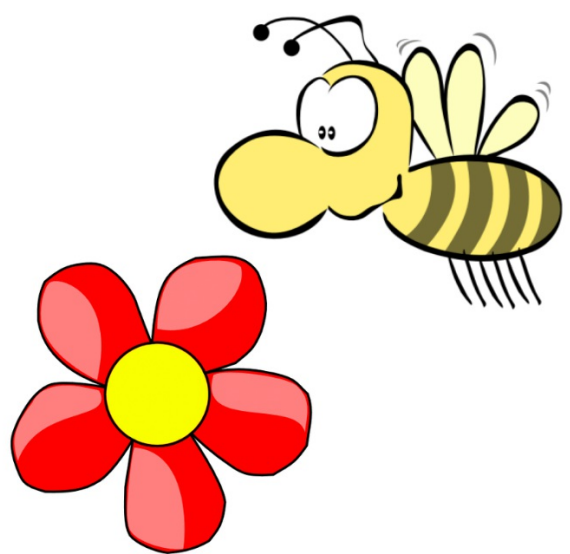


A Problem with Bees



Vocabulary

cornerstone

essential

evacuate

epidemic

calamity

populous

crisis

Colony Collapse Disorder

estimate

colossal

repercussions

primer

industry

proboscis

engineered

crop yields

frightening proportions

speculation

claim

retracted

account for

realm

onset

industrialization

urbanization

disruption of habitat

introduction of invasive species

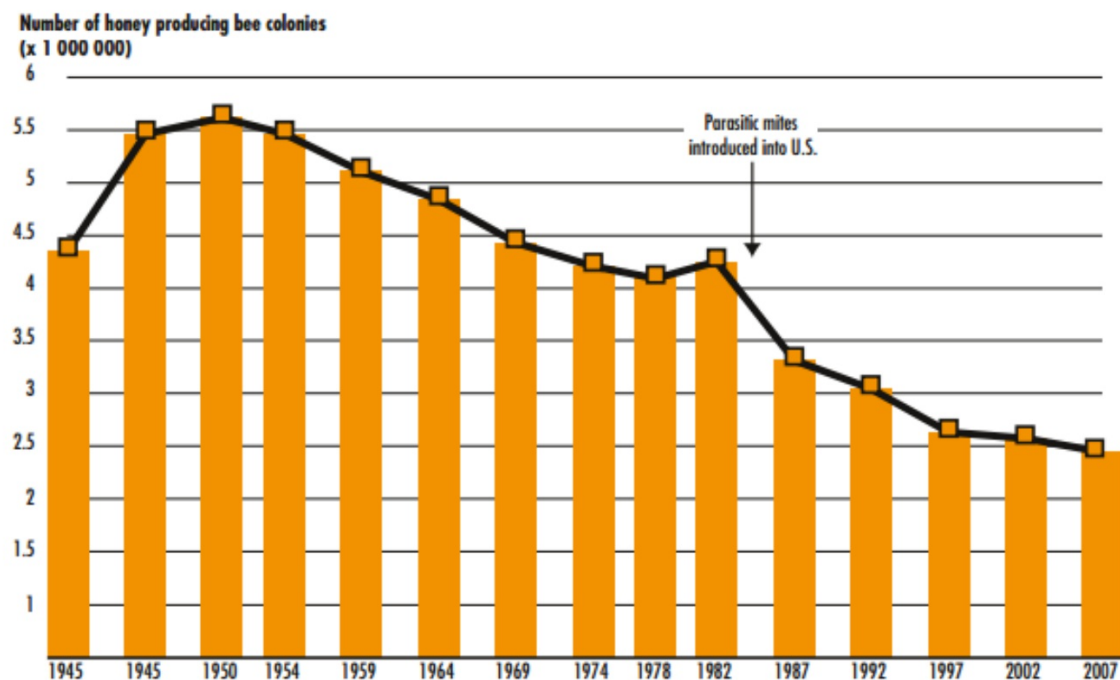
Identify the Problems

Watch the video clip and identify as many problems as you can.



