal Shards, 1 x Potion of Fire Resistance [8:00]

**Amulet of Night Vision *[Duh…]*:**

1 x Amulet, 1 x Level 25 Mystical Crystal, 1 x Night Vision Potion [8:00]

**Amulet of Diving *[Water Breathing]*:**

1 x Amulet, 1 x Level 20 Mystical Crystal, 1 x Air Crystal Shard, 1 x Potion of Water Breathing [8:00], 1 x Water Crystal Shard

**Growth Pendant *[Speeds up plant growth; Limited durability]*:**

1 x Amulet, 1 x Level 20 Mystical Crystal, 2 x Bone Meal, 1 x Earth Crystal Shard

**Belt of Water Walking *[Walk on top of Water; Hold Shift to descend]*:**

1 x Belt, 1 x Level 10 Mystical Crystal, 1 x Water Crystal Shard

**Belt of Feather Falling *[Removes fall damage]*:**

1 x Belt, 1 x Level 5 Mystical Crystal, 2 x Feathers, 1 x Air Crystal Shard

**Speed Belt *[Speed Upgrade; Affects Flight as well]*:**

1 x Belt, 1 x Level 10 Mystical Crystal, 2 x Feathers, 1 x Potion of Swiftness [1:30]

**Wall Climbing Belt *[Duh…]*:**

1 x Ladder, 1 x Belt, 2 x Vines, Level 5 Mystical Crystal

**Ring of Flight *[Creative Flight]*:**

1 x Ring, 2 x Feathers, 1 x Level 100 Mystical Crystal, 2 x Air Crystal Shards, 1 x Nether Star

**Magnet Ring *[Pulls mined and loose items to you; Limited range]*:**

2 x Iron Ingots, 2 x Level 10 Mystical Crystals, 1 x Ring

**Deflection Tiara *[Deflects 50% of Projectiles; Infusible with 50 Levels for******100% Deflection]*:**

1 x Tiara, 1 x Level 25 Mystical Crystal, 1 x Shield

***SIDE PROJECT 9:* @ENDERSTORAGE**

***[Item & Fluid Storage that can be linked across Infinite Distances and Dimensions]***

**NOTE:** You get an Ender Pouch when you Spawn in the world. *ANYONE* can access its Inventory, until you change its Frequency *[which is recommended]*

**Ender Chest:** For Item Storage. *[Can be privatized to stop others accessing your Color Frequency remotely if you Shift+RClick a Diamond onto the Golden Latch]*

4 x Blaze Rods

2 x Obsidian

1 x Ender Pearl

1 x Chest

1 x Wool *[Wool Color designates starting Frequency]*

**Ender Pouch:** For Item Storage on the go. *[Links with Ender Chests if you Shift+RClick an Ender Chest with it. This also copies any Privatized settings]*

4 x Blaze Powder

3 x Leather

1 x Ender Pearl

1 x Wool *[Wool Color designates starting Frequency]*

**Ender Tank** *[For Fluid Storage]*

4 x Blaze Rods

2 x Obsidian

1 x Ender Pearl

1 x Cauldron

1 x Wool *[Wool Color designates starting Frequency]*

All of these have 3 Buttons on top of them. The color of the buttons designates the “Color Frequency” the Chest/Pouch/Tank is tuned to, and these buttons can be changed on the Chest & Tank by RClicking a Vanilla or Modded Dye onto each of them; into any combination of matching or different colors. The Pouch is different. To change the Color Frequency, Shift+RClick an Ender Chest to Synchronize the Pouch to the Chest’s Color Frequency.

***SIDE PROJECT 10: @ENCHANTINGPLUS***

***[Advanced Enchanting]***

Craft 1 x Advanced Enchantment Table

* 4 x Gold Ingots
  + 2 x Obsidian
  + 1 x Book and Quill
    - 1 x Book
    - 1 x Feather
    - 1 x Ink Sac
  + 1 x Eye of Ender
    - 1 x Ender Pearl
    - 1 x Blaze Powder
  + 1 x Enchantment Table
    - 4 x Obsidian
    - 2 x Diamond
    - 1 x Book

This Advanced Enchantment Table Shows the names of every accessible Enchantment in the Game and its cost. It has the same requirements as the Vanilla Enchantment Table in regards to Bookshelves and Enchantment Levels…

***SECTION 2: VANILLA PLUS ULTRA:***

# OBJECTIVE 11: @THERMALFOUNDATION, @THERMALEXPANSION & @THERMALDYNAMICS

# [BASIC POWER]

If you have trouble following this, Search YouTube for:

“Thermal Expansion Infinite Energy Early Game Bit by Bit” for a tutorial

Spruce Sapplings *[Fastest Resin Production Rate]*

4 x Arboreal Extractors per Spruce Tree

**NOTE:** Arboreal Extractors do not require power

**NOTE:** Each Extractor must be placed at the base of the Tree

**NOTE:** Trees must be naturally grown – not built manually

**NOTE:** Tree must stay on at least one block of Dirt

**NOTE:** Dark/Oak Treesproduce Sap with this setup, and we want Resin

Enough Fluiducts

Enough Leadstone Fluxducts

Enough Itemducts (Opaque)

1 x Fractionating Still

1 x Steam Dynamo

1 x Energy Cell

1 x Aqueous Accumulator

1 x Coal/Charcoal

1 x Compression Dynamo

**SETUP:**

1. Connect Arboreal Extractors to Fractionating Still with Fluiducts to transfer the Resin
2. The Fractionating Still will Process Resin into Rosin *[a solid fuel source]* if given Power *[Redstone Flux or RF]*
3. Surround an Aqueous Accumulator with water and connect Fluiducts from it to both the Steam & Compression Dynamos to transfer water to them
4. Connect Leadstone Fluxducts from Steam Dynamo to the Energy Cell
5. Connect Leadstone Fluxducts from Energy Cell to Fractionating Still to give it power
6. Add the Coal/Charcoal to Steam Dynamo to kick-start the system with its first amount of power *[RF]*

