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# NCIP 11 — Crystals / Item Grinder v1.0

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## Abstract

After a year on the mainnet, a need organically arose for a second currency to act as a balancing factor in the current economic model of Nine Chronicles. **Nine Chronicles Crystals** is a proposed sub-currency which will be mainly generated by the disassembling of items and will have various use cases in an effort to troubleshoot some of the ongoing issues of the Nine Chronicles economy.

The proposed implementation in this document takes into consideration the minimisation of development time and tries to have an optimized impact on the current economy while having the ability to be built upon the existing structural basis of Nine Chronicles.

## Motivation

After every content update, there is a certain time period after which the supply for newly crafted items surpasses the demand (Market Saturation). As a by-product of this, the *average* NCG value of an Item purchased at a given point in time is expected to decline, thus making it a bad investment. While the introduction of a second sub-currency might not solve this issue

in its entirety, it helps combat the effects of market saturation by giving another use case to items crafted by players and thus, greatly increasing the time before the market gets saturated. In the current implementation of Nine Chronicles, excess items crafted by players always end up on the market. It is vital to have a system in place where players have the option to sell some of their items for gain and use others for various other purposes in the game.

Another ongoing issue is that while there is no entry fee for Nine Chronicles, the threshold at which new players can start earning keeps increasing with time. A tradeable sub-currency which new players can acquire early on, helps alleviate this and introduce the Play to Earn ideology sooner.

To summarise, this NCIP aims to solve (partially or fully) these issues:

- item value deterioration (byproduct of inflation/market saturation)
- low level players' earning threshold
- infinite value generation

## Specification

### *How are crystals acquired?*

#### Disassembling items - Item grinder (Main)

The proposed way to acquire crystals is by disassembling items. The desired outcome of this utility is to mitigate the number of items that end up on the market for sale. Players are able to disassemble items that are non-optimal and don't constitute upgrades to their items. This would prevent the market from being saturated by low rolls since it would be more cost-efficient for players to disassemble their items instead of selling.

A way of valuing the rewarded crystals per item is: Every crafting recipe has a predetermined amount of crystals that the item will reward when disassembled. Additionally, the more stars an item has, the more crystals it gives. This way, the great success rolls are worth more than basic ones, and premium crafts are valued more than the basic ones. The upgrade level of the item should also be taken into consideration

#### Failing upgrades (Optional)

Right now players are simply scared of upgrading past +7 because the chance of failing gets rather big and it takes a lot of money and time to get another one.

Giving them some crystals as a compensation would reduce this frustration a lot - even if they still lose the NCG in the process.

## Event rewards (Optional)

Since it's not a limited currency, it can be given as event rewards for participants. The ability to reward crystals through events also adds the functionality to externally monitor and affect the economy if necessary.

## Exchangeable on Market (Optional)

All the crystals would be tradable for NCG.

## *Nine Chronicles Crystals - Proposed Use Cases (difficulty)*

### -Crystals are required for crafting endgame items (difficulty: easy)

Just an extra tax over the old materials required. Maybe use extra crystals to increase the chance of great success.

### -Crystals are paid to participate in events (difficulty: easy)

Want to participate in this arena season - buy the season pass with crystals.  
The fee can apply to any future events, not just the arena.

### -Crystals can be used to unlock new stages or recipes (difficulty: easy)

After the player beats a stage with 3 stars, some crystals are required to move further.  
Same thing for the recipe: a crystal cost is added over the clear stage requirement.

### -Crystals can be used to enchant items. (difficulty: hard)

We can dig out the [enchancing ncip](#) and replace the rune idea with a pure crystals cost. Or keep the runes (to have that valuable drop still in the game) and just add an additional crystal cost to the process.

### -Crystals can be used to reduce the upgrade chance to fail (difficulty: medium)

All the upgrades take some crystals but you can top it up to reduce the chance to fail.

