

## ***Nidad*: The Maize and Malaria Card Game**

### **Background:**

This is a strategy and risk game modeled after the Ethiopian agricultural system. The name of the game, *Nidad*, or malaria, in Amharic, emphasizes the link between maize, mosquitoes, and malaria as found in the Rockefeller Foundation study lead by Boston University Professor James McCann.

### **Game Overview:**

Each player oversees six farm plots through the course of three harvests.

### **Object:**

The player with the largest profit from completed harvests at the end of the season wins.

### **Points:**

Based on current yield and market price.

Maize: 3

Teff: 2

Red Pepper: 2

### **Players:** 1-5

### **Pieces:**

- 5 Mats: Mats have places marked 1-6 to represent plots.
- Soil cards: Soil cards are red, black, and orange and represent red, black, and mixed plots, respectively.
- Crop chips: Maize, teff, and red pepper crops are laminated chips.
- Playing cards: Playing cards represent the factors and risks associated with farming.
- Dice: Only one die is needed. You can use either a physical die or a smartphone dice app.

### Setting up the game:

1. Distribute game mats to each player.
2. Deal out black, red, and mixed soil cards at random until each player has 6 cards. Mixed soil is represented by the orange card.
3. Players decide individually upon one crop for each plot.
  - a. **Teff grows on each type of soil: black, mixed, and red.**
  - b. **Maize grows on mixed and red soil.**
  - c. **Red pepper grows on red soil only.**
4. Shuffle the deck of playing cards and divide into three roughly equal decks. Each of the three decks represents one harvest/one round. A game is complete after all three harvests/rounds are played.

### Playing the game:

Gameplay goes clockwise and begins with the player who has the highest die roll. Players begin their turn by rolling the die to determine to which plot the playing card will apply. After rolling, the player takes a card from the top of the first harvest/round deck. Other than the “Epidemic Card” and the “Facts Card,” each variable only applies to the single plot indicated to on the die. Players should follow the instructions on each card. If the player draws a mosquito card, then the following instructions apply. If **one or more** mosquito cards land on the maize plot, the people working on the plot become sick with malaria and the harvest for that round is lost. The crop card should be turned over to represent its loss. When **at least 10 mosquitoes** are accumulated on a teff or red pepper plot, the people working on the plot become sick with malaria and the plot is lost for one harvest. This represents the ten times increased rate of malaria transmission when cultivating maize in Ethiopia, as found in the Rockefeller study.

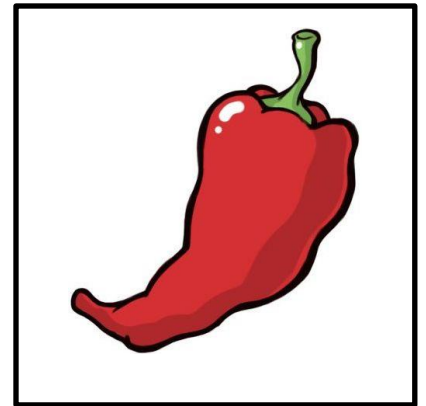
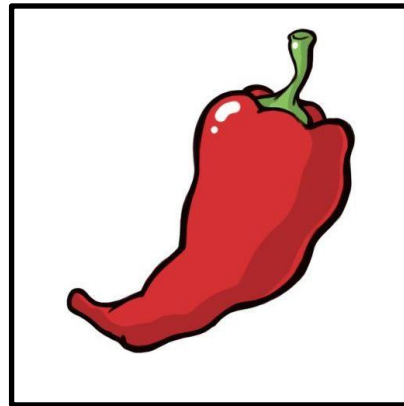
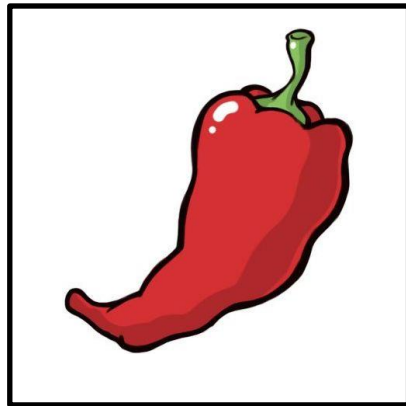
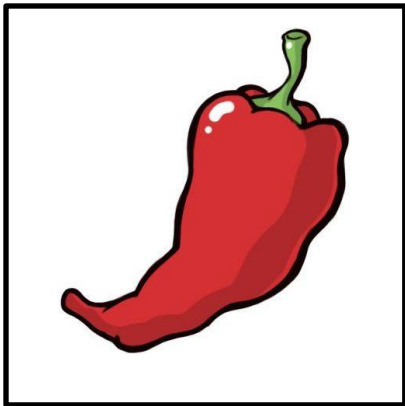
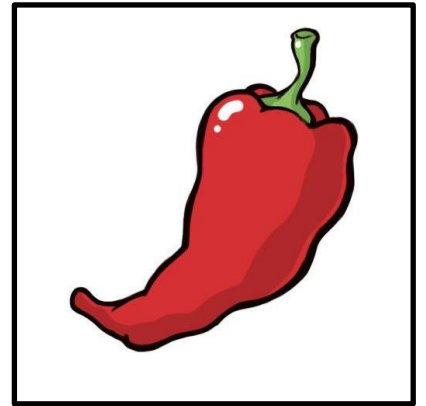
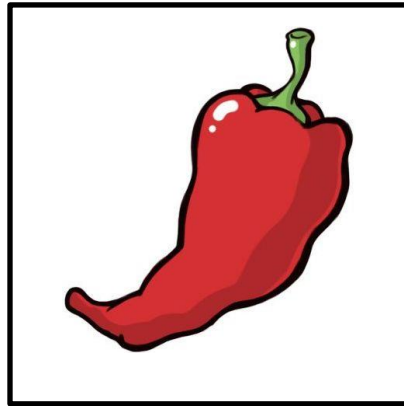
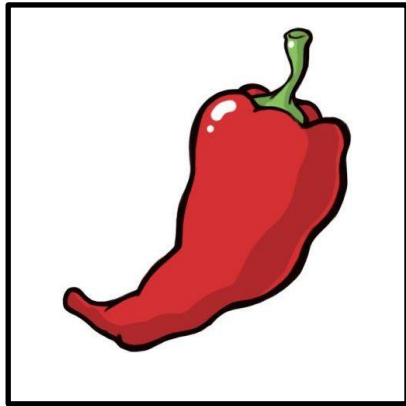
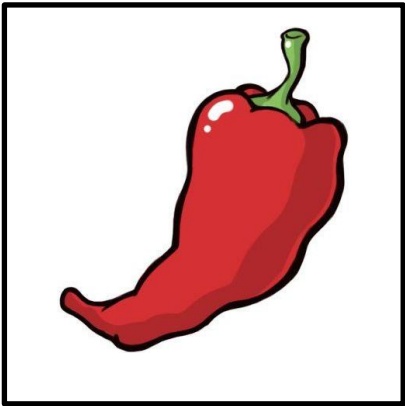
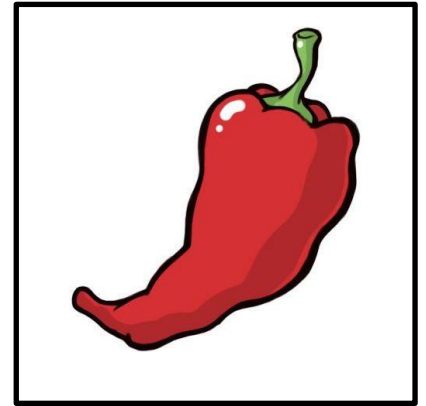
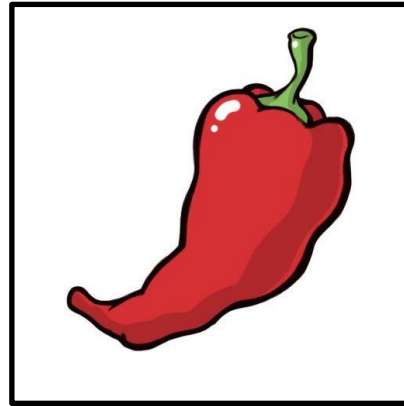
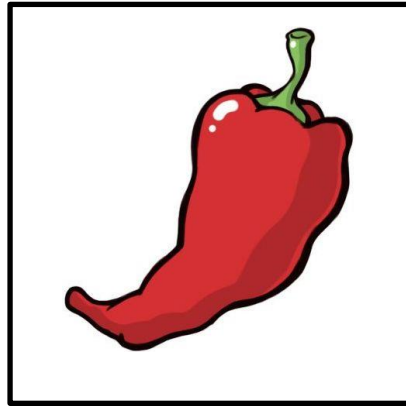
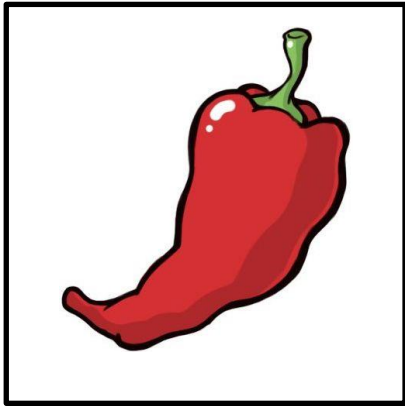
At the end of each round, which is determined by finishing one-third of the playing cards, everyone harvests all of their crops that have not been lost to sickness or other factors. Players collect the successfully harvested cards to the side. For the new round, players decide which crops to replant. Players may choose different crops than in the original round, but the soil cards remain the same.

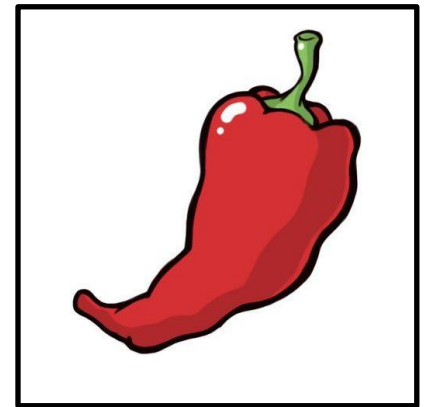
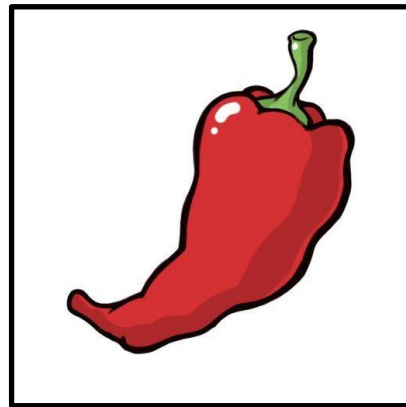
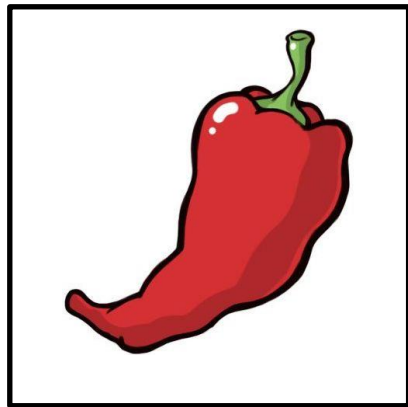
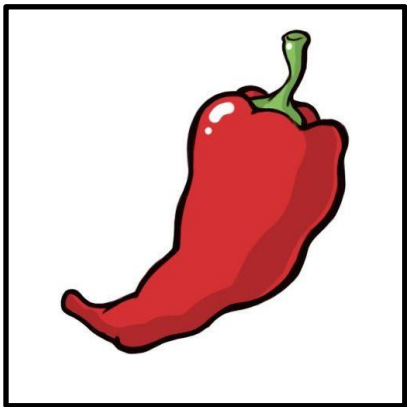
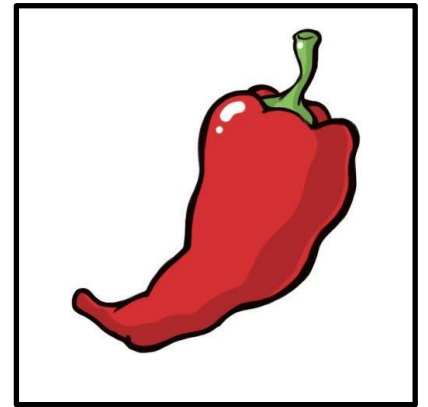
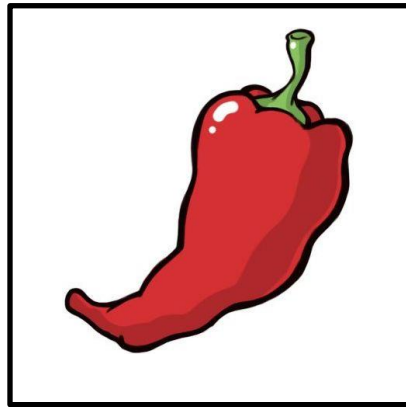
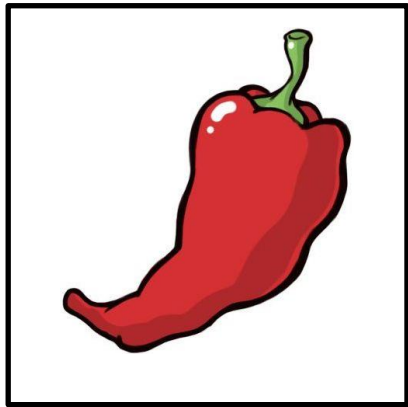
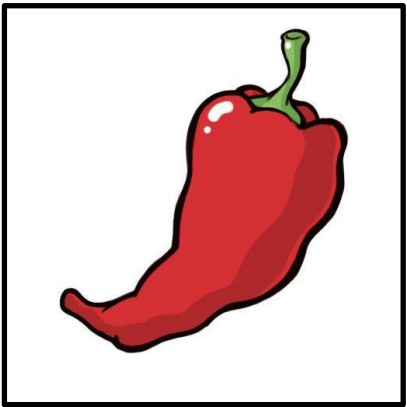
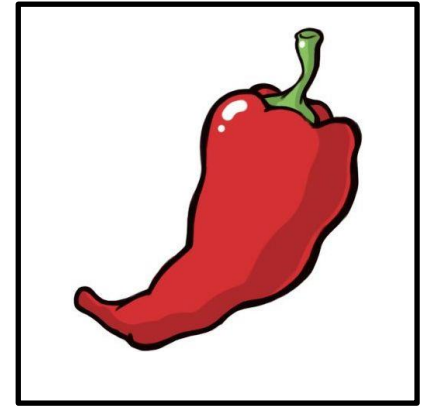
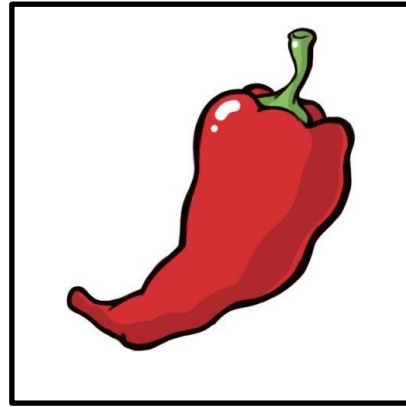
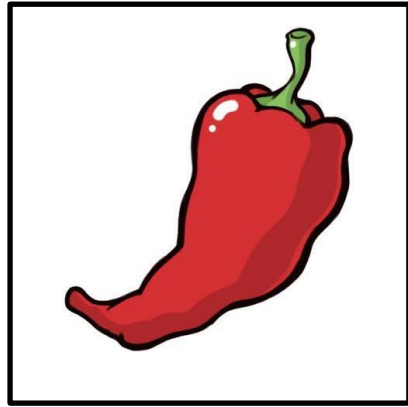
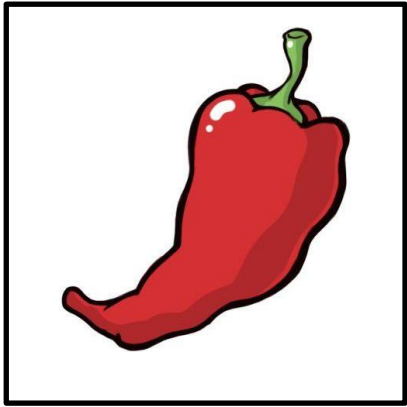
At the end of all three harvests, players add up their successfully harvested crop cards according to the point value associated with each. The player with the most points wins.

