

SCALE Video Coding for
Improving Competency in Elementary Science Teaching and Learning (NSF project)

Phase 1: Initial Coding

While watching the video you will identify clips that represent opportunities for specific behaviors. Opportunities can refer to the teacher engaging students in a discussion, activity, task, or questions that provide the opportunity for students to engage in a specific scientific behavior. We may also observe a student or group of students initiating one of these behaviors – we definitely want to catch this when it happens.

Opportunities to Plan an Investigation or Design

Identify/Formulate/ Discuss Testable Question or Design Problem	Discuss/Make Hypothesis or Prediction	Ask/Discuss what evidence/ data is needed for investigation	Discuss/Design Fair Test – control variables/ multiple trials	Discuss/Identify design elements or design constraints	Other – Please specify in comment section below
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Opportunities for Carrying Out an Investigation

Discuss/Identify appropriate tools/procedures	Model/Use appropriate tool/ procedure	Make observations or drawings /Take measurements	Construct/Organize/ Display Data Table (data/ other info)	Discuss/Evaluate/ Critique accuracy of procedures /data collection	Other – Please specify in comment section below
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Opportunities to Analyze & Interpret

Discuss how to represent the data (after investigation)	Discuss/Identify Patterns or Relationships	Compare data with other groups or with “expert” data	Discuss/Evaluate/Critiq ue accuracy of data or data recording	Discuss/Evaluate/ Critique/Revise representation of data	Other – Please specify in comment section below
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Opportunities to Construct an Explanation: The teacher may ask students to individually write or to share their explanation with a partner. Even though we can't hear it or read it I think we need to count it as an opportunity for that behavior to occur. We can say more when we actually hear students share their explanations but I do think it is important to try to catch when there is an opportunity for students to engage in the behavior.

Ask for/Give response without answering "why" (not an explanation)	Ask for/State/Write a component of an explanation (claim, evidence, OR reason)	Ask for/State/Write a complete explanation (claim, evidence, AND reason)	Model /Identify structure or components of an explanation	Ask/Build on/Revise initial explanation using additional evidence	Evaluate/Critique (Agrees/Disagrees) another's explanation	Other – Please specify in comment section below
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Opportunities to Argument Using Evidence

Ask for/Give response but not an argument	Ask for/State/Write a component of an argument (claim, evidence OR reason)	Ask for/State/Write a complete argument (claim, evidence, AND reason)	Model /Identify structure or components of an argument	Ask/Build on/Revise initial arguments using additional evidence	Evaluate /Critique (Agrees/Disagrees) another's arguments	Other – Please specify in comment section below
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OTHER Opportunities

Give Directions	Introduce Content/ Sets context for lesson	Introduce / Refer To essential or research question	Discuss/Refer to Previous Lesson/Investigation /Prior Knowledge	Model/ Use/Refer To Sentence Starters	Discuss/Prefer To/ Use science notebooks	Other – Please specify in comment section below
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Rater _____ Date _____ Teacher Id _____ School Id _____ Video # _____

Put a STAR (*) next to any clips that you think would provide an example of best practices for the type of behavior. Put a question mark (?) next to any clip that you are uncertain of or have questions about.	
Time Stamp	Episodes for Opportunities for Specific Behaviors
00:00 To 05:00	
05:01 to 10:00	
10:01 to 15:00	
15:01 to 20:00	
20:01 to 25:00	
25:01 to 30:00	

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Rater _____ Date _____ Teacher Id _____ School Id _____ Video # _____

Put a STAR (*) next to any clips that you think would provide an example of best practices for the type of behavior. Put a question mark (?) next to any clip that you are uncertain of or have questions about.	
Time Stamp	Episodes for Opportunities for Specific Behaviors
30:01 To 035:00	
35:01 to 40:00	
40:01 to 45:00	
45:01 to 50:00	
50:01 to 55:00	
55:01 to 60:00	

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Video Codes by Category

Opportunities to Plan Investigation/Design		Opportunities to Carry Out Investigation		Opportunities to Analyze and Interpret		Opportunities to Construct Explanations		Opportunities to Argue with Evidence		Other Opportunities	
A	Identify/Formulate/ Discuss Testable Question or Design Problem	G	Discuss/Identify appropriate tools/procedures	M	Discuss how to represent the data (after investigation)	S	Ask for/State/Write a component of an explanation (claim, evidence, OR reason)	AA	Ask for/State/Write a component of an argument (claim, evidence OR reason)	AM	Other – Please specify in comment section below
B	Discuss/Make Hypothesis or Prediction	H	Model/Use appropriate tool/ procedure	N	Discuss/Identify Patterns or Relationships	T	Ask for/State/Write a component of an explanation (claim, evidence, AND reason)	AB	Ask for/State/Write a complete argument (claim, evidence, AND reason)	AL	Discuss/Prefer To/ Use science notebooks
C	Ask/Discuss what evidence/ data is needed for investigation	I	Make observations or drawings /Take measurements	O	Compare data with other groups or with “expert” data	U	Ask for/State/Write a complete explanation (claim, evidence, AND reason)	AD	Ask/Build on/Revise initial arguments using additional evidence	AK	Model/ Use/Refer To Sentence Starters
D	Discuss/Identify design elements or design constraints	J	Construct/Organize/ Display Data Table (data/ other info)	P	Discuss/Evaluate/Critique accuracy of data or data recording	V	Model /Identify structure or components of an explanation	AC	Model /Identify structure or components of an argument	AJ	Discuss/Refer to Previous Lesson/Investigation/Prior Knowledge
E	Discuss/Design Fair Test – control variables/ multiple trials	K	Discuss/Evaluate/Critique accuracy of procedures /data collection	Q	Discuss/Evaluate/Critique/Revise representation of data	W	Ask/Build on/Revise initial explanation using additional evidence	AE	Evaluate /Critique (Agrees/Disagrees) another’s arguments	AI	Introduce / Refer To essential or research question
F	Other – Please specify in comment section below	L	Other – Please specify in comment section below	R	Other – Please specify in comment section below	X	Evaluate/Critique (Agrees/Disagrees) another’s explanation	AF	Other – Please specify in comment section below	AH	Introduce Content/ Sets context for lesson
						Y	Other – Please specify in comment section below	AG	Give Directions		

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Rater _____ Date _____ Teacher Id _____ School Id _____ Video # _____

“Opportunities To” Means: Teacher Displays the Behavior and/or Students Engage In the Behavior Please Indicate a “T” when Teachers Are Displaying the Behavior and a “S” when Students Are Engaging in the Behavior																																								
	Opportunities to Plan Investigation/Design						Opportunities to Carry Out Investigation					Opportunities to Analyze and Interpret					Opportunities to Construct Explanations					Opportunities to Argue with Evidence					Other Opportunities													
Timestamp	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	A	A	A	A	A	A	A	A	A	A	A		
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