**NOTE:** The Steam Dynamo will consume 1 Rosin to generate 8,000RF at a base rate of 40RF/t.

1. Connect the Fractioning Still with Fluiducts to the Compression Dynamo to transfer Tree Oil into it *[by creating Rosin in the Fractioning Still, you get Tree Oil as well]*

**NOTE:** The Compression Dynamo will consume 1 Bucket of Tree Oil for 1,000,000RF at a base rate of 4RF/t

***OBJECTIVE 12: @THERMALFOUNDATION, @THERMALEXPANSION & @THERMALDYNAMICS***

***[Machine Processing by consuming RF (Power) ]***

**BASIC MACHINES:**

* **Redstone Furnace** – Electric Furnace
* **Pulverizer** – Crushes Ores and Ingots into Pulverized *[Powdered]* forms *[Ores will give 2 Ingots worth of Pulverized Metals]*
* **Induction Smelter** – Combines 2 Materials into One *[similar to the Smeltery from* ***Objective 4****’s Alloying ability]*
* **Magma Crucible** – Melts Metals into Liquid form *[similar to the Smeltery from* ***Objective 4****’s Smelting ability]*
* **Fractionating Still** – Changes Fluids into other Materials *[It does more than just the Rosin from* ***Objective 11****]*
* **Fluid Transposer** – Fills Items with Liquids *[such as a Bucket with Water. Really depends on what you’re filling this Machine with]*
* **Energetic Infuser** – Transfers RF into Items *[Such as RF Powered Tools and Weapons]*
* **Glacial Precipitator** – Creates Snow and Ice if fed with Water
* **Igneous Extruder** – Creates Various Stones *[Stone, Cobblestone, Obsidian, etc]* if fed with Water & Lava
* **Aqueous Accumulator** – If surrounded with Water, will collect infinite Water into itself. Can then be connected to other Machines that will consume that Water
* **Arboreal Extractor** – Extracts Fluids from Trees *[the type of Tree determines the Fluid extracted]*

**POWER GENERATORS:**

* **Steam Dynamo** – Generates RF *[Power]* if feed with Water and a Solid Fuel Source *[eg: Coal, Charcoal, Rosin, etc]*
* **Magmatic Dynamo** – Generates RF if feed with Lava
* **Compression Dynamo** – Generates RF if fed with Water and a Liquid Fuel Source *[eg: Tree Oil]*

**STORAGE:**

* **Energy Cell** – Stores RF *[like a rechargeable battery]*
* **Portable Tank** – Stores Fluids
* **Cache** – Stores a total of 20,000 units of a Single Item
* **Strongbox** – Securable Chest
* **Flux Capacitor** – Stores RF *[like a rechargeable battery]* for rechargingyour RF Powered Items on the go
* **Satchel** – Stores Items on the go *[like a bag]*

**NOTE:** A Signalum Security Lock can be used to prevent other Players from accessing your Item *[requires it to be able to be Securable, like a Strongbox]*

**UPGRADE KITS:**

**NOTE:** Upgrades a Machine to its level *[the previous level is required]*. Doing this improves the Machine’s Ability, and allows the use of Augments to further Improve or Specialize the Machine. Simply Shift + RClick the Upgrade onto the Machine

* **Hardened – 1st Level** *[All Machine are recommended to be at this Level]*

1 x Bronze Gear

4 x Bronze Ingot

Alloy in Tinkers Construct Smeltery 3 x Copper Ingot & 1 x Tin Ingot

4 x Invar Ingot

Alloy in Tinkers Construct Smeltery 2 x Iron Ingot & 1 x Nickel Ingot

2 x Redstone

* **Reinforced – 2nd Level** *[Specialized Machines are recommended to be at this Level]*

1 x Silver Gear

4 x Silver Ingot

4 x Electrum Ingot

Alloy in Tinkers Construct Smeltery 1 x Silver Ingot & 1 x Gold Ingot

2 x Hardened Glass (Makes x 2 in Induction Smelter)

4 x Pulverized Obsidian

Place Obsidian in Pulverizer (Makes x 4)

1 x Pulverized Lead

Place Lead Ingot in Pulverizer – (Makes x 1)

* **Signalum – 3rd Level** *[Energy Cells are recommended to be at this Level]*

1 x Electrum Gear

4 x Electrum Ingot

4 x Signalum Ingot

3 x Pulverized Copper

1 x Pulverized Silver

1 x Destabilized Redstone Bucket

Use a Fluid Transposer to fill a Bucket with Destabilized Redstone

Use a Magma Crucible to melt Redstone for 100mb

Use a Magme Crucible to melt Redstone Ore for 1000mb

2 x Cryotheum

1 x Snowball

1 x Redstone

2 x Blizz Powder ***[SEE SIDE PROJECT: 13]***

* **Resonant – 4th Level** *[while useful, you probably won’t be needing this]*

1 x Lumium Gear

4 x Lumium Ingot

3 x Pulverized Tin

1 x Pulverized Silver

1 x Energized Glowstone Bucket

Use a Fluid Transposer to fill a Bucket with Energized Glowstone

Use a Magma Crucible to melt Glowstone Dust for 250mb

Use a Magma Crucible to melt Glowstone for 1000mb

4 x Enderium Ingot

3 x Pulverized Lead

1 x Pulverized Platinum

1 x Resonant Ender Bucket

Use a Fluid Transposer to fill a Bucket with Resonant Ender

Use a Magma Crucible to melt Ender Pearl for 250mb

**AUGMENTS:**

**NOTE:** To use an Augment, at least 1 Upgrade Kit must have been used first. Only 1 Specialization can be installed in a Machine at the Same Time