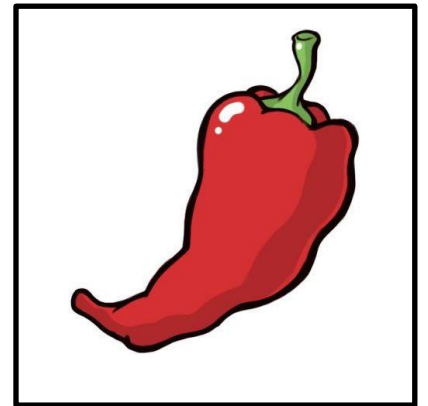
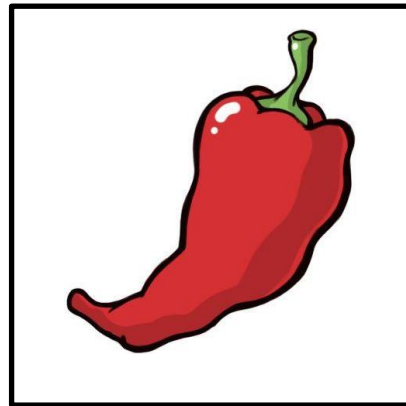
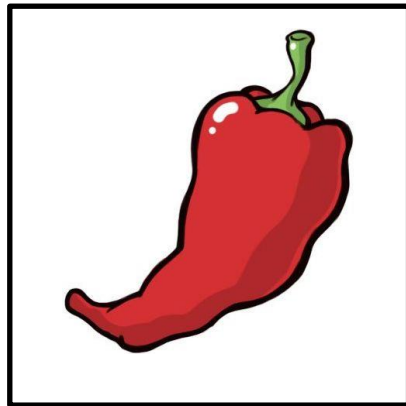
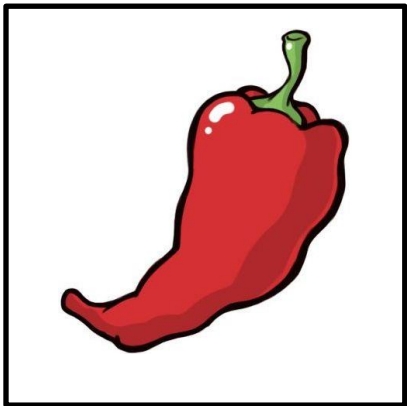
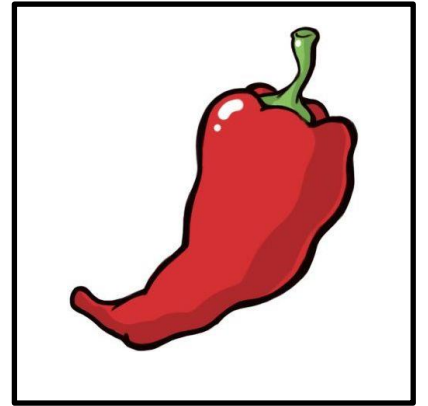
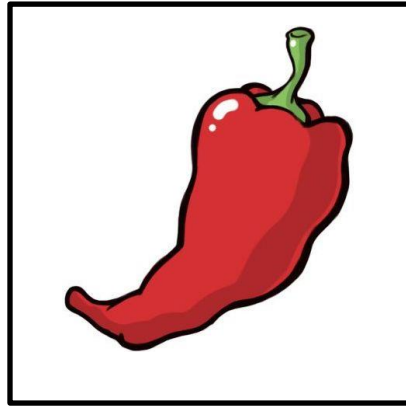
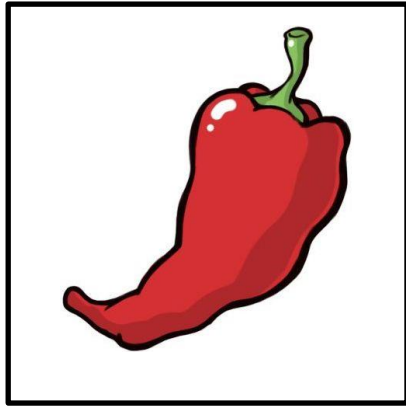
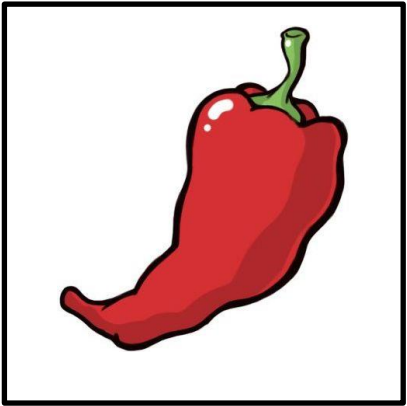
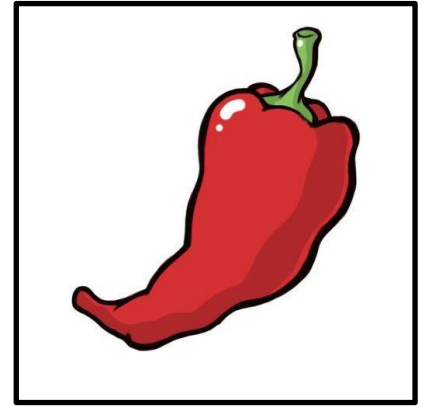
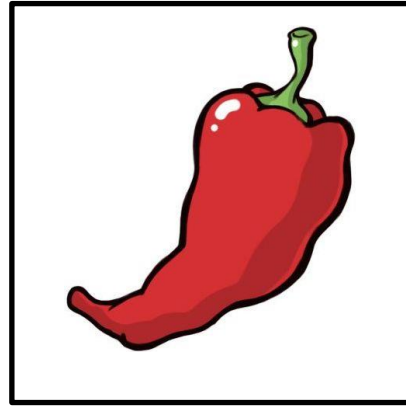
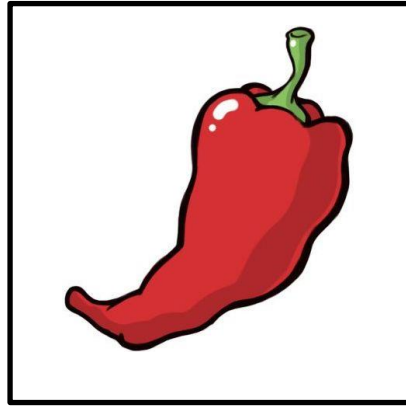
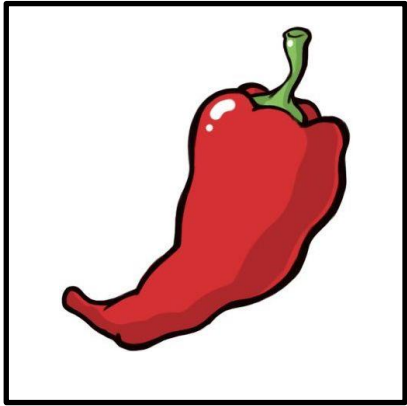












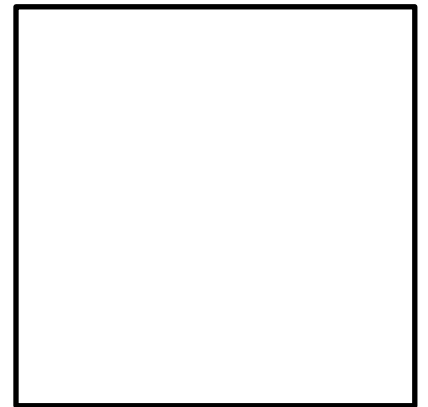
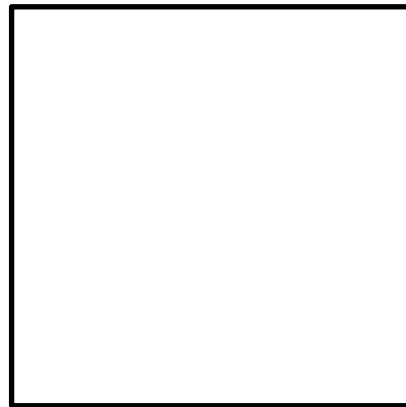
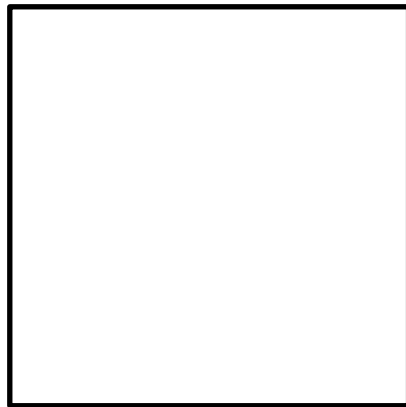
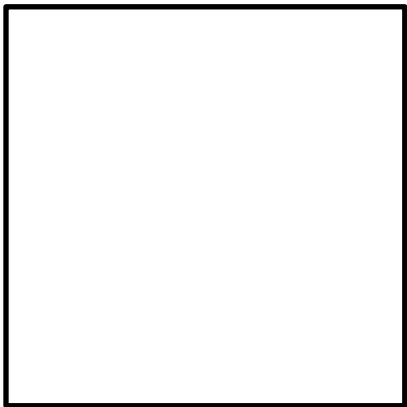
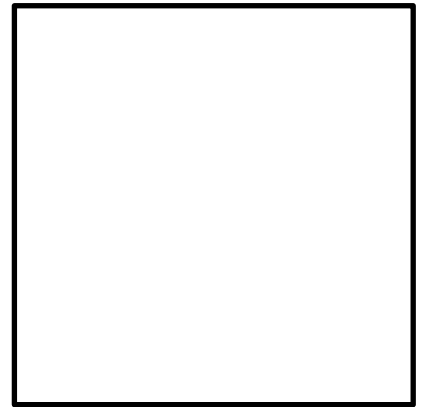
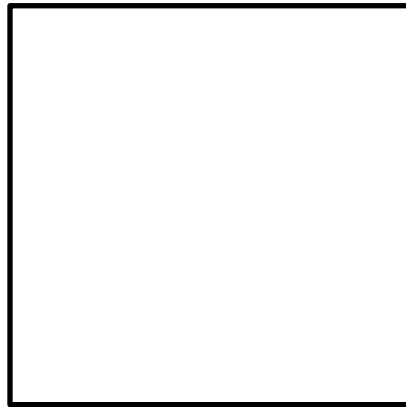
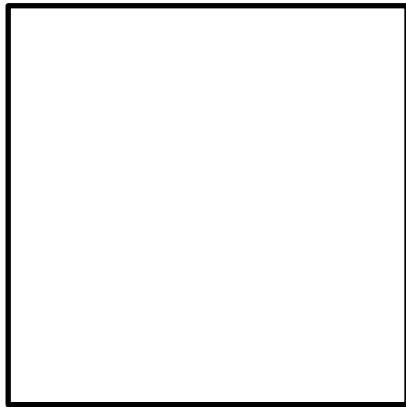
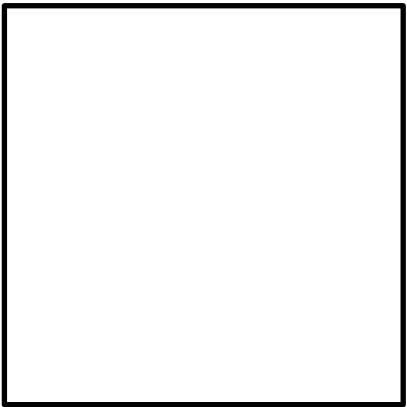
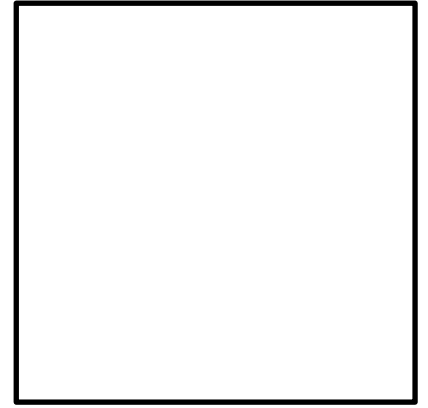
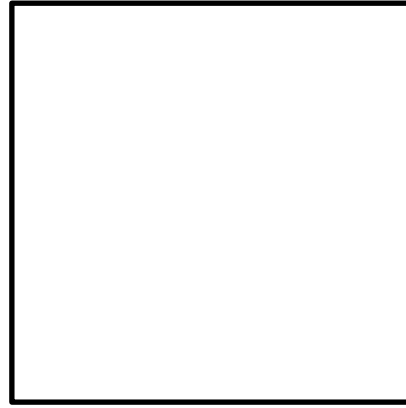
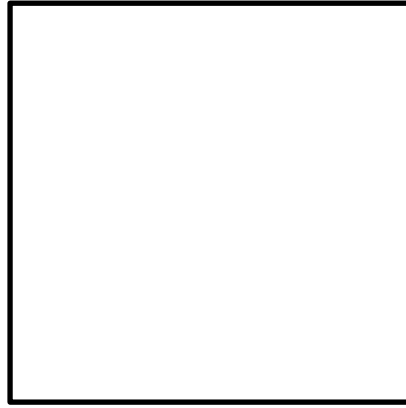
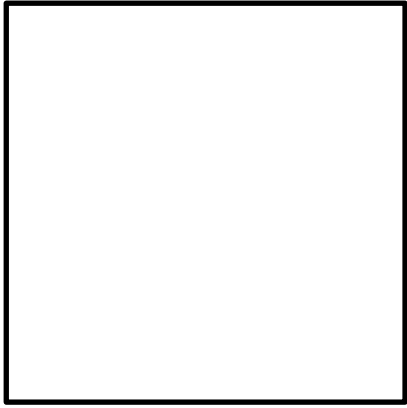


