**CS465 – Design Team #5**

**Technical Design Document for:**

# Tribe to Survive

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Version 3.1

## **Family Attributes**

* The “Community” is comprised of all “Families”.
* Each “Family” has a number of “Households”.

1. Population of the whole family
   1. Population growth per season = (Prosperity \* Households) \* 0.5
2. Households – Number of Marriages Completed
   1. # Marriageable Men and # Marriageable Women
      1. Marriageable people occur by chance each season:
         1. Marriageable Chance per Household = ((Wealth \* Population) / Households) / 10,000.
         2. This marriageable person is a woman 52% of the time and male 48%.
3. Skill – Each of Activities: Hunting, Gathering, Farming, Production
   1. 10 (base) skill gained when focused each season.
   2. All Skills Start at 10.
4. Capability = ((10% of each Skill) / 100) \* Population. (Round Down)
5. Wealth = Sum of Value of all Raw Materials and Finished Goods
6. Prosperity = (Capability + Wealth) / Population
7. Needs = array of required amounts of finished goods
   1. Unmet needs trigger events.
   2. Fire Need = 0.30\*Population
   3. Clothing Need = 0.25\*Population
   4. Food Need = Population
   5. Based upon the above EFFECTIVE PROSPERITY = Prosperity \*

(MAX=1) ( (MAX=0.5)(Fire / 2\*Fire Need) + (MAX=0.5)(Clothing / 2\*Clothing Need) )

Thus Effective Prosperity is a portion based upon meeting (but not exceeding these values). Excess isn't beneficial. The needs are doubled for an averaging of their fulfilment which multiplies the prosperity. Thus having half the fire and half the clothing you need makes your Effective Prosperity 50% of the base prosperity you have.

## **Raw Materials**

|  |  |  |
| --- | --- | --- |
| Raw Materials | Wealth  Value |  |
| Bone | 6 | |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Activity | Bone | Clay | Fiber | Shells | Stone | Wood | Hide | Food | | Hunting | b |  |  |  |  |  | c | d | | Gathering |  | a |  | a | a | c |  | a | | Farming |  | a | b | a | a |  |  | c | |
| Clay | 3 |
| Fiber | 2 |
| Shells | 8 |
| Stone | 1 |
| Wood | 3 |
| Skins | 5 |
| Food | 1 |  |

* One (1) food is deducted for each member of the Population each season.
  + Food shortage will cause “starvation,” where half the people who lack food die while the rest starve but somehow survive.
* Activity Yield Modifiers:
  + a = 0.25, b = 0.4, c = 0.6, d = 1.0
* Finished Good Bonus (Table Below)
* Material Gain Per Season (for Family):
  + ((Community Capability \* 0.01) \* Yield Modifier) +
  + ((Capability \* 0.1) \* Yield Modifier \* Bonus Yield) +
  + (((Activity Skill \* Households Performing Trade) \* 0.1) \* Yield Modifier)
  + Round up

## **Finished Goods**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Good | Material(s) | Bonus Yield (0.01)X | Finished Good Bonus (X) | Bonus\*\*\*\*\*\*\* | Time Cost |
| Homes | 20 Wood, 4 Skins | Production, Farming | +.75X |  | 1 |
| Tents | 10 Skins, 2 Wood, 1 Fiber | Gathering, Hunting | +0.15X |  | 0.2 |
| Pottery | 5 Clay, 1 Shell, 1 Wood | Gathering, Farming | +.01X |  | 0.1 |
| Tools \* | 1 Stone, 2 Wood, 2 Fiber | Production, Hunting |  | Used by doing any activity | 0.2 |
| Jewelry | 5 Shells, 1 Fiber |  |  | -- | 0.25 |
| Clothes \* | 3 Fiber, 5 Skins |  |  | Need 0.25\*Population = Stock Each Season | 0.1 |
| Fire\* | 4 Wood |  |  | Need 0.5\*Population = Expended per season | 0.1 |
|  |  |  |  |  |  |

* TODO
* Using Goods, Fire, Clothes, to proportion prosperity. 100 population uses up 50 fire each season. The same population with 5 houses uses 5 fire
* Wealth Value of Finished good sum of all raw material wealth values + 20\*Time to produce

\*TODO\* Create table with Activities on y-axis, Finished Goods on x-axis: “Finished Good Experience Offset” i.e. Number of Pots you have increases your gathering skill gain by 0.01% per pot.

