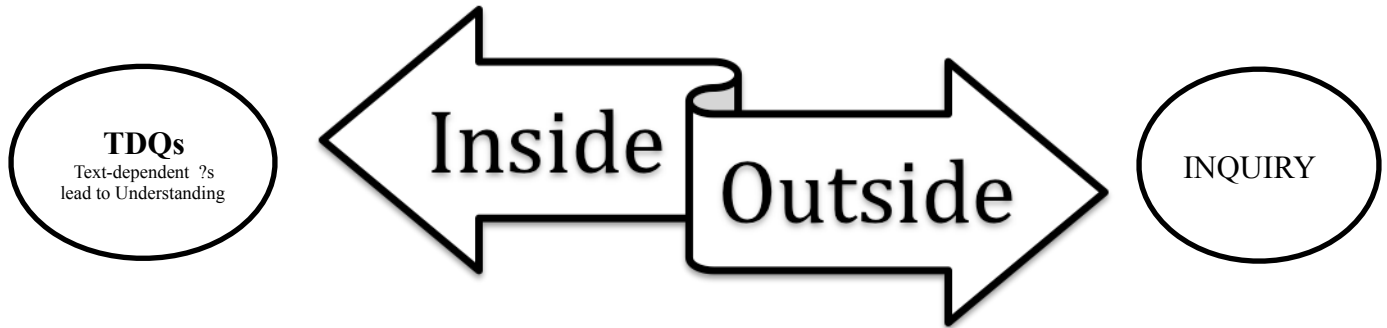


Understanding Inquiry - Research Investigations



- Inquiry happens when you leave the text.
- Text-dependent questions are teacher-directed and meant to insure the text was understood.
- Inquiry questions are student-initiated and meant to inspire children to dig deeper.
- The goal of Inquiry is to build knowledge by asking questions, by uncovering, and discovering answers.
- Understanding often requires synthesis—to comprehend, then create, and communicate.

After either of the books in the series is read aloud to the child(ren), ask them to begin to wonder about something they learned in the book.

Give them a copy of the “I Wonder” handout to inspire inquiry and use as a springboard to research.

Note: If you purchase an eBook of *Who Will Roar If I Go?* or *Will You Miss Us If We Go?*, you will be able to display the enlarged copy on the LCD for your read-aloud. The enlarged images make the animals come alive.

The lesson plan ideas we have posted have been tested at grade levels 3, 4, and 5. See where these might fit in your local curriculum mapping. Or, use the plans in the library as a learning adventure!

Standards this activity will embrace:

Information Literacy Standards:

- Teaching Inquiry
- Teaching “How can we ask a good question?”
- Teaching open-ended questions
- Students will learn how to use a database, encyclopedia, etc.
- Students will learn to identify keywords for searching

English Language Arts (Common Core)

As early as Grade 3, students are being asked to “research to build and present knowledge.” Short-term research projects are encouraged.

Here is one standard from <http://www.corestandards.org/ELA-Literacy/W/3/>

Research to Build and Present Knowledge:

CCSS.ELA-LITERACY.W.3.7

Conduct short research projects that build knowledge about a topic.

CCSS.ELA-LITERACY.W.3.8

Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

Next Generation Science Standards

Please read this Grade 3 science standard and the connection to Common Core writing standards below. Note the Disciplinary Core Ideas in orange.

This table can be found at: <https://www.nextgenscience.org/pe/ms-ess3-3-earth-and-human-activity>
For additional information, please see the NGSS site at Grade levels 3, 4, and 5.

Here is an example:

MS-ESS3-3 Earth and Human Activity

Students who demonstrate understanding can:

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.*
[Clarification Statement: Examples of the design process include examining human environmental impacts, assessing the kinds of solutions that are feasible, and designing and evaluating solutions that could reduce that impact. Examples of human impacts can include water usage (such as the withdrawal of water from streams and aquifers or the construction of dams and levees), land usage (such as urban development, agriculture, or the removal of wetlands), and pollution (such as of the air, water, or land).]

The performance expectation above was developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices

Constructing Explanations and Designing Solutions

Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.

- Apply scientific principles to design an object, tool, process or system.

Disciplinary Core Ideas

ESS3.C: Human Impacts on Earth Systems

- Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth's environments can have different impacts (negative and positive) for different living things.
- Typically as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise.

Crosscutting Concepts

Cause and Effect

- Relationships can be classified as causal or correlational, and correlation does not necessarily imply causation.

Connections to Engineering, Technology, and Applications of Science

Influence of Science, Engineering, and Technology on Society and the Natural World

- The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. Thus technology use varies from region to region and over time.

Connections to other DCIs in this grade-band:

MS.LS2.A ; MS.LS2.C , MS.LS4.D

Articulation of DCIs across grade-bands

3.LS2.C ; 3.LS4.D ; 5.ESS3.C ; HS.LS2.C ; HS.LS4.C ; HS.LS4.D ; HS.ESS2.C ; HS.ESS2.D ; HS.ESS2.E ; HS.ESS3.C ; HS.ESS3.D

Common Core State Standards Connections:

ELA/Literacy -

- WHST.6-8.7** Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. (MS-ESS3-3)
- WHST.6-8.8** Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. (MS-ESS3-3)

Mathematics -

- 6.RP.A.1** Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MS-ESS3-3)
- 7.RP.A.2** Recognize and represent proportional relationships between quantities. (MS-ESS3-3)
- 6.EE.B.6** Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-ESS3-3)
- 7.EE.B.4** Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (MS-ESS3-3)

The section entitled “Disciplinary Core Ideas” is reproduced verbatim from *A Framework for K-12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas*. Integrated and reprinted with permission from the National Academy of Sciences.