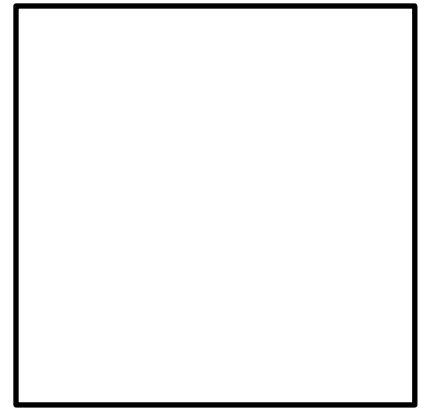
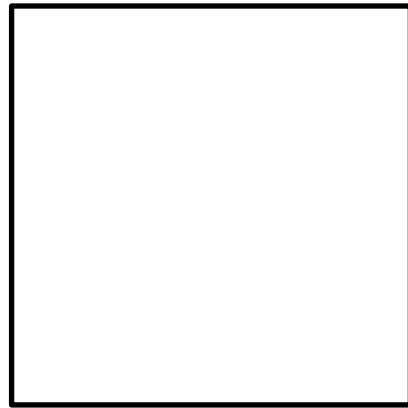
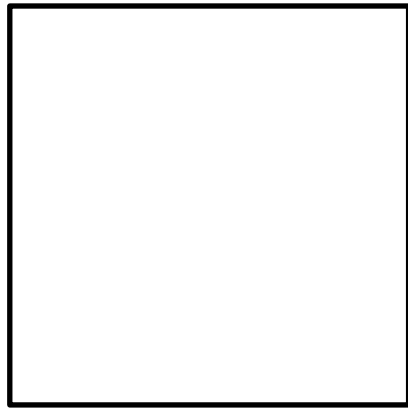
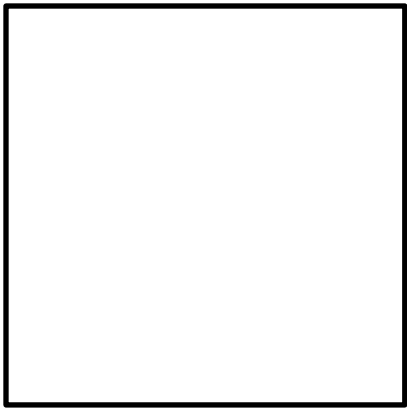
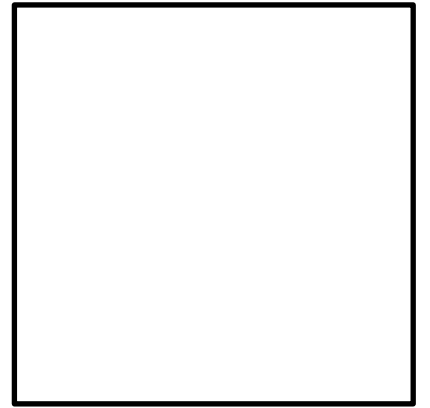
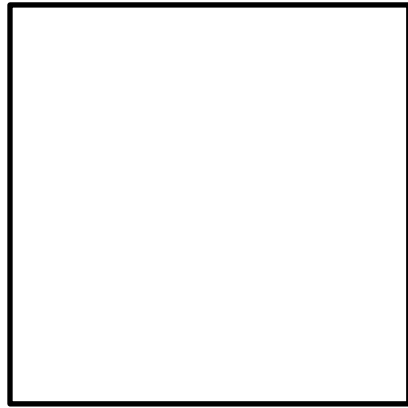
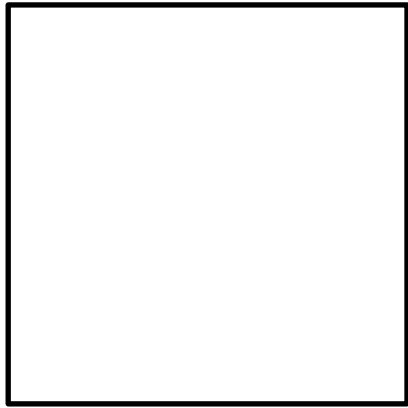
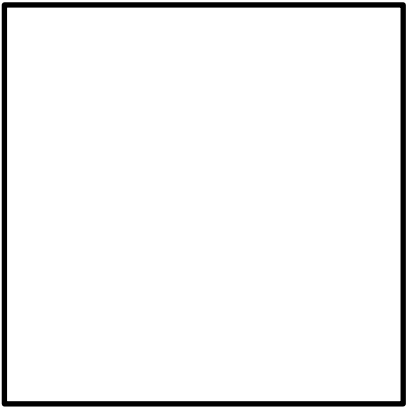
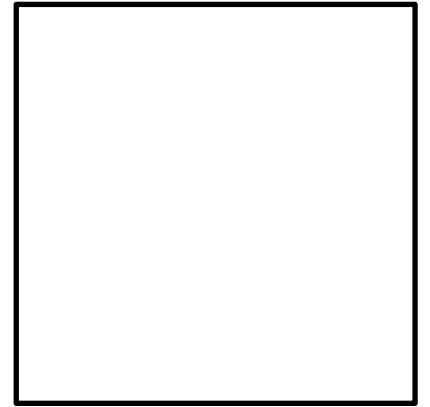
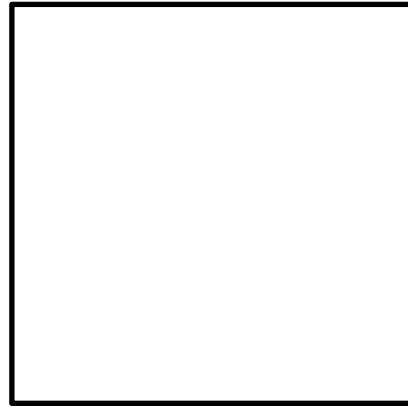
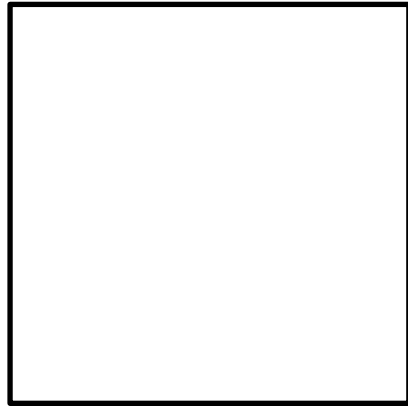
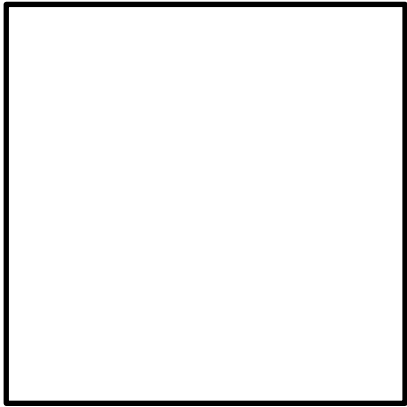




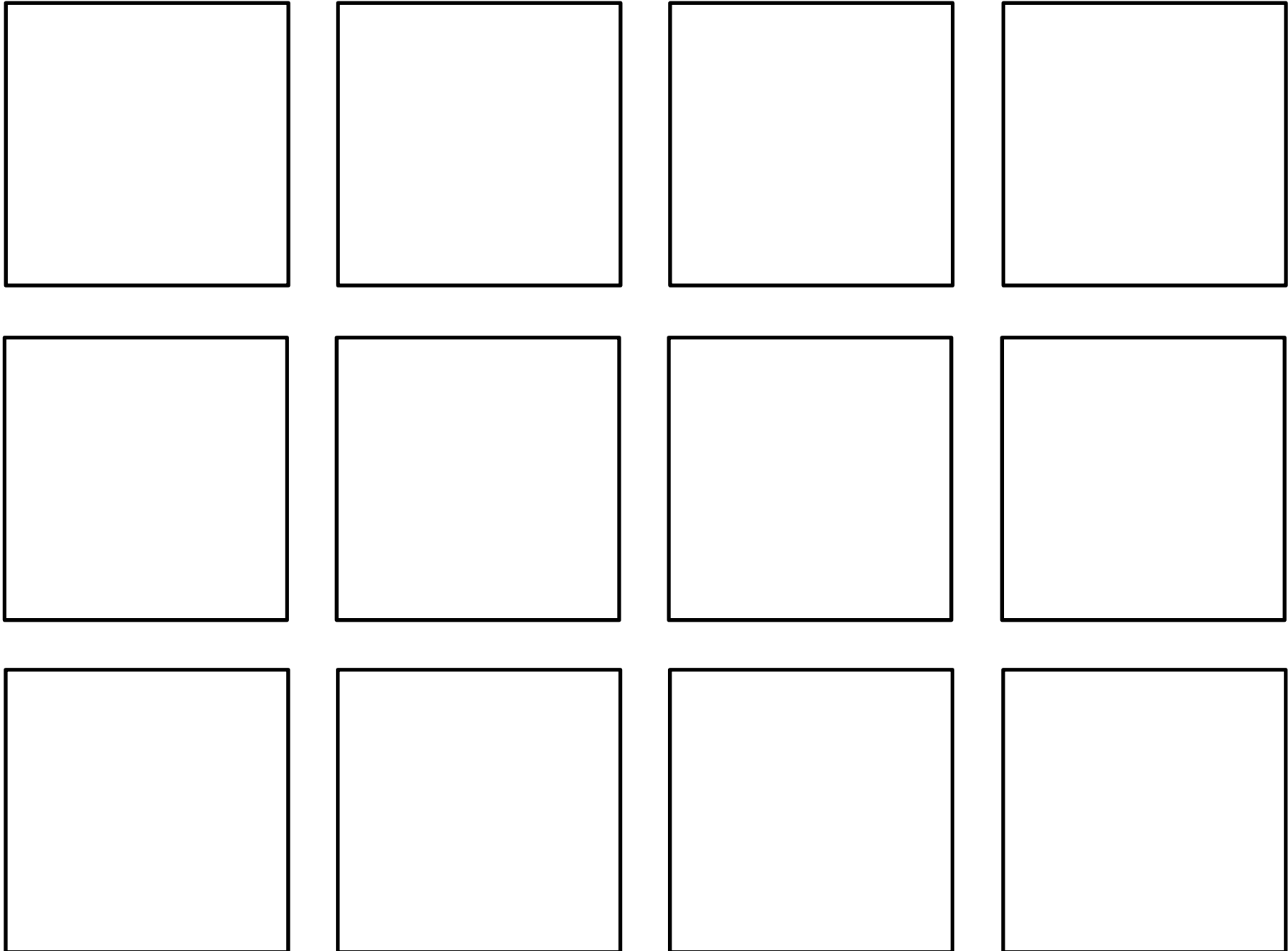


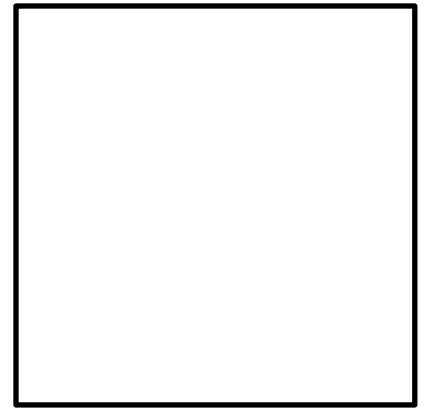
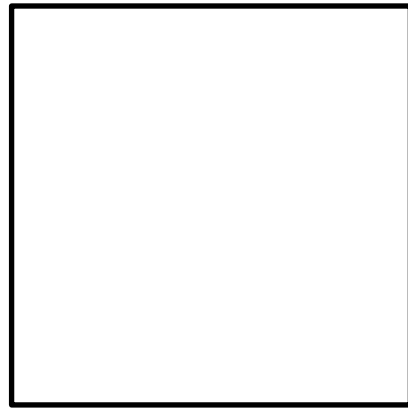
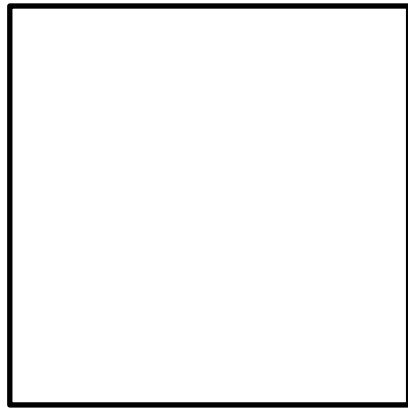
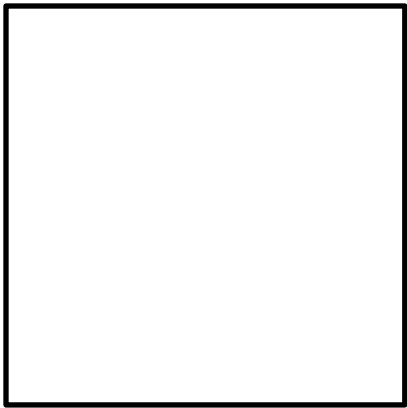
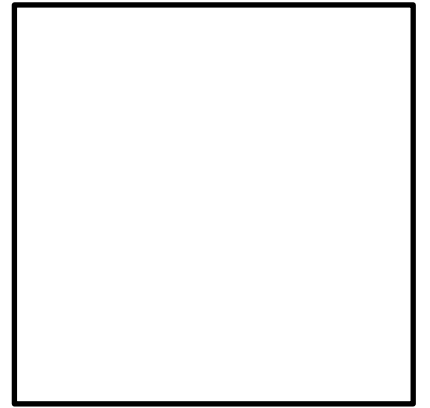
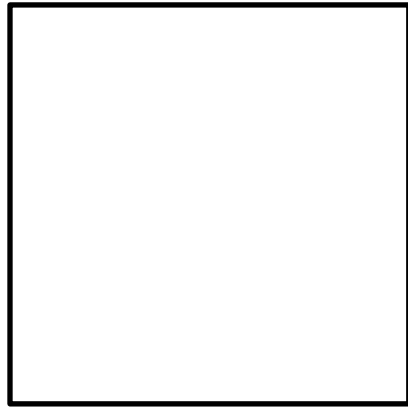
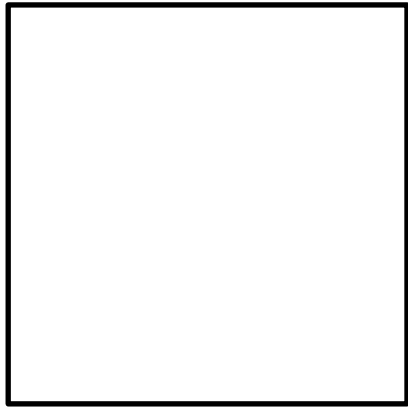
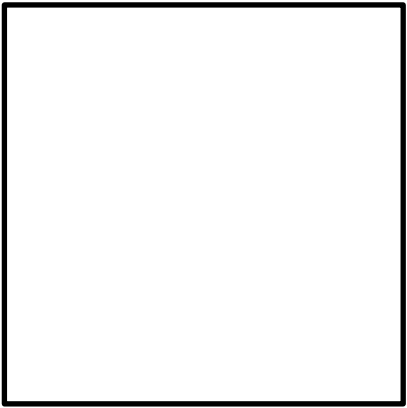
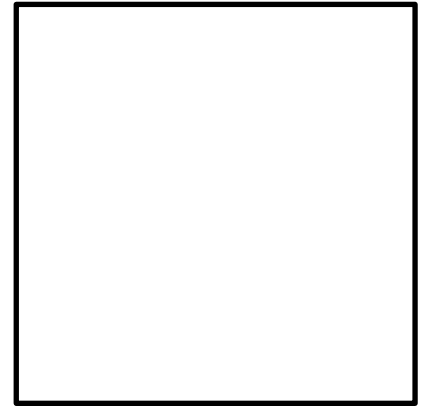
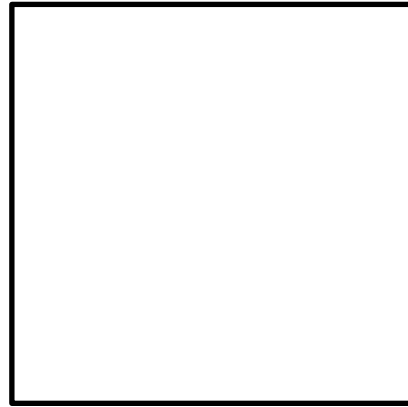
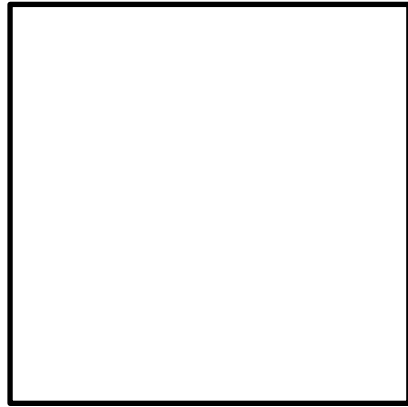
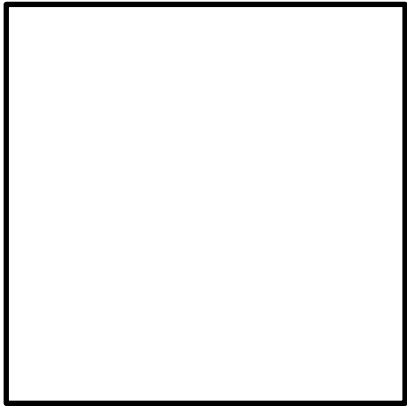
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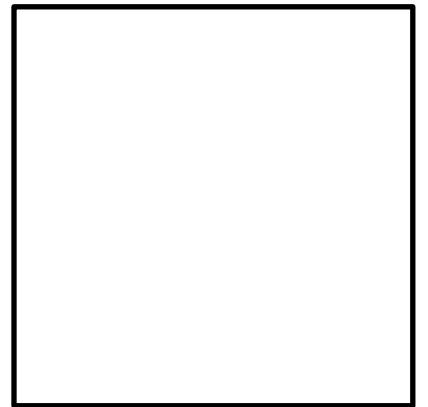
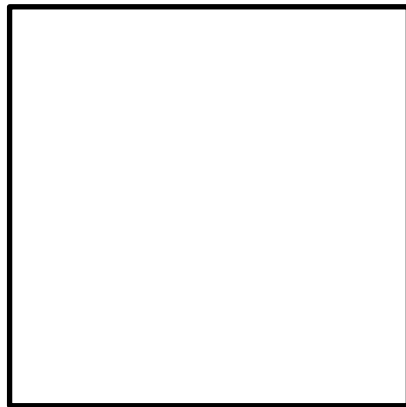
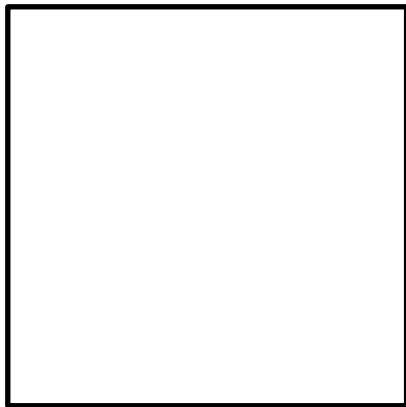
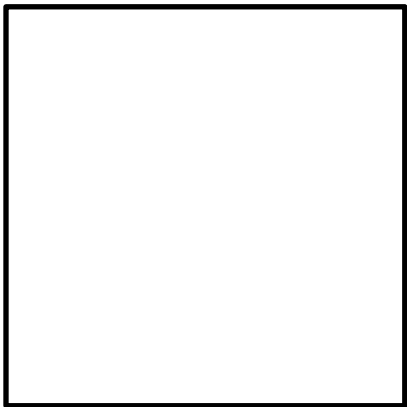
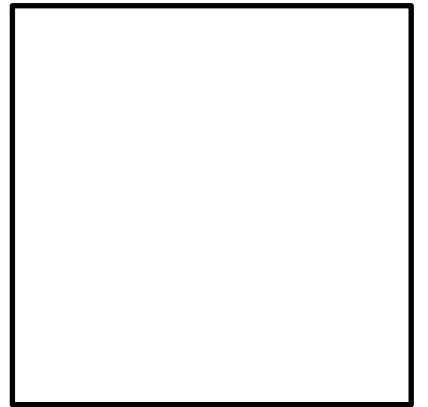
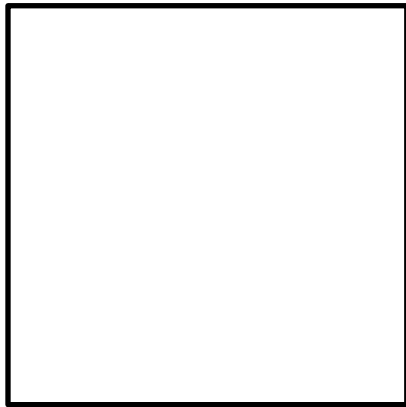
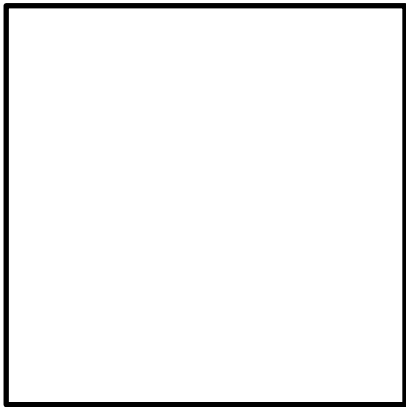
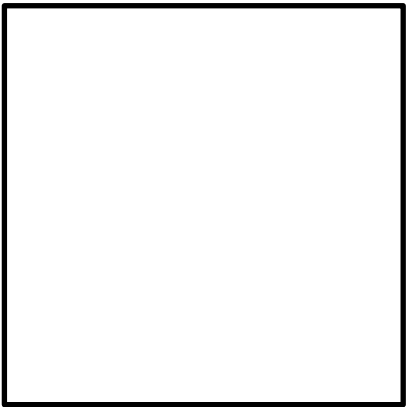
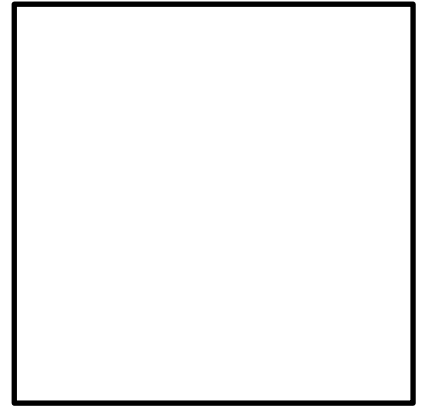
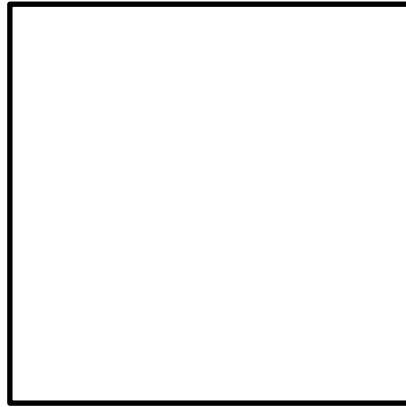
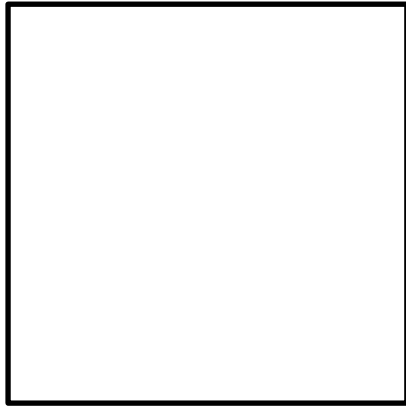
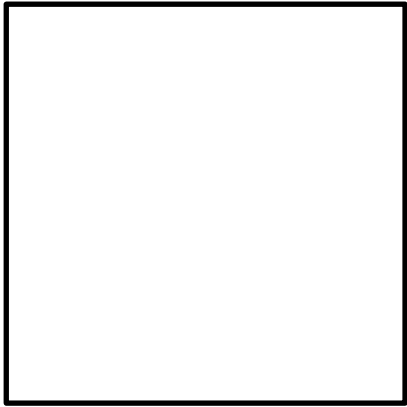