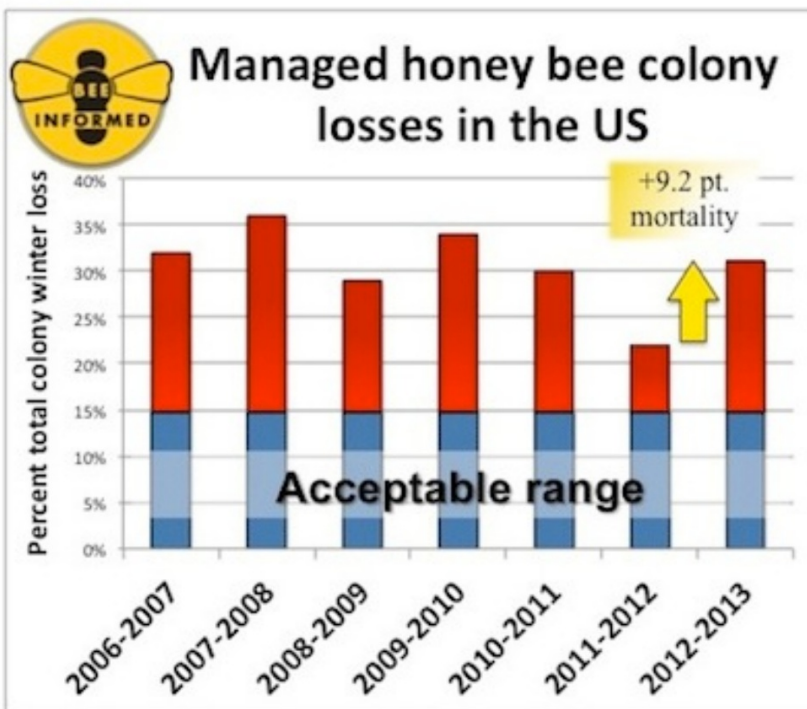
Stop at 19:34.

Figure 4: US honey-producing colonies



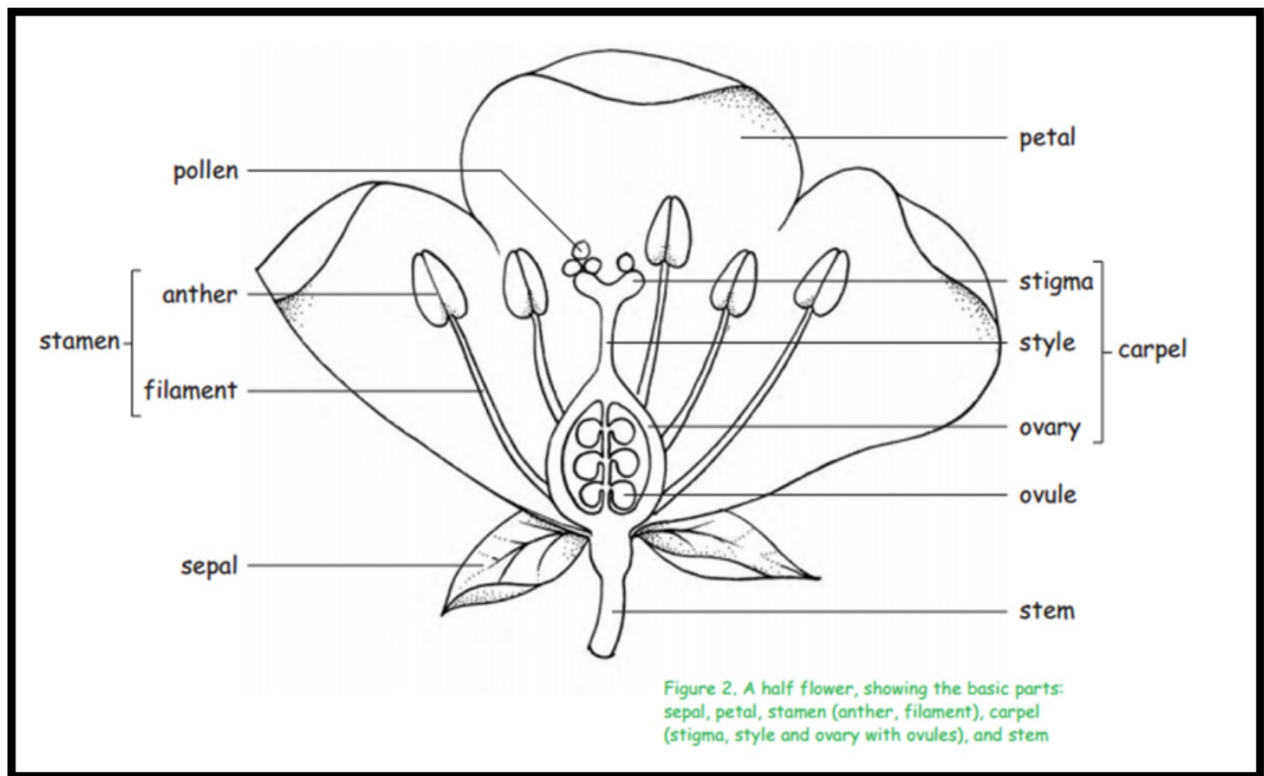
Data source: U.S. Department of Agriculture's (USDA) National Agricultural Statistics Service (NASS) NB: Data collected for producers with 5 or more colonies. Honey producing colonies are the maximum number of colonies from which honey was taken during the year. It is possible to take honey from colonies which did not survive the entire year.

