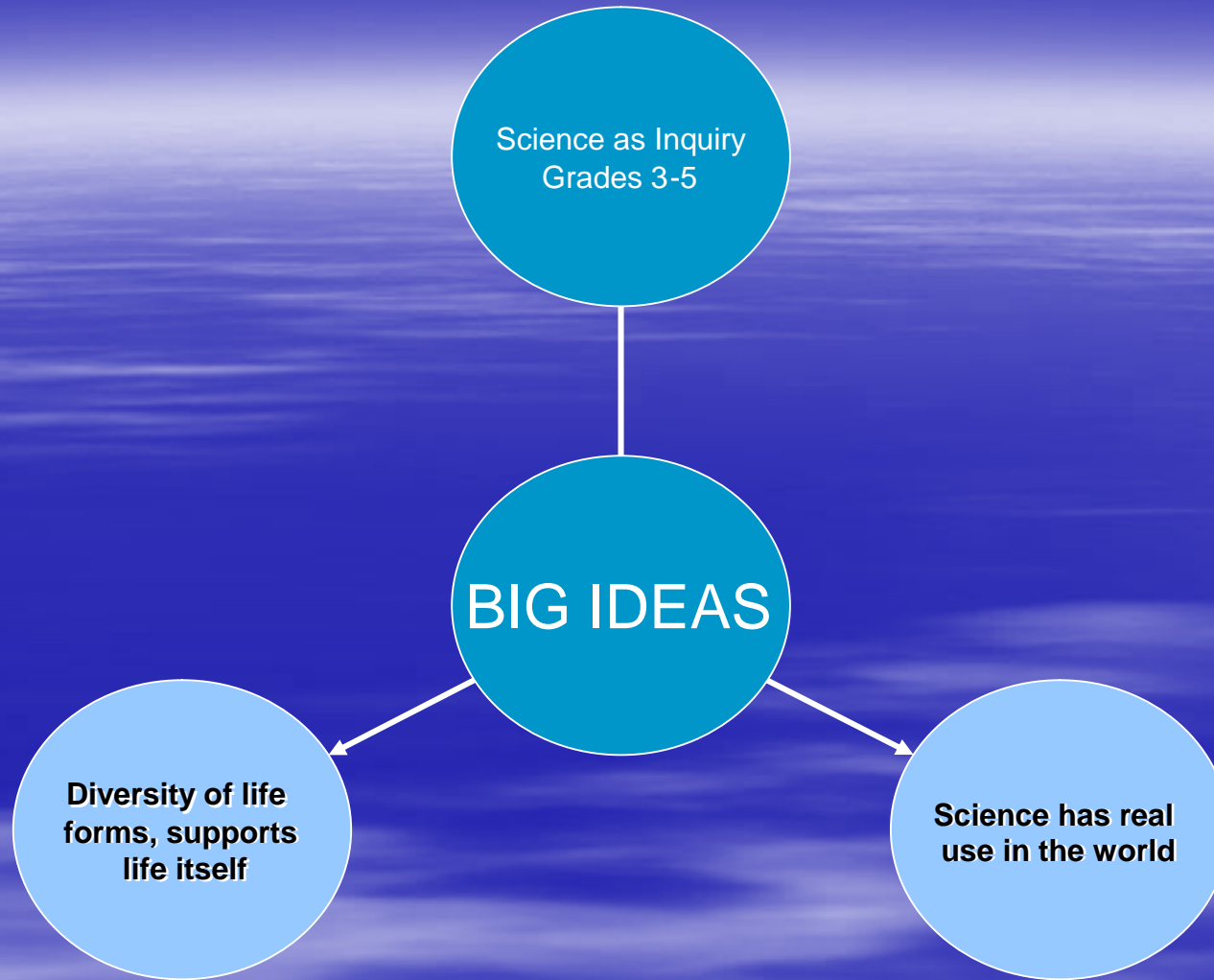


Science as Inquiry

Novato Charter School

Grades 3-5



Planned Outcomes

	3rd Grade <i>Fibers</i>	4th Grade <i>Birds</i>	5th Grade <i>Botany</i>
Memory	To remember different fibers that have been used by various cultures around the world to make clothing.	To remember different life forms (animals) that work together to support life in various ecosystems.	To remember diversity is essential to life, that plants can be categorized, and that plants adapt to their environment through mutation.
Analytical	Students can identify fibers from five different plants and animals.	Students can identify 25 different birds.	Students can identify eight different plant families and their characteristics.
Creative	Students can spin wool into yarn.	Students draw bar graphs to show results of their field studies.	Children draw and paint examples of plants studied, and grow the various plant families from seed.
Practical	Students weave wool yarn into bookmarks.	Class sends data to Cornell University as "Citizen Scientists".	Students grow plants and hold a "Plant Fair" to teach other classes about what they have learned.

