

CHECKLIST OF CA SCIENCE STANDARDS FOR GRADE 1

SOLIDS AND LIQUIDS

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 grade 1 sessions start with active investigation, which may include teacher demonstration, hands-on activity in small groups with guiding questions, class discussion, teacher explanation, and vocabulary reinforcement. At certain times in an investigation, students read (or are read to) and discuss the reading as a class. Students use their notebooks to respond in words or drawings to review questions focusing on the key science concepts in the investigation. 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 **Solids and Liquids Module** supports the following Physical Sciences Content Standards for grade 1.*

PHYSICAL SCIENCES

PS1 *Materials come in different forms (states), including solids, liquids, and gases. As a basis for understanding this concept:*

- PS1a *Students know* solids, liquids, and gases have different properties.
- PS1b *Students know* the properties of substances can change when the substances are mixed, cooled, or heated.

The **Solids and Liquids Module** supports the following Investigation and Experimentation Content Standards for grade 1.*

INVESTIGATION AND EXPERIMENTATION

I&E4 *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&E4a Draw pictures that portray some features of the things being described.
- I&E4b Record observations and data with pictures, numbers, or written statements.
- I&E4c Record observations on a bar graph.
- I&E4e Make new observations when discrepancies exist between two descriptions of the same object or phenomenon.

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



Checklist of CA Science Standards for Solids and Liquids Investigation 1

Content Standard Focus	Investigation 1: Solids	Teacher Guide (<i>Science Resources</i>) pages
PS1a, I&E4b	Part 1: Introduce Solids—1 session	43-52
DATE OF INSTRUCTION	SESSION 1	
	Teacher introduction (observe, solid, liquid, gas), demonstration, and explanation (matter, properties)	48-49
	Small group hands-on with guiding questions and vocabulary instruction (flexible, soft, hard, rough, smooth, transparent, opaque, flat, pointed)	49-51
	Writing in science notebook	51
	Vocabulary and content review	52
PS1a, I&E4a, I&E4b	Part 2: Sort Solid Objects—2 sessions	53-57
DATE OF INSTRUCTION	SESSIONS 1-2	
	Teacher-led discussion (review solids and vocabulary) and demonstration (sorting circles and solid objects)	55
	Small group hands-on with sorting and guiding questions	56
	Embedded assessment (writing in science notebook)	56
	Vocabulary and content review	57
PS1a, I&E4a, I&E4b	Part 3: Construct with Solids—4 sessions	58-65 (3-8)
DATE OF INSTRUCTION	SESSION 1	
	Teacher explanation (engineers) and demonstration (building towers with solid objects)	60
	Small group hands-on with guiding questions	60-61
	Embedded assessment (teacher observation, interviews)	61
	Teacher-led class discussion	61
	Writing in science notebook	61
	Vocabulary and content review	62
DATE OF INSTRUCTION	SESSIONS 2-3	
	Class hands-on with writing in science notebooks	62
DATE OF INSTRUCTION	SESSION 4	
	Student reading with discussion, review questions, and glossary instruction	63-65 (3-8)



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Checklist of CA Science Standards for Solids and Liquids Investigation 2

Content Standard Focus	Investigation 2: Liquids	Teacher Guide (<i>Science Resources</i>) pages
PS1a, I&E4b	Part 1: Liquids in Bottles—2 sessions	80-84
DATE OF INSTRUCTION	SESSIONS 1–2	
	Teacher-led class discussion (review solids) and demonstration (liquids in bottles)	83
	Center hands-on with bottles and guiding questions	83-84
	Vocabulary and content review	84
	Writing in science notebook	84
PS1a, I&E4b	Part 2: Properties of Liquids—1 session	85-91
DATE OF INSTRUCTION	SESSION 1	
	Teacher demonstration (posters, sorting bottles) and explanation (transparent, translucent, viscous)	88-89
	Class hands-on with bottles and guiding questions	89
	Teacher-led demonstration (go fish and memory cards)	89
	Center hands-on with cards	90
	Embedded assessment (teacher observation)	90
	Writing in science notebook	90
	Vocabulary and content review	91
	Writing in science notebook	91
PS1a, I&E4b, I&E4c	Part 3: Liquid Level—5 sessions	92-101 (9-15)
DATE OF INSTRUCTION	SESSION 1	
	Teacher explanation (level, surface) and demonstration (bottles and science notebook sheet)	96-97
	Center hands-on with bottles and science notebook sheet	97-98
	Embedded assessment (teacher observation and notebook sheet)	97-98
	Vocabulary and content review	99
	Writing in science notebook (create bar graph)	99
DATE OF INSTRUCTION	SESSION 2	
	Student reading with discussion, review questions, and glossary instruction	100-101 (9-15)
DATE OF INSTRUCTION	SESSIONS 3–5	
	Center hands-on (properties-exploration materials)	101
	Writing and drawing in science notebook	101



