Episode Four 204 – Life Cycles (Life Science)

So which came first, the chicken or the egg? Award-winning science teacher and host Rick Crosslin shows you how life, whether it's plants or creatures, is really one endless, fascinating circle! Imagine a seed that grows so fast, it's a full plant in just over a week – and dead less than a month later, right here in Indiana. From insects to people, from seeds to DNA – learn how we are part of the cycles that keep turning 'round and 'round in the world around us.

Funded by:
Dr. Laura Hare Charitable Trust
Indiana Department of Education – Center for School Improvement and Performance
Veolia Water Indianapolis

Overview
Students will gain an understanding of the parts of a flower.

Background information
A plant has many parts: roots that soak up nutrients, water, and provide support, a stem for stability, leaves that make food and the flower. The job of the flower is to pass on the traits of the plant to the next generation by pollination and fertilization. The flower is the reproductive part of the plant. In this lesson students will learn how the flower reproduces through pollination. Pollen moves from the stamen to the pistol. This is called fertilization and it allows the seeds to develop. The purpose of the flower is to attract pollinators for fertilization to enables the plant to reproduce.

Connections to the Indiana Academic Standards for Science, Grades 4 - 7
4.1.4, 4.4.5, 4.4.6
5.1.1, 5.1.3, 5.2.4, 5.2.7
6.1.2, 6.4.3
7.1.3, 7.2.7, 7.4.3
Science Process Skills
- Classifying
- Communicating
- Identifying
- Inferring
- Measuring
- Posing questions

Estimated Time Requirement
One 35-minute session

Materials for dissecting the part of a flower
Parts of a flower diagram, downloaded from the Indiana Expeditions website
- Flower: such as a snapdragon, lilly, delphinium
- Scissors
- Clear tape
- Hand lens
- Paperclip
- Pencil

Objectives
Students will be able to:
- identify the parts of a flower
- dissect a flower
- create a diagram and identify the parts of a flower

Procedure
Anticipatory set:
- Visit the website: www.IndianaExpeditions.org
- View the Life Cycles Indiana Expeditions segment
- View the video lesson from the this episode

Preparation prior to the lesson:
- Gather materials
- Lesson sequence:
  - Inform the students that today they are all going to learn the parts of a flower by dissecting flower buds. Discuss the parts of a flower.
  - Pull off a single bud of a snapdragon
  - Using the hand lens observe the stamen and pistol
  - Discuss the process of pollination
  - Remove the outer petals
  - Tape the petal to the diagram
  - Observe the pollen on the stamen
  - Remove one of the stamen
  - Tape the stamen to the diagram
  - Observe the pistol with the hand lens
  - Cut the pistol open with the scissors
• Using the hand lens observe the seed pod within the pistol
• Tape the seed pod and pistol to the diagram
• Label the diagram with the parts of the flower

Closure:
• Discuss, as a class and then ask the students how this relates to real-world pollination
• Discuss, as a class, the different ways flowers are pollinated: wind, insects, bats, etc.
• Discuss, as a class, the different ways seeds are dispersed

Suggested Student Assessment
Objectives:
Ask students to write and/or illustrate what they did during this activity and what they learned from their participation in the activity.
Select other flowers for students to compare and contrast the parts.

Extending the Lesson
Ask students to dissect other flowers
Encourage students to do some research on the different types of flowers and pollination.

Source of Lesson
The Children’s Museum of Indianapolis – SciencePort Investigation,
www.ChildrensMuseum.org/SciencePort

To learn more, visit the website at www.Indiana Expeditions.org