The following 24 plots represent the black soil type card. Please print these sheets on black colored paper to represent this soil type.

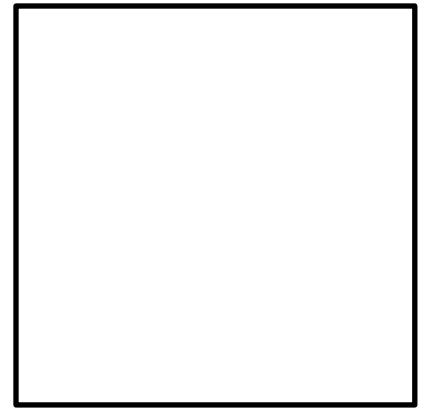
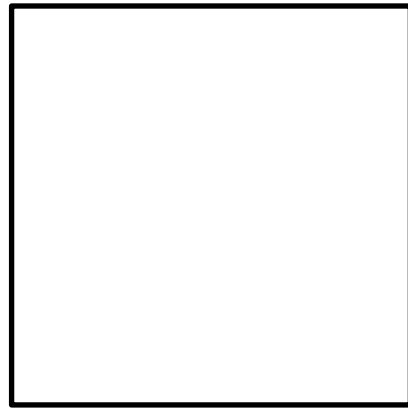
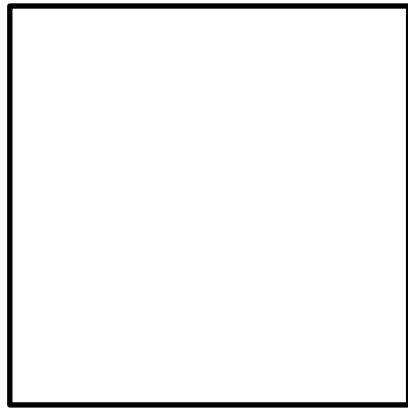
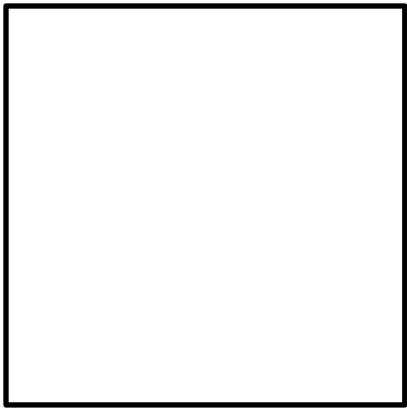
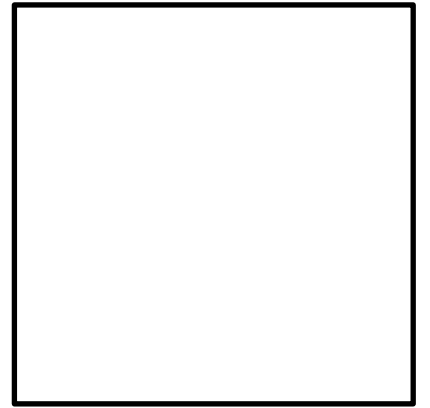
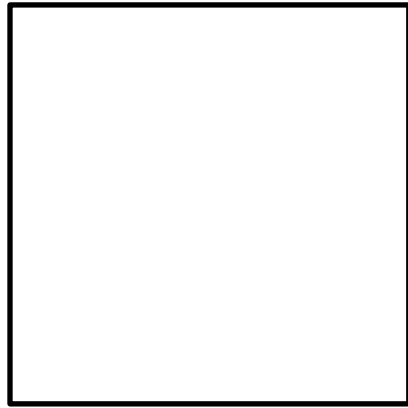
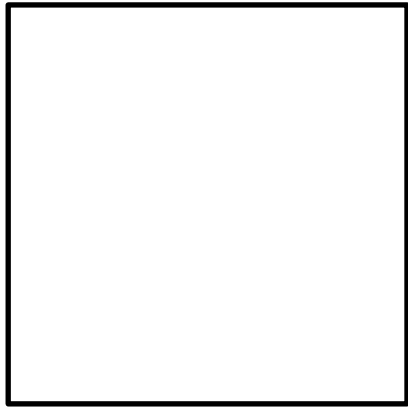
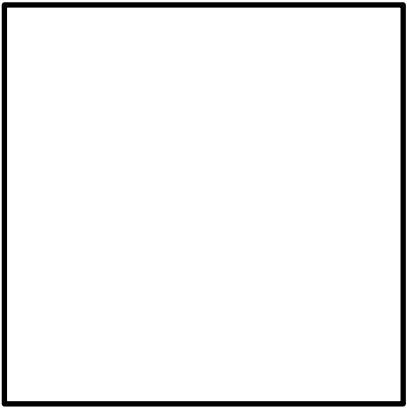
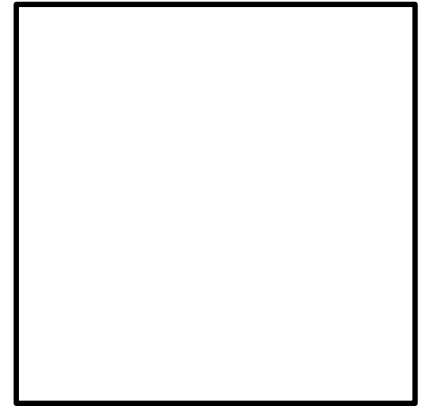
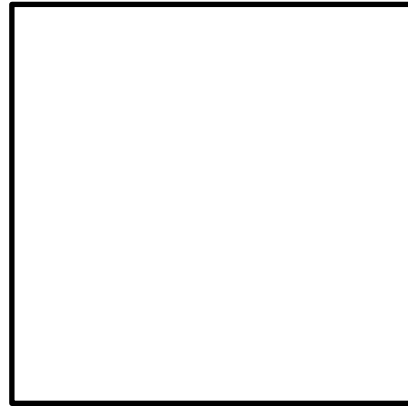
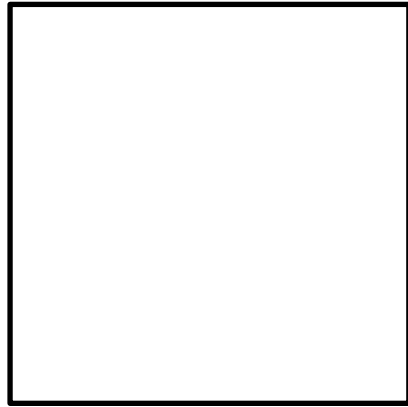
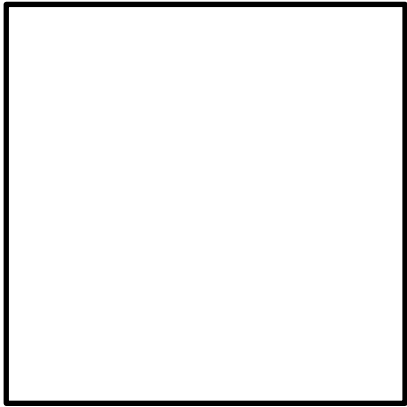


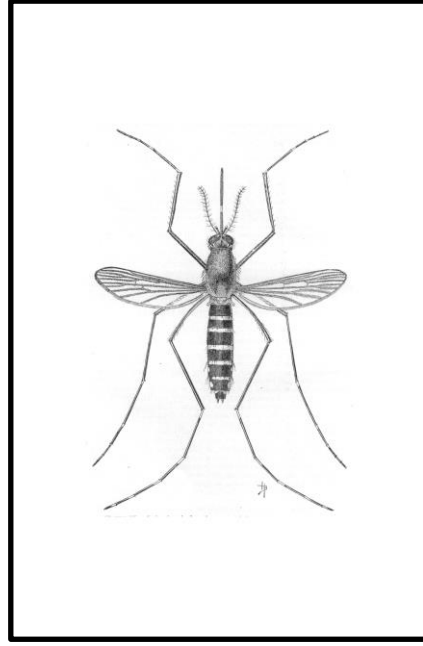
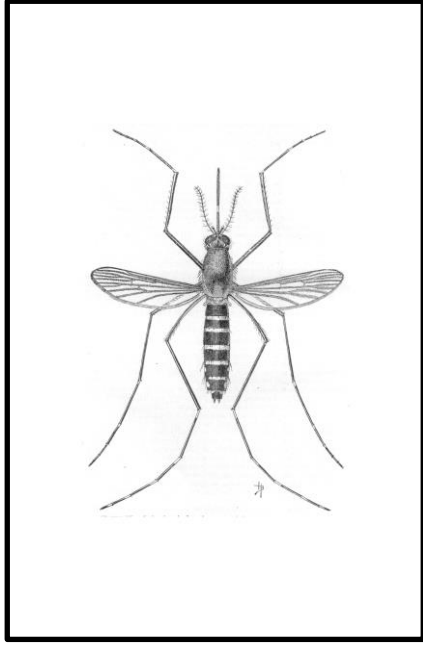
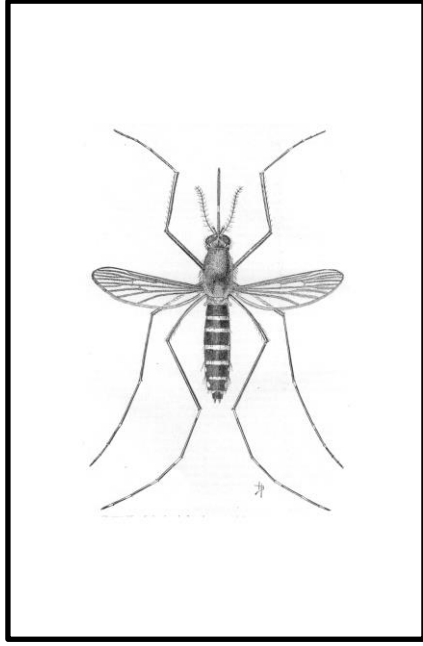
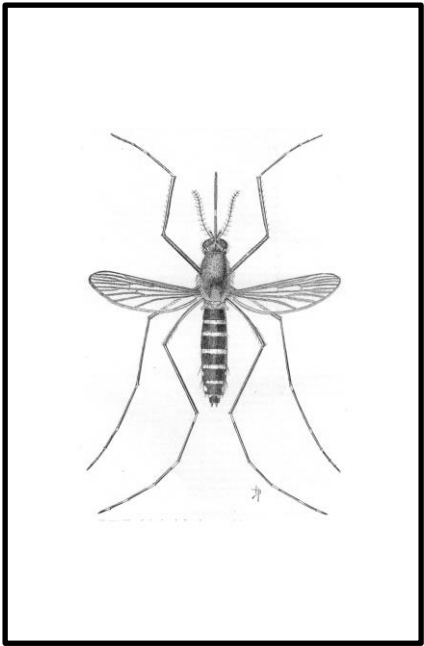
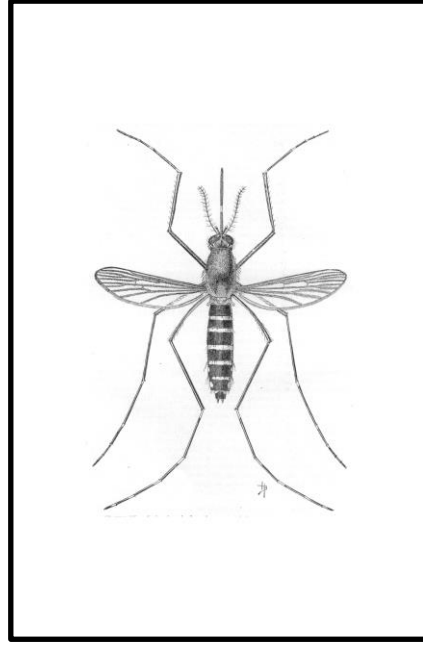
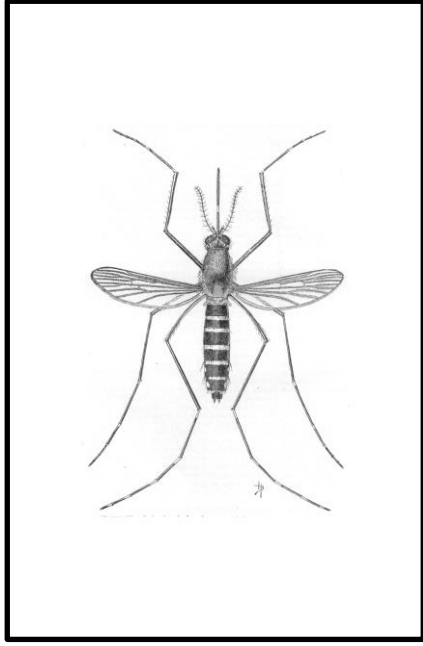
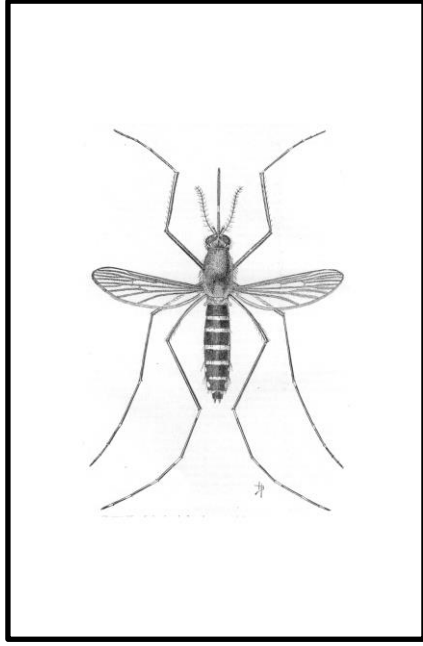
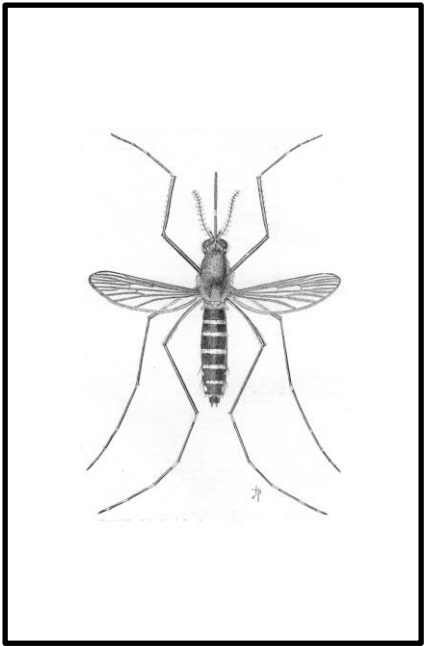


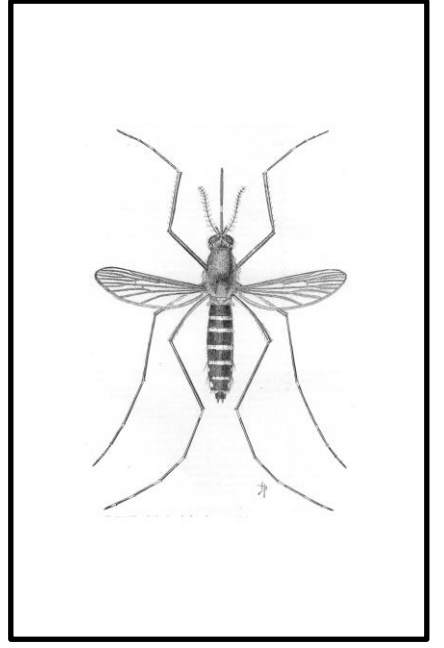
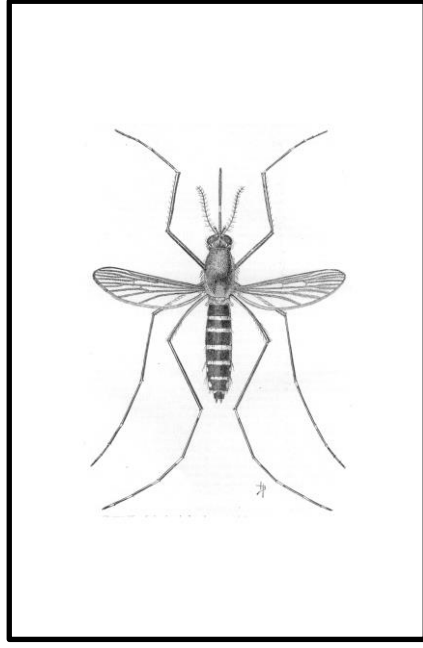
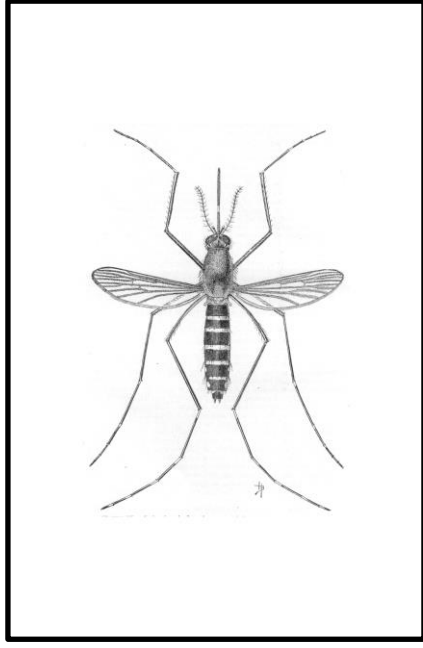
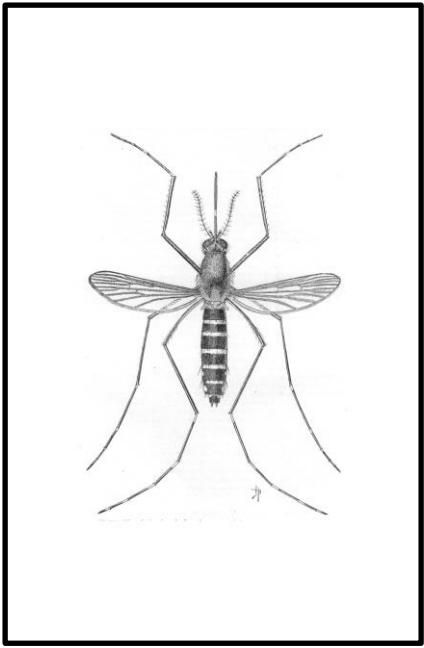
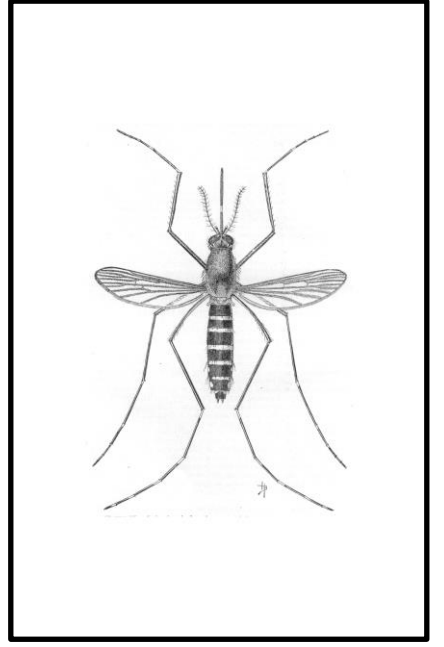
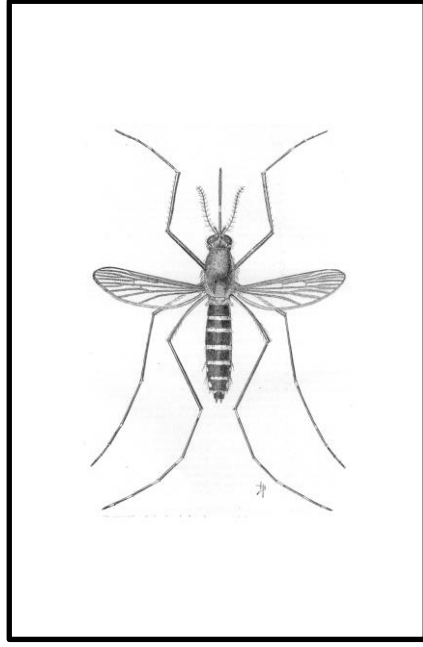
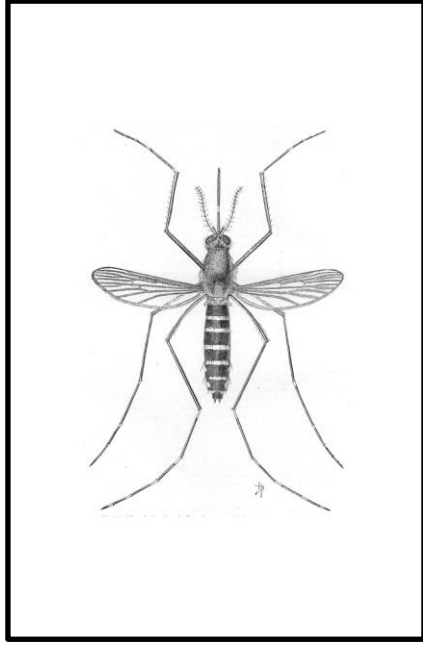
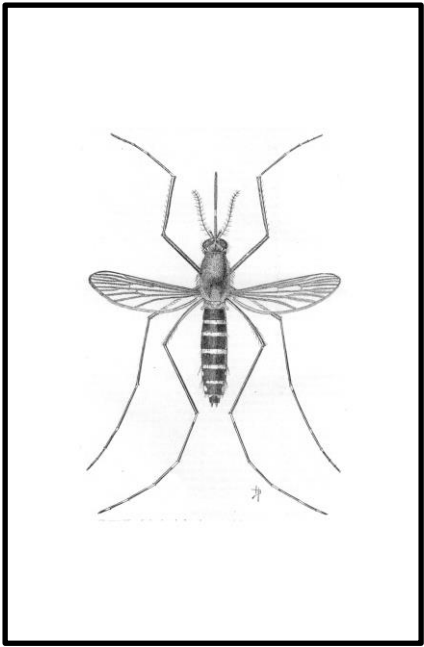
The following 24 plots represent the mixed soil type card. Please print on orange colored paper to represent this soil type.

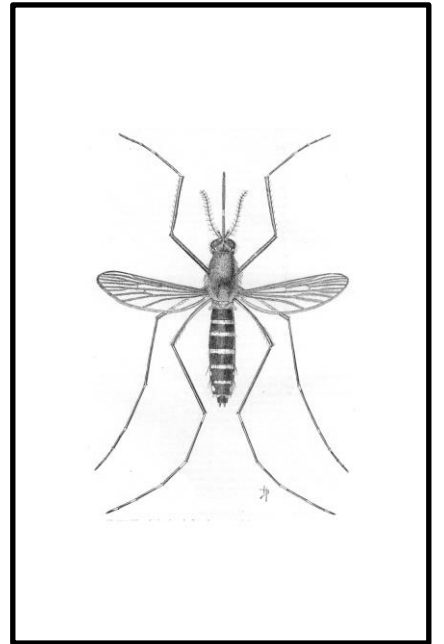
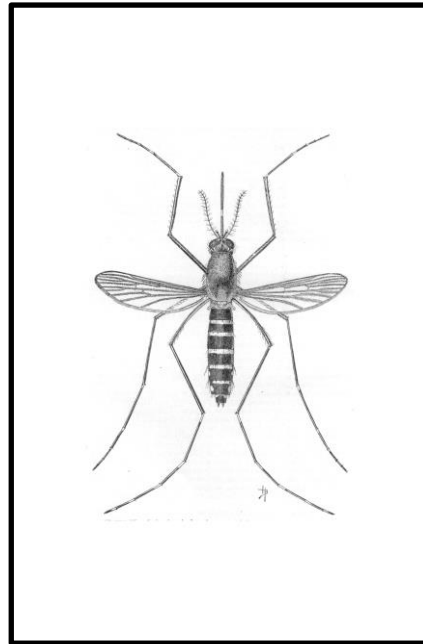
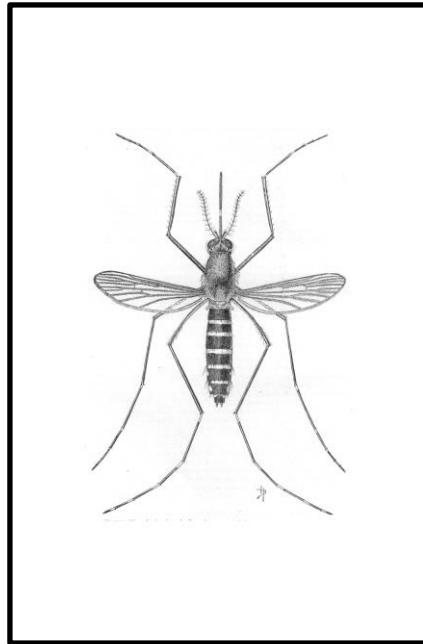
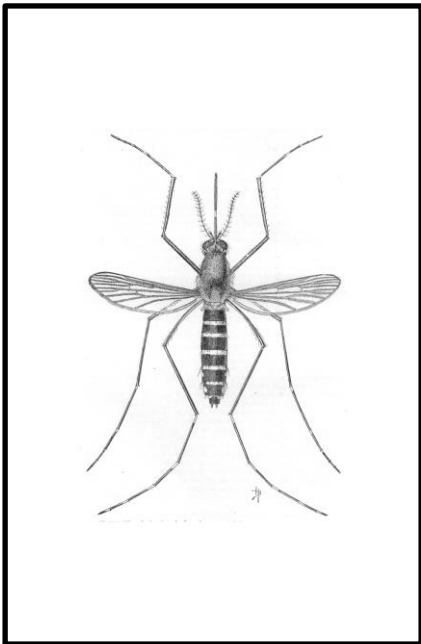
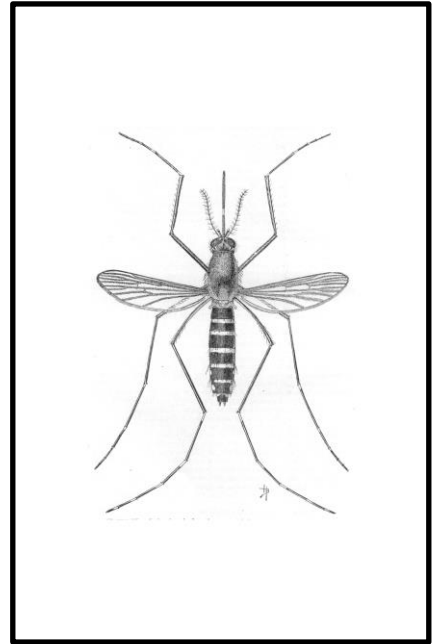
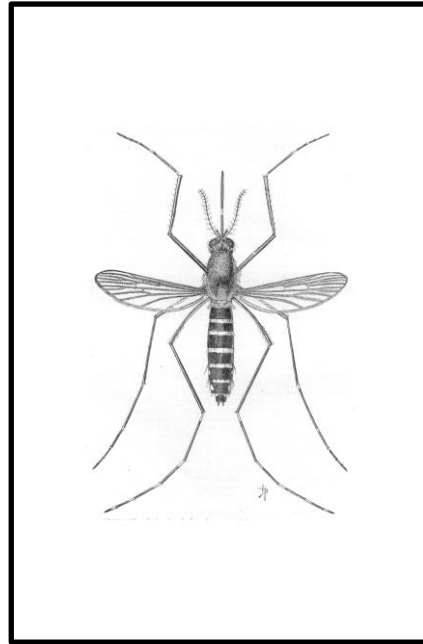
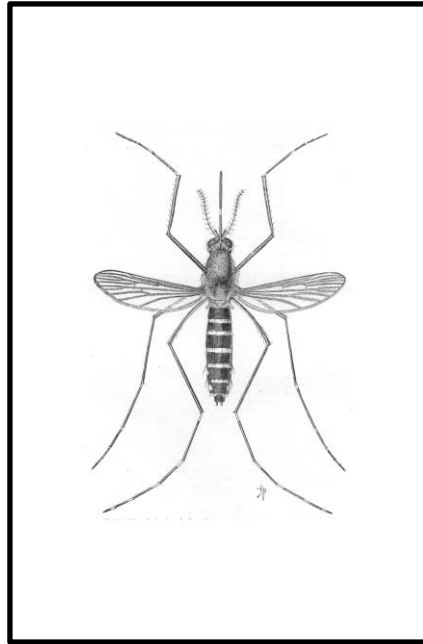
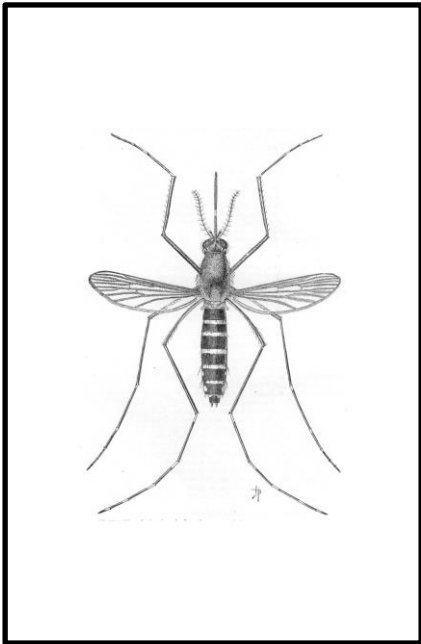


