

# Problem-Based Learning Unit Template

<b>Topic</b>	
<b>4.4 Life Processes/ 4.5 Living Systems</b>	
<b>Goals/Objectives/SOL</b>	
4.4	The student will investigate and understand basic plant anatomy and life processes. Key concepts include a) the structures of typical plants and the function of each structure; b) processes and structures involved with plant reproduction; c) photosynthesis; and d) adaptations allow plants to satisfy life needs and respond to the environment.
4.5	The student will investigate and understand how plants and animals, including humans, in an ecosystem interact with one another and with the nonliving components in the ecosystem. Key concepts include a) plant and animal adaptations; b) organization of populations, communities, and ecosystems and how they interrelate; c) flow of energy through food webs; <del>d) habitats and niches;</del> <del>e) changes in an organism's niche at various stages in its life cycle; and</del> f) influences of human activity on ecosystems.
<b>Theme</b>	
Interaction of plants and animals in the ecosystem.	
<b>Problem Question</b>	
How could you educate your community about the importance of a stable bee population and ways to prevent their future decline and therefore reduce the negative effects on Carroll County's ecosystem and economy?	
<b>Scenario</b>	
Honeybees are becoming scarce in Carroll County and across the United States. Scientists are not sure what is happening to the bees but the impact is evident in the local orchards and gardens. Your job is to identify possible causes and the resulting effects of a diminished bee population and report to the Virginia Natural Resources Conservation Service about how to educate the community about importance of the bees' role in our ecosystem.	

## **Student Role**

Researcher for the Virginia Natural Resources Conservation Service

## **Resources**

Internet  
Local Bee Keepers  
Local Orchard owners  
Virginia Cooperative Extension  
Books

## **Culminating Activity**

Develop a plan to educate your community about the importance of bees in the Carroll County/ Virginia ecosystem.

