

CHECKLIST OF CA SCIENCE STANDARDS STRUCTURES OF LIFE MODULE

PURPOSE

The checklist is

- A sequential listing of instructional activities through each module.
- A place to document teaching and coverage of CA standards.
- A correlation tool showing where each CA standard is addressed.

Instructional sequence. The Checklist displays the sequence of instruction as the module progresses through 1) active investigation, 2) reading, and 3) assessment. The chart is broken out by investigation, part, and session number.

Most sessions start with active investigation, which may include teacher demonstration, hands-on activity, recording / writing in notebooks, class discussion, teacher explanation, and vocabulary reinforcement. Next students read, answer review questions, and discuss the reading. Finally, embedded assessments are completed, reviewed, and self-assessed. FOSS Teacher Guide and *Science Resources* book pages where CA standards are addressed are referenced through the instructional sequence.

Documentation of teaching and coverage. The Checklist helps teachers keep track of the class's progress through the module. Teachers can copy the Checklist and record the date of each instruction session. The completed Checklist can serve as a planning tool for teaching the module a second time.

Correlation with CA standards. The Checklist allows teachers to identify all the places in the teacher guide and *Science Resources* book where any specific CA standard is addressed. Teachers can quickly find the page references for any point in the instruction. The Checklist provides a table of evidence showing where the CA standards are addressed through multiple exposures and with a minimum of 20-25% hands-on activities integrated cohesively into the instruction.



FOSS AND CALIFORNIA STANDARDS

The **Structures of Life Module** supports the following Life Sciences Content Standards for grade 3.*

LIFE SCIENCES

LS3 *Adaptations in physical structure or behavior may improve an organism's chance for survival. As a basis for understanding this concept:*

- LS3a *Students know* plants and animals have structures that serve different functions in growth, survival, and reproduction.
- LS3b *Students know* examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.
- LS3c *Students know* living things cause changes in the environment in which they live: some of these changes are detrimental to the organism or other organisms, and some are beneficial.
- LS3d *Students know* when the environment changes, some plants and animals survive and reproduce; others die or move to new locations.
- LS3e *Students know* that some kinds of organisms that once lived on Earth have completely disappeared and that some of those resembled others that are alive today.

The **Structures of Life Module** supports the following Investigation and Experimentation Content Standards for grade 3.*

INVESTIGATION AND EXPERIMENTATION

I&E5 *Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:*

- I&E5a Repeat observations to improve accuracy and know that the results of similar scientific investigations seldom turn out exactly the same because of differences in the things being investigated, methods being used, or uncertainty in the observation.
- I&E5c Use numerical data in describing and comparing objects, events, and measurements.
- I&E5d Predict the outcome of a simple investigation and compare the result with the prediction.
- I&E5e Collect data in an investigation and analyze those data to develop a logical conclusion.

*Science Content Standards for California Public Schools: Kindergarten through Grade Twelve (Sacramento: California Department of Education, 2000).



Checklist of CA Science Standards for Structures of Life Investigation 1

Content Standard Focus	Investigation 1: Origin of Seeds	Teacher Guide (Science Resources) pages
LS3a, I&E5c, I&E5e	Part 1: Seed Search—3 sessions	50–60 (83–87)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led discussion (properties of fruit, bean pod)	55
	Hands-on with bean pods	56–57
	Teacher-led discussion and demonstration (seed graph)	57
	Writing in notebook (Comparing Seeds)	58
DATE OF INSTRUCTION	SESSION 2	
	Teacher-led discussion (other fruits, seed search)	58–59
	Hands-on with fruit and sorting seeds	58
	Vocabulary instruction and content review	59
DATE OF INSTRUCTION	SESSION 3	
	Student reading with discussion questions	60 (83–97)
LS3a, LS3c, I&E5c	Part 2: The Sprouting Seed—3 sessions	61–70 (88–91)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion and demonstration (seed properties, challenge, minisprouters, place mat, draining, care, storage)	65–67
	Hands-on with seeds, minisprouter, mats	65–67
	Writing in notebook (The Sprouting Seed)	65–67
	Teacher-led demonstration (setting up the class sprouter)	68–69
DATE OF INSTRUCTION	SESSION 2	
	Writing in notebook	69
	Assess Progress–Response Sheet	69
DATE OF INSTRUCTION	SESSION 3	
	Student reading and discussion questions	70 (88–91)
LS3a, I&E5a, I&E5c, I&E5d	Part 3: Seed Soak—4 sessions	71–78 (92–95)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led discussion and demonstration (changes to seeds, weighing dry bean)	73
	Hands-on with beans and balances	74
	Teacher-led class discussion (results, procedure, add water)	75
	Writing in notebook (The Soaked Seed)	75
DATE OF INSTRUCTION	SESSION 3	
	Teacher-led class discussion (minisprouter seeds and soaked beans, weigh beans, open lima beans, identify seed parts, seed coat, cotyledons, embryo)	75
	Hands-on with beans and balances	75
	Vocabulary instruction and content review	76
DATE OF INSTRUCTION	SESSION 4	
	Student reading with discussion questions	77 (92–95)
DATE OF INSTRUCTION	SESSION 5	
	Assess Progress—I-Check 1 and review	78