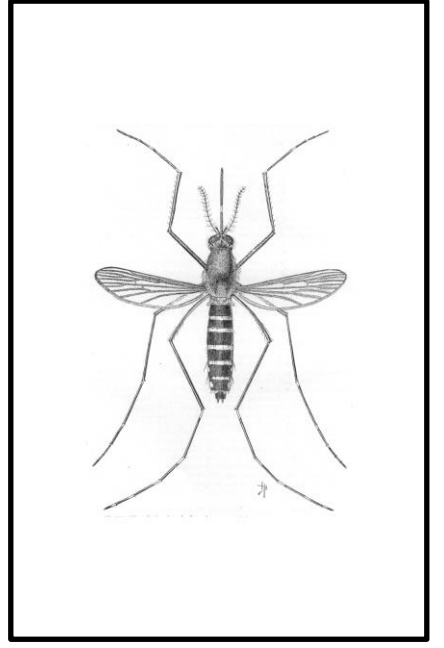
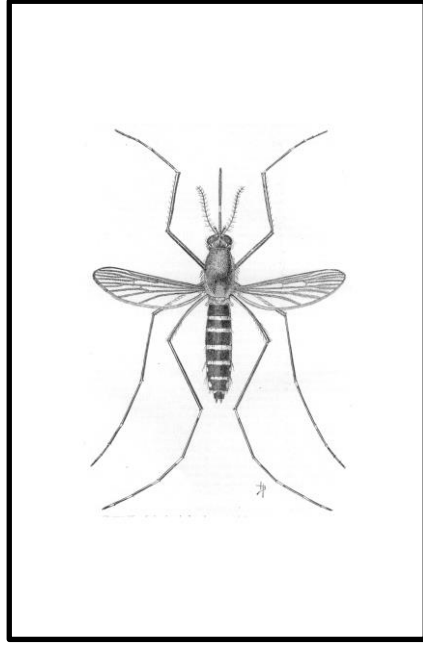
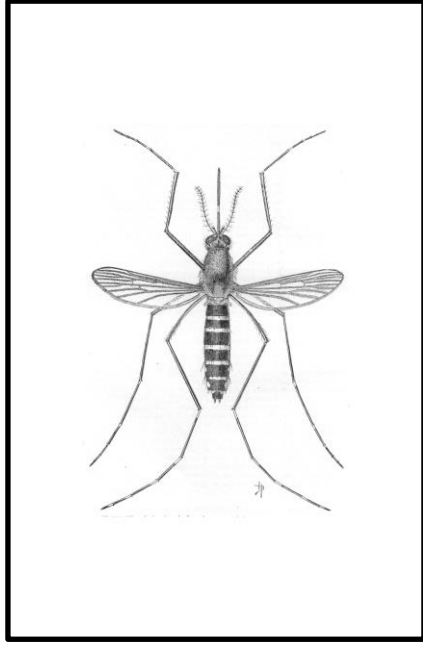
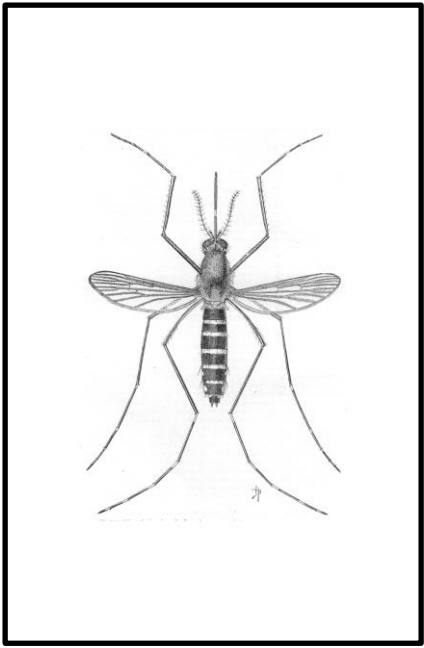
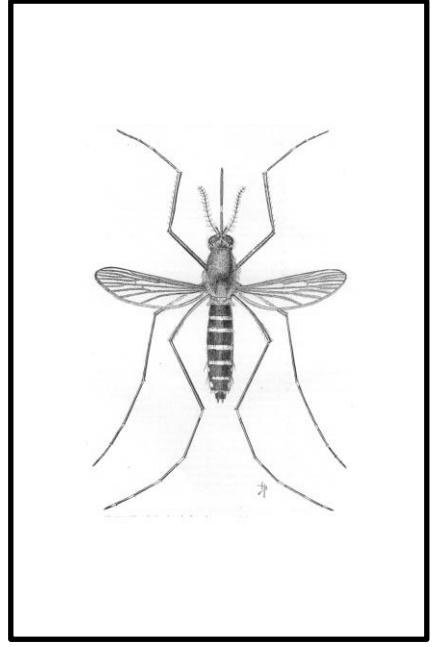
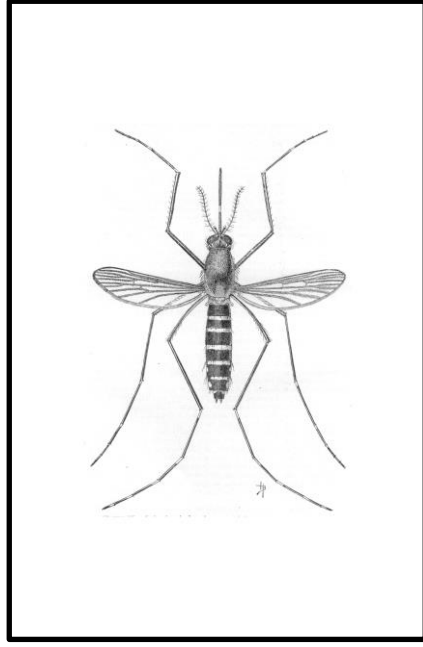
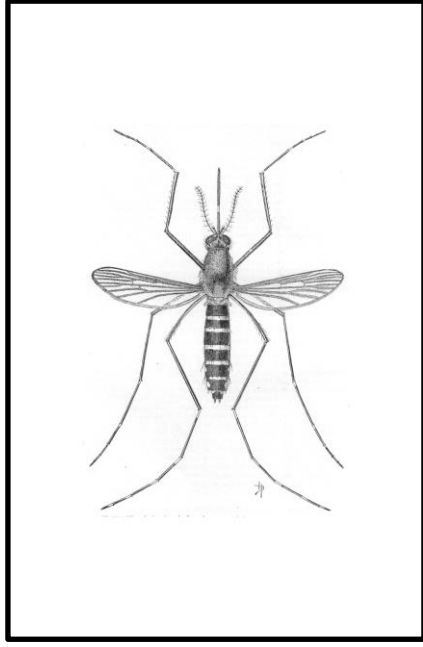
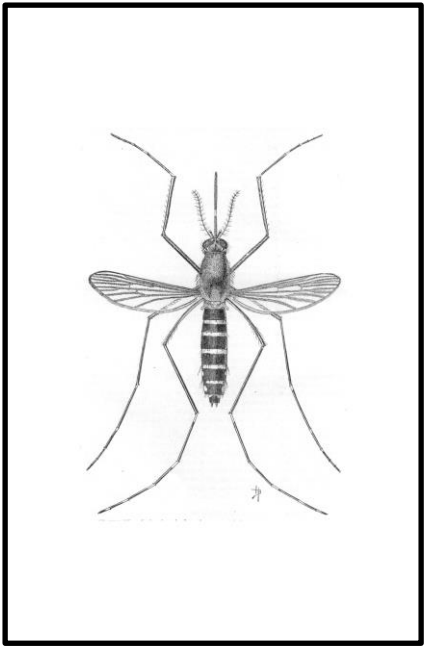


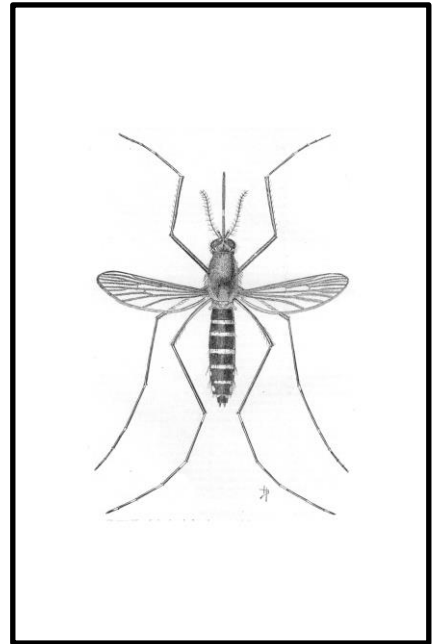
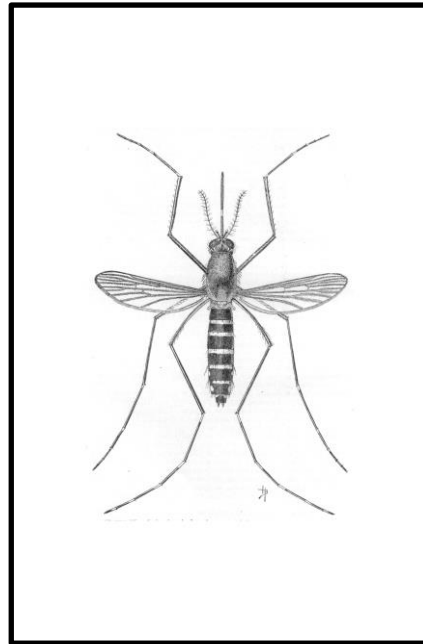
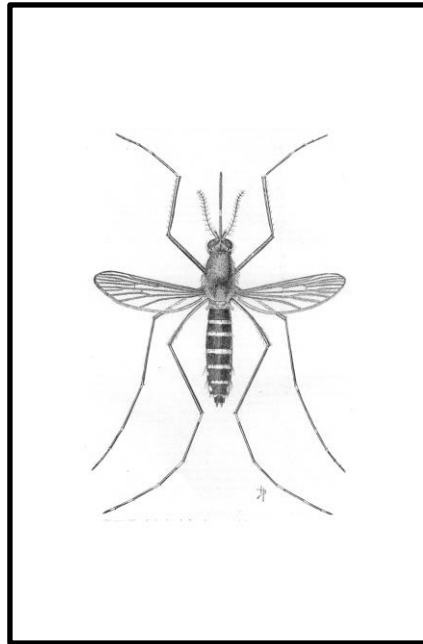
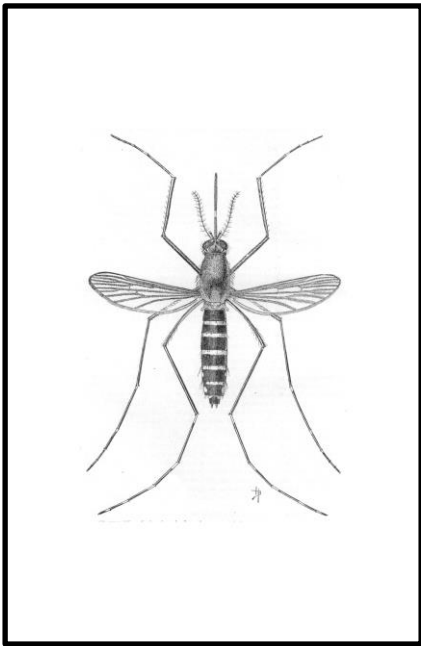
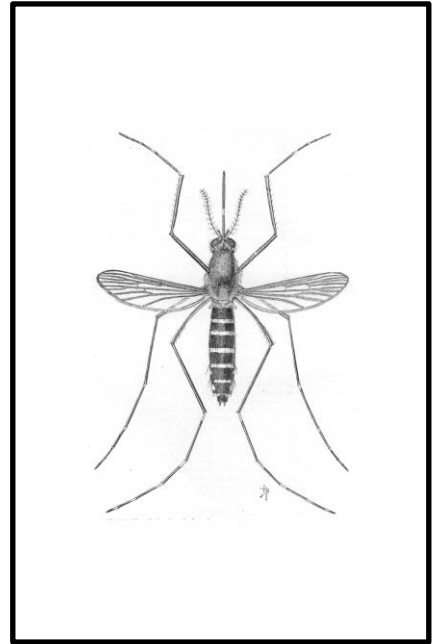
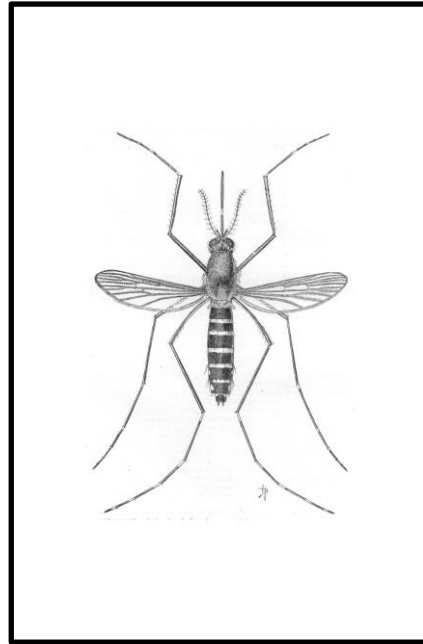
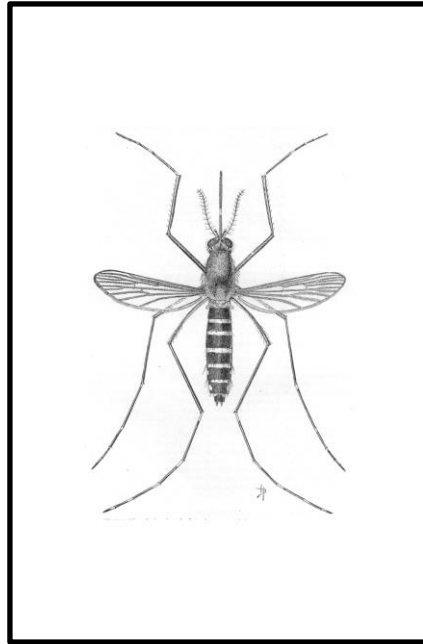
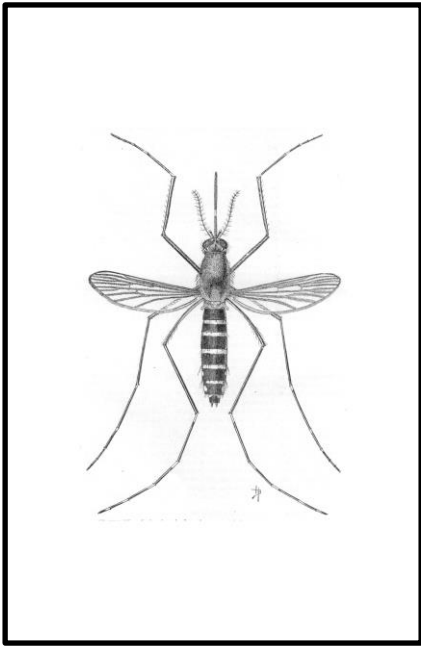


