What is a simulation?

Evolutionary Simulations in **Geonomics**

Geonomics: Forward-Time, Spatially Explicit, and Arbitrarily Complex Landscape Genomic Simulations

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*Simulation of **local adaptation** and **speciation** across realistic landscapes*

Let’s make a species!

Movement

Reproduction

```
'dragon': {
    'mating'     : {
        <whatever you want to simulate!>
        },
    'mortality'      : {
        <whatever you want to simulate!>
        },
    'movement': {
       <whatever you want to simulate!>
        },
    },
```

Movement

Reproduction

Let’s make a landscape!

```
'landscape': {
    'layers': {
        <whatever you want to simulate!>
        }
    },
```

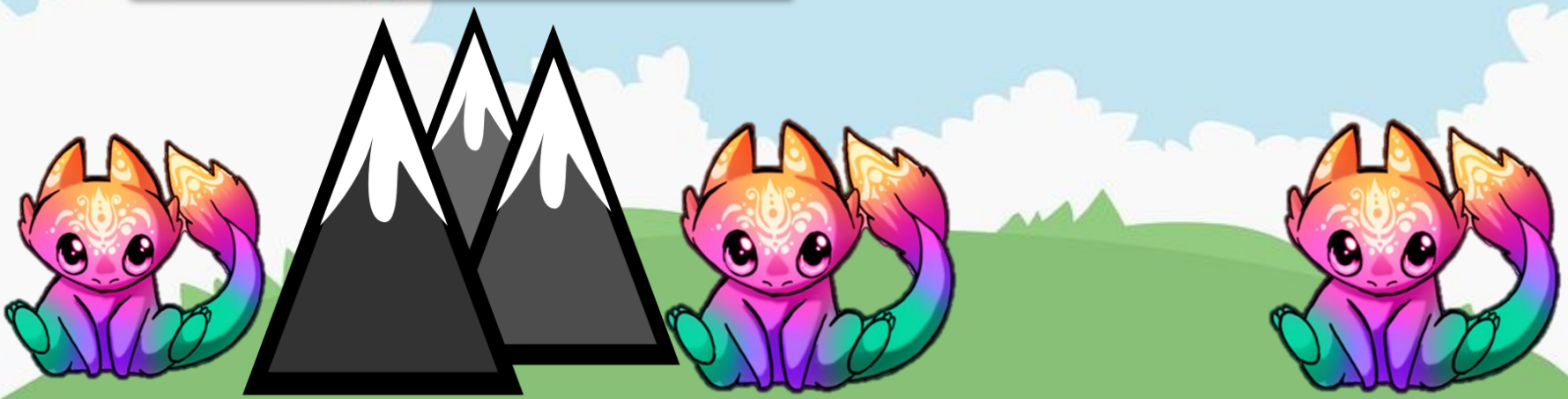

'landscape': {
'layers': {
<whatever you want to simulate!>
}
},

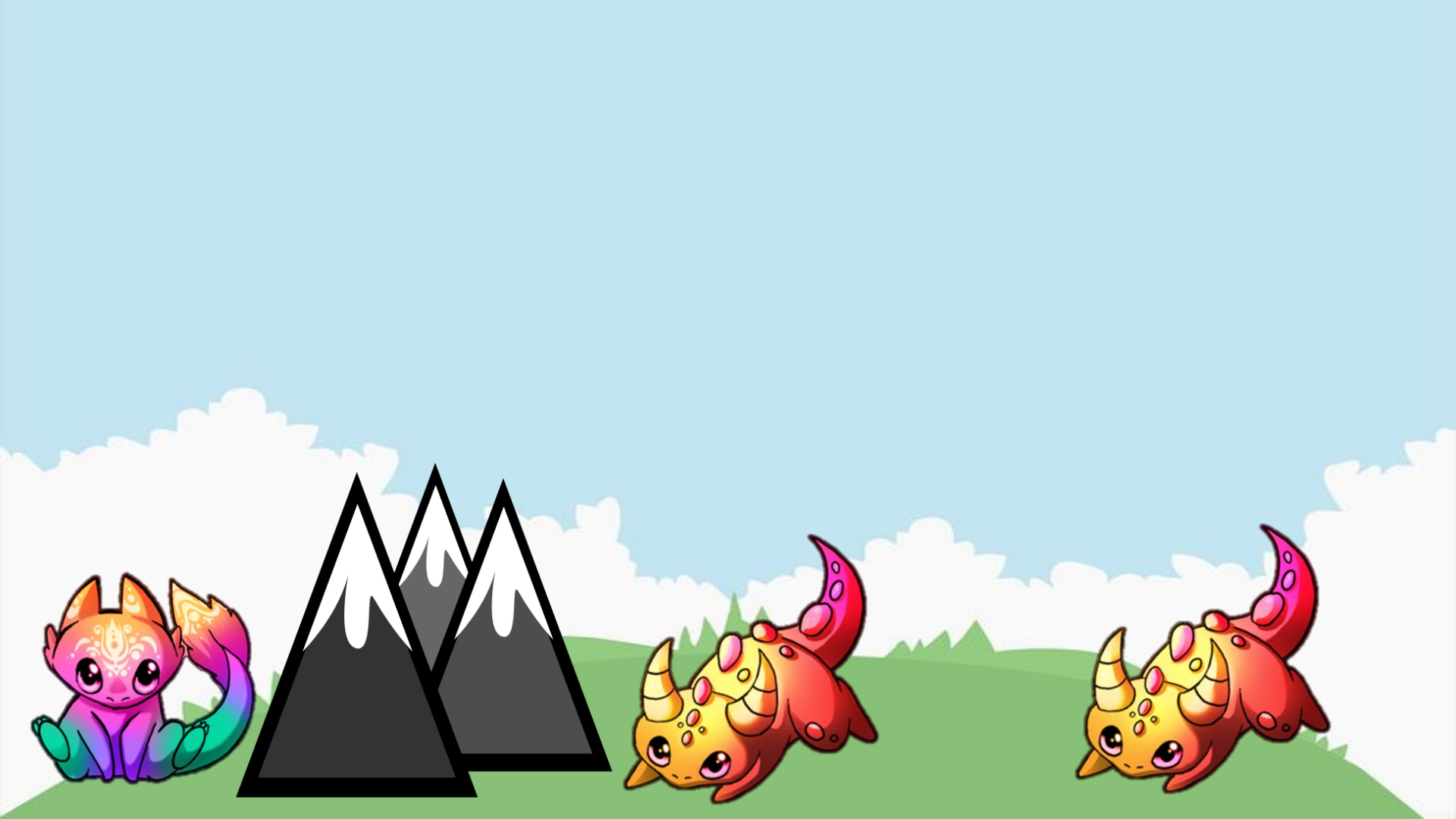

'landscape': {
'layers': {
<whatever you want to simulate!>
}
},

How does speciation occur?

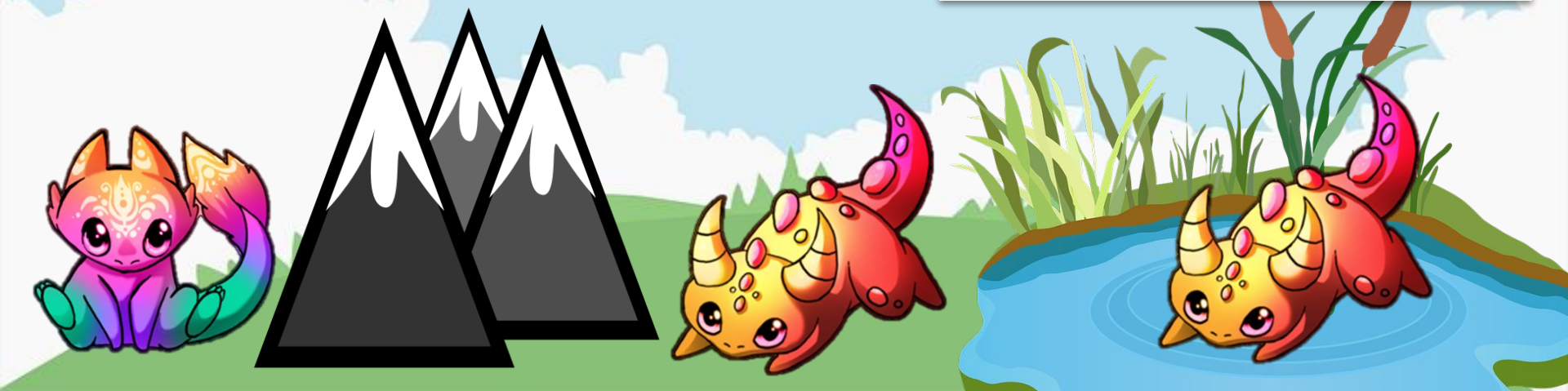
How does speciation occur?

```
'landscape': {
    'layers': {
        <code to make a barrier!>
        }
    },
```





```
'landscape': {
    'layers': {
        <code to make a new environment!>
        }
    },
```



```
params = {
#-----------------#
#--- LANDSCAPE ---#
#-----------------#
    'landscape': {
        'main': {
            [STUFF]
            }, # <END> 'main'
        'layers': {
            [STUFF]
            } # <END> 'layers'
        }, # <END> 'landscape'
#-----------------#
#--- COMMUNITY ---#
#-----------------#
    'comm': {
        'species': {
            #species name
            'spp_0': {
                'init': {
                    [STUFF]
                    }, # <END> 'init'
                'mating'    : {
                    [STUFF]
                    }, # <END> 'mating'
                'mortality'     : {
                    [STUFF]
                    }, # <END> 'mortality'
                'movement': {
                    [STUFF]
                    },    # <END> 'movement'
                'gen_arch': {
                    [STUFF]
                    'traits': {
                        [STUFF]
                        }, # <END> 'traits'
                    }, # <END> 'gen_arch'
                }, # <END> spp num. 0
            }, # <END> 'species'
        }, # <END> 'comm'
    } # <END> params
```

(almost) everything can be turned into code!

And we've done it for you…