

# Lyfe

A game about things

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# 1 Overall Style and Goals

The most important goal of all is to keep this a fun game. Realism is welcome and will be integrated as good as possible but fun is the main principle. But by no means is this supposed to be a hardcore experience.

The look of the game is planned to be more realistic than Spore was in any way possible. It should be possible to make creatures with normal proportions easily.

There will probably be no online sharing feature. The folder and save structure for your creations will be kept easy enough to just download creations from others and insert them there to use them, though.

# 2 Stages

Stages is probably the best way to describe this. The first thought was to make alle the stage changes as smooth as possible to make the changes as smooth as possible so it feels like one continues experience. This however is probably not possible. The next best thing is to keep the transitions down to a minimum.

## 2.1 Single Cell

The obvious starting point would be single celled life. You start out with pretty much just some DNA, a membrane, the ability to wiggle around a bit and that's it. At this point you're slow and dependend on the currents of the little puddle or giant ocean you're currently occupying to carry some chemicals towards you to survive. Not sure if this will end up in the final game but for now it seems like a good idea. It would feel pretty much like a low key playable cutscene. You don't produce or use any ATP at this point. Fairly quickly you will run into your first other cell: a proto-mitochondrium / cyanobacterium (depending on the biom you start in since photosynthesis is pretty hard at the bottom of the sea withou light). After you absorb it ATP is generated as long as you have the compounds. These compounds include Carbon, Natrogen, Oxygen, Phosphor and Sulfur. The Mitochondrium uses sugar and oxygen to produce ATP while the Chloroplast uses CO2 (since Hydrogen might not be a ressource). To balance this the Chloroplast produces less ATP.

As long as you have those compounds left energy will be produced. Other organelles you unlock on your microscopic journy will consume it to give you an advantage in surviving.

For example if you got a flagellum or cilia on your cell and move forward ATP will be consumed over time. The more organelles you got on your cell the more is consumed which will force you to think about what you really need to survive.

If you run out of ATP your cell will fall back into the movement scheme it had at the very beginning of this stage.

Possbile parts:

<u>Name</u>	<u>Function</u>	<u>ATP balance</u>
Mitochondrium	Produce ATP from Carbon and Oxygen	30
Vacuole	Store more chemicals for ATP production	-10
Cell Core	Better defense agains viruses	-10
Cell Wall	More health	0 but makes you slower
Chloroplast	Produce ATP from sunlight and Carbon	20
Endoplasmatic Reticulum	Repairs cell	-10 (while repairing)
Golgi Body	Produces vesicel → reduced cost for ATP production because components get transported to organelles more directly	-10
Flagellum	Movement	-20
Ribosome	Produces protein → faster DNA production	-20

Poison Production	Produces poison; if no excretion organell, then it only harms enemies that attack you	-30
Poison Excretion	Excretes poison at your command	-40
Sensory Input	Instead of only a small part of the world being visible to you, you start seeing vague shapes of the world around you	-30
Thermoplast		
Cilia	Add to mobility (rotation speed)	
Cytoplasm	Add to mass	

(all stats might be subjected to further changes to optimize gameplay)

One major feature of this stage is absorbing other cells. This gives you some compounds and large junk of DNA. You can generate DNA without absorbing other cells but it is a low slower forcing you to think about the pros and cons of interacting with other species in your environment. Absorbing other cells can also result in unlocking a new organell to mutate your cell with. You can only absorb cells that are smaller than you, though. The DNA you gain from this is used to split your cell and access the editor.

And apart from other cells viruses might also be a factor in gameplay. This is also more of an experimental-feature on which I'd like to hear your opinions. If you spot a virus you can swim away from it absorb it. If you pick the latter one of two things can happen: You gain a bonus or a malus for this "life". They are gone as soon as you die. Splitting your cell doesn't remove it.

## 2.2 Multiple Cell

This phase of the game still takes place on the microbic level but now multiple cells bond together to form a bigger organism.

### 2.2.1 Small Cluster

The small cluster consists of between 5 and 100 cells and has no specialization yet.

### 2.2.2 Medium Cluster

The medium cluster consists of between 100 and 10 000 cells. First simple forms of specialization occur (e.g. movement, energy intake, defense, storage, sensory input → here even with some color and actual view of the world).

The editor in this stage is similar to the one in the 2005 demo of Spore. (Maybe modular editor without the „spine“ in the middle?)