* **Auxiliary Reception Coil – Generic Augment:** Increases Machine Processing Speed at the Cost of Fuel/RF

4 x Gold Ingot

1 x Redstone Reception Coil

1 x Gold Ingot

2 x Redstone

* **Trivection Chamer – Redstone Furnace Specialization:** Doubles Food Output when Cooked. *[Only Food Items can be furnace]*

1 x Copper Gear

4 x Copper Ingot

2 x Silver Plate

Use a Compactor to Make Plates with just 1 x Ingot

Use the Tinkers Construct Smeltery with a Plate Cast to Make Plates with just 1 x Ingot

1 x Bricks

4 x Brick

1 x Redstone Conductance Coil

1 x Electrum Ingot

2 x Redstone

* **Flux Anodizers – Redstone Furnace Specialization:** Bonus Ingot Output when Ores are Smelted. *[Only Ores can be Furnaced]*
* **Flux Linkage Concentrator – Energetic Infuser Specialization:** Rapid Recharging
* **Flux Reconstruction – Energetic Infuser Specialization:** Repairs Damaged items if supplied with Essence of Knowledge
* **Parabolic Flux Coupling – Energetic Infuser Specialization:** Wireless Recharging of Flux Capacitors
* **Pyroclastic Injection – Igneous Extruder Specialization:** Water is no longer consumed

1 x Copper Gear

2 x Invar Plate

1 x Redstone Server

1 x Iron Ingot

2 x Redstone

1 x Cryotheum Dust

* **Auxiliary Transmission Coil – Generic Dynamo Augment:** Increases RF/t

4 x Silver Ingot

1 x Redstone Transmission Coil

1 x Silver Ingot

2 x Redstone

* **Fuel Catalyzer – Generic** **Dynamo Augment:** Increases RF produced by Fuels

4 x Lead Ingot

1 x Redstone Conductance Coil

2 x Redstone

1 x Electrum Ingot

* **Boiler Conversion – Steam Dynamo Specialization:** Changes a Steam Dynamo into a Steam Boiler *[Which outputs Steam instead of RF, more efficiently than a Steam Dynamo can. Output the Steam into a Steam Dynamo for boosted Fuel for power generation]*

1 x Iron Gear

2 x Copper Plate

1 x Bucket

1 x Hardened Glass (Makes 2 in Induction Smelter)

4 x Pulverized Obsidian

Place Obsidian in Pulverizer (Makes x 4)

1 x Pulverized Lead

Place Lead Ingot in Pulverizer – (Makes x 1)

* **Turbine Converion – Steam** **Dynamo Specialization:** Changes a Steam Dynamo into a Steam Turbine *[Which generates RF from Steam more efficiently than a Steam Dynamo can]*

1 x Iron Gear

2 x Copper Plate

1 x Iron Ingot

1 x Conductance Coil

**DUCTING:**

**FLUXDUCTS:** Transfers RF *[Power]* from your Generators or Energy Cells to your Machines, so they can run. Each type has its limits on how much RF can pass through it at once. Each Machine will consume a set amount while in use. If your Machines consume more power than your Fluxducts provide they will stop.

* **Leadstone Fluxduct** –1,000 RF/t (makes x 6)

6 x Redstone

2 x Lead

1 x Glass

* **Hardened Fluxduct** – 4,000 RF/t
* **Redstone Energy Fluxduct** – 9,000 RF/t
* **Signalum Fluxduct** – 16,000 RF/t
* **Resonant Fluxduct** – 25,000 RF/t
* **Cryo-Stabilzed Fluxduct** – Infinite RF/t

**FLUIDUCTS:** Transfers Fluids between Machines such as the Aqueous Accumulator

* **Fluiduct (Opaque)** –Breaks with Hot or Cold Fluids (Makes x 6)

2 x Copper Ingot

1 x Lead Ingot

* **Hardened Fluiduct (Opaque)** – Transfers Fluids of all temperatures

2 x Invar Ingot

1 x Lead Ingot

* **Signalum-Plated Fluiduct** **(Opaque)**– Transfers Fluids of all temperatures + 4,000 RF/t

3 x Hardened Fluiduct (Opaque)

1 x Signalum Ingot

1 x Electrum Ingot

**ITEMDUCTS:** Transfers Items between Machines

* **Itemduct (Opaque)** – Transfers Items

2 x Tin Ingot

1 x Lead Ingot

* **Impulse Itemduct** **(Opaque)** – Transfers Items Faster
* **Signalum-Plated Itemduct** **(Opaque)** – Transfers Items + 4,000 RF/t

3 x Itemduct (Opaque)

1 x Signalum Ingot

1 x Electrum Ingot

* **Signalum-Plated Impulse Itemduct (Opaque)** – Transfers Items Faster + 4,000 RF/t

**NOTE:** The normal version of the (Opaque) Ducts mentioned here will show their contents as their items travel in it. Not only are they *more expensive to craft*, they *may create Lag in large systems*. So I have recommended we use the (Opaque) versions.

