



OFFICE OF K-12 SCIENCE & PLANETARIUM

SCIENCE PARENT NEWSLETTER

SIXTH GRADE

UNIT 2

LIFE SCIENCE

IN SCHOOL...

6th grade students work on the NGSS standards for middle school. The middle school standards build upon students' science understanding from earlier grades and from the disciplinary core ideas, science and engineering practices, and crosscutting concepts of other experiences with physical and earth sciences. There are four life science disciplinary core ideas in middle school: 1) From Molecules to Organisms: Structures and Processes, 2) Ecosystems: Interactions, Energy, and Dynamics, 3) Heredity: Inheritance and Variation of Traits. These same disciplinary core ideas will follow them in high school.

STUDENTS WILL KNOW...	STUDENTS WILL BE ABLE TO...
<ul style="list-style-type: none">• Matter and energy cycle throughout ecosystems.• Ecosystem Dynamics, Functioning, and Resilience.• Biotic and abiotic factors in an ecosystem have effects on population.• Biodiversity is essential for a population and ecosystem to survive.	<ul style="list-style-type: none">• Develop a model to describe phenomena.• Analyze and interpret data to provide evidence for phenomena.• Construct an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.

AT HOME...

ASK YOUR STUDENTS...	ENGAGE YOUR STUDENTS...
<ul style="list-style-type: none">• How does a system of living and non-living things operate to meet the needs of the organisms in an ecosystem?• How are things connected in an ecosystem?• What can we learn from patterns?	<ul style="list-style-type: none">• Organisms, and populations of organisms, are dependent on their environmental interactions both with other living things and with nonliving factors.• In any ecosystem, organisms and populations with similar requirements may compete with each other for limited resources which constrains their growth and reproduction.• Food webs are models that demonstrate how matter and energy is transferred between groups interacting in an ecosystem.• Ecosystems are dynamic in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations• Small changes in one part of a system might cause large changes in another part

IN THE COMMUNITY...

- Using the food web created in class, visit a local forest preserve or park and look for evidence of the food web in action. Can you find evidence of herbivores feeding on producers? Evidence of other consumers? Can you find evidence of or even examples of the decomposers found in our native ecosystems?
- Do some research on one or more Illinois' threatened and endangered species. Why did this specie/s become endangered? Scientist across the planet use the acronym HIPPO (Habitat Loss, Invasive Species, Population, Pollution, Overconsumption). Which category impacted the species you studied?

STEM Expo...

- Present your research on an endangered species. Teach people through your project why the organism's population declined, what is being done to save the organism and how people can help.
- Create a food web centered on a local food web or focus on one group within the food web (producers, consumers, decomposers). What is the contribution of the group to the food web? What happens if that group were to disappear?
- Do a presentation or research on one of the threats to biodiversity (HIPPO).
- Research the recovery of an ecosystem devastated by either a manmade or natural disaster. How long does the recovery take? Is there one group better suited for survival?
- Present your in class project "Construct an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem."