



# NETLOGO TUTORIAL IV

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# GOOGLE DOCS

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- We will write all of our code in a Google doc
  - We can then copy and paste this code into the 'NetLogo Code' section
  - Remember to click 'Recompile Code' after you make your changes!
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# PROCEDURES

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- A set of instructions is known as a procedure or a function
  - Today we will write all of the procedures for our coral-algae model in a Google Doc
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# CORAL-ALGAE MODEL: VERSION 1.0

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# GOOGLE DOCS

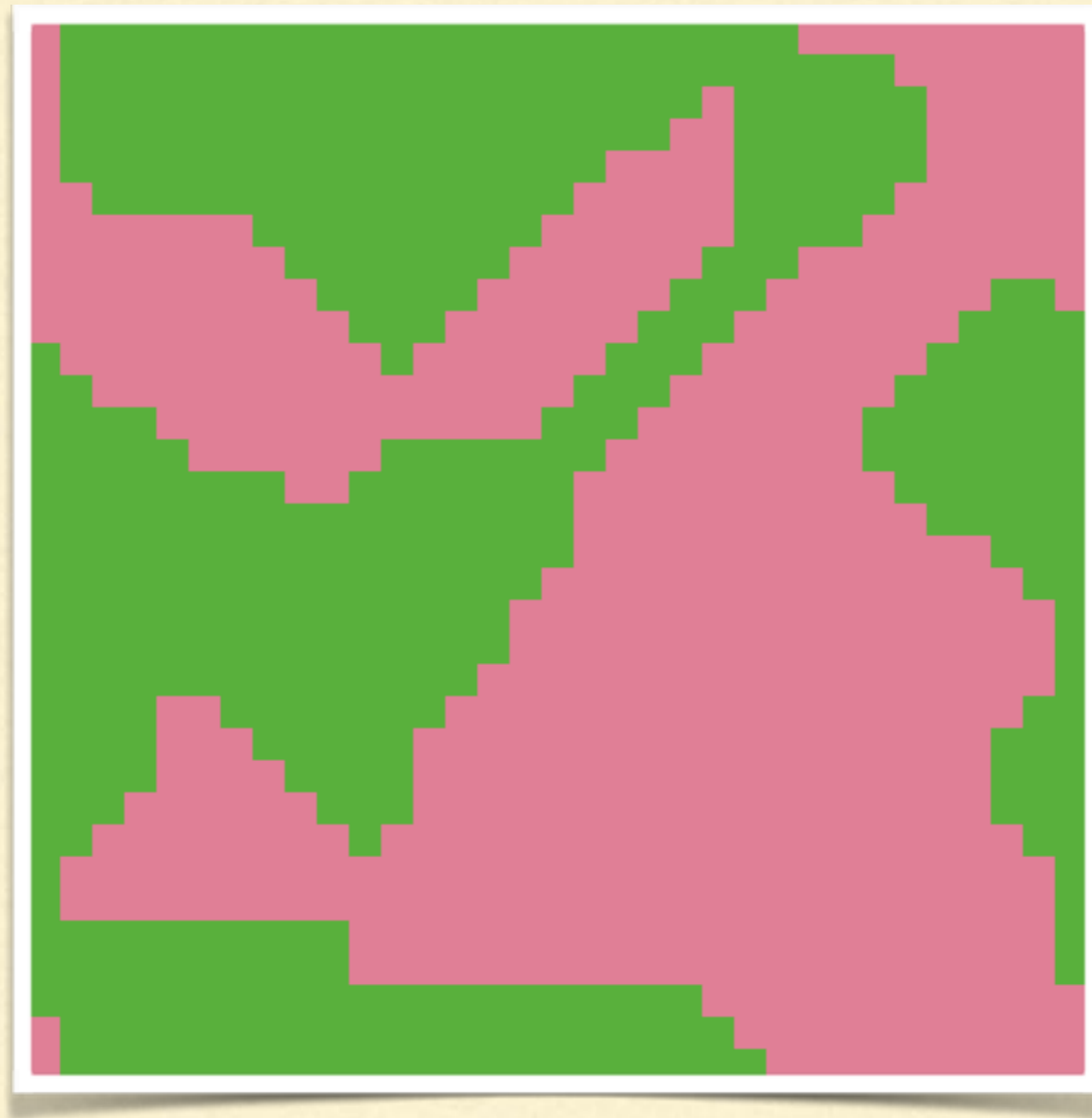
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- Open up the coral\_algae\_docV2.docx file
  - Copy and paste this code from **PAGE 1** into the 'NetLogo Code' section
  - Remember to click 'Recompile Code' after you make your changes!
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# REEF PLOT

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# SLIDERS

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- In our model, we have the following sliders called **time-steps**, **initial-algae** and **initial-coral**
  - These are variables in our model
  - What do we need to change in the code in order to make these sliders 'live'?
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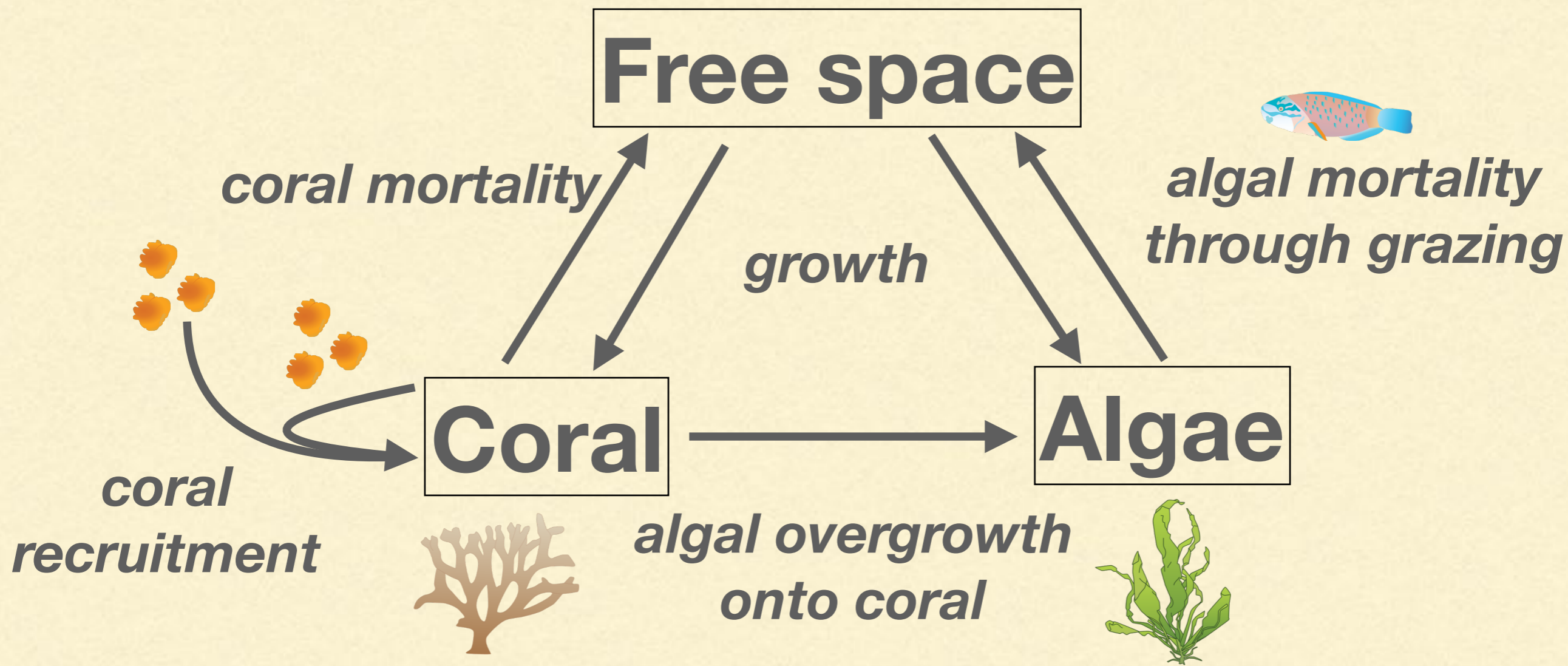
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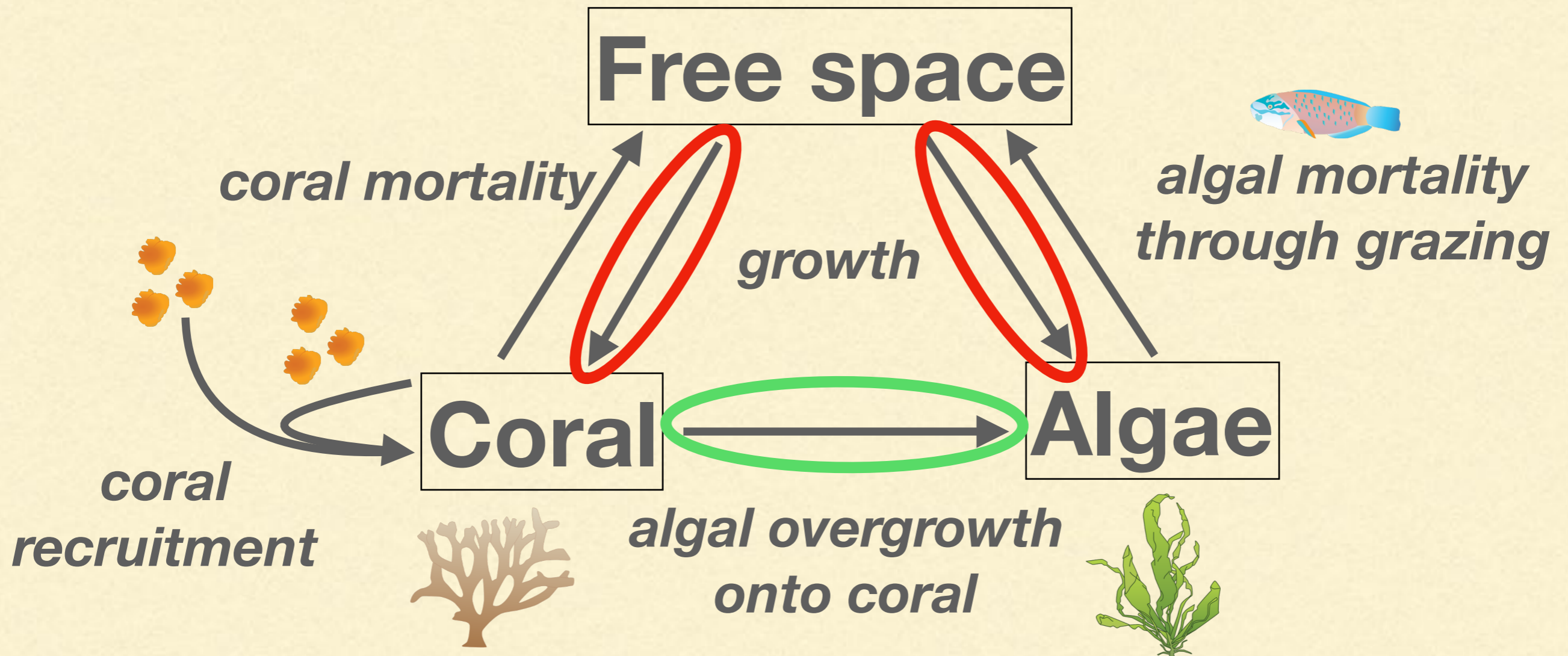
# ADDING REALISM