### -Buff items for each season (difficulty: medium-hard)

A use case for Crystals that seems to solve two problems at once is the introduction of an additional buff system on Items. The suggested buff would only apply to the competitive aspects of Nine Chronicles for two reasons:

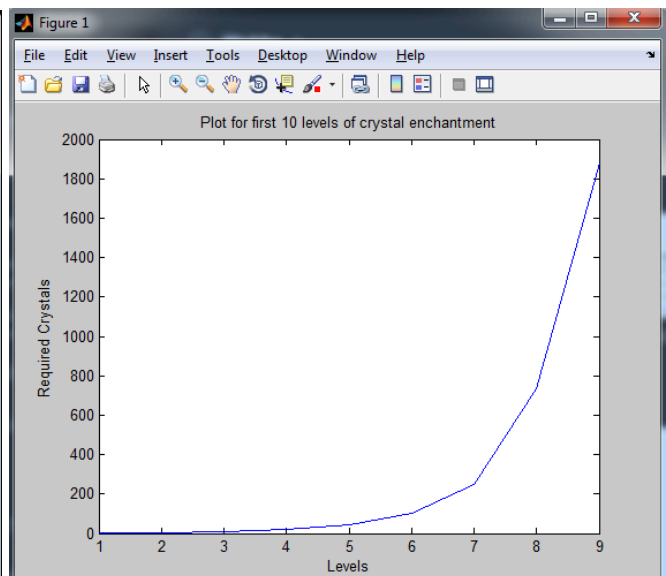
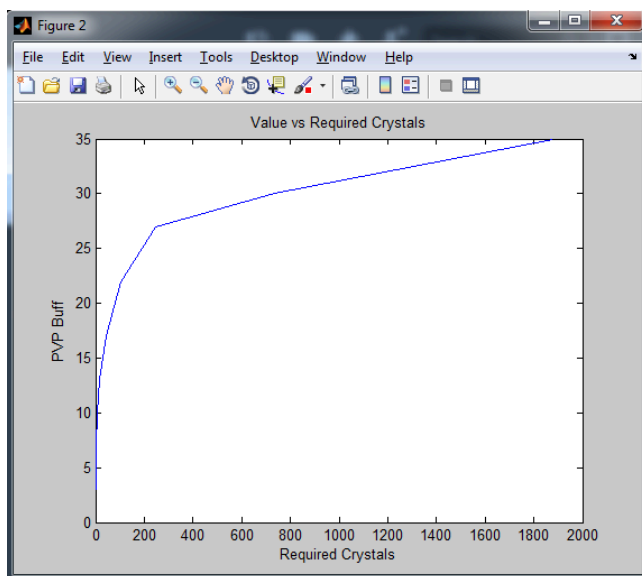
- To avoid adding complexity to balancing of the Campaign
- To make sure that crystals used on items disappear after a period of time.

Based on the level of crystals enchantment, items would produce PvP buffs that only apply in selected competitive areas. The intended functionality of this mechanic is that players will have to decide which and how many of their items to disassemble in order to compete against other players.

Ideally, the Crystal Enchantment level would reset after each round of the competitive event.



While the below graphs are just drafts, they are an indication of the progression of required crystals per level. It is advised to avoid a linear progression.









## NCG vs Crystals utility

	NCG	Crystals
Items upgrading	OK	—
Buying items	OK	— ? *
Governance	OK	—
Staking rewards	OK	—
Required to participate in events	OK ?	OK
Item enchanting	—	OK
Unlock stages	—	OK
Unlock recipes	—	OK
Craft items	— ?	OK ?
Craft “legendary” items	OK	—
Reduce upgrade chance to fail	—	OK
Increase the chance of rare stats on crafting	—	OK
Staking for full energy meter	OK	—

## Ways of getting NCG vs Crystals

	NCG	Crystals
Buy from exchanges	OK	— ? OK
<b>Destroy items</b>	—	OK
Fail upgrades	—	OK
Selling items	OK	— ?
Event rewards	OK	OK

Onboarding portal activities		 ?
Buy with NCG (you can sell Crystals on the market)		
Gain by completing stages		

\*= eventually

## Prerequisites

Needed changes before this NCIP can have the specified outcomes

### Stable Reward system (100% Necessary)

- supply/demand stability

### Item Level Restriction (80% Necessary)

### Order Market for crystals (X% Necessary)

## Item grinder logic and gains.

Initial thought process by Wabbs:

The only way I see this scale is by considering crystals = time and time = blocks. So in my mind, the crystals gained from destroying items should be directly tied to how long that took to build. That works because by design the stronger and the more materials a craft requires → the more time it takes to craft. Great success crafts also have a longer craft time that reflect their bigger power.