Gameplay is still pretty much the same as in the cell stage only now you can differentiate more between living through photosynthesis, eating plants or eating 'animals'. At this point absorbing chemicals simply isn't sufficient anymore to keep you alive.

### 2.2.3 Large Cluster

You are now a 'proto-creature'. You have between 10 000 and 1000 0000 cells. You have some first organs and at this point a simplified version of the creature editor is in place but gameplay still is pretty much the same as before only now you can play like the cell stage of Spore. You have a primitive mouth and eyes. A nervous system is in place and other creatures will start hunting you or running away as well as actively looking for food.

In this phase unlocking new parts no longer works via 'stealing' them from other creatures.

(Still first idea and not final:) There will be kind of a organ-tree via which you unlock new or better organs.

At this point you still use cell division to reproduce.

## 2.3 Creature

Next up is the creature stage. You start of as an aquatic race. At the transition from MC to C the editor opens. All the parts you inlocked for multicellular life are available at this point but if you got leftover DNA you can already spend it on your organ-tree that now includes the part 'primitive'.

During the creature stage the organ-tree expands 2 more times, every time after you pay a certain amount of DNA to unlock it. You also have to do this to unlock the highest level for your brain to get to the next stage. This forces you invest into this.

As well as having subbranches like fins, eyes, legs and so at this point the branch will split into three major branches: Terrestrial, Aquatic, Both.

For the gameplay: If you equipt fins you can swim; if you mutate legs you can walk on the ground; if you have neither you have to wiggle on the ground and somehow find a mate like this.

So: ground living is default but with fins you can start swimming.

Whe you mate the editor opens. As always you can spend DNA do unlock new organs. Continuing the tradition that started at the single celled stage the only limit to your creature is how much you can eat.

Not sure if it will be in the previous stage but it will be here: Every time you mutate the game will calculate how much your new creature differs from the old one. The more you changed the more time will and the creatures around you will evolve, too.

You start this stage with only one skin type (slick) but you can evolve more from your organ tree (fur, feathers, scales).

### 2.3.1 Terrestrial vs Aquatic

Actually at this point land and sea stage are combined into one and if you 'evolve' lungs you could basically just walk onto land. If you have no legs though you'll just flop around a bit. Withoug lungs you could get to the beach but only for a short amount of time before you die; same way with only lungs and water.

The branches between the three branches of land- and sea-organs tend to grow into each other but will do so less frequently the more complex the organs get.

Once you got an organ you can always remutate it and so your species could go from sea to land back to sea a basically infinite times.

Of your species lives on land you can can also mutate wings which would allow you to fly. Under water they would slow you down, though.

It has consequences though, in which medium you end this stage in. You'll enter the civilization stage in that environment. Both will have their advantages and disadvantages.

### 2.3.2 Important Stats influencing Gameplay

Nutrition

Health

Protection (via a shell or something)

Speed

Jaw strength (biting but also cracking nuts or something)

Extremity strength

View distance (basically draw distance)

Agility

Energy Intake

Nutrition needed

### 2.3.3 Usage of simple Tools

Basically rocks, sticks.

You can use rocks to crack nuts or skulls and sticks for example can be used to get fruit off high trees you couldn't otherwise reach.

This feature is more Nice To Have than anything else and might be moved to that section later on.

## 2.4 Civilization

The civilization stage is split into two major parts: You directly controlling your chieftain/mayor/president/general (choose the title yourself) and organizing your tribe/city/country. In the later phases of this stage the individual component is no longer that important and the focus is more on managing.

This stage also introduces the actual tech-tree. The organ-tree will still be present but evolving is more costly at this point. As before DNA gets autogenerated as long as your Civ has food.

Hunting/Gathering → Farming

Combat lead by player → armies vs armies

At the beginning of this stage there will be a large number of tribes which reduces by them trading with/allying with/conquering each other step by step.

All tribes will develop into nations while step by step unlocking technologies from their own tech tree.

There will be a trading system and technologies will be tradable as will be materials and produces.

So if you are a tribe/nation that lives under water but another nation on your planet has mutated to live on land, too you can trade technologies with them once you discovered them or they discovered you.

What kind of technologies you can research will be determined by where you built your laboratories. Laboratories also create TAP for you to advance in your Tech-tree.

When you start this stage you don't have any buildings except for your chieftain's hut. You also got no other options to build anything until you unlock it from your Tech-tree. To actually get to the point of unlocking tech your main hut will produce some TAP itself.