## **Skills/Trades**

Experience gain each season = 10 \* (Households Participating) + Finished Good Bonus

## **EVENTS**

**Environmental Events**

* Globally effect all families
* Big Picture Environment/Season Migration Stuff

(Each chance is direct chance for each Event to fire for working on each activity)

TODO: Add a table such as below for each activity.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Chance | Event | F | Sp | Su | W | Effect |
| 2% | Floods | X | X | X | X | -20% Farming Yields |
| 8% | Good rain |  | X | X |  | +20% Farming Yields |
| 4% | Snow | .25X | .25X |  | X | -50% Gathering Yields |
| 4% | Severe Thunderstorm | X | X | X |  | -20% To All Yields |
| 1% | Tornado | X | X |  |  | Destruction of Finished Goods 50% chance to destroy 25% of the wealth/items of a family. |
|  |  |  |  |  |  |  |

Activity Events

* Participating in these activities =
* Chance of these Events happening
* Your performance of an activity will incur the chance of the following. Each table coresponds to the activity it accompanies.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Farming |  |  |  |  |  |  |
| Chance | Event | F | Sp | Su | W | Effect |
| 3% | Floods | X | X | X |  | -50% |
| 10% | Fertile Rains | X | X | X |  | +50% |
| 50% | Broken Tool | 0.6X | 0.6X | 0.2X | X | Household's Family loses 1 Tool |
| 10% | Broken Tools (1-3) | 0.6X | 0.6X | 0.2X | X | Household's Family loses 1-3 Tools |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Gathering |  |  |  |  |  |  |
| Chance | Event | F | Sp | Su | W | Effect |
| 3% | Lost! | X | X | X | X | -50% All |
| 10% | Strawberry Fields | X | X |  |  | +50% Food |
| 10% | Find Dry Riverbed | X | X | X |  | +100% Shells |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Hunting |  |  |  |  |  |  |
| Chance | Event | F | Sp | Su | W | Effect |
| 1% | Ambush! | X | X | X | X | 0-10 Population of the family of the Household Die |
| 5% | Find Bear | X | X | X |  | +50% All Yields, 0-2 Population of Family of the Household Die |
| 10% | Find Elk | X | X | X | X | +50% All Yields, |

**Family Events**

* **Families have random things that happen to them**

|  |  |
| --- | --- |
| Chance |  |
| 3% | **Twins!!** Add 2 or 3 to population of Family. |
| 1% | **Divource Family Breaks Up into 1 new family** |
|  | **Maybe Family ends but breaks into 2 new family** |

(Chance each season)

**Caused Events**

* **???**

|  |  |
| --- | --- |
| **Cause** | **Event Effects** |
| **Not enough Food** | **Starvation = Lose ½ population that lacks food** |
| **Not enough Clothes** | **Effective Prosperity penalty** |
| **Not enough Fire** | **Effective Prosperity penalty** |

**Historic Events**

* **Time Period Stuff Circa 1500**

|  |  |
| --- | --- |
| Time (Year,Season?) | Event |
|  | Pass by |
|  | Trade with |
|  | Made example of |

Mini Game functions/interactions

1. Hunting
   1. Treestand (shooting gallery, Oregon Trail 360)
      1. Weapons (Spear, Bow, Stone axe, Thrown Rock)
      2. Some creatures (eventually) might attack, retreat?
   2. Fishing (boat, with spear/fish net/hook on a string?)
      1. Boat (river setting)
      2. Beach/shore (stationary setting)
      3. Types of fish
2. Gathering
   1. Click to reveal, Limited Moves Game
      1. Cells are clicked on to check them (reveals an item gotten)
      2. Each cell (hex) counts toward the limited number of excursions you may make.
      3. Hexes become less likely to grant items and more likely to grant different items based upon a few factors which are about how thuroughly a hex has been searched.
      4. The end result is that in the beginning places close to the origin (your house) will offer the greatest rewards and lumber may be gotten as it renews each season, but shells, and stone become depleted and you must search further afield to find them.
      5. Hexes further from the origin cost more to search because they cost more time to get to. Each hex traveled counts as a basis for this cost limit. So if you have 3 hexes worth of searching left, and select 3 adjacent tiles radiating in one direction you've made the most efficient use of your tiles. However if you backtrack you access less valuable tiles and earn less by exploring.
3. Farming
   1. Patches of land (hexes) are available for the planting of many crops (corn, squash, beans, no difference between each type, but all 3 together increase food yields by 30%)
   2. Each piece of land (hex) will offer hidden benefits based upon the geography/fertility of the land.
   3. After placement, the season ends with a timelapse to see how your crops grew, and shows your yields.
4. Production
   1. Procedure/glob pieces together? (minecraft's procedure/type construction)
   2. Pick

Map Ideas:

