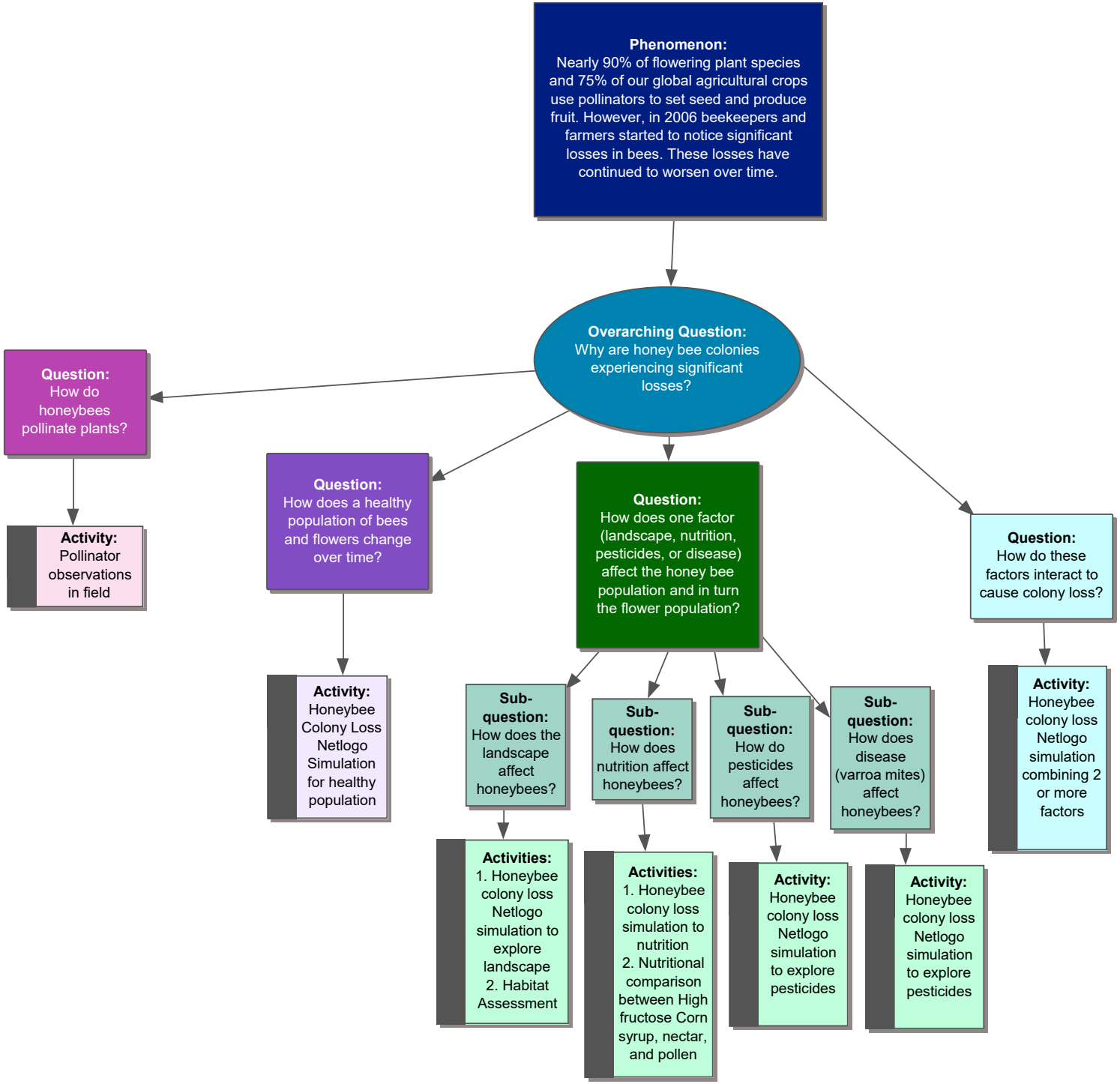
Phenomenon:
Nearly 90% of flowering plant species and 75% of our global agricultural crops use pollinators to set seed and produce fruit. However, in 2006 beekeepers and farmers started to notice significant losses in bees. These losses have continued to worsen over time.
Overarching Question:
Why are honey bee colonies experiencing significant losses?
Question:
How do honeybees pollinate plants?
Activity:
Pollinator observations in field
Question:
How does a healthy population of bees and flowers change over time?
Activity:
Honeybee Colony Loss Netlogo Simulation for healthy population
Question:
How does one factor (landscape, nutrition, pesticides, or disease) affect the honey bee population and in turn the flower population?
Sub-question:
How does the landscape affect honeybees?
Activities:
1. Honeybee colony loss Netlogo simulation to explore landscape
2. Habitat Assessment
Sub-question:
How does nutrition affect honeybees?
Activities:
1. Honeybee colony loss simulation to nutrition
2. Nutritional comparison between High fructose Corn syrup, nectar, and pollen
Sub-question:
How do pesticides affect honeybees?
Activity:
Honeybee colony loss Netlogo simulation to explore pesticides
Sub-question:
How does disease (varroa mites) affect honeybees?
Activity:
Honeybee colony loss Netlogo simulation to explore pesticides
Question:
How do these factors interact to cause colony loss?
Activity:
Honeybee colony loss Netlogo simulation combining 2 or more factors