



Charlotte/Wilbur Lives On!

Introduction

Objective:

Students will conduct research about pigs and/or spiders to examine their life cycle and reproduction.

Students will organize their data and share findings in a flipbook that identifies factual and fictional information about the organism.

Academic Content Standards:

- ❖ National Science Education Standards: Life Science
 - *Characteristics of organisms*
 - *Life cycles of organisms*
 - *Organisms and environments*
 - *Structure and function in living systems*
 - *Reproduction and heredity*
 - *Regulation and behavior*
 - *Populations and ecosystems*
 - *Diversity and adaptation of organisms*
 - *Biological evolution*
 - *Interdependence of organisms*
 - *Matter, energy and organization in living systems*
- ❖ National Science Education Standards: Science as Inquiry
 - *Abilities necessary to do scientific inquiry*
 - *Identify questions and concepts that guide scientific investigations*
 - *Design and conduct scientific investigations*
 - *Understanding about scientific inquiry*
- ❖ Ohio Academic Content Standards for Science: Life Sciences
 - *Students demonstrate an understanding of how living systems function and how they interact with the physical environment. This includes an understanding of the cycling of matter and flow of energy in living systems. An understanding of the characteristics, structure and function of cells, or organisms and of living systems are developed as well as a deeper understanding of the principles of heredity, biological evolution and the diversity and interdependence of life. Students also demonstrate an understanding of different historical perspectives, scientific approaches and emerging scientific issues associated with the life sciences.*
 - *Benchmark: No relevant indicators for grade 4 (focus is on plants)*
 - *Benchmarks: B and C (5th Grade)*
 - *Benchmarks: A and B (6th Grade)*
- ❖ Ohio Academic Content Standards for Science: Scientific Ways of Knowing
 - *Students realize that the current body of scientific knowledge must be based on evidence, be predictive, logical, subject to modification and limited to the natural world. This includes demonstrating an understanding that scientific knowledge grows and advances as new evidence is discovered to support or modify existing theories, as well as to encourage the development of new theories. Students are able to reflect on ethical scientific practices and demonstrate an understanding of how the current body of scientific knowledge reflects the historical and cultural contributions of women and men who provide us with a more reliable and comprehensive understanding of the natural world.*
 - *Benchmark: A (4th, 5th & 6th Grades)*

Getting Started

Materials:

- Research materials including non-fiction books, websites, encyclopedias, etc., related to the lifecycle and characteristics of pigs and /or spiders.
- Flipbook made from construction paper, plastic bindings or rings tied together with ribbon or String.
- Markers, crayons, etc.
- Student instruction sheets – Charlotte Lives On and Wilber Lives On.

Vocabulary:

- Reproduction
- inherited and learned characteristics
- Life cycle

Technology:

- Include the use of electronic resources during research. Locate and bookmark websites for students that have less experience in searching the Internet and students with special needs.
- Student presentations can be completed using presentation software (e.g., PowerPoint or Hyperstudio stacks) in place of flipbooks. Illustrations can be scanned into the presentation.

Lesson

Orientation Activity:

Create a class list of facts gathered from The Children's Theatre production of *Charlotte's Web*, which relate to the life cycle and reproduction of pigs and/or spiders. Option: Divide the class in half, each half assigned to either the life cycle of a pig or that of a spider. Both groups will brainstorm, discuss, and then share their list with the entire group. Record the information on a class chart.

Learning Activity:

Distribute the student instruction sheets outlining the assignment. Review the instructions with students. Emphasize the research required to answer the stated questions and that required to complete the flipbook to illustrate research findings. Students will identify and distinguish factual information about the organism from fantasy or opinion.

Provide class time for the research. Have print, non-print material and electronic access available to aid the students. Additional time outside the classroom may be necessary to complete the work. Each student creates their book and then shares it within a small group. Each student within the group may ask one question related to the findings shared by each student. The group then makes a list of the data that was found to be common for the organism and a list of the data that one student collected and others did not. Share these ideas with the class. Identify details of fact or fantasy as related to the dramatic production and the "real" life of a pig or spider.