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Checklist of CA Science Standards for Structures of Life Investigation 2

Content Standard Focus	Investigation 2: Growing Further	Teacher Guide (<i>Science Resources</i>) pages
LS3a, I&E5a, I&E5e	Part 1: Germination—2 sessions	88–93 (96–99)
DATE OF INSTRUCTION	SESSION 1	
	Hands-on with minisprouters	90
	Teacher presentation (germination)	90
	Writing in notebook (Comparing Germinated Seeds)	90–91
	Assess Progress—Teacher Observation	91
	Teacher-led discussion (compare one structure)	91
	Vocabulary instruction and content review	92
DATE OF INSTRUCTION	SESSION 2	
	Student reading with discussion questions	93 (96–99)
LS3a, I&E5a, I&E5e	Part 2: Life Cycle of the Bean—5 sessions	94–104 (100–106)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class demonstration (hydroponic containers, holder, nutrients, seedlings in holders)	97
	Hands-on with seedlings and holders	97–98
	Teacher-led class discussion (bean growth chart)	98
	Writing in notebook (Bean Plant Growth Chart)	98–99
DATE OF INSTRUCTION	SESSION 2	
	Hands-on with harvesting beans	100
	Teacher-led discussion and demonstration (plant life cycle, bean plant life cycle sheet)	100–101
	Writing in notebook (Bean Plant Life Cycle)	101
	Assess Progress—Notebook Sheet	101
	Vocabulary instruction and content review	102
DATE OF INSTRUCTION	SESSION 3	
	Student reading with discussion questions	103 (100–103)
DATE OF INSTRUCTION	SESSION 4	
	Student summary reading with discussion questions	104 (104–106)
	Writing in notebook	104
DATE OF INSTRUCTION	SESSION 5	
	Assess Progress—I-Check 2 and review	104

Content Standard Focus	Investigation 3: Meet the Crayfish	Teacher Guide (<i>Science Resources</i>) pages
LS3a	Part 1: <i>Crayfish Structures</i>—2 sessions	114–124 (109–114)
DATE OF INSTRUCTION	SESSION 1	
	Teacher demonstration (crayfish, organism, handling)	118
	Hands-on with crayfish	118
	Writing in notebook (Crayfish Structures)	118
	Teacher-led discussion (structures, functions, crayfish diagrams, housing, crayfish habitat)	119–120
	Writing in notebook (Crayfish Diagrams)	120–121
	Teacher-led class discussion (crayfish log sheet, care, feeding basins)	122
	Hands-on with crayfish and home trays	122
	Vocabulary instruction and content review	123
DATE OF INSTRUCTION	SESSION 2	
	Student reading and discussion questions	124 (109–114)
LS3a, LS3b	Part 2: <i>Adaptation</i>—4 sessions	125–135 (115–120)
DATE OF INSTRUCTION	SESSION 1	
	Teacher discussion (crayfish behaviors)	127
	Hands-on with crayfish	127
	Writing in notebook (Crayfish Behavior)	127
	Teacher-led class discussion (crayfish behaviors)	128
DATE OF INSTRUCTION	SESSION 2	
	Teacher-led discussion (environment, organism cards)	129
	Hands-on with organism cards	129
	Teacher-led class discussion and demonstration (adaptation, movement, getting food, protection, raising young)	129–130
	Hands-on with organism cards	131
	Writing in notebook (Adaptations)	131
	Assess Progress–Notebook Sheet	132
	Hands-on with organism cards in small groups	132
DATE OF INSTRUCTION	SESSION 3	
	View and discuss video (<i>All About Animal Adaptations</i>)	132–133
	Writing in notebook (video discussion questions)	132–133
	Vocabulary instruction and content review	134
DATE OF INSTRUCTION	SESSION 4	
	Student reading and discussion questions	135 (115–120)



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Checklist of CA Science Standards for Structures of Life Investigation 3 (cont.)