Taken from: http://www.unep.org/dewa/Portals/67/pdf/Global_Bee_Colony_Disorder_and_Threats_insect_pollinators.pdf



Honeybee colony losses over the last seven years. *Image: Engelstorp et al.*

Parts of a Flower



Let's talk about the STRUCTURE... of Flowers

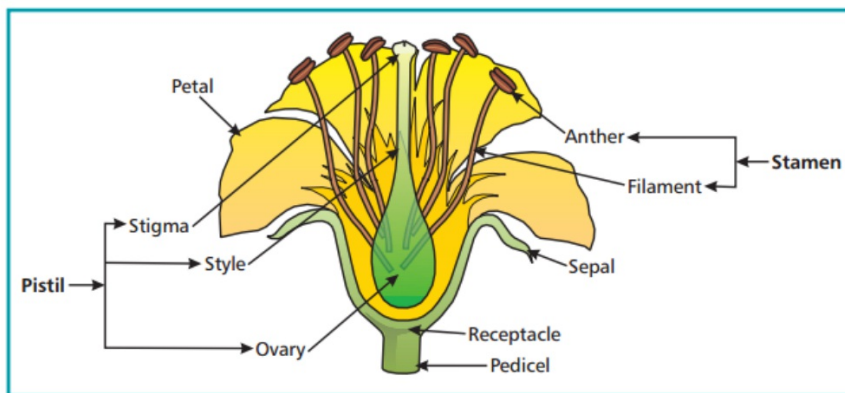
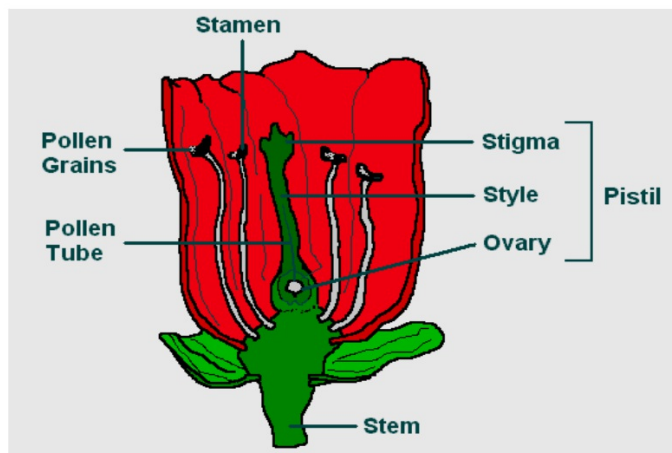
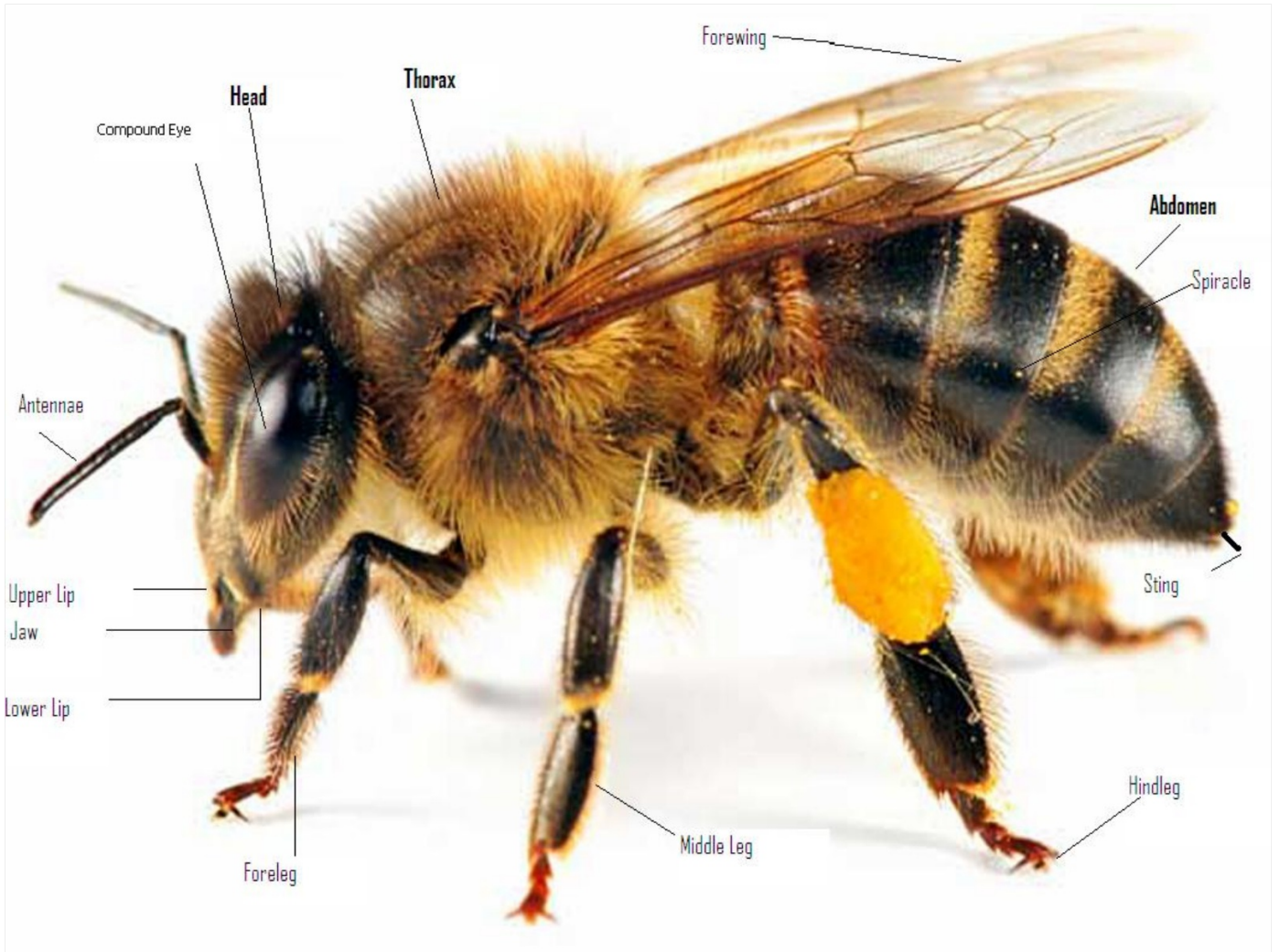