**EXAMPLES:**

* Take your Basic Power System from **OBJECTIVE 11**. After setting it up, you would run your Fluxducts from the Energy Cell into your Base and connect your machines to it. This would allow them to run.
* Some Machines require different Fluids *[such as Water or Lava]* to operate. An Aqueous Accumulator can provide them with Water by using the Fluiducts. You can use a **@RangedPumps** Pump to pump Lava from the Nether into a **@EnderStorage** Ender Tank. Then put an Ender Tank in your Base on the same Color Frequency and use Hardened Fluiducts to provide your Igneous Extruder with Lava – providing infinite Stone, Cobblestone and Obsidian! ***[SEE SIDE PROJECT 11]***
* If you have Machines constantly processing Items, use Itemducts and connect them to the next Machine or even a Storage Block. Say you have a Double Chest. Connect an Itemduct to it and a Pulverizer. This will drag ores from the Chest into the Pulverizer and it will process them into Powdered forms of that Ore. Another Itemduct between the Pulverizer and a Redstone Furnace will allow it to smelt the Powdered Metals into Ingots
* This is Automating your Machine Processing!

**SERVOS & FILTERS:**

* **Filters:** Used to restrict Items or Fluids in Ducts. But cannot Extract them. Higher Tier Filters grant better options.
* **Servos:** Used to Extract Items or Fluids in Ducts. Can also Filter these as well. Higher Tier Servos grant better options.

***SIDE PROJECT 11: @RANGEDPUMPS, @ENDERSTORAGE & @THERMAL – INFINITE LAVA***

***[Lag free Lava pumped straight from the Nether]***

**NETHER:**

1 x Pump *[Placed on Block next to Lava Lake]*

1 x Magmatic Dynamo *[RClick with Crescent Hammer to “point” the Dynamo into the Pump]*

2 x Hardened Fluiducts *[Connects the Pump to the Dynamo to provide it with Lava; so it can provide the Pump with Power]*

1 x Ender Tank *[Shift+RClick on top of the Pump]*

Press **E** and select the little Map Icon in top Left.

RClick the Square your Pump is on to Claim it as yours

Shift-RClick your Claimed Square to **Chunk Load** it *[now it will stay active while you’re not there]*

**OVERWORLD:**

1 x Ender Tank *[Same Color Frequency as Nether Tank]*

**USES:**

* Place on top of Igneous Extruder to provide it with Infinite Lava to provide you with Infinite Stone, Cobblestone, Obsidian, etc
* Place near your Tinkers Construct Smeltery and connect it with a hardened Fluiduct to your Seared Tank to provide your Smeltery with infinite Lava to use it with…

***SIDE PROJECT 12: @MYSTICALAGRACULTURE***

***[Unlimited Reasources]***

**CRYSTALS:**

**Infusion Crystal (1,000 Durability):**

4 Prosperity Shards

4 x Inferium Essence

1 x Diamond

**Master Infusion Crystal** **(Unlimited Durability):**

4 x Prosperity Shards

4 x Supremium Essence

1 x Diamond

**ESSENCES:**

**Inferium:**

Obtained through: Ore, Mob Drops, Inferium Crops

**Prudentium:**

4 x Inferium Essence

1 x Any Infusion Crystal

**Intermedium:**

4 x Prudentium Essence

1 x Any Infusion Crystal

**Superium:**

4 x Intermedium Essence

1 x Any Infusion Crystal

**Supremium:**

4 x Supremium Essence

1 x Any Infusion Crystal

**TOOLS & ARMORS:**

Each level of Essence has its own Tool & Armor Version.

Complete sets of these Armors grant additional bonuses dependent on which level was used *[e.g.: Supremium Armor has Creative Flight built into the complete set]*. They also have their own upgrading system called Charms via a Tinkering Table.

If you have trouble following this, Search YouTube for:

“Sky Factory 4 - How to Use a Tinkering Table”

**BASIC CRAFTING SEEDS:**

**Base Crafting Seed:**

4 x Prosperity Shards

1 x (Wheat) Seed

**Tier 1 Crafting Seed:**

4 x Inferium Essence

1 x Base Crafting Seed

**Tier 2 Crafting Seed:**

4 x Prudentium Essence

1 x Tier 1 Crafting Seed

**Tier 3 Crafting Seed:**

4 x Intermedium Essence

1 x Tier 2 Crafting Seed

**Tier 4 Crafting Seed:**

4 x Superium Essence

1 x Tier 3 Crafting seed

**Tier 5 Crafting Seed:**

4 x Supermium Essence

1 x Tier 4 Crafting Seed

**CRAFTING MOD DROP CHUNKS:**

To Obtain Chunks from Mobs, use either a Soulium Dagger, or make Soulium Parts for Tinkers Construct Weapons

**Tier 1 Mob Chunk:** Smelt Zombie Chunk

**Tier 2 MobChunk**: 1 x Tier 1 Chunk, 2 x Prudentium Essence or Smelt any Tier 2 Mob Chunk

**Tier 3 Mob Chunk:** 1 x Tier 2 Chunk, 2 x Intermedium Essence or Smelt any Tier 3 Mob Chunk

**Tier 4 Mob Chunk:** 1 x Tier 3 Chunk, 2 x Superium Essence or Smelt any Tier 4 Mob Chunk

**Tier 5 Mob Chunk:** 1 x Tier 4 Chunk, 2 x Supremium Essence or Smelt any Tier 5 Mob Chunk

**CROPS:**

Any crop requires:

4 x the Material you want to grow *[most Mods are compatible]*

4 x the Essence level required to craft

1 x Crafting Seed of the level required to craft

Crops should be compatible with the @TINKERSCONSTRUCT Scythe *[for bulk harvesting!]*