Assessment Tools

- 3rd Grade: Quality and content at the Fiber Fair
- 4th Grade: Written assessment
- 5th Grade: Written assessment and quality and content at the Plant Fair.

Instructional Blueprint

	3 rd Grade <i>Fibers</i>	4 th Grade <i>Birds</i>	5 th Grade <i>Botany</i>
Overarching Learning Objective	Nature provides fibers that humans can make into textiles/clothing.	Diversity in animal life is essential to healthy ecosystems.	Plant diversity is important to healthy ecosystems.
Specific Lessons	<p><u>3.5 Weeks of lessons</u></p> <ul style="list-style-type: none"> ▪ What are fibers and where do they come from? ▪ Plant fibers ▪ Animal fibers How is wool spun into yarn? ▪ History of spinning ▪ History of Weaving - Silk: Life cycle of silkworms ▪ "Fiber Fair" ▪ Review 	<p><u>4 Weeks of lessons</u></p> <ul style="list-style-type: none"> ▪ There are many different animal life forms ▪ How do diverse animal forms support an ecosystem? ▪ Categorization of animals ▪ Comparison of animal families and characteristics ▪ Bird field markers - Outdoor observation of birds ▪ Review 	<p><u>3.5 Weeks of lessons</u></p> <ul style="list-style-type: none"> ▪ Organization in nature - Divisions of plant kingdom How do plants help other life forms. ▪ Outdoor field science education at Yosemite National Park ▪ "Plant Fair" ▪ Review

Final Product: Structure

<p>3rd Grade 3-week Block</p>	<ul style="list-style-type: none">▪ Study of 5 Fibers from plants and animals▪ Stories and songs about fibers▪ Main lesson book write-ups and illustrations▪ Fiber Fair
<p>4th Grade 4-week Block</p>	<ul style="list-style-type: none">▪ Study of 12 animal kingdoms from Protozoa to Humans▪ Focus on birds - Field study▪ Main lesson book write-ups and illustrations▪ Review for quiz
<p>5th Grade 3+ week Block</p>	<ul style="list-style-type: none">▪ Study of 8 plant families▪ Growth of plants from seed▪ Comparison and contrast of these plants▪ Garden work▪ Main lesson book write-ups and illustrations▪ Plant Fair▪ Review for quiz

Lesson Plan – 3rd Grade

Third Grade put on a “Fiber Fair”. It was outside and consisted of 5 booths, one for each of the fibers studied: cotton, flax, tapa, wool, and silk. Fourth and Fifth Grade students were divided into equal groups and visited each booth for a period of 15 minutes. The Third Graders gave oral presentations on what they learned about their booth’s fiber, read from and showed their Main Lesson Books, and led the visiting students in an activity pertinent to the booth’s fiber. Activities were: pulling apart a cotton ball to make one long “thread” of cotton, extraction of pineapple leaf fibers and the process of retting flax fibers, painting designs on tea-dyed paper to simulate tapa cloth, carding and knitting wool, and making a bracelet out of silk spinning fibers.

3rd Grade



Lesson Plan – 4th Grade

Teacher delivered the Fourth Grade lesson. She introduced the lesson, then went behind a screen to change clothes and emerged as Professor Brigand Birdsleuth from Cornell University's Department of Ornithology. Ms. Birdsleuth led the children in discussion and activities to compare and contrast bird body parts with human body parts, gave out illustrated bird cards to each child, introduced the concept of field markers, guided the students in a sketch of the bird on their cards, grouped the children to look at each others' cards, instructed the children to make a drawing of the bird in their Main Lesson Books, and lastly, sent groups of children with an adult to observe birds in the school garden.

Lesson Plan – 5th Grade

The Botany Block began by taking students out into the school's garden and nearby creek to simply appreciate the diversity of plants. Students also had the opportunity to plant a small plot in the garden and observe the beginning growth characteristics of a few plants from different plant families. Students then focused on learning how to identify the different parts of plants, different plant species, and learn about the essential role plants play in the web of life on earth. Art was integrated when students were assigned to draw and illustrate a selected plant. This work flowed into an understanding of how plants adapt to different environments and the key part pollinators play in the development of plants. In spring, students journeyed to Yosemite for a week-long Life Science outdoor education adventure led by the Yosemite Institute. The block culminated with an outdoor botany fair where students shared some of the fascinating elements about the world of plants with other classes.

5th Grade

