

Identifying Student Thinking Lens Strategies (Answer Key)

STL Strategy	Evident in Video Clip	Evidence from Video Clip
<p>1. Ask questions to elicit student ideas and predictions.</p>	<p style="text-align: center;">1 2 3 4 5</p> <p>Not at all Very</p>	<p>Elicit questions are designed to get a lot of different ideas on the table before exploring a new idea. On the one hand, we could argue that in the video, the teacher isn't trying to get a lot of different ideas (prior knowledge) on the table. It's evident from her talk that she wants students to conclude that the baby mouse looks most like the brown parents. On the other hand, however, we might reasonably consider the question at video segment 00:24 an elicit question because, in fact, the teacher gets a variety of answers even though this didn't appear to be her intent.</p>
<p>2. Ask questions to probe student ideas and predictions.</p>	<p style="text-align: center;">1 2 3 4 5</p> <p>Not at all Very</p>	<p>Examples of probe questions from the video clip:</p> <p>01:00: "You think what?"</p> <p>01:03: "Why not?" <i>[The teacher wants to know more about why the student doesn't think the mouse belongs to "those guys." This could also be interpreted as a challenge question]</i></p> <p>02:21: "So are you thinking that they might be able to change as time goes on?"</p> <p>02:59: "So you're leaning towards one of the other sets being the parents?"</p> <p>03:04: "Or the brown set?"</p> <p>03:06: "Which one do you think most?"</p> <p>03:12: "You think the brown ones are the parents?"</p> <p>Note: Most of these probe questions are posed to make sure the teacher understands what the student has said (rather than asking for more elaboration).</p>

<p>3. Ask questions to challenge student thinking.</p>	<p>1 2 3 4 5 Not at all Very</p>	<p>Examples of challenge questions from the video clip:</p> <p>00:24: “I would like you to talk [with your small group] about what you found out and maybe why it’s that way.” <i>[This question pushes students to examine their data and make a prediction about which mice are parents of the brown mouse. The goal is to move student thinking forward toward the idea that offspring look mostly, but not exactly, like their parents. The teacher is essentially repeating this question when she asks students, “What’d you find?” “What do you think?” and “Is that what you were thinking?” (segments 00:49, 01:42; 02:26).]</i></p> <p>01:03: “Why not?” <i>[The teacher is pushing the student to give a reason using the data. This could also be interpreted as a probe question.]</i></p> <p>02:07: “How come?” <i>[The teacher is pushing the student to give a reason.]</i></p> <p>Note: There is a leading question at segment 01:07: “But let’s look up here. So who has the most check marks out of all three sets?” The teacher also leads at segment 01:27 with the statement, “That’s true. But if this one’s got the most checks, I might lean towards that one.”</p> <p>The teacher misses an opportunity to correct the student at segment 01:46 who erroneously says, “The gray mice still only has one check mark gone, and the brown mice also only have one check mark gone.” The data clearly show that the gray and the brown mice don’t have the same number of check marks.</p>
<p>4. Engage students in analyzing and interpreting data and observations.</p>	<p>1 2 3 4 5 Not at all Very</p>	<p>Throughout this clip, students are making observations of the mouse, organizing their data table to keep track of their observations, and interpreting what the data table is showing them.</p>

<p>5. Engage students in constructing explanations and arguments.</p>	<p>1 2 3 4 5 Not at all Very</p>	<p>Students' efforts to identify the parents of the baby mouse don't quite reach the level of explanations. They're beginning to make sense of (interpreting) the data, and we could say that their ideas and reasoning are first steps in constructing an evidence-based explanation. But they don't yet have enough information and evidence to determine which mice are the parents and why.</p>
<p>6. Engage students in using and applying new science ideas in a variety of ways and contexts.</p>	<p>1 2 3 4 5 Not at all Very</p>	<p>Right before this activity, students commented that green beetles will have green baby beetles. This introduced the science idea that offspring look similar to, but not exactly like, their parents. There was an expectation that students would use this idea when making their predictions about the mouse's parents. Thus, this can be seen as a use-and-apply activity. On the other hand, this idea about offspring looking mostly, but not exactly, like their parents was just introduced in this lesson (and only briefly). From this perspective, you could argue that this is a new idea for students and therefore isn't an opportunity to use and apply an idea previously developed.</p>