**VANILLA RESOURCE EXAMPLES:**

**Stone Seeds:**

4 x Stone

4 x Inferium Essence

1 x Tier 1 Craft Seed

**Coal Seeds:**

4 x Coal

4 x Prudentium Essence

1 x Tier 2 Crafting Seed

**Iron Seeds:**

4 x Iron Ingot

4 x Intermedium Essence

1 x Tier 3 Crafting Seed

**Gold Seeds:**

4 x Gold Ingots

4 x Superium Essence

1 x Tier 4 Craft Seed

**Diamond Seeds:**

4 x Diamond

4 x Superemium Essence

1 x Tier 5 Crafting Seed

**VANILLA MOB DROP EXAMPLES**

**Zombie Chunk:** 8 x Rotten Flesh, 1 x Tier 1 Chunk or Mob Drop with Soulium Dagger/TiCon Part

* **Zombie Seeds:** 4 x Zombie Chunk, 4 x Inferium Essence, 1 x Tier 1 Crafting Seed

**Cow Chunk:** 2 x Leather, 2 x Raw Beef, 1 x Tier 2 Chunk or Mob Drop with Soulium Dagger/TiCon Part

* **Cow Seeds:** 4 x Cow Chunk, 4 x Prudentium Essence, 1 x Tier 2 Crafting Seed

**Spider Chunk**: 2 x String, 2 x Spider Eye, 1 x Tier 3 Chunk or Mob Drop with Soulium Dagger/TiCon Part

* **Spider Seeds:** 4 x Spider Chunk, 4 x Intermedium Essence, 1 x Tier 3 Crafting Seed

**Enderman Chunk:** 2 x Ender Pearl, 1 x Tier 4 Chunk or Mob Drop with Soulium Dagger/TiCon Part

* **Enderman Seeds:** 4 x Enderpearl, 4 x Superium Essence, 1 x Tier 4 Crafting Seed

**Wither Skeleton Chunk:** 2 x Wither Skeleton Skull, 1 x Tier 5 Chunk or Mob Drop with Soulium Dagger/TiCon Part

* **Wither Skeleton Seeds:** 4 x Wither Skeleton Chunk, 4 x Supremium Essence, 1 x Tier 5 Crafting Seed

**MODDED RESOURCE EXAMPLES:**

**Silicon Seeds:**

4 x Silicon

4 x Prudentium Essence

1 x Tier 2 Crafting Seed

**Bronze Seeds:**

4 x Bronze Ingot

4 x Intermedium Essence

1 x Tier 3 Craft Seed

**Dark Steel Seeds:**

4 x Dark Steel Ingot

4 x Supermium Essence

1 x Tier 4 Crafting Seed

**OBTAINING RESOURCES FROM ESSENCES:**

* Each Crop will produce a crafting ingredient call Essence (eg: Gold Essence).
* This Essence must be crafted into their respective resources – and each has a different crafting layout (Most Ingot’s layout is a chest pattern, meanwhile Diamond’s is a Block)

# SIDE PROJECT 13: @THERMALEXPANSION

# [Mob Drop Shortcuts (Due To No Overworld Mobs)]

**NOTES:**

* Solidified Essence in Magma Crucible = Essence of Knowledge
* The Following Items are Fluid Transposer Recipes that combine with Essence of Knowledge
* Use the Resulting Powders in a Compactor to gain the Mob Drop Rods
* **Blaze Powder:**

Sulfur

* **Basalz Powder:**

Obsidian Powder

* **Blizz Powder:**

Snow Ball

* **Blitz Powder:**

Niter *[Sand Grinding by-product]*

***ADVANCED CHALLENGE 1: @THERMAL - ADVANCED POWER SYSTEM***

***[RF (Power) Generation]***

**STAGE 0: SAP PRODUCTION:**

* Start your Setup with STAGE 2’s Tree Farm. That way the Sap will build up and kick start your Rich Phyto-Grow pretty quickly by the time you are ready to start the system!

**NOTE:** No need to do anything further in STAGE 2 other than the actual tree setup here…

**STAGE 1: PHYTO-GROW PRODUCTION:**

* 3 x **Aqueous Accumulators** feeding **Water** into:
* **Igneous Extruder** *[Reinforced Upgrade + Clastic Depostion (Makes Sand types instead of Stone types & Auxiliary Reception Coil (Speeds up machine) Augments]* feeding:

**NOTE:** This needs at least 1 Bucket of Lava as well as water. But it doesn’t consume the Lava, only the Water

* + - **Sandstone** into: the 1st **Pulverizer** *[Hardened Upgrade + Auxiliary Sieve (Bonus Secondary Output – specifically we want Niter) ]-* feeding:
      * **Sand** into: **Induction Smelter** *[Hardened Upgrade + Auxiliary Sieve (Bonus Secondary Output – specifically we want Slag) ]* feeding:
        + **Iron Ingots** into the 2nd Pulverizer *[Basic]* which feeds**Pulverized Iron** back into the **Induction Smelter** mentioned above

**NOTE:** The Iron is not consumed; it’s only going round in a circle to create infinite Slag by consuming Sand, constantly pulverizing and smelting the Iron.

**NOTE:** The sand is needed to Smelt the Pulverized Iron in the Induction Smelter as it always requires 2 Ingredients

* **Slag** into the 1st **Sequential Fabricator** *[Basic]*

**NOTE:** 1st of 3 Ingredients

* + - **Niter** into: 1st **Sequential Fabricator** *[Basic]*

**NOTE:** 2nd of 3 Ingredients

* + 1 x “input” Chest feeding a supply of **Charcoal** into:
    - 3rd **Pulverizer** which feeds **Charcoal Dust** into the 1st **Sequential Fabricator**

**NOTE:** 3rd of 3 Ingredients

Once the **Sequential Fabricator** has all 3 Ingredients, set the Recipe to **Phyto-Grow** *[by placing 1 of each of the Ingredients in its Crafting Grid]* and click the Green Tick.