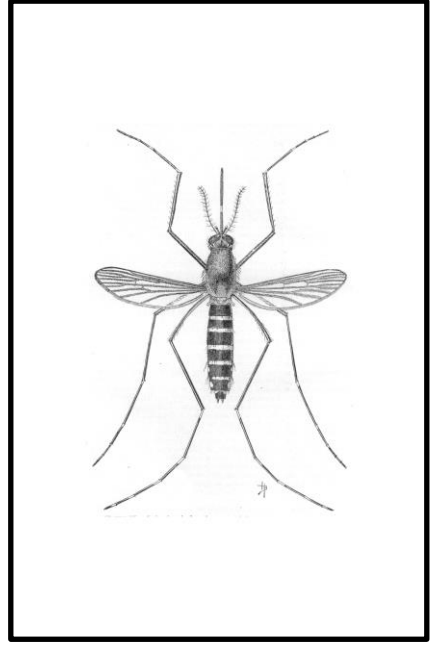
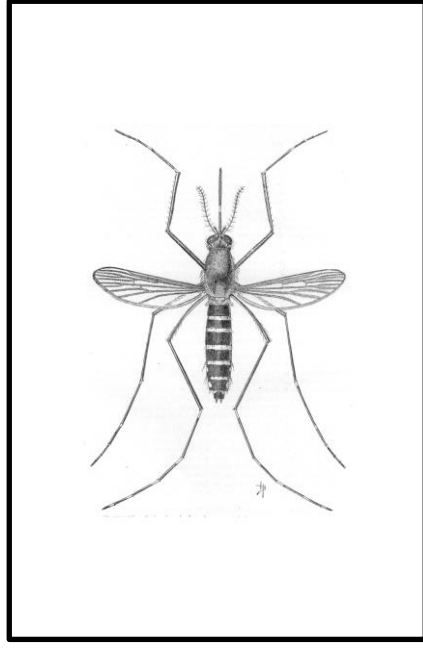
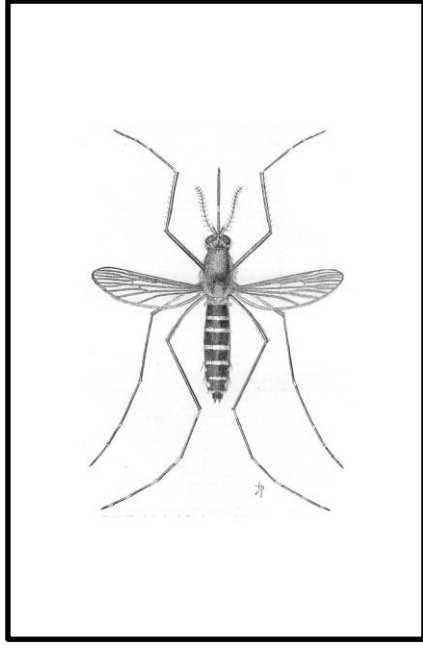
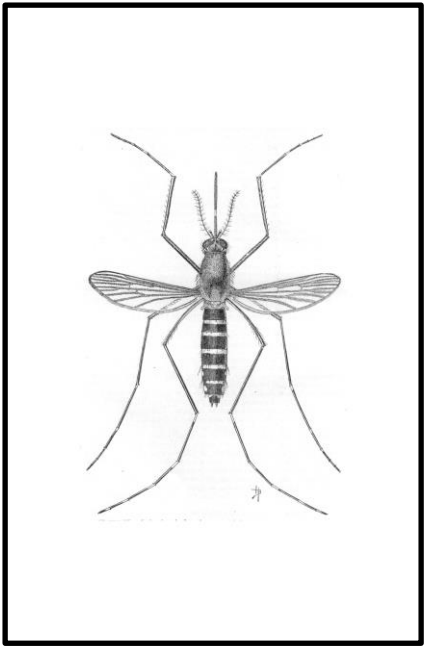
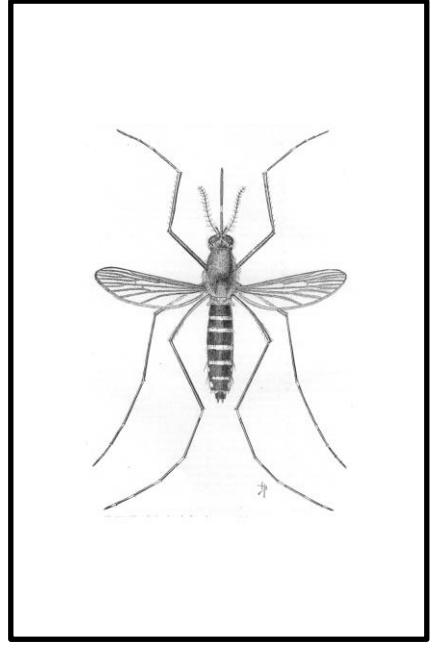
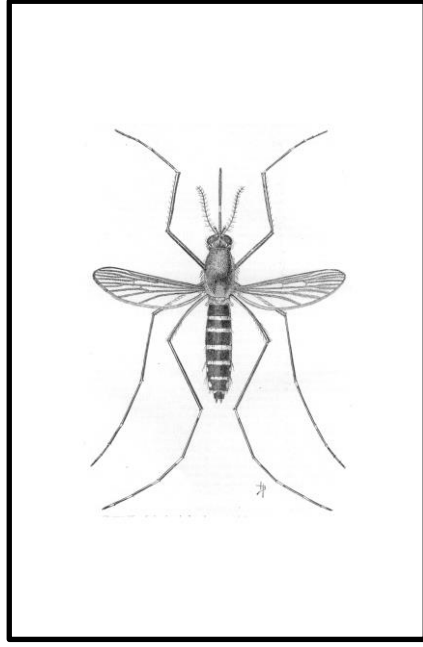
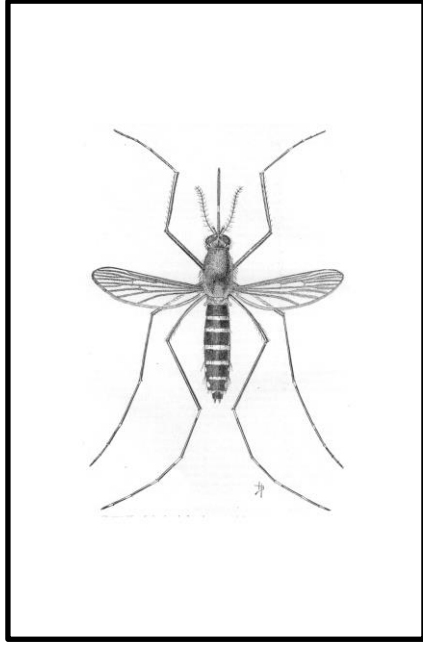
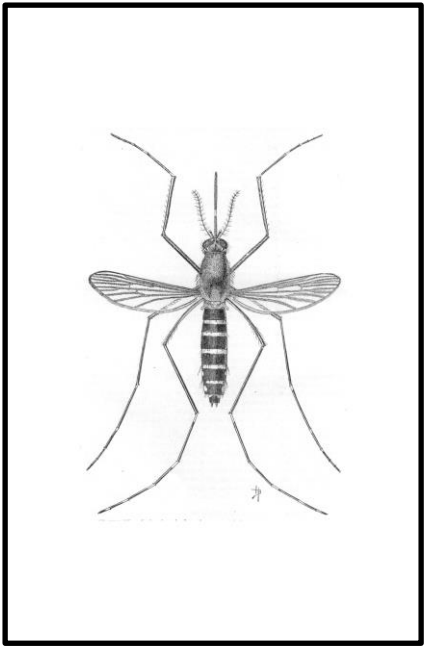


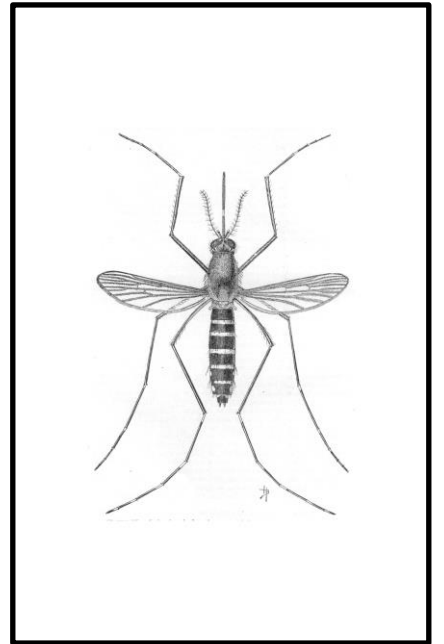
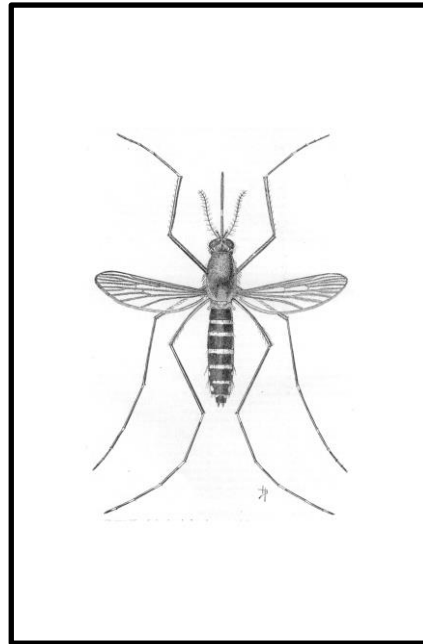
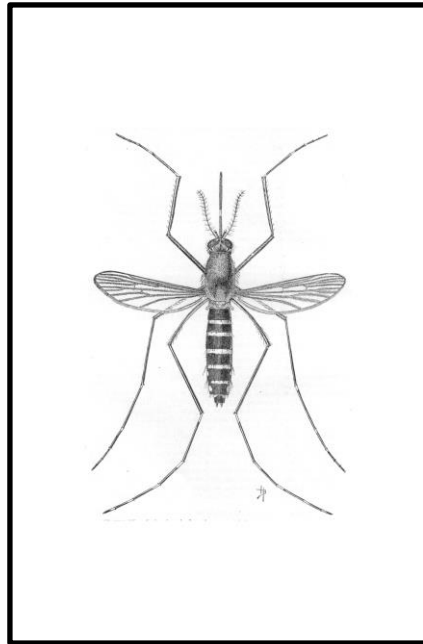
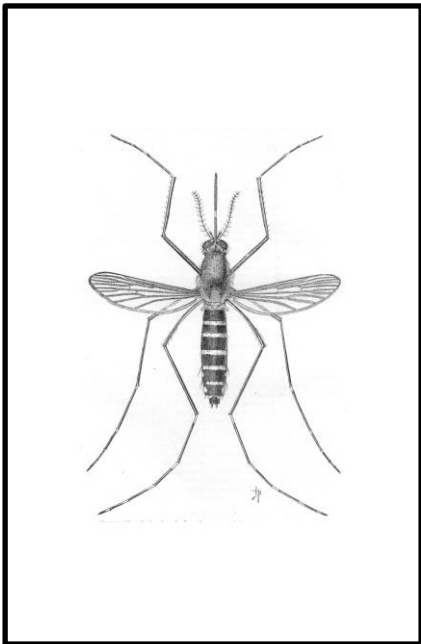
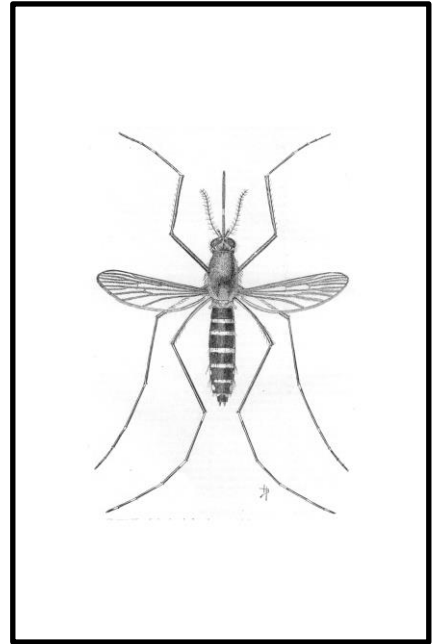
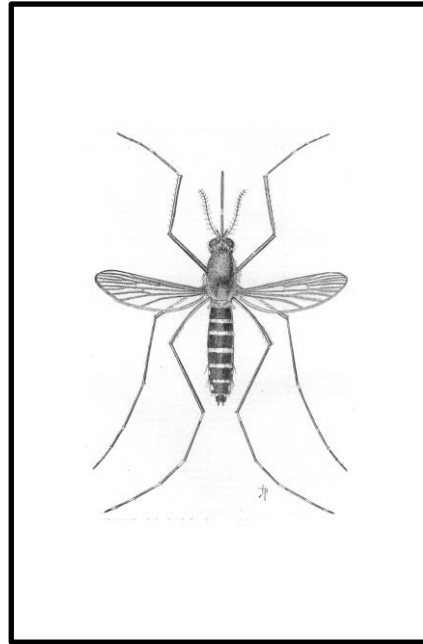
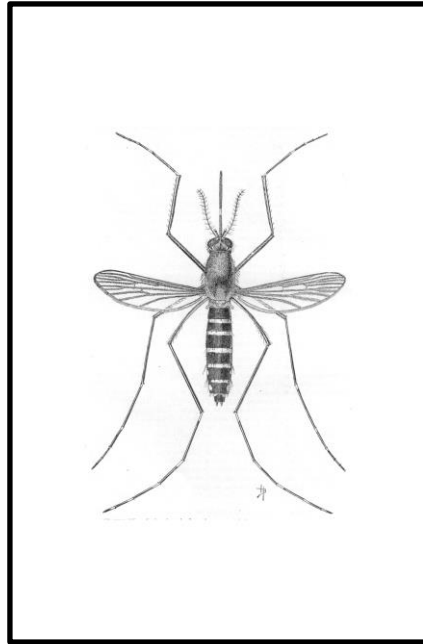
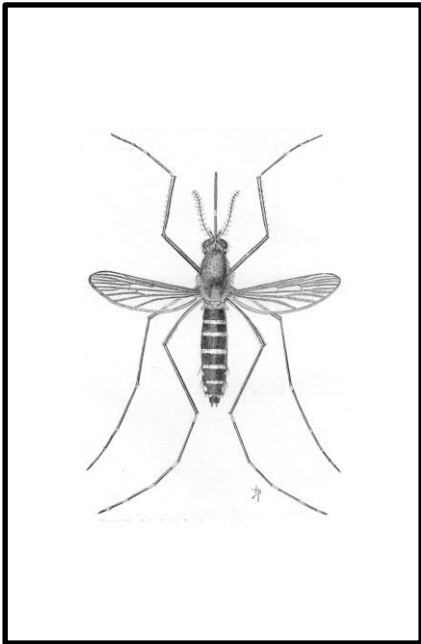




