

Goal(s): Student will

- increase knowledge about protocols and patterns.
- increase knowledge about the Scientific method of inquiry.

Unit I

Relating to Science

Lesson #4

Standards:

- Science 1
- Language Arts 1-2, 4, 6
- GLO 1-5

Topic	Task/Activity	Materials/Time	Notes
Entry	<ul style="list-style-type: none">• Share your ah-hahs about protocols with 2 other people.	Homework	
Review	<ul style="list-style-type: none">• Invite a S to state one protocol from worksheet.• Ask Ss who share this protocol to stand up or raise their hand.• Repeat 3-6 more times.• Debrief by asking: What was noticed about the protocols shared by classmates? Did they observe any patterns?• Collect worksheets and let Ss know they will use these data in the future.	Protocols in My World Worksheet	
Preview	<ul style="list-style-type: none">• Display OH #1.1 and connect to today's 2 topic.<ol style="list-style-type: none">1. Protocols – Hang Gliding2. Scientific Method – a procedural protocol.	Unit Overview OH #1.1	
Video	<ul style="list-style-type: none">• Redefine the term protocol (OH #3.4).• Replay video with Ss taking notes on Joe's 5 protocols.• Discuss the 5 things Joe observes to determine if it is a good day to hang glide:<ol style="list-style-type: none">1. Wind direction (straight up the cliff)2. Wind velocity or speed (10 – 20 mph)3. Cloud base (above mountains)4. Weather on the way5. How you feel in your mind• Ask Ss to explore if these 5 protocols also relate to paddling, surfing, and other sports.	A Protocol Is OH #3.4 <i>Hanging With Joe</i> video Est: 5-10 minutes	

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<p>The Scientific Method</p>	<ul style="list-style-type: none"> Distribute Scientific Method handout while displaying as a poster or OH #4.1. Explain that this describes a procedure, a series of steps that scientists use when conducting research. (Optional: ask Ss to look up word in dictionary). Read orally to familiarize Ss. Link Scientific Method (the procedure) as a protocol used by ALL scientists. Invite Ss to form groups of 4 and review Scientific Method handout. Ask groups to create questions/comments about Scientific Method and note any unfamiliar words or statements. Monitor groups to hear their questions/comments: <ul style="list-style-type: none"> Provide clarification information as appropriate. Invite Ss to share definitions of key words. Make sure Ss understand: <ul style="list-style-type: none"> #1 The scientific method or process is not linear: Starting point may vary, you may return to steps, arrows and lines show connections; double arrows indicate 2-way flow. #2 Testing your hypothesis is the foundation: This step is a must for scientific thinking. #3 How you do this is most important. Protocols must be clearly followed. Explain to Ss that: <ol style="list-style-type: none"> Chart needs to be placed in their binder It will be used throughout the year They will fully understand it by end of the yea. 	<p>Scientific Method class poster and/or OH #4.1</p> <p>Dictionaries</p> <p>ObLog/Paper & pen/pencil</p> <p>Chart paper and pens</p> <p>Est: 20-30 Minutes</p>	

Topic	Task/Activity	Materials/Time	Notes
Video	<ul style="list-style-type: none"> Introduce the video entitled <i>Killing Coqui the Scientific Way</i> by explain that: <ol style="list-style-type: none"> Ss will have an opportunity to see the scientific method in action. Coqui frogs are an invasive species causing great concern to our environment because there are no predators to eat them. Coqui frogs have been closely studied so scientists will know how to eradicate them. Kehau Kong is a key person in video. She was a UH graduate student who conducted research on these frogs. Invite Ss to look for the: <ol style="list-style-type: none"> steps to the scientific method as they view the video problems caused by these invading frogs. Play video. Ask Ss to recap what was seen (Scientific Method steps; why Coqui are a problem). Write key word notes on board or OH (model this skill). Link information to the Scientific Method Poster. 	<p><i>Killing Coqui the Scientific Way</i> video</p> <p>Scientific Method Poster Board or Blank OH</p> <p>Est: 15 minutes</p>	
Homework	<ul style="list-style-type: none"> Explain homework assignment while referring to the wall chart or OH #4.2. Distribute Using the Scientific Method worksheet. (Model an example for different sections) (e.g., <i>Observe</i>: sit still, listen for noises, watch action around you, recall things you saw, <i>Question and Wonder</i>: talk with someone, see a movie, write notes, etc.). <p>WHAT: Scientific Method.</p> <p>HOW:</p> <ol style="list-style-type: none"> Complete worksheet alone or with a partner. Locate someone at home and share worksheet and handout. Obtain their signature. 	<p>Wall-chart or OH #4.2</p> <p>Using the Scientific Method Worksheet #1</p> <p>Scientific Method Handout</p> <p>Est: 5 minutes</p>	