**Congratulations!** You just automated **Phyto-Grow**! This is the basic version.

We need to up this item’s level: Phyto-Grow -> Rich Phyto-Grow -> Fluxed Phyto-Grow

Rich Phyto-Grow is next, so feed the Phyto-Grow from the **Sequential Fabricator** into the **Fluid Transposer** from STAGE 2

**STAGE 2: RICH PHYTO-GROW & FLUXED PHYTO-GROW PRODUCTION:**

Remember your Objective 11 Basic Tree Oil Power System? It had 4 Arboreal Extractors… well this Setup calls for more. But we’re not trying to harvest Tree Oil, we are looking for Sap. And Oak Trees are the best at that!

* + - 16 x **Oak Saplings** planted every 5 blocks, in a 4 Oak Tree x 4 Oak Tree grid.
      * Surround those Oak Trees with 4 x **Arboreal Extractors** each, feeding Sap into:
        + **Fluid Transposer**

**Congratulations!** You just automated **Rich Phyto-Grow!**

Now feed that Rich Phyto-Grow into your Energetic Infuser and BAM! You just automated **Fluxed Phyto-Grow!**

Now this is where it gets complicated…

Feed this **Fluxed Phyto-Grow** into the **Phytogenic Insolators**

**STAGE 3: OAK WOOD & CHARCOAL PRODUCTION:**

Normally the Phytogenic Insolators only grow crops *[like Wheat]*. But with an Augment it can “grow” trees – or rather simply produce Wood Logs. But it needs Phyto-Grow to do any of it. And the higher the tier of Phyto-Grow, the higher the amount of Wood you’ll get! So we need to Upgrade it as well to install this Augment

* Up to 4 x **Phytogenic Insolator** *[Signalum Upgrade + Sappling Infuser (grows Trees), Auxiliary Reception Coil (Speeds up machine) & Nullification Chamber (Prevents the system from clogging up and stalling by destroying excess saplings) Augments]* feeding **Wood** into:
  + Cache feeding **Wood** into:

**NOTE:** This allows you hopefully to have access to infinite Wood as the system back fills.

**NOTE:** This system should be able to support 4 Phytogenic Insolators

* + - 10 x **Redstone Furnaces** *[Reinforced (no Augments. Upgrading also increases the Machine Speed) ]* feeding **Charcoal** into:
      * 2nd **Sequential Fabricator**. Set it to craft **Charcoal Blocks**. Feeding them into:
      * Cache feeding **Charcoal Blocks** into Steam Dynamos in the next STAGE

**NOTE:** This allows you hopefully to have access to infinite Charcoal as the system back fills.

**NOTE:** Charcoal Blocks burn for 10 x Charcoal not just the 9 it takes to Craft them.

**Congratulations!** You just automated Wood and Charcoal! As a bonus, you should be able to withdraw your Charcoal to refill your “input” Chest for Phyto-Grow production: *“Modded Automation, it’s the way of the Future!”*

**STAGE 4: ENERGY PRODUCTION:**

* Remember those **Aqueous Accumulators**? Also use them to feed **Water** into:
  + Up to 8 x **Steam Dynamos** *[Reinforced Upgrade + Boiler Conversion (Specialization – Only Produces Steam) & Auxiliary Transmission Coil (Increases Steam Output) Augments]* feeding **Steam** into:

**NOTE:** The system described *should* be able to support 8 Steam “Boiler” Dynamos

**NOTE:** Normally Steam Dynamos can create RF *[Power]* by consuming Solid Fuels *[Coal, Charcoal, Rosin, etc]* and Water. But this is not very efficient.

**NOTE:** Splitting the Steam and RF productions greatly boosts how much Steam and Power you’ll generate… The previous STAGEs only set up infinite Charcoal Blocks. And as we have Water already, we now have infinite Steam…

* + - Up to 16 x **Steam Dynamos** *[Reinforced Upgrade + Turbine Conversion (Specialization – only consumes Steam) & Auxiliary Transmission Coil (Increases RF generated) Augments]* feeding RF into:

**NOTE:** The Steam Production *should* be able to support twice the amount of Steam “Boiler“ Dynamos; so up to 16 Steam “Turbine” Dynamos.

**NOTE:** The total output of your Steam “Turbine” Dynamos WILL exceed the capacity of your Fluxducts – your only choices are to either:

1. Split RF output to your Energy Cell/s so they don’t exceed the **Fluxduct’s** limit
2. Or upgrading your **Fluxducts** to **Cryo-Stabilzed Fluxducts**, just between your Steam “Turbine” Dynamos and your Energy Cell
   * + - Minimum 1 x Energy Cell *[Signalum or higher Upgrade (Increases RF Storage Capacity) ]* feeding RF into:
         * Your Entire Base’s Machines!

**STAGE 5: KICK-STARTING THE WHOLE SYSTEM:**

1. Once everything is set up to your best understanding, place as much Coal/Charcoal you already have on hand *[best to craft into blocks first for an extra unit of burn time]* into one of your Steam “Boiler” Dynamos
2. The Steam “Boiler” Dynamo will start creating steam
3. The Steam “Turbine” Dynamos will start generating RF
4. You machines will all receive RF and start producing their set outputs
   1. Sandstone
   2. Sand & Niter
   3. Slag & Pulverized Iron/Iron Ingots
   4. Charcoal Dust
   5. Phyto-Grow
   6. Rich Phyto-Grow *[At this point, you should have a backlog of Sap and Rich Phyto-Grow production will boosted for a short while, helping to kick-start the system become self sufficient]*
   7. Fluxed Phyto-Grow
   8. Wood
   9. Charcoal
   10. Charcoal Blocks
   11. Steam & RF – and the cycle continues!

