

Guided Investigations

Overview:

Guided investigations engage students in experiments, inquiry-based learning, and research projects that require high levels of cognitive engagement.

Purpose:

By engaging students in exploring compelling questions, observing real-world phenomena, analyzing data and evidence, and reporting their discoveries, guided investigations support meaning-making and long-term memory. They tap into student's natural curiosity, making learning more joyful and memorable. They also provide students with opportunities to use repetition and retrieval to encode their learning more richly.

Application: When and where can I use it?

Guided investigations engage students in examining driving questions and investigating intriguing phenomena, primarily in natural and social sciences. They usually unfold with the following sequence of learning activities:

- Build students' background knowledge with high-interest texts.
- Design experiments and investigations to test hypotheses and assumptions.
- Collect data and gather evidence through close observation and reading.
- Use evidence to support findings and conclusions.

Research has shown that guided investigations are effective at promoting and improving student learning when the following principles are applied:

- *Students should be expected to think deeply about their learning while doing something with it.* Particularly effective is engaging students in learning that requires them to re-think or re-consider previously held notions about scientific phenomena, social issues, or historical events.
- *Student self-direction should be balanced with teacher-guided learning.* Guided investigations are just that – guided. Inquiry that is structured by teacher-provided questions and that combines direct instruction with discovery learning provides the balance necessary for meaningful learning to take place.
- *Hands-on and real-world learning experiences deepen learning.* Giving students the chance to engage in hands-on experiences related to texts and classroom-based learning increases student motivation and achievement, specifically when the hands-on activities are explicitly designed to help students extend and apply their learning.
- *Cognitive writing (another 'cognitive capacity' move) ensures that guided investigations support deep learning.* The act of writing about the learning deepens the learning.

Getting Started: What are some tips for starting and using this routine?

Here are some tips to help you engage your students to extend and apply their learning with guided investigations.

Start with what students should think about – and what they need to see to believe and comprehend. Your guided investigations should be grounded in the enduring understandings of your unit. What discoveries do you want your students to make? What new insights do you want them to develop? What will they need to see or experience to truly believe?

Identify what knowledge and skills to teach directly and what students should discover through hands-on learning, experimentation, or research. As indicated previously, minimally guided discovery learning is rarely effective. However guided discovery, which integrates teacher direction with student discovery, is incredibly powerful. As the instructor, you need to give careful thought to what needs to be taught directly, vs. what students should discover. Think about the following:

- What knowledge or skills do students need to conduct the investigation?
- Which key concepts and vocabulary terms do they need to understand what they are doing and be successful?
- Do you want your students to discover concepts first and hear them explained afterward?

Ensure students return to thinking about key concepts, big ideas, and enduring understandings. It can be very easy to get caught up in the hands-on investigation part of a guided investigation and lose sight of the purpose of that investigation. Given that students only learn what they think about, be sure to anchor the investigations in opportunities for students to think about and reflect on what they've learned through class discussions and writing activities that are linked back to the learning goals.

See this Instructional Move in action:

[Bing Videos](#)

Read more about this Instructional Move:

[Embracing Inquiry-Based Instruction | Edutopia](#)

[Microsoft Word - DirectedInquiryvsGuidedInquiry.doc \(discoveryeducation.com\)](#)

[Inquiry in the Social Studies Classroom - Fresh Ideas for Teaching \(savvas.com\)](#)

[Inquiry-Based Tasks in Social Studies | Edutopia](#)

References:

Lemov, Doug. Teach Like a Champion 3.0 Jossey-Bass 2021