Argument-Driven Inquiry
A way to help students develop science proficiency

What is Argument-Driven Inquiry?

Argument-Driven Inquiry or ADI is an innovative approach to lab instruction. This inquiry-based instructional model was developed using the latest research about how people learn science and current recommendations for making lab activities more meaningful for students. This approach consists of eight stages:

- The teacher identifies a task and guiding question to answer;
- The students work in small research teams in order to collect the data they need to answer the guiding question;
- The students analyze the collected data and develop a tentative argument that consists of an answer to the guiding question, evidence in support of it, and a justification of the evidence;
- The students participate in an argumentation session where they share, critique, and refine their arguments;
- The teacher leads an explicit and reflective discussion about the core idea underlying the lab, ways to improve investigations in the future, and the nature of science and scientific inquiry.
- Each individual student writes an investigation report;
- The students participate in a double-blind group peer review of the reports; and,
- The students revise their reports based on the feedback and then submit the reports to the teacher for evaluation.

How does ADI fit into a course?

ADI can be integrated into any curriculum. It can be used at the elementary, middle school, high school, or college level. Teachers can replace the existing lab activities in their curriculum with ADI lab investigations that have already been developed, piloted, and refined. These ADI lab investigations are available in a series of books that are available from NSTA press. Teachers can also develop their own ADI lab investigations by modifying an existing lab activity or by creating a completely new ADI lab investigation.

Is ADI aligned with my state standards?

Yes. Students have an opportunity to learn how to participate in the scientific practices found in the Framework for K-12 Science Education & state standards during each investigation. Students also learn about a core idea and a 1 – 3 crosscutting concepts as part of each investigation.

Is ADI aligned with Cross-Curricular instruction Initiatives?

Yes. The ADI instructional model was developed as a tool for science and STEM teachers. Reading, writing, language, and mathematics skills are integrally important to professional science and should be part of high-quality science and STEM instruction. ADI is designed to be cross curricular because research shows that integrated instructional units are more effective than traditional laboratory instruction and even cultivate greater interest in science ADI is designed to help students learn science and develop important math and literacy skills at the same time.

How well does it work?

Our research indicates that ADI can help students learn the core concepts, crosscutting concepts and the scientific practices outlined in the Framework for K-12 Science Education. ADI lab investigations also help students develop the fundamental literacy skills found in the newest state ELA state standards.

How can teachers learn about how to use ADI in their classroom?

ADI provides free resources on our website, classroom resources, and professional learning opportunities. We offer regional PL events or we can come to your district. Additionally, ADI’s Train the Trainer program prepares participants to facilitate ADI professional development about the ADI Instructional model and provide ongoing support for colleagues within their districts. To learn more about the ADI instructional model, PL opportunities, when they are offered, or how to schedule one, visit: www.argumentdriveninquiry.com.

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