

FIELD CARD

Cut out along outer lines, & fold along the centerline. This makes a handy reference card that will fit in your pocket.

Nature Scene Investigators: NSI

Introducing the Activity

1. There are mysteries everywhere in nature!
2. Explain—if you know how to observe, ask questions & make explanations, nature is exciting and interesting.
 - ▶ You'll be **Nature Scene Investigators** checking out a mystery object.
3. Students form two concentric circles facing inward, with inner circle sitting/kneeling.
4. Explain roles: inner circle makes observations, outer circle asks questions

Making Observations and Asking Questions

1. Unveil the mystery object & set it in the circle.
2. Tell the inner circle to make observations & the outer circle to ask questions.
3. Facilitate this stage of the discussion by encouraging participation, interaction, observations, questions, & conversation.
 - To encourage participation establish non-verbal signals for agreement
 - To encourage interaction, include the outer circle.
 - To encourage observations & questions, use prompts like:
 - ▶ What do you notice?
 - ▶ What colors do you see? Textures?
 - ▶ Is it heavy or light?
 - ▶ What do you notice with other senses?
 - ▶ How would you describe its shape?
 - To encourage dialogue & discussion, use questions like:
 - ▶ Isaiah, do you see the holes, too?
 - ▶ Do you agree with what Bernice said?
 - ▶ Sarah, how would you describe the color?
 - ▶ What do you think, Juan?
4. Before students lose interest in the object, ask circles to switch places.
5. Tell everyone to make observations & ask questions.
6. Facilitate this stage of the discussion by focusing students on one part of the object and helping them build on one another's observations to encourage discussion.
 - To help students focus on one part of the object, follow student excitement & ask "going deeper" questions like:
 - ▶ We've noticed this pattern of it being light on top and dark on the bottom—is there anywhere on the object it's not like that?
 - ▶ Are those colors everywhere, or just in certain areas?

- ▶ What true statements can you say about the cracks?
 - To help students build on one another's observations, ask questions like:
 - ▶ Roberto showed us that these holes go all the way through this object. What else can we notice about them? Are all the holes like that?
 - ▶ Does anyone want to build on what Carla was saying?

Making Explanations from Evidence

1. Well before students lose interest, invite everyone to make explanations based on evidence.
2. Facilitate this stage of the discussion by following their interests, encouraging good science talk, & asking questions that encourage explanations, promote dialogue, & uncover student thinking.
 - To follow student interests, seek out their excitement, then follow it as they make explanations.
 - To encourage good science talk, ask students to share their evidence & define big words they use.
 - To encourage good science talk, ask students to respectfully agree or disagree with each others ideas, & use "the language of uncertainty." (Hold up "Language of Uncertainty Sentence Starters" to help students form their sentences.)
 - To encourage explanations, ask questions like:
 - ▶ We've wondered about ____; what's an explanation for it?
 - ▶ So Sarah, you said that you saw different colors on different sides of the object. What's your explanation for that?
 - ▶ What do you think happened to it? What could have caused this?
 - To encourage dialogue & uncover student thinking, ask questions like:
 - ▶ What's your evidence for that?
 - ▶ Would anyone like to add to that explanation, or come up with a different explanation?
 - ▶ What makes you think that?
 - ▶ So, Isaiah thinks something may have eaten it because of these small holes. What do you think of that idea, Juan?
 - ▶ So Roberto, you said you think this object fell on the ground at some point because of the damage you observed. Does anyone want to build on what Roberto has said?
3. Keep the discussion moving & transition when students are ready.
4. **Optional crosscutting concept:** Explain to students that many features we observe in nature are "effects" of one or more causes.
5. **Optional crosscutting concept:** Explain, since we can't always "catch the causes in the act," we can make possible explanations for what might

FIELD CARD CONTINUED

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have happened.

Sharing & Evaluating Information From Other Sources

1. Invite students to share what it reminds them of, what they know or have heard, & to name their sources.
2. Encourage students to share how reliable they think their sources are.
3. Ask questions to encourage student sharing, such as:
 - ▶ *What does it remind you of?*
 - ▶ *Where have you seen something like this before?*
 - ▶ *Have you ever heard, seen, or read anything about something like this?*
4. After students have the chance to share their knowledge, share relevant information you know about the object, & include your source(s).

Applying the Skills & Catching “Inquiry Fever”

1. Explain to students that they can use these skills anywhere in nature.
2. Take students to an area rich for exploration & send them to explore and use their skills with others.
3. *Optional Crosscutting Concept:* Encourage them to make explanation about possible causes for things they observe.
4. Offer tools like cups, nets, bug boxes, & hand lenses. Give students time to find & explore interesting stuff.
5. Move between groups and help engage students who may be less focused or don’t know what to do. Ask questions such as:
 - ▶ *What do you notice about this?*
 - ▶ *What are some questions you have?*
 - ▶ *What’s your explanation for that?*
 - ▶ *What’s the evidence for your explanation?*
 - ▶ *What do you think about that explanation?*
 - ▶ *Can you come up with a different explanation?*

Wrapping Up & Making Connections

1. Ask students what it was like to use science inquiry skills in nature.
2. Tell students to keep looking for mysteries in nature & using their tools—during the field experience, & beyond it.
3. *Optional Crosscutting Concept:* Encourage students to make & discuss explanations coming up with possible causes for effects they observe. Tell them this is a useful way for scientists to learn about many parts of the natural world.
 - ▶ *When we find interesting stuff in nature, let’s keep trying to figure out what caused it. Scientists think about cause and effect whenever they’re trying to figure something out, because it helps them better understand*

the world.

4. If your object is commonly found at your site, encourage students to look for other examples, & investigate further.
5. Make connections to your theme and/or concepts.

Write additional notes here: