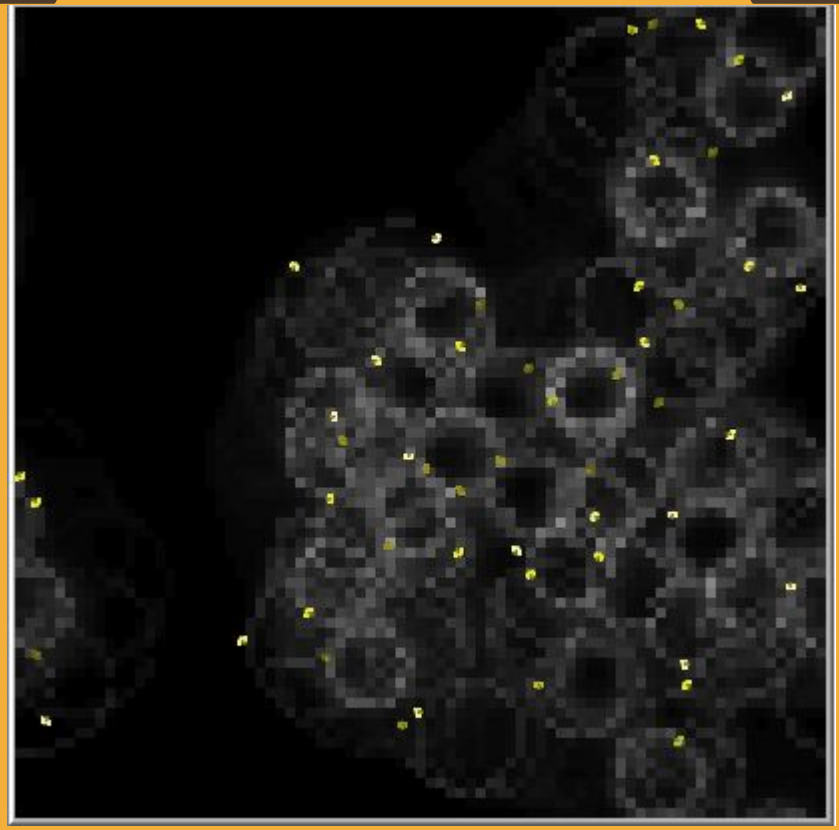
Honeycomb Simulation

By: Kaden L and Emilee J

At a high level, what is the model simulating?

The model is simulating how fast a certain number of bees can create honeycomb



What do the turtles in the simulation represent?

The turtles in the simulation represent the bees that are making the honeycomb

What do the patches represent?

The patches that are being displayed are the honeycomb that is being produced by the bees

How is randomness used in the model?

Randomness is used in the model through the bees movement and where the patches are made

Simplification and the result of bias

Some simplifications and resulting bias is that once the honeycomb gets big enough then beekeepers take the honeycomb that can lead to the result of how much honeycomb is being produced

There would be potential animals that also want to take the honeycomb

The weather can affect the amount of pollen the bees need to create the honeycomb and peritors that target bees

Questions about the real world system

Does the species of bees affect the amount of honeycomb that is being produced?
Does the honeycomb change with the seasons?
What will happen if the honeycomb is taken by a predator would it be the same when they rebuild it or will it be different?

Potential changes in the simulation

Potential changes that could be added to the code of the simulation could be to changing how fast the bees go for season/weather patterns.

The different species of bees to select from and the differences between them such as how they work.

Try to make the code to where every fives seconds or so there is a potential predator that appears

Conclusions drawn from the model

The conclusion that we had had without all of the dangers and if the honeycomb is getting taken the bees will produce the honeycomb very quickly

What are some real-world issues related to this model?

Some real world issues that relate to the model is the patterns that the bees can fly in to increase the production of the honeycomb.
It can show the environment that the bees can be best and can show how they are able to produce faster within a certain environment

Thank you !

Kaden L & Emilee J