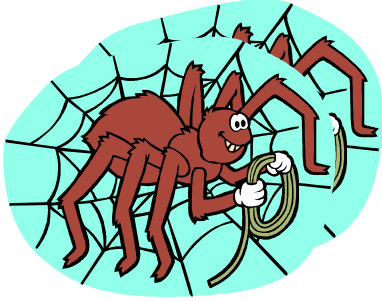
Evaluation and Follow-Up

Assessment Tools and Methods:

- The flipbook and written drafts will serve as the evaluation of student work.
- Create a grading rubric that fits the needs of the assignment for this activity.
- As students conduct research, observe the type of resources they use. Suggest higher level resources as needed. Record anecdotal notes about the students work habits, time management, research and organizational skills.

Interdisciplinary Connection:

Language Arts: Advise students to complete a bibliographic listing of the resources used for their research. Completion of the flipbook may include specific writing application structures and writing process requirements. Create a rubric to evaluate the content and also the written expression used in the flipbook.

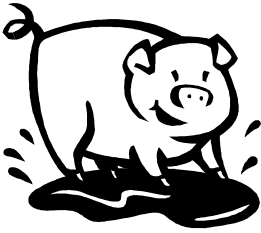


CHARLOTTE LIVES ON! INSTRUCTION SHEET

Charlotte lives on! Through the magic of *Charlotte's Web*, we discovered many interesting facts and fantasy ideas about spiders and their lives. Even though Charlotte's life soon came to an end, amazingly, her offspring carried on many of her characteristics. How does this happen? What process allows this to happen? This is your challenge to discover!

- What? An illustrated flipbook for an identified audience
- When? Over the next few class periods, final copy is due _____
- Where? At school and at home if necessary
- Who? You and your resources
- Why? To provide evidence of your understanding of factual and fantasy information, and the life cycle and reproduction process of spiders as part of an ecosystem
- How? This is the fun part!!!!
 1. My audience is _____(age of children or adults).
 2. My flipbook will be constructed of _____
_____ using _____
for the illustrations.
 3. I will provide information about the lifecycle of a spider, how a spider carries on characteristics from it's parents/relatives, identify the difference between factual and fantasy information about spiders, share characteristics that are inherited or learned.
 4. Be creative now... what other things will you share in your flipbook?
_____ and _____
_____.

"Ok, so where do I start?" is what you are now asking... well, how about thinking like a scientist. Ask a question, find the answer, record the data, and examine your findings. Do this again and again until you have collected the data that you need to produce the most wonderful flipbook your audience has ever read! Clarify misconceptions and justify facts in your flipbook. Make Charlotte proud!



WILBUR LIVES ON! INSTRUCTION SHEET

Wilbur lives on! Through the magic of *Charlotte's Web*, we discovered many interesting facts and fantasy ideas about pigs and their lives. Even though Wilbur's life has yet to come to an end, amazingly, his offspring would carry on many of his characteristics. How does this happen? What process allows this to happen? This is your challenge to discover!

- What? An illustrated flipbook for an identified audience
- When? Over the next few class periods, final copy is due _____
- Where? At school and at home if necessary
- Who? You and your resources
- Why? To provide evidence of your understanding of factual and fantasy information, and the life cycle and reproduction process of pigs as part of an ecosystem
- How? This is the fun part!!!!
5. My audience is _____ (age of children or adults).
 6. My flipbook will be constructed of _____
_____ using _____
_____ for the illustrations.
 7. I will provide information about the lifecycle of a pig, how a pig carries on characteristics from it's parents/relatives, identify the difference between factual and fantasy information about pigs, share characteristics that are inherited or learned.
 8. Be creative now... what other things will you share in your flipbook?
_____ and _____
_____.

"Ok, so where do I start?" is what you are now asking... well how about thinking like a scientist. Ask a question, find the answer, record the data, and examine your findings. Do this again and again until you have collected the data that you need to produce the most wonderful flipbook your audience has ever read! Clarify misconceptions and justify facts in your flipbook. Make Wilbur proud!