FIGURE 1. Major parts of a flower.





Let's talk about the STRUCTURE... of Bees





Your Task: Use the Materials to Create a Hand Pollinator

Before we begin - let's evaluate the materials:

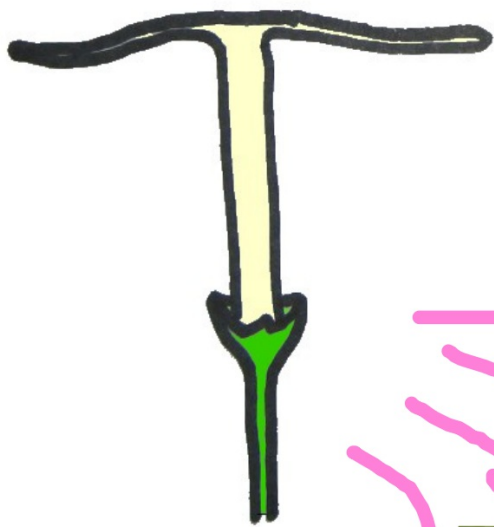
1. Marbles
2. Tape
3. Erasers
4. Aluminium Foil
5. Pompon
6. Pipe Cleaner
7. Other

- draw
- idea getters
- Science
- builder

Next - it's time to design your hand pollinator!

Independently: Use graph paper to design at least 2 (or up to 4) designs!

Team: Share your ideas and choose the best attributes or features from each one to come up with a team design.



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