This also applies to the upgrading. The higher the level, the longer the craft time. The better the tier, the longer the craft time too.

*I'd also add that the grinder should require a level to unlock - but players can get crystal even before that from quests and events.*

I'd aim for something as high as 1k crystals = 1 ncg as a starting point. Otherwise it makes no sense to give crystals from the start. But at the same time that doesn't really work on low items - since it might be better to keep on selling them as +3 items.

Right now the tier 1 fodder sells as low as 1 ncg for a +3.

It takes a player 5 blocks to craft each one of those items so 40 blocks for the base and the upgrading add around (it varies depending on slot and upgrade success)

$25 * 4 + 75 * 2 + 150 = 400$ . So a +3 t1/normal item takes under 500 blocks to make

The bad rolls of endgame items sell under 100 ncg (but they take weeks to make). They take from 18k (201 chest basic) to 42k (220 premium sword) blocks to craft

But the problem with scaling this are the mid items. For example, you can find gladiator swords wind for as low as 1-2 ncg and they take 7k blocks to craft.

Paired with the introduction of level restrictions that might be ok: players will just destroy all the low and average rolls and will sell just the best ones, making an easy to navigate market, where players can just buy a good item, use it for a while and sell it back.

Action	Crystals	Obs
Crystal Gains		
Item grind - gain for block required to craft	1 crystal for 1 block crafting time	This way the starter t1 items give 5 crystals. The endgame items will give around 25k crystals but they also sell for over 100 ncg on average.
Failing upgrades	Get the equivalent crystals of grinding the fodder	Maybe add a 10% penalty.
Event rewards		
Crystal costs		
Stage unlock	Exponential price increase. Can start around stage nr * 1 and get to stage nr * 5 or even more	Starting from stage 100?
Recipe unlock	Same idea as the stage	Starting from stage 100? Players might just skip most recipes anyway.
Reduce chance to fail	50% of what you would get from losing that item if fail	
Event participation		
Item enchantment	If we keep runes ~1k Without runes 5-10k	

### Suggested approach:

In the Nine Chronicles ecosystem, Item value should roughly translate to how much **effort** (energy used+NCG invested) was required to acquire it. In an attempt to quantify this “effort” value which could then translate to how many crystals would be rewarded upon disenchanting, it is useful to look into what is the smallest amount of crystals you can acquire and balance accordingly:

### Overall macro view:

Recipes progressively give more crystals based on required materials. World level progression determines average returns.

