

### Appendix A. Placement of Exploring Life WBIs on instrument

	Learner Directed		Materials Directed	
Essential Feature of Inquiry	L2	L1	M1	M2
<p><b>Learners are engaged by scientifically oriented questions.</b></p>	<p>Prompts learner to formulate own question or hypothesis to be tested.</p> <p>Laboratory 7.2 Guided Research: Cellular Respiration in FastPlants®</p>	<p>Suggests topic areas or provides samples to help learner formulate own question or hypothesis.</p> <p>Laboratory 7.2 Guided Research: Cellular Respiration in FastPlants® Laboratory 8.1 Photo Finish</p>	<p>Offers learner lists of questions or hypotheses from which to select.</p> <p>Laboratory 7.2 Guided Research: Cellular Respiration in FastPlants®</p>	<p>Provides learner with specific stated (or implied) question/hypothesis to be investigated.</p> <p>Webquest – CalorieQuest Webquest – ChocolateQuest Webquest - ThermalventQuest</p> <p>Laboratory 7.1 Investigating Chemical Energy Stored in Food Laboratory 7.2 Guided Research: Cellular Respiration in FastPlants® Laboratory 8.1 Photo Finish Investigative Lab 36 - You Are a Pond Organism Explore!: Aerobic Exercise and Dietary Supplements</p>
<p><b>Learners give priority to evidence, which allows them to draw conclusions and/or develop and evaluate explanations that address scientifically oriented questions.</b></p>	<p>Learner determines what constitutes evidence and develops procedures and protocols for gathering relevant data (as appropriate).</p> <p>Laboratory 7.1 Investigating Chemical Energy Stored in Food Laboratory 7.2 Guided Research: Cellular Respiration in FastPlants® Laboratory 8.1 Photo Finish</p>	<p>Directs learner to collect certain data, or only provides portion of needed data. Often provides protocols for data collection.</p> <p>Laboratory 7.1 Investigating Chemical Energy Stored in Food Laboratory 7.2 Guided Research: Cellular Respiration in FastPlants® Laboratory 8.1 Photo Finish Investigative Lab 36 - You Are a Pond Organism</p>	<p>Provides data and asks learner to analyze.</p> <p>Explore!: Aerobic Exercise and Dietary Supplements Ch. 8 Webquest – ChocolateQuest</p>	<p>Provides data and gives specific direction on how data to be analyzed.</p> <p>Ch. 7 Webquest – CalorieQuest Ch. 8 Webquest – ChocolateQuest Ch. 36 Webquest - ThermalventQuest</p>

<p><b>Learners formulate conclusions / explanations from evidence to address scientifically oriented questions.</b></p>	<p>Prompts learner to analyze evidence (often in the form of data) and formulate own conclusions/explanations.</p> <p>Laboratory 7.2 Guided Research: Cellular Respiration in FastPlants® Explore!: Aerobic Exercise and Dietary Supplements</p>		<p>Prompts learner to think about how evidence leads to conclusions/explanations, but does not cite specific evidence.</p> <p>Explore!: Aerobic Exercise and Dietary Supplements</p>	<p>Directs learner attention (often through questions) to specific pieces of evidence (often in the form of data) to draw conclusions and/or formulate explanations.</p> <p>Webquest – CalorieQuest Webquest - ThermalventQuest Laboratory 7.2 Guided Research: Cellular Respiration in FastPlants® Laboratory 8.1 Photo Finish Investigative Lab36 - You Are a Pond Organism Ch.7 Explore!: Aerobic Exercise and Dietary Supplements</p>	<p>Directs learner attention (often through questions) to specific pieces of evidence (often in the form of data) to lead learner to predetermined correct conclusion/explanation (verification).</p> <p>Webquest – ChocolateQuest Webquest – ThermalventQuest Laboratory 7.1 Investigating Chemical Energy Stored in Food Ch.7 Explore!: Aerobic Exercise and Dietary Supplements</p>			
<p><b>Learners evaluate their conclusions / explanations in light of alternative conclusions/ explanations, particularly those reflecting scientific understanding.</b></p>		<p>Prompts learner to examine other resources and make connections to conclusions and/or explanations independently (“Catalyst”).</p> <p>Webquest - ThermalventQuest Laboratory 8.1 Photo Finish</p>	<p>Provides hypertext links but does not refer to them. Learner independently examines other resources and make connections to conclusions and/or explanations.</p>	<p>Directs learner to hypertext links related to areas and sources of scientific knowledge.</p> <p>Explore!: Aerobic Exercise and Dietary Supplements</p>	<p>Identifies areas and sources of scientific knowledge that could be useful, but does not provide hypertext links.</p>	<p>Suggests or implies possible connections, but does not provide hypertext links.</p>	<p>Explicitly states specific connections, but does not provide hypertext links.</p>	

<b>Learners communicate and justify their proposed conclusions / explanations.</b>	Reminds learner of general purpose of communication and/or need for communication, but gives no specific guidance.	Talks about how to improve communication, but does not suggest content or layout.	Suggests possible content to include and/or layout that might be used. <b>Laboratory 7.2 Guided Research: Cellular Respiration in FastPlants®</b>	Specifies content to be included and/or layout to be used. <b>Explore!: Aerobic Exercise and Dietary Supplements</b>
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Learner-driven with much initiative and independence.

Learner makes decisions, but with support and scaffolding, particularly with the process.

Learner does much selecting from provided materials. Limited choices.

Materials-driven. Learner makes few choices and is given much direction.

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