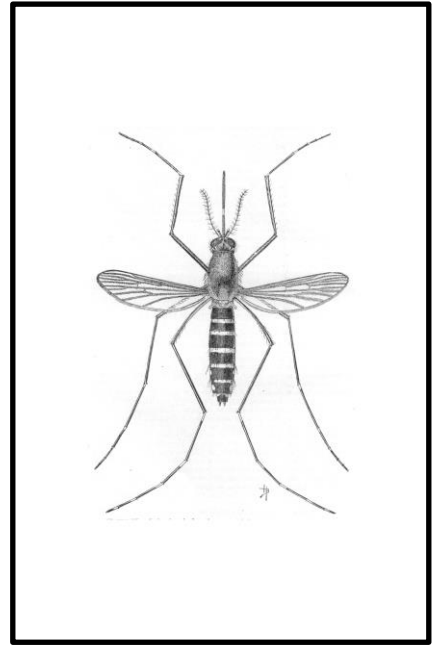
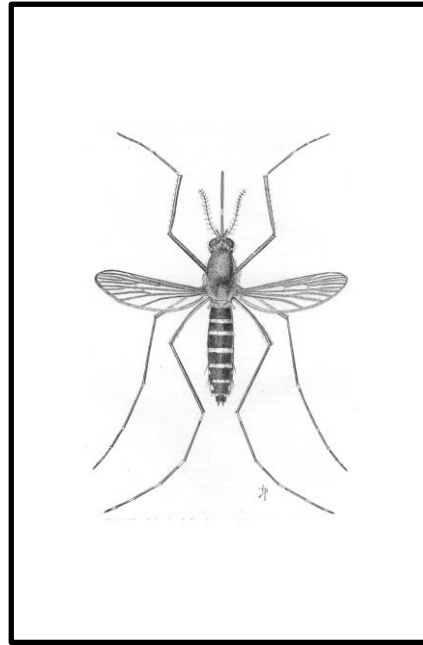
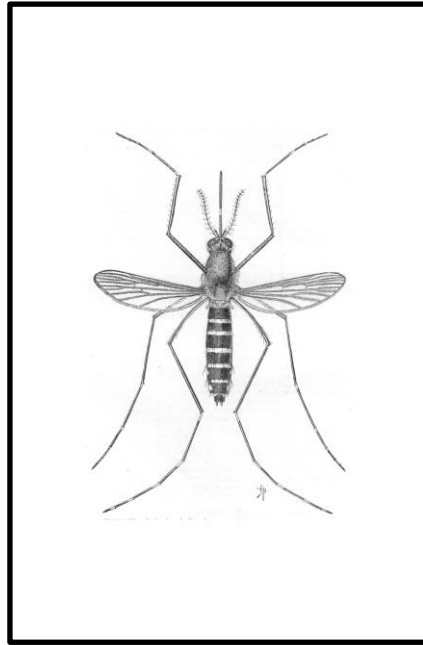
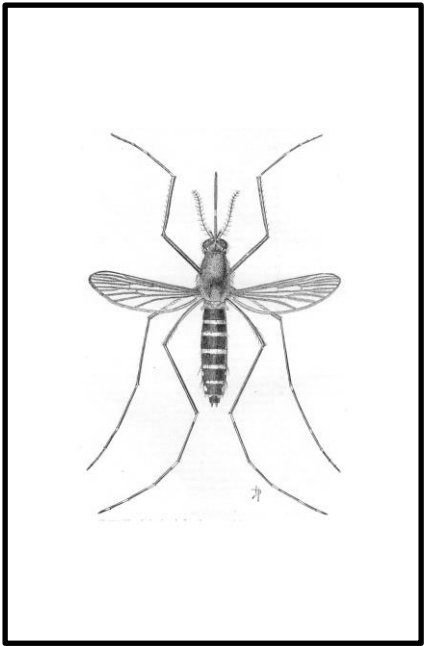


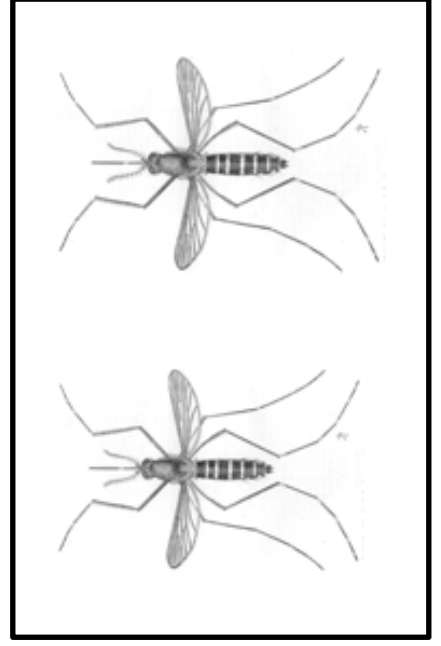
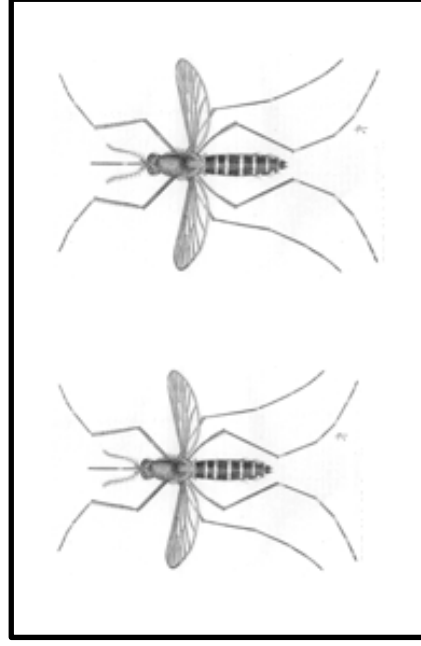
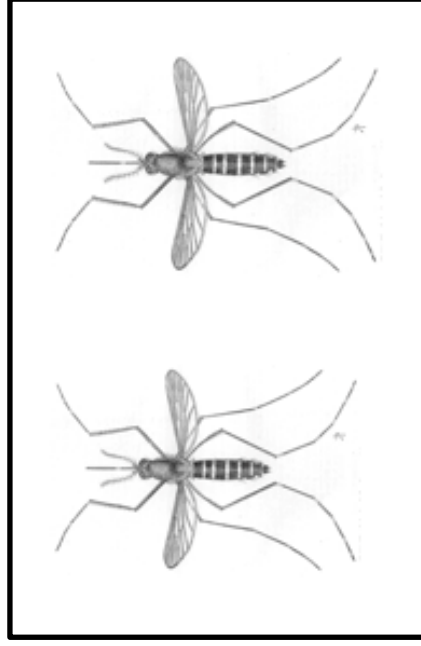
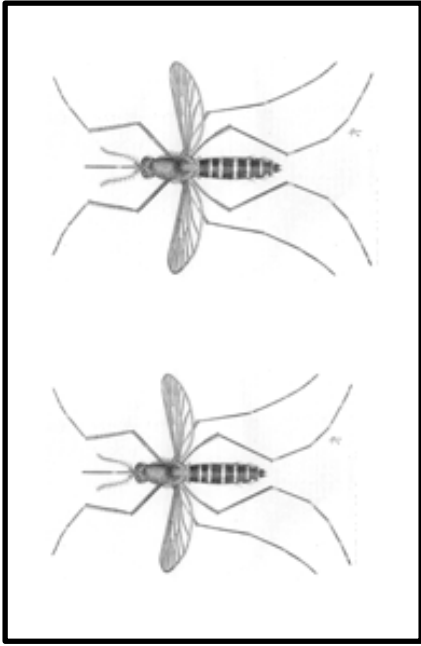
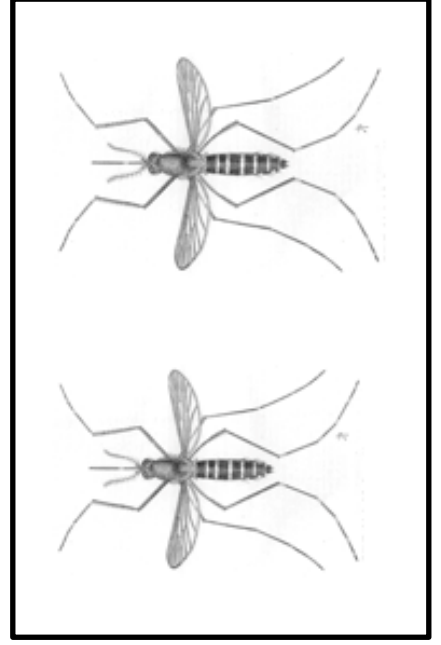
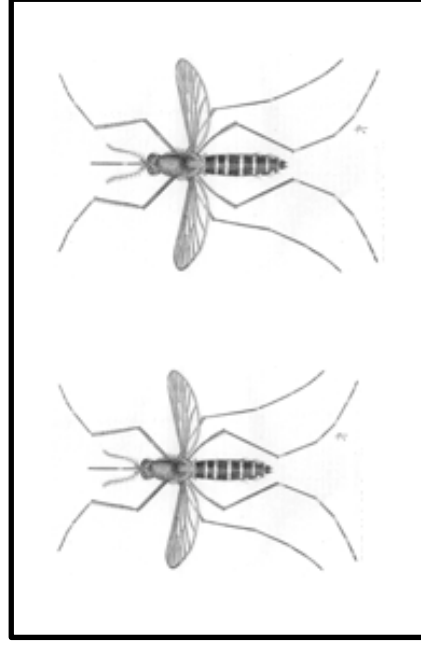
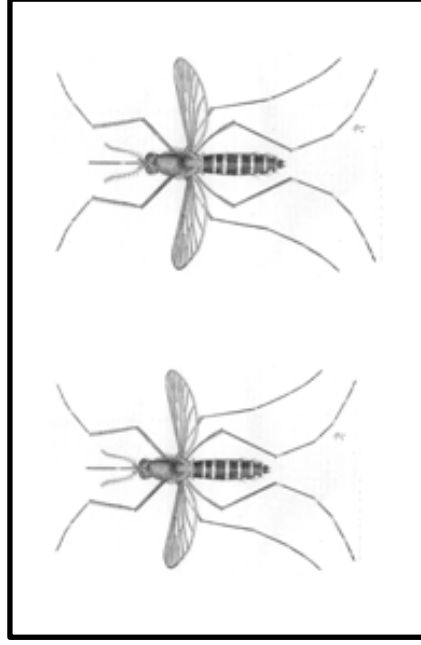
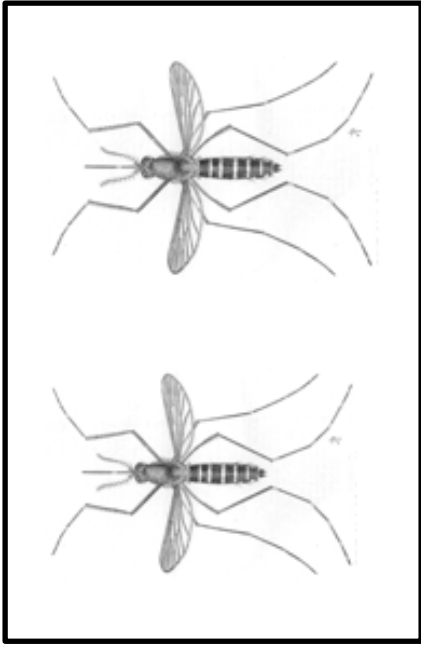












**Pesticide Spray**



**You are safe from mosquitoes for 2 turns.**

**Pesticide Spray**



**You are safe from mosquitoes for 2 turns.**

**Pesticide Spray**



**You are safe from mosquitoes for 2 turns.**

**Pesticide Spray**



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**Pesticide Spray**



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**Pesticide Spray**



**You are safe from mosquitoes for 2 turns.**

**Pesticide Spray**



**You are safe from mosquitoes for 2 turns.**

**Pesticide Spray**



**You are safe from mosquitoes for 2 turns.**

**Smudge**

**If plot is teff, plot is lost for the rest of the game.**

**Smudge**

**If plot is teff, plot is lost for the rest of the game.**

**Smudge**

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is lost for the rest  
of the game.**

**Smudge**

**If plot is teff, plot  
is lost for the rest  
of the game.**

**Smudge**

**If plot is teff, plot  
is lost for the rest  
of the game.**

**Bed Net**



**This plot is safe  
from mosquitoes  
for 2 turns.**

**Bed Net**



**This plot is safe  
from mosquitoes  
for 2 turns.**

**Bed Net**



**This plot is safe  
from mosquitoes  
for 2 turns.**

**Bed Net**



**This plot is safe  
from mosquitoes  
for 2 turns.**

**Bed Net**



**This plot is safe  
from mosquitoes  
for 2 turns.**

**Bed Net**



**This plot is safe  
from mosquitoes  
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**Bed Net**



**This plot is safe  
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**This plot is safe  
from mosquitoes  
for 2 turns.**

**Bed Net**



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for 2 turns.**

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from mosquitoes  
for 2 turns.**

**Bed Net**



**This plot is safe  
from mosquitoes  
for 2 turns.**

**Bed Net**



**This plot is safe  
from mosquitoes  
for 2 turns.**

**Your grandmother has  
gone temporarily blind from  
working with red pepper for  
two long.**

**If the dice rolls to a red  
pepper crop lose  
one harvest.**

**Your grandmother has  
gone temporarily blind from  
working with red pepper for  
two long.**

**If the dice rolls to a red  
pepper crop lose  
one harvest.**

**Your grandmother has  
gone temporarily blind from  
working with red pepper for  
two long.**

**If the dice rolls to a red  
pepper crop lose  
one harvest.**

**EPIDEMIC**

**DISASTER STRIKES**

**Lose harvest from farms  
1-3 for one season.**

**Your grandmother has gone temporarily blind from working with red pepper for two long.**

**If the dice rolls to a red pepper crop lose one harvest.**

**Your grandmother has gone temporarily blind from working with red pepper for two long.**

**If the dice rolls to a red pepper crop lose one harvest.**

**Your grandmother has gone temporarily blind from working with red pepper for two long.**

**If the dice rolls to a red pepper crop lose one harvest.**

**Your grandmother has gone temporarily blind from working with red pepper for two long.**

**If the dice rolls to a red pepper crop lose one harvest.**

**FACT:**

**Teff can grow in black soil because it tolerates seasonal water logging.**

**Your grandmother has gone temporarily blind from working with red pepper for two long.**

**If the dice rolls to a red pepper crop lose one harvest.**

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**FACT:**

**Anopheles arabiensis females are zoophagic and anthropophagic meaning they can take blood from animals or from humans.**

**FACT:**

**Anopheles arabiensis is the dominant vector of human malaria parasites in many parts of sub-Saharan Africa.**

**FACT:**

**Teff is self-pollinating and produces only small amounts of pollen.**

**FACT:**

**Red pepper is harvested and processed mainly by women. Harvesting and processing red pepper can cause temporary blindness.**

**FACT:**

**Anopheles arabiensis mosquitoes prefer to lay their eggs in small puddles instead of large ponds.**

**FACT:**

**Mosquitoes that buzz are of the Culex genus and are not a vector for malaria. Mosquito workers say A. arabienses “sing”.**

**FACT:**

**Anopheles arabiensis females are zoophagic and anthropophagic meaning they can take blood from animals or from humans.**

**FACT:**

**Red pepper is insect pollinated and mosquitoes feed on the flowers' nectar rather than blood. Females require a blood meal to produce eggs.**

**FACT:**

**Anopheles arabiensis mosquitoes like to bite near the ankles or lower body.**

**FACT:**

**Research shows that maize growing farms in Ethiopia have a malaria rate about ten times higher than farms growing other crops.**