**Congratulations!** If your machines are working as described, you have made a rather challenging Power system! – if you’ve gone the Maximum option for all machines, you should be generating 6,400 RF/t! While the system only uses about 600 RF/t…

# ADVANCED CHALLENGE 2: @LUCRAFTCORE - INFINITY GENERATOR

* 4 x Dwarf Star Alloy Plates
* 1 x Advanced Circuit
  + 4 x Copper Wiring
    - 1 x Copper Plate (Makes x 4)
    - 1 x Wire Cutter
      * 2 x Sticks
      * 1 x Iron Plate
  + 2 x Redstone
  + 2 x LV Capacitor
    - 2 x Iron Ingots
    - 1 x Redstone
    - 1 x Lead Ingot
    - 4 x Iron Plate
    - 1 x Copper Plate
  + 1 x Basic Circuit
    - 6 x Copper Wiring
    - 2 x Redstone
    - 1 x Iron Plate
* 1 x HV Capacitor
  + 2 x Steel Ingots
    - 1 x Pulverized Iron
    - 4 X Pulverized Coal
    - (Makes 1 x Steel Blend)
  + 1 x Redstone Block
  + 4 x Iron Plates
  + 1 x Block of Lead
  + 1 x Intertium Plate
    - 2 x Pulverized Iron
    - 1 x Osmium Dust
    - (Makes 3 x Intertium Dust)
* 1 x Nether Star

**NOTES:**

* Requires 1 x Tesseract *[Found inside Churches around the World (Generated by* ***@HeroesExpansion****), behind the Tree (1 in 10**chance), at eye height]*.
* Generates 100,000 FE/t
* Forge Energy *[FE]* equals Redstone Flux *[RF]* 1:1

# ADVANCED CHALLENGE 3: @LUCRAFTCORE – PORTAL DEVICE

***[Chitauri Invasion Event]***

Craft a **Portal Device**:

* 1 x Iron Ingot
* 2 x Advanced Circuit
  + 2 x Redstone
  + 4 x Copper Wiring
    - 1 x Copper Plate
      * Use Tinkers Construct Smeltery or Thermal Expansion Compactor to make using 1 x Copper Ingot, otherwise use LuraftCore Hammer with 2 x Ingots
    - 1 x Wire Cutter
      * 1 x Iron Plate
      * 2 x Sticks
  + 2 x LV Capacitor
    - 2 x Iron Ingot
    - 4 x Iron Plate
    - 1 x Copper Plate
    - 1 x Lead Ingot
    - 1 x Redstone
  + 1 x Basic Circuit
    - 6 x Copper Wiring
    - 1 x Iron Plate
    - 2 x Redstone
* 1 x Copper Wiring
* 4 x Iridium Plate
* 1 x HV Capacitor
  + 4 x Iron Plate
  + 2 x Steel Ingot
  + 1 x Block of Redstone
  + 1 x Block of Lead
  + 1 x Intertium Plate
    - Intertium Dust is crafted with 2 x Pulverized Iron & 1 Osmium Dust

1. Place a Tesseract in the Portal Device and connect it to a Power Generator
2. Then press “Set Destination”:
   1. This Device can send you to any Dimension and Location in the Game
   2. Or it can open the Portal to the “Invasion” by the Chitauri Army

# ADVANCED CHALLENGE 4: @LUCRAFTCORE x @INFINITYCRAFT – INFINITY GAUNLET

***[Fine, I’ll Do It Myself…]***

**NOTE: GOLD-TITANIUM ALLOY DUST ALLOYING RATIO:** 2 x Titanium Dust – 1 x Pulverized Gold

**CRAFT THE INFINITY GAUNTLET:**

* 6 x Gold-Titanium Alloy Plate & Infinity Gauntlet Cast in Anvil
* Or 4 x Blocks + 5 x Ingots + 6 x Nuggets of Gold-Titanium Alloy in Tinkers Construct Smeltery
* **TESSERACT *[@HEROESEXPANSION]*:**
  + 10% Chance behind the Tree in Norse Village’s Church
  + RClick Collects the Tesseract *[place this inside the Infinity Generator for 100,000RF/t or inside the Portal Device for the Invasion Event]*
  + Clicking Breaks the Tesseract and Creates the Space Stone *[place this inside the Infinity Gauntlet for Teleportation and other Abilities]*

**USE THE ABILITY OF THE INFINITY GAUNTLET’S SPACE STONE OR PORTAL DEVICE**

***[BOTH FROM @HEROESEXPANSION]* TO TELEPORT TO – x:60,000 y:? z:60,000**

* Once you fall to the ground, explore for a bit and the Stones will start to Generate inside little Cobblestone Gazebos; announcing their Generation in the game chat
* If you have Commands enabled, use /generatedStones to find any Generated Stone’s

