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Raising Silkworms

Outline:

- A. Target Audience: 5th/6th graders
- B. Set up environment for silkworm development in classroom
- C. Receive eggs and complete Worksheet 1
- D. Begin Reading *Project Mulberry* chapters 1-7
- E. Complete Worksheet 2
- F. Continue reading chapters 8-13 while working on Worksheet 3
- G. Finish the book by reading chapters 14-16
- H. Students will do cocoon and silk activity and complete the project with Worksheet 4

Detailed Instructions:

Two weeks prior to beginning activity: Librarian/Teacher will order silkworm eggs and upon arrival, set up an environment for them to begin developing and hatching. When a change in color begins, start reading the book and introducing the activity to the children. This will ensure a majority of the activity time is spent watching the larvae develop.

Activity (Chapters 1-3): Begin by showing students the eggs that are soon ready to hatch and have the children draw what they see on the worksheet. Inform students that we will be following Julia and Patrick as they embark on the ups and downs of raising silkworms. Begin reading *Project Mulberry* three chapters per week, discussing key points in each chapter. A few of them are highlighted below.

Mulberry trees (Chapters 4-7): After reading about mulberry trees being the primary food source of silkworms, have the children do some research in the library to determine what a mulberry tree looks like. Make copies or have them trace the leaf. Their mission until the next meeting is to find a mulberry tree in the community.

Larva Development (Chapter 10-13): As the larvae begin to grow, have the children document their growth by taking measurements over the course of the next few weeks on the worksheet. The children will also draw the larva on the worksheet.

Silk Collection (Chapter 14-16): Once the book is completed and the larvae have spun their cocoons, the children will collect and spin the silk. Using a hot plate and a pot of water, cocoons will be boiled until they have loosened. Then students will twist several strands together into a thread. Students will also complete research on uses of silk and how to dye silk.

Silkworm care:

- 1) A shoebox, plastic tote, or a terrarium with ventilation holes will work to house silkworms. A clear container is best for viewing.
- 2) Feed daily using several fresh mulberry leaves, or specific silkworm food as a substitute. Wash hands thoroughly before handling the food to avoid bacterial contaminants which can harm the larvae.
- 3) Clean the droppings from the container regularly to avoid mold and pathogens to protect the larvae.
- 4) Ideal temperatures for silkworms lie between 78-88 degrees Fahrenheit. Beware of condensation.
- 5) Be cautious not to try and keep too many larvae.
- 6) Handle silkworm larvae as little as possible as they are very fragile. If necessary, wash hands thoroughly and be very gentle.

Silkworm life cycle schedule:

- 1) Eggs hatch in 6-20 days.
- 2) Caterpillars eat for about 26 days before spinning silk.
- 3) It takes 3 days to spin a cocoon and turn into a pupa.
- 4) Moths emerge from the cocoon after 21 days.
- 5) Moths lay eggs two days after emerging from the cocoon.

Materials:

Silkworms can be purchased for approximately \$10 per 30 eggs.

[Niles Biological](#)

[Carolina Biological Supply Company](#)