To build you need resources. You can gather them yourself with your chieftain. That is a pretty slow and boring process though. This is the point where the new management gameplay gets introduced. You can now assign this task to members of your tribe. They can gather wood (after you researched axes), rocks and all other resources you have the necessary tools for.

You can also send your people to attack other tribes.

If you want to negotiate with other tribes though you have to personally go there with your chieftain. This can be done like in a strategy game or you can take control him/her and walk there yourself with the same controls as in the creature stage.

This will be obsolete when both nations got telecommunications. Overall the more tech you research the less it will be necessary for you to directly control your chieftain.

Once you made the smooth transition from tribe to actual nation with vehicles you can directly control one of those (Space Rangers would be a good point of reference). For now this will only be an option for actual war vehicles because the rest would be quite boring.

Other types of vehicles would be: Resource gathering, diplomacy, trade and civil.  
 For four of those (not resource gathering) there will be three forms: Land, Air, Water.  
 Resources gathering will have no air option.

Civil vehicles will not really fulfill a gameplay purpose (except for not having them will reduce your people's happiness) but will be visible and therefore should be customizable.

Resource gathering vehicles will have one special component that decides what exactly they can gather. Only one of those components can be mounted.

When you build a vehicle it is not predetermined what its function will be. This is solely decided by the components you attach to it. You can also have more than just one land-war, one water-war, one air-war and so on. There will be a cap though.

Types of buildings (not the final names but just the type):

Laboratory	
Town Hall / Chieftain's hut / Main ut	

#### 2.4.1 Terrestrial vs Aquatic

Right off the bat: Fire and everything that depends on it is not possible under water. Now that we got that out of the way we can get to the important stuff.

Where you end the creature stage determines with which of the three main huts you start off:

Aquatic/Terrestrial/Amphibian. Later one you can unlock all three of these through the tech tree.

That will be costly though. You can always build a new main hut but this destroys your old one.

Aquatics can only be built under water at a certain depth and terrestrials only on dry land.

Amphibian can be build in shallow water or close to water.

You can still mutate your species when you reached the Civ stage but now with some constraints:

You can't go directly from a sea creature with an aquatic main hut to one living on land and breathing air. You have to first get the amphibian hut and build it. You can then mutate your gills into lungs or vice versa though keep in mind this will take ingame time.

#### 2.4.2 Gameplay Styles

Your goal in this stage is is to become the dominant empire on your starting planet. You can achieve this through military, economy or „reputation“.

The **military** way is pretty straight forward: conquer all other nations.

The **economic** way to victory boils down to having a significantly higher GDP than the other nations.

**Reputation** is the most isolationist way: The happiness of your people has to be significantly higher than the other nations'. This will cause the leaders of the other nations pretty much to ally with you.

To 'win' you can use any combinations of these three. Conquer some nations, make one deperent on you though trade and demoralize the rest through propaganda while at the same time keeping your people happy.

Either way you will unify the nations of your planet under one banner. This doesn't end the stage though. You still have to unlock „Space Travel“ in you Tech-tree. If you already unlocked it before you dominate the planet it will unlock new technologies such as colonies for your star system.

# 3 Event-System

# 4 Editors

## 4.3 Creature

When generating the movement for a creature the hierarchy for what to hold as straight as possible is eyes (in descending levels) – mouth (in descending levels) – center of mass (if too complicated: middle vertebra)

## 4.8 Plant

The parts you put on your plant determine whether it's more suited towards existing on land or water. Based on this you might find it in one of those two locations when you play the 'campaign'.

# 6 Nice To Have

## 6.1 Different Environments

This could include Desert, Tundra, Moderate, Cold. Basically different combinations of temperatures and vegetations.

For the creature stage this would add the stats:

Resistance to heat

Resistance to cold

## 6.2 Species Behaviour

The player can decide how his species behaves. Will it change homes frequently; will it be more aggressive; will it flee a lot;

## 6.3 Bioluminescence

Attracts other microbes to you in the two microbic stages when it's unlocked.

If you unlock it in one of the two microbe stages you start with it in the creature stage. If now you can unlock it later on.

# 7 Dictionary

mutate	Change something on your creature
evolve	Unlock a new part
DNA	Currency used to pay for organ-tree unlocks
organ-tree	Basically the tech tree for all creature stages
TAP	(technical advancement points); currency for the tech tree

# 8 Code