**f(x)**: average return of crystals

$$\{f(x) = f(1) + f(1)e^{-rx}, x > 2\}$$

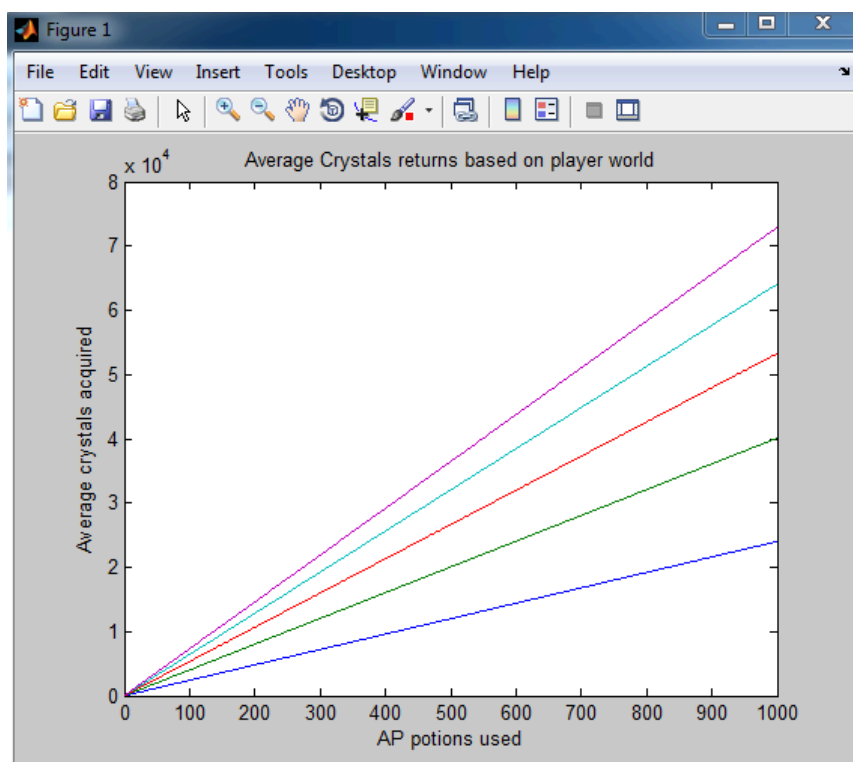
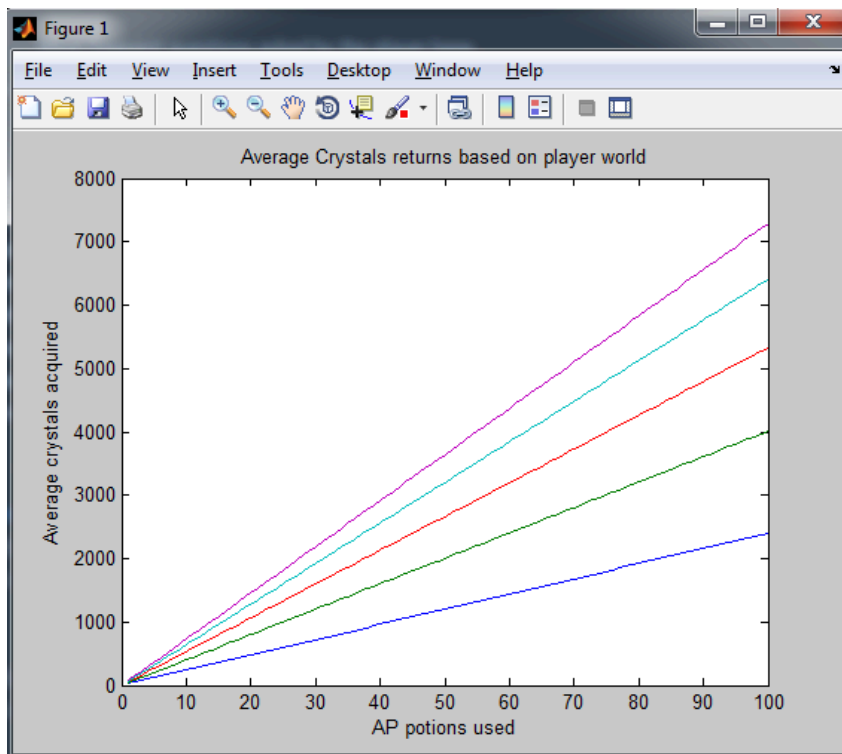
**f(1)**: minimum crystal returns for world 1

