



Frisch's Outreach: Inquiry 101 (Gr.1-3) Extensions

Session One



At a glance

Students will begin to understand how to use the Scientific Process to find answers to their questions

Goal(s)

Students will begin to use the QUEST model to find answers to their questions.

Objective(s)

1. Students will begin to understand the process of Inquiry using the QUEST model.
2. Students will be able to conduct direct observations.
3. Students will be able to formulate a comparative question.(**What do you want to know?**-in a comparative form)
4. Students will be able to make a prediction of outcome based on a comparative question.(**What do you think?**)

5. Students will be able to understand how to create and use a data collecting tool during animal observations.(**What do you see?**)

Theme

The Scientific Process can be utilized to discover answers to our questions.

Sub-themes

1. The QUEST model is an aide in the discovery of answers to questions.

Academic standards

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| Ohio Science Academic Content Standards | <p>Benchmark -Scientific Inquiry <i>Grade 1-2 A,B,C</i></p> <p>Benchmark- Scientific Ways of Knowing <i>Grades 1-2 A,B,C,D</i></p> <p>Grade Level Indicators Doing Scientific Inquiry <i>Grade 1 1,2,3,4,5,6,8,9</i> <i>Grade 2 1,2,3,4,5,6,7,9,10</i> <i>Grade 3 1,3,4,5,6</i></p> <p>Nature of Science <i>Grade 1,2 1, 2</i> <i>Grade 3 1</i></p> <p>Ethical Practices <i>Grade 2 3</i> <i>Grade 3 2</i></p> <p>Science & Society <i>Grade 1 3</i> <i>Grade 2 4</i> <i>Grade 3 5</i></p> |
| Kentucky Core Content— Science | <p><i>Grade Primary Through Gr. 4</i> Scientific Ways of Thinking and Writing 2.1</p> |
| Benchmarks for Science Literacy (Project 2061) | <p><i>Grade 1,2</i> Nature of Science, Scientific Inquiry 1B/P1,1B/P3,1B/P4</p> <p><i>Grade 3</i> Nature of Science, Scientific Inquiry 1B/E1,1B/E2,1B/E2b,1B/E3a,1B/E4</p> |

Background

Imagination and inventiveness are always involved in Inquiry. Students can learn about our world by gaining experience in conducting their own investigations and in working within small groups. Students can explore and determine their own questions. **What do you want to know?** Using Inquiry students can make Predictions about the possible answers to their questions. **What do you think?** Learners can understand the importance of collecting

data and using scientific tools for that collection. By carefully examining their collected data they can confidently answer the question **How do you know?** They will be challenged to check what they think to what they see. Once their questions can be scientifically answered by using Inquiry they can share with other learners their new found discoveries! The QUEST model can be a formula for the Scientific Process but it can also allow for creativity and flexibility as determined by the learners.

Vocabulary

comparative (adj.)-compared with others considered relative to something known

data(n)-information often in the form of facts found from experiments and observations

ethogram(n)-catalog of behaviors on which an observer may record the numbers of such acts or the amount of time engaged in the behaviors

hypothesis(n)-tentative explanation used for basis of further investigation

observe(v)-to watch something attentively

prediction(n)-statement of what someone thinks will happen

question(n)- a quest for information or understanding

record(v) an account of something, preserved in a lasting form, e.g. in writing

scientific(adj) relating to, using, or conforming to science or its principle

Assessment

Unsatisfactory—student seems uninterested, does not participate, and does not answer questions.

Satisfactory—student seems somewhat interested, participates to some degree, and attempts to answer questions when asked

Excellent—student seems very interested; participates willingly in all activities, and answers questions. Student offers his or her own questions.

Extensions

What's Different?

To develop sharp eyes for keen observation ask one student to stand in front of the group. Everyone carefully looks for details about clothing, eye color, etc.

Now ask the student to leave the area (out of everyone's view). That student should now change something about himself or herself. (untie one shoe string; turn a belt buckle slightly, etc.) If the group is skilled try to make more than one change. Now ask that student to re-enter into the group. Can the other learners find what is different?



Eagle Eye!

Collect a group of toys, school items, etc. Place them in a row for all to see. Ask the group to “Eagle Eye” them. Look very closely at each one without touching them. Now ask the group to close their eyes. Quickly remove one of the objects. Have them open their eyes. Can they tell which one is missing? After playing a few times you can add more items or change the position of some items while their eyes are closed!

Resources

Broda, Herbert, Schoolyard Enhanced Learning: Using the Outdoors As An Instructional Tool, Stenhouse Publishers, 2007.

Louv, Richard. Last Child in the Woods: Saving Our Children From Nature Deficit Disorder. Algonquin Books, 2005.

Sobel, David, Place Based Education: Connecting Classrooms and Communities, Orion Society, 2004

Cincinnati Zoo & Botanical Garden
www.cincinnati-zoo.org

National Wildlife Federation (NWF)
Schoolyard Habitats Program
<http://www.nwf.org/schoolyard/index.cfm>

Project Dragonfly
www.muohio.edu/dragonfly

Project Feeder Watch
www.birds.cornell.edu/pfw/index.html
(classroom data gathering)

Project Wild
<http://www.projectwild.org>