Checklist of CA Science Standards for Solids and Liquids Investigation 3

Content Standard Focus	Investigation 3: Bits and Pieces	Teacher Guide (Science Resources) pages
PS1a, I&E4b	Part 1: Solids in Containers—1 session	114-119
DATE OF INSTRUCTION	SESSION 1	
	Teacher introduction (cornmeal, rice, mung, pinto, lima beans), and demonstration (observing solids in containers)	117
	Center hands-on with guiding questions	117-118
	Vocabulary and content review	119
	Writing and drawing in science notebook	119
PS1a, I&E4b	Part 2: Separating Soup Mix—1 session	120-125
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion (review solids in containers, powders) and demonstration (separating soup mix)	123
	Center hands-on with guiding questions	123-124
	Vocabulary and content review	125
	Writing and drawing in science notebook	125
PS1a, I&E4b	Part 3: Solids in Bottles—1 session	126-131
DATE OF INSTRUCTION	SESSION 1	
	Teacher explanation (solids in bottles) and demonstration (filling and observing solids in bottles)	129
	Center hands-on with guiding questions	129
	Embedded assessment (teacher observation and interviews)	129-130
	Teacher-led class discussion (observations and static electricity)	130
	Vocabulary and content review	131
	Writing and drawing in science notebook	131
PS1a, I&E4b, I&E4c	Part 4: Separating Beads with a Screen—2 sessions	132-135
DATE OF INSTRUCTION	SESSIONS 1-2	
	Teacher-led class discussion (bead-mix sheets) and demonstration	134
	Class hands-on (bead-mix sheets and screens transparencies)	134
	Embedded assessment (science notebook sheet)	134
	Vocabulary and content review	135



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Checklist of CA Science Standards for Solids and Liquids Investigation 4

Content Standard Focus	Investigation 4: Solids and Liquids with Water	Teacher Guide (Science Resources) pages
PS1a, PS1b, I&E4a, I&E4b, I&E4c	Part 1: Solids and Water—3 sessions	147-156
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion (review solids and liquids) and demonstration (mixing solids and water in a bag)	150
	Small group hands-on with writing in science notebook	150-151
	Teacher-led class discussion, explanation (mixtures) and new vocabulary	151-152
DATE OF INSTRUCTION	SESSION 2	
	Small group hands-on with discussion and explanation (change)	153
	Writing in science notebook	153
	Teacher-led class discussion (create class bar graph) and vocabulary instruction (dissolve)	153
	Teacher demonstration (separating mixtures)	154
	Small group hands-on with discussion (solids before and after)	154
DATE OF INSTRUCTION	SESSION 3	
	Small group hands-on with discussion (observations, evaporation)	155
	Writing in science notebook	155
	Vocabulary and content review	156
PS1a, PS1b, I&E4b, I&E4e	Part 2: Liquids and Water—2 sessions	157-164 (16-22)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion (mixtures) and demonstration (adding water and recording)	160
	Small group hands-on with guiding questions	160-161
	Writing in science notebook	161
	Embedded assessment (notebook sheet)	162
	Vocabulary and content review	162
DATE OF INSTRUCTION	SESSION 2	
	Student reading, discussion, and review questions	163 (16-22)
PS1a, PS1b, I&E4b, I&E4e	Part 3: Toothpaste Investigation—2 sessions	165-169
DATE OF INSTRUCTION	SESSION 1	
	Teacher introduction (toothpaste question) and demonstration (design an investigation)	167
	Small group hands-on with guiding questions	167-168
	Writing in science notebook	168
DATE OF INSTRUCTION	SESSION 2	
	Small group hands-on with guiding questions	168
	Writing in science notebook	168
	Embedded assessment (teacher observation)	169
	Content review	169



**Checklist of CA Science Standards for Solids and Liquids Investigation 4
(cont.)**

Content Standard Focus	Investigation 4: Solids and Liquids with Water (continued)	Teacher Guide (Science Resources) pages
<i>PS1a, PS1b, I&E4b, I&E4e</i>	Part 4: <i>Changing Properties</i>—5 sessions	170-177 (23-27)
DATE OF INSTRUCTION	SESSION 1	
	Teacher introduction (heating question) and demonstration (margarine, chocolate chips, cups, in hot water bath)	173
	Small group hands-on with guiding questions	173
	Embedded assessment (teacher observation)	173
	Teacher led discussion (melting, cooling) and demonstration (melting crayon and freezing ice cube, margarine, chocolate chip)	174
DATE OF INSTRUCTION	SESSION 2	
	Teacher introduction and demonstration	175
	Small group hands-on (frozen items including bottles of liquids)	175
	Embedded assessment (teacher observation)	175
	Vocabulary and content review	176
DATE OF INSTRUCTION	SESSION 3	
	Small group hands-on (observing frozen, viscous liquids again)	176
DATE OF INSTRUCTION	SESSION 4	
	Student reading, discussion, and review questions	177 (23-27)
DATE OF INSTRUCTION	SESSION 5	
	End-of-Module Assessment	177