

# CHECKLIST OF CA SCIENCE STANDARDS FOR GRADE 1

## AIR AND WEATHER

### **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 **Air and Weather Module** supports the following Physical and Earth Sciences Content Standards for grade 1.\*

**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.

**ES3** *Weather can be observed, measured, and described. As a basis for understanding this concept:*

ES3a *Students know* how to use simple tools (e.g., thermometer, wind vane) to measure weather conditions and record changes from day to day and across the seasons.

ES3b *Students know* that the weather changes from day to day but that trends in temperature or of rain (or snow) tend to be predictable during a season.

ES3c *Students know* the Sun warms the land, air, and water.

The **Air and Weather 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 thing being described.

I&E4b Record observations and data with pictures, numbers, or written statements.

I&E4c Record observations on a bar graph.

I&E4d Describe the relative position of objects by using two references (e.g., above and next to, below and left of).

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 Air and Weather Investigation 1

Content Standard Focus	Investigation 1: Exploring Air	Teacher Guide (Science Resources) pages
<b>PS1a, I&amp;E4a, I&amp;E4b</b>	<b>Part 1: Air Is There—1 session</b>	<b>44-50</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher introduction and demonstration (objects and air in bag)	48
	Small-group hands-on with guiding questions	48
	Embedded preassessment activity	49
	Teacher-led class discussion and explanation (matter, gas, invisible)	49
	Vocabulary and content review	50
<b>PS1a, I&amp;E4b, I&amp;E4d</b>	<b>Part 2: Air Under Water—2 sessions</b>	<b>51-55</b>
DATE OF INSTRUCTION	SESSIONS 1-2	
	Teacher-led class discussion and demonstration	53
	Center hands-on with vials, foam ball, water and guiding questions (relative position, air observations)	53-54
	Embedded assessment (writing in science notebook)	54
	Vocabulary and content review	55
<b>PS1a, I&amp;E4b, I&amp;E4e</b>	<b>Part 3: Parachutes—1 session</b>	<b>56-60</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion and demonstration	58
	Small-group hands-on with parachute materials and guiding questions (air resistance, no. of “passengers”)	58-59
	Embedded assessment (writing in science notebook)	59
	Vocabulary and content review	60
<b>PS1a, I&amp;E4b</b>	<b>Part 4: Pushing on Air—1 session</b>	<b>61-66</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion and demonstration	63
	Small-group hands-on with syringes, tubes, guiding questions, and vocabulary instruction (pressure, compress)	63-65
	Embedded assessment (writing in science notebook)	65
	Vocabulary and content review	66
<b>PS1a, I&amp;E4e</b>	<b>Part 5: Air and Water Fountain—1 session</b>	<b>67-73</b>
	SESSION 1	
	Teacher-led discussion (syringes) and demonstration (bottles and pipes)	70
	Hands-on in pairs with bottles, pipes, and guiding questions	70-71
	Teacher-led class discussion and demonstration (water flow in bottle, suck out water, water fountain)	71-72
	Vocabulary and content review	73



## AIR AND WEATHER CHECKLIST

### Checklist of CA Science Standards for Air and Weather Investigation 1 (cont.)

Content Standard Focus	Investigation 1: Exploring Air (continued)	Teacher Guide (Science Resources) pages
<b>PS1a, I&amp;E4a, I&amp;E4b, I&amp;E4e</b>	<b>Part 6: Balloon Rockets—2 sessions</b>	<b>74-81 (3-7)</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion and demonstration (balloon, balloon rocket)	76
	Small-group hands-on with balloon rocket materials and guiding questions	76
	Embedded assessment (teacher observation)	77
	Teacher-led class discussion (how air makes balloon rockets move)	77
	Whole-class hands-on outdoors to release balloon rockets	78
	Vocabulary and content review	79
	Embedded assessment (writing in science notebook)	79
DATE OF INSTRUCTION	SESSION 2	
	Student reading, discussion, review questions, and introduction of glossary	80-81 (3-7)



## Checklist of CA Science Standards for Air and Weather Investigation 2

Content Standard Focus	Investigation 2: Observing Weather	Teacher Guide (Science Resources) pages
<b>ES3a, ES3c, I&amp;E4b</b>	<b>Part 1: Weather Calendars—2 sessions</b>	<b>92-99</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher introduction (weather), demonstration (experience weather outdoors), and vocabulary instruction (meteorologist)	95-96
	Teacher explanation (weather symbols, calendar, monitor)	96-97
DATE OF INSTRUCTION	SESSION 2	
	Vocabulary instruction (observe)	97-98
	Teacher-led class discussion and explanation (scientific notebooks, weather notebook entry)	98
	Embedded assessment (writing in science notebook)	98
	Teacher-led class discussion (today's weather conditions)	98
	Vocabulary and content review	99
<b>ES3a, ES3c, I&amp;E4b</b>	<b>Part 2: Measuring Temperature—1 session</b>	<b>100-106</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher introduction (temperature) and demonstration (thermometer, weather instrument, degrees Celsius or Fahrenheit)	103
	Class hands-on indoors and outdoors with thermometer	103
	Teacher demonstration (demo thermometer)	103-104
	Small-group hands-on (making model thermometers)	105
	Vocabulary and content review	106
	Writing in science notebook	106
<b>ES3a, ES3b, ES3c, I&amp;E4b, I&amp;E4d</b>	<b>Part 3: Watching Clouds—2 sessions</b>	<b>107-113 (8-15)</b>
DATE OF INSTRUCTION	SESSION 1	
	Vocabulary instruction (describe) and demonstration (cloud descriptions, cloud types, cirrus, cumulus, stratus)	109-110
	Class hands-on outdoors to view clouds with guiding questions about observations and relative position	110
	Vocabulary and content review	111
	Writing and drawing in science notebook	111
DATE OF INSTRUCTION	SESSION 2	
	Student reading, discussion, review questions, and use glossary	112-113 (8-15)
	Create class or student weather chart	113