**x**: world number

**r**: rate of diminishing return

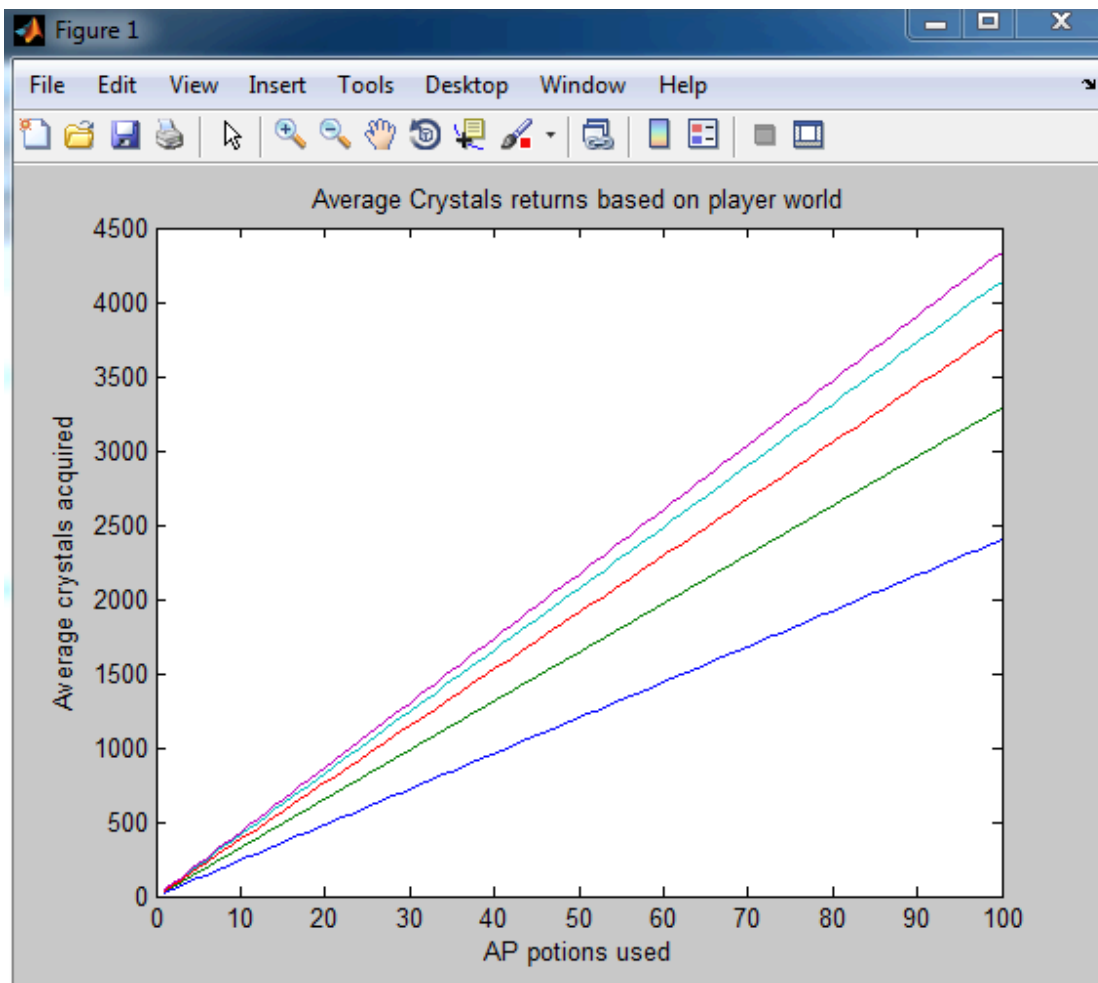
*1 AP Pot = 24 crystals*

*E.g. f(1) = 24, r = 0.2*





E.g. 2:  $f(1)=24$ ,  $r = 0.5$



## Implementation

The implementation of crystals can be viewed as a separate problem. An initial train of thought can be this:

Each item's MINIMUM crystal value is tied to the amount of materials that are required to craft it. Each material has a different crystal value based on the probability that it can be acquired. Below is a simplified example for recipes which is only considering the probability of acquiring an item based on its independent drop rate probability. This example is not considering that the average amount of materials per stage can be more than one.

### Low level Recipe

Long Sword

Great Success Rate 3.3 %

Required Blocks 5

ATK 14

ATK +(4-5) 100 %

SPD +(0.14-0.16) 30 %

Flame Blow Attack 11 %

Materials

51/2 78/1 245/1 174/1

COMBINE

R:0.70 M:1:1

R:0.70 M:1:1

R:0.70 M:1:1

Total crystals/0.033 = 190

$$2 \times 1 \text{ crystal} + 1 \times 1 \text{ crystal} / 0.7 + 1 \times 1 \text{ crystal} / 0.7 + 1 \times 1 \text{ crystal} / 0.7$$

$$= 6.28$$

### High level Recipe

Heavy Sword

Great Success Rate 3.4 %

Required Blocks 28050

ATK 908

ATK +(245-262) 100 %

SPD +(10.29-11.44) 34 %

Sand Blow Attack 10 %

Materials

2900/61 1954/61 2207/31 36/31

COMBINE

R:1.000 M:1:1

R:0.30 M:1:1

R:0.50 M:1:1

R:0.038 M:1:1

Total = 1141 / 3.4% = 33508

61x 1 crystal + 61x 1 crystal / 0.3 + 31x 1 crystal / 0.5 + 31x 1 crystal / 0.038

= 61 + 203 + 62 + 815

Total Crystals = 1141

Note: great success rates could be calculated in a different way to reward fewer crystals.