Content Standard Focus	Investigation 3: Meet the Crayfish (continued)	Teacher Guide (<i>Science Resources</i>) pages
LS3a, LS3b, I&E5d, I&E5e	Part 3: Crayfish Territory—5 sessions	136–145 (121–134)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion (crayfish houses, plan, secure houses, identify crayfish, movement)	139–141
	Hands-on with crayfish	140
	Writing in notebook (Crayfish Habitat)	140
DATE OF INSTRUCTION	SESSION 2	
	Teacher-led discussion (territory, data, mating, egg-carrying, molting, birth, growth, death, life cycle)	141–142
	Hands-on with crayfish observations	141
	Vocabulary instruction and content review	143
DATE OF INSTRUCTION	SESSION 3	
	Student reading and discussion questions	144 (121–133)
DATE OF INSTRUCTION	SESSION 4	
	Student summary reading and discussion questions	145 (134–137)
	Writing in notebook	145
DATE OF INSTRUCTION	SESSION 5	
	Assess Progress—I-Check 3 and review	145

Checklist of CA Science Standards for Structures of Life Investigation 4



Content Standard Focus	Investigation 4: Meet the Land Snail	Teacher Guide (<i>Science Resources</i>) pages
LS3a	Part 1: <i>Land Snails at Home</i>—2 sessions	160–166 (139–140)
DATE OF INSTRUCTION	SESSION 1	
	Teacher introduction and demonstration (land snails, proper handling, making observations)	162
	Hands-on with snails	162
	Teacher-led class discussion (comparisons, snail needs, class habitat, snail care, log, estivation, eggs, scat)	163–164
	Vocabulary instruction and content review	165
DATE OF INSTRUCTION	SESSION 2	
	Student reading and discussion questions	166 (139–140)
LS3a, LS3c, LS3d	Part 2: <i>Compare Crayfish and Snails</i>—5 sessions	167–175 (141–144, 145–148)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion (review snail structures)	169
	Hands-on with snails (mouth, heart, breathing hole)	169
	Writing in notebook (Land Snail Observations)	169
DATE OF INSTRUCTION	SESSION 2	
	Teacher-led class discussion (review crayfish behaviors)	170
	Writing in notebook (Land Snail sheet, part 2)	170
	Teacher-led class discussion (structures and functions)	170
	Writing in notebook (Land Snail sheet, part 3)	171
DATE OF INSTRUCTION	SESSION 3	
	Teacher demonstration (Venn diagram, compare structures of crayfish and land snails)	171
	Hands-on with crayfish	171
	Writing in notebook (Comparing Structures)	171–172
	Assess Progress–Notebook Sheet	172
	Vocabulary instruction and content review	173
DATE OF INSTRUCTION	SESSION 4	
	Student reading and discussion questions	174 (141–144)
DATE OF INSTRUCTION	SESSION 5	
	Student reading and discussion questions	175 (145–148)



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Checklist of CA Science Standards for Structures of Life Investigation 4 (cont.)

<i>LS3a, LS3e, I&E5c</i>	Part 3: Snail Races—5 sessions	176–182 (149–156)
DATE OF INSTRUCTION	SESSION 1	
	Teacher demonstration (snail race-tracks, sticky dots)	178
	Hands-on with snails and racetracks	178
	Teacher-led class discussion (results, snail's pace)	179
	Vocabulary instruction and content review	180
DATE OF INSTRUCTION	SESSION 2	
	Student reading and discussion questions	181 (149–153)
DATE OF INSTRUCTION	SESSION 3	
	Student summary reading and discussion questions	182 (154–156)
DATE OF INSTRUCTION	SESSION 4	
	Assess Progress—I-Check 4 and review	182
DATE OF INSTRUCTION	SESSION 5	
	Assess Progress—Posttest	182