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## **AIR AND WEATHER CHECKLIST**

### **Checklist of CA Science Standards for Air and Weather Investigation 2 (cont.)**

<b>Content Standard Focus</b>	<b>Investigation 2: Observing Weather</b>	<b>Teacher Guide (<i>Science Resources</i>) pages</b>
<b><i>ES3a, I&amp;E4b</i></b>	<b>Part 4: <i>Measuring Rain</i>—2 sessions</b>	<b>114-118</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion (review clouds, rain) and demonstration outdoors (setting up rain gauge)	116
	Class hands-on to set up rain gauge	116
DATE OF INSTRUCTION	SESSION 2	
	Class hands-on with rain gauge after next rainstorm	116-117
	Writing in science notebook	117
	Teacher-led class discussion (natural sources of water poster)	117
	Embedded assessment (writing in science notebook)	117
	Vocabulary and content review	118



## Checklist of CA Science Standards for Air and Weather Investigation 3

Content Standard Focus	Investigation 3: Wind Explorations	Teacher Guide (Science Resources) pages
<b>ES3a</b>	<b>Part 1: Bubbles in the Wind—1 session</b>	<b>130-133</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher introduction (air and weather) and demonstration (bubble solution, cups, wands)	132
	Class hands-on with guiding questions	132-133
	Vocabulary and content review	133
<b>ES3a, I&amp;E4b</b>	<b>Part 2: Wind Speed—1 session</b>	<b>134-138</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion (wind, moving air) and demonstration (wind scale, anemometer, fan, hair dryer)	136
	Class hands-on indoors and outdoors with guiding questions	136-137
	Embedded assessment (science notebook sheet)	137
	Vocabulary and content review	138
<b>ES3a</b>	<b>Part 3: Pinwheels—1 session</b>	<b>139-143</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher introduction (pinwheel) and demonstration	141
	Small-group hands-on indoors and outdoors with guiding questions	142-143
	Embedded assessment (teacher observation and interviews)	142
	Vocabulary and content review	143
<b>ES3a, I&amp;E4b</b>	<b>Part 4: Wind Vanes—2 sessions</b>	<b>144-151 (16-20)</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion (wind vane) and demonstration	147
	Small-group hands-on indoors and outdoors with wind vanes, compass, observing cloud movement	148
	Embedded assessment (science notebook sheet)	149
	Vocabulary and content review	149
DATE OF INSTRUCTION	SESSION 2	
	Student reading, discussion, review questions, and use glossary	150-151 (16-20)
<b>ES3a</b>	<b>Part 5: Kites—1 session</b>	<b>152-157</b>
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion (kites, air) and demonstration	154-155
	Class hands-on indoors and outdoors with kites	155-156
	Teacher-led class discussion (kites, anemometer, wind vane)	155-156
	Embedded assessment (teacher observation and interviews)	156
	Teacher-led class discussion of kite flying observations	156
	Vocabulary and content review	157



## AIR AND WEATHER CHECKLIST

### Checklist of CA Science Standards for Air and Weather Investigation 4

Content Standard Focus	Investigation 4: Looking for Change	Teacher Guide ( <i>Science Resources</i> ) pages
<b>ES3a, ES3b, I&amp;E4b, I&amp;E4c</b>	<b>Part 1: <i>Weather Graphs</i>—2 sessions</b>	<b>166-170</b>
DATE OF INSTRUCTION	SESSIONS 1–2	
	Teacher-led class discussion (review month’s weather, graphing) and demonstration (graphs)	168
	Small-group hands-on and discussion (make graphs, record weather on calendar, make graphs again and compare)	169
	Vocabulary and content review	170
<b>ES3b, ES3c, I&amp;E4b, I&amp;E4c</b>	<b>Part 2: <i>Comparing the Seasons</i>—4 sessions</b>	<b>171-179 (21-27)</b>
DATE OF INSTRUCTION	SESSIONS 1–2	
	Teacher-led class discussion (new weather graphs, sun in the sky) and demonstration (when to take daily readings, weather data)	175-176
	Small-group hands-on recording and comparing data	176
	Vocabulary and content review	177
DATE OF INSTRUCTION	SESSION 3	
	Student reading and discussion questions	178 (21-27)
	Create class or student charts showing seasonal effects	179
	Embedded assessment (writing in science notebook)	179
DATE OF INSTRUCTION	SESSION 4	
	End-of-Module Assessment	179