Artificial silkworm food

<http://www.mulberryfarms.com>

<http://www.silkwormshop.com>

www.silkwormeggs.net

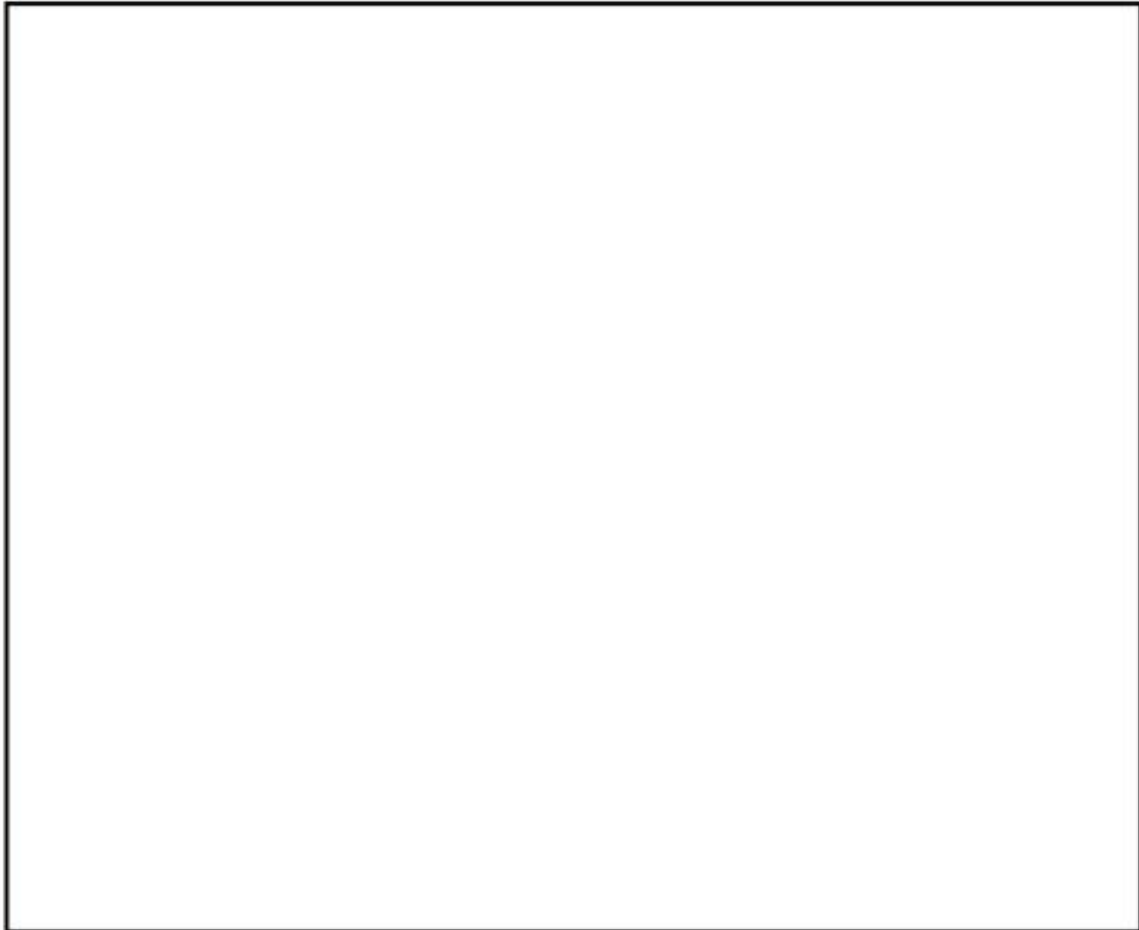
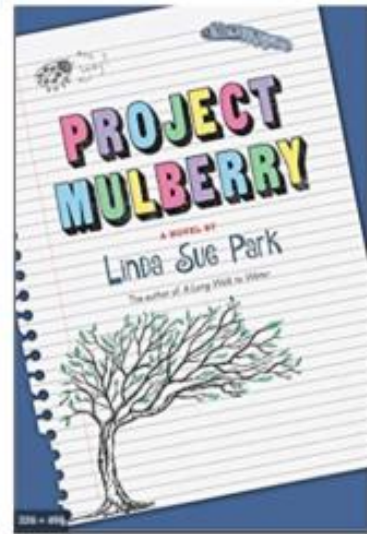
Other products