## Upgraded Items

Upgraded items should be disenchanting as such:

Recipe

BasicPremiumMimir

Mana Necklace

Great Success Rate3.4%

Required Blocks25284

HIT 2151

HIT +(522-558)100%

DEF +(139-155)34%

Hit Increase10%

Materials

254/551454/553349/2836/28

0COMBINE

=

Base fodder

BasicPremiumMimir

Mana Necklace

Great Success Rate3.3%

Required Blocks1005

HIT 510

HIT +(137-147)100%

DEF +(36-41)30%

Hit Increase11%

Materials

254/1321/7

0COMBINE

+ 3x

While Items above +4 require NCG in order to be upgraded it is advised that this is not relevant when disenchanting items for two main reasons:

1. If the development team applies any static value to crystals this way, this will immediately create a centralized NCG/Crystals rate.
2. The introduction of crystals is likely to create a supply shock for fodder materials throughout the market, so it should not be as cost effective to disenchant items above 4 to further diminish this undesired effect.

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Since crystal generation is directly connected to how much energy is required to produce them, the price of crystals will inevitably be connected to the price of AP Potions (defined by players, decentralised).

While the actual amount of minimum rewarded crystals will be designated by the game design team, this proposition ensures that the value of crystals will be fluctuating based on AP Pots which are generated by the player-base in a decentralized way.

Crystal utilities numeric values should be designed in accordance with the rewarded numeric values. The utilities that require crystals should be enticing in a way that drives players to overall use crystals at their disposal at this will optimise their growth. While crystals are obviously an inflationary coin, the proposed utilities and their numeric requirements should produce a steady demand. Examples to be added soon:

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## Conclusion

1. More returns for higher level players but at a degrading efficiency
2. Crystals per material
3. Upgraded items do return more crystals but at a degrading efficiency

# Backwards Compatibility

No. This introduces a breaking change in the form of a new currency.

## Copyright

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## Archive — Other Suggestions

Additional suggestions that could be implemented at a later date/might be worth discussing

### Non-tradable crystals

Crystals could be separated into tradeable and not tradeable. This adds the utility of “forcing” players to spend some and also acts as a safeguard for events, rewards etc in the case of too many crystals being given out.

### How are crystals acquired?

Failing upgrades (Optional, offers UX value)

Right now players are simply scared of upgrading past +7 because the chance of failing gets rather big and it takes a lot of money and time to get another one.

Giving them some crystals as a compensation would reduce this frustration a lot - even if they still lose the NCG in the process.

### Nine Chronicles Crystals - Proposed Use Cases

#### Crystals can be used in Guild Wars

Similar to the PvP buff aspect, when in the future we have Guild Wars, a very similar use case for crystals would be that players of a guild can spend their Crystals to give every guild member similar buffs during the Guild vs Guild events

## Crystals are required for upgrades

V1 - Upgrading is the same as now but it also takes an amount of crystals for it

V2 - as [Pooh suggested](#) a long time ago, we don't require fodder anymore, just a lot of crystals.

## Crystal Market

It could also be an idea to directly sell items for crystals. That way there could be a market for low items that sell for crystals and a market for awesome items that sell for NCG.

Or.. why not, just make all the market work only with crystals and have a tab where you can exchange ncg <> crystals.

Order book type of exchange suggestion: <https://lostrelics.io/marketplace>

## Crystals can be used to unlock new stages or recipes

After the player beats a stage with 3 stars, some crystals are required to move further.

Same thing for the recipe: a crystal cost is added over the clear stage requirement.