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- Algae grow faster than corals
  - Algae can also grow over corals, although not as fast as they can over free space
  - How can we modify our code to reflect this?
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- Let's change our code so that at every time step, algae grows on free space with a probability of 40/100
  - Note: 'random' is a NetLogo primitive that "rolls the dice" and gives you a value between 0 and the number you set

*to grow-algae*

*if random 100 < 40 [*

*ask patches with [pcolor = green] [*

*ask neighbors [if pcolor = black [set pcolor green] ]*

*]*

*]*

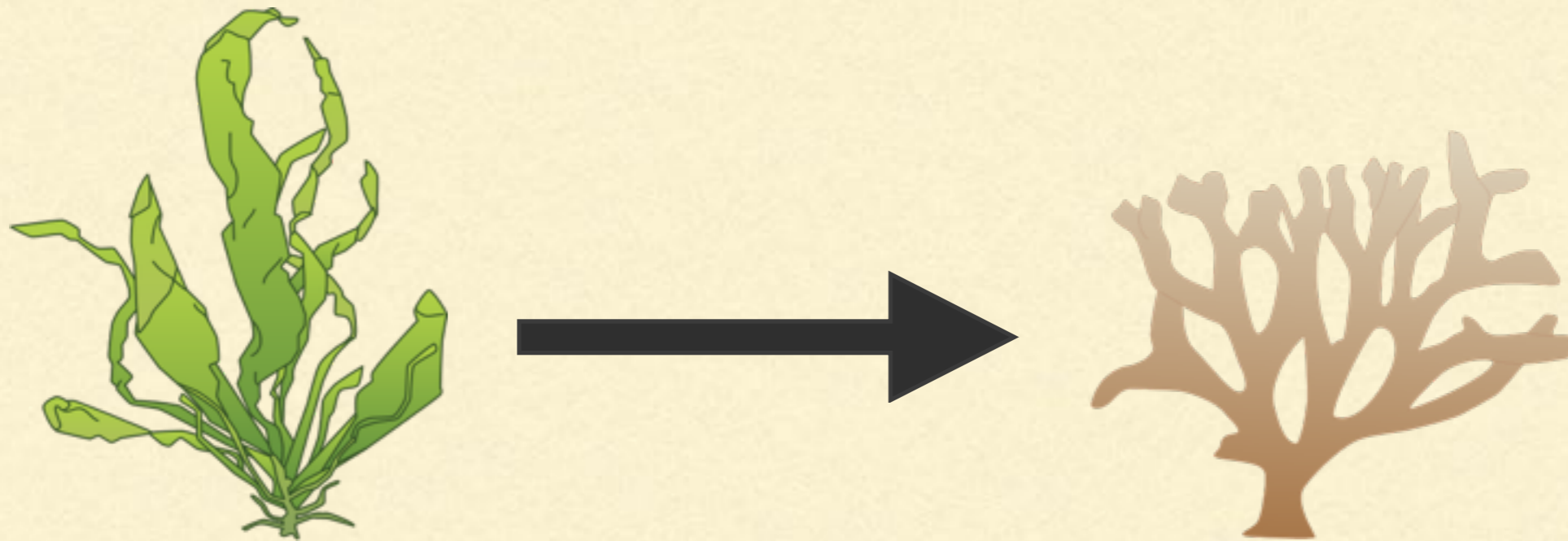
*end*

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How do we add a probability that  
algae will grow over coral?



Write a procedure called  
'grow-algae-coral'

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- Let's change our code so that at every time step, algae can grow on coral at a probability of 20/100

```
to grow-algae-coral
  if random 100 < 20 [
    ask patches with [pcolor = green] [
      ask neighbors [if pcolor = pink [set pcolor green] ]
    ]
  ]
end
```

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