Co-Ords

* There is only one of each of these Stones in the world – First in, First served!
* **SPACE STONE:**
  + Teleportation Portal – Black Circle Icon
  + Levitation of Blocks and Entities *[Click to throw them]* – Blue Cube Icon
  + Shield (?) - Steve Icon
  + Black Hole – Spiral Galaxy Icon
* **REALITY STONE:**
  + Turn yourself invisible – Steve Shield Icon
* **POWER STONE:**
  + Laser – Line Icon
* **TIME STONE:**
  + Rewind Time of Day – Clock Icon
  + (?) – Green Cube Icon
* **MIND STONE:**
  + LucraftCoreFlight – Flight Icon
  + Cycle Between Abilities – Yellow Cube *[use with Soul Stone: Infinity Gauntlet Icon]*
    - Kill Evil Entities *[doesn’t seem to work?]*
    - Destroy the Stones *[works]*
    - Kill Half *[doesn’t seem to work?]*
    - Bring back the Dusted *[WIP] [doesn’t seem to work?]*
  + Recreate the Universe *[WIP] [doesn’t seem to work?]*
  + Levitation of Blocks and Entities *[Click to throw them]* – Blue Cube Icon
* **SOUL STONE:**
  + And I am… Iron Man *[If Kill Evil Entities/ is Selected]* Infinity Gauntlet Icon
  + You should have gone for the head *[If Kill Half is Selected]* Infinity Gauntlet Icon

***ADVANCED CHALLENGE 5: @REFINEDSTORAGE***

***[Digital Storage & Crafting]***

This Mod allows you to store your Items in bulk digitally *[in a sort of Computer]*, and access all of it at once while allowing you to craft with all of it at the same time

**NOTE:** Use JEI to find the Recipes and Craft this yourself. I’ve given you the Basics.

Will You Accept This Challenge?

If you have trouble following this, Search YouTube for:

“Refined Storage Bit-by-Bit” on YouTube – there are 3 videos

**Resources Needed:**

* Iron
* Nether Quartz
* Silicon *[can smelt Quartz]*
* Quartz Enriched Iron *[Crafted 3 Iron & 1 Quartz]*
* Gold
* Diamond
* Redstone
* Glowstone
* Power System *[Not Included in Mod]* ***[SEE OBJECTIVE 11 OR ADVANCED CHALLENGE 1]***

**Machines Required:**

* 1 x Controller *[Power Required]*
* 1 x Solderer *[Crafting Table + Furnace]*
  + 6 x Quartz Enriched Iron
  + 2 x Sticky Pistons
* Crafting Grid *[Recommended]*
  + 1 x Crafting Table
  + 1 x Advanced Processor *[Diamond Level]*
* Grid *[Accesses all connected Inventories]*
  + 3 x Glass
  + 1 x Machine Casing
  + 1 x Q.E. Iron
  + 2 x Improved Processor *[Gold Level]*
  + 1 x Construction Core
  + Basic Processor *[Iron Level]*
    - Glowstone Dust
    - 1 x Destruction Core
    - Basic Processor *[Iron Level]*
    - Nether Quartz

**SOLDERER NOTES:**

* Put Silicon in this, and it will eventually make a Printed Silicon – the base for the mod
* Put Iron, Gold or Diamond in, and it will eventually make their Printed versions
* Put in Printed Silicon and the Printed version of Iron, Gold or Diamond for the Processors
* As long as the machines touch each other and a Controller they will all be powered
* Cables can extend power reach from Controller. Crafting Recipe grants 12 per Craft.
* Speed Upgrades can increase Operational Speed

**Tools:**

Wrench *[You may never need it, but can come in handy]*

Shift+RClick Uses Wrench

RClick Changes modes:

Config -> Dismantle -> Rotate

Config: Saves settings and transfers them to another machine

Rotate: Duh

Dismantle: Pickup Block

**Storage Option 1:**

1k Storage Block *[Holds 1,000 Different Items/Stacks]*

4k Storage Block *[Holds 4,000 Different Items/Stacks]*

16k Storage Block *[Holds 16,000 Different Items/Stacks]*

64k Storage Block *[Holds 64,000 Different Items/Stacks]*

**Storage Option 2:**

External Storage *[Connects to any Vanilla/Modded Storage Block (eg: Chests) ]*

**NOTES:**

* The flat part needs to be on the Storage
* Multiple Connects allowed
* R-Click on the flat part can access the filtering options
* Standard Whitelist/Blacklist rules apply
* Priority sets which storage block is used first

**Storage Option 3:**

1 x Disk Drive *[Holds 8 Disks]*

Disks – As many as you can make

1k, 4k, 16k, 64k Disk Options

***ADVANCED CHALLENGE 6: @AETHERII***

As I may have said, this Modpack is heavily biased towards World Exploration.

And the **@AetherII** Mod brings this and more!

*“The Aether II Mod is an extensive mod for Minecraft which implements a remarkable world in the skies. Adventure, danger, and mystery await in the depths of the Aether.”* – Gilded Games *[The Devs]*

**NOTE:** This mod is what the Glowstone and Water Portal Disappointment Meme was all about – that was how you used to build the Portal, but people didn’t know about Mods that much back then…

1. First craft the Aether Portal

4 x Iron Ingots

4 x Stone

1. Next Place the Portal *[more of a Pedestal really…]* down somewhere.
2. When ready, RClick it and be transported to the Skies Above!
3. The first thing you’ll find is a Firepit *[Which also acts as your Return Portal]* in a low set Gazebo. A man sits beside the Fire nearby. Speak with him…
4. **Finally, Explore!** New Stone types to build with, Trees and Wood Types, QuickSoil *[the opposite of Soul Sand which slows you down; QuickSoil speeds you up!]*, New Mobs and of course New Tools, Weapons and Armor to Craft!

**TIP:** You will most definitely find some form of Flight handy here *[Heroes Expansion, Curio, etc…]*. This Dimension is a Void Dimension, like The End. Islands floating in the Sky…