<http://www.sericulum.com>

www.ladysilkworm.com

Worksheet 1

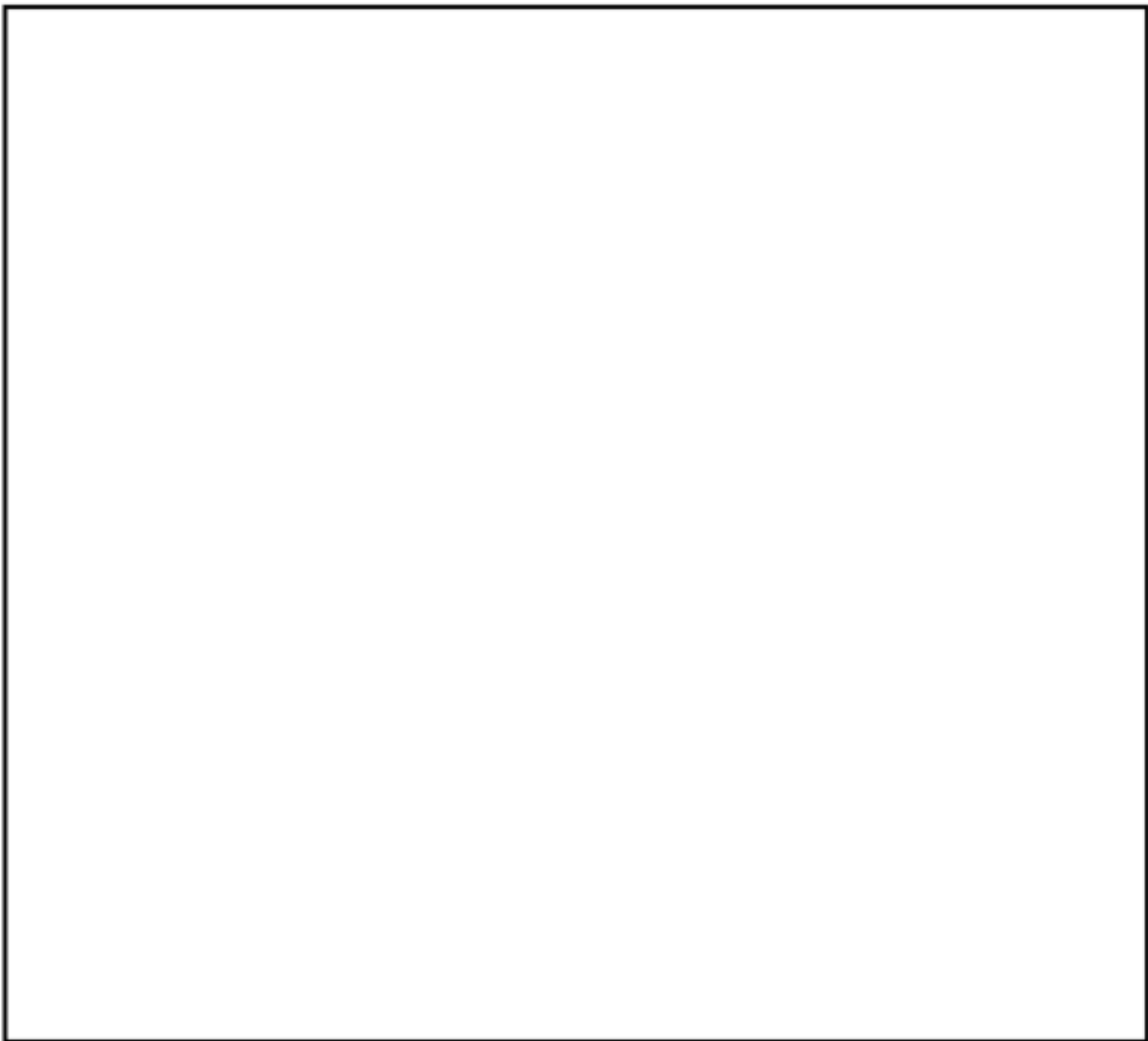
Observe the silkworm eggs and draw what you see. Look at the habitat, color, size and anything that stands out to you. You will soon be reading *Project Mulberry* and seeing what Julia and Patrick face on their journey of raising silkworms.



Worksheet 2

During library time, we will be looking for images and information on mulberry trees. Find an image of a mulberry tree leaf that you would like to trace below. Then, use your image to help you find a mulberry tree nearby.

What does a
Mulberry Tree
look like?



Worksheet 3

How is the larva changing?

Over the next few weeks, we will be measuring the growth of the larva. Each week, take down the measurements and either draw or describe what you see and changes that are developing.

Size:

Identifying Features/Changes:

Size:

Identifying Features/Changes:

Size:

Identifying Features/Changes:

Worksheet 4

Now that our silkworms have spun their cocoons, we will loosen the strands and make thread. Below describe what we did to complete this task, list several uses of silk, and describe how silk is dyed. Draw or describe below.

What is Silk used for? Can it be dyed?

How did you get the silk thread?

What are things silk is used for?

How is silk dyed?