

Lesson Plan Format

NC SCOS Objective		<p>SCIENCE 2.05, 2.06 Investigate, observe and collect decomposers to assist with the discussion of soil makers.</p>
Essential Question		What are decomposers and how do they contribute to the formation of soils?
Vocabulary		- Composting, decomposition, living soil, microorganisms, macroorganisms, habitat
Materials		-Hand lenses-- cardboard or plastic trays-
Technology Integration		iPad camera: teachers should demonstrate the proper way to take pictures of objects. PowerPoint can be used to show pictures of local decomposers before taking students into the field. Identification keys can also be downloaded on their iPads, so students can refer to them in the field.
Minute by Minute Assessment		<i>Be sure to pause every 2-3 minutes and ask students what they are observing throughout the experiment.</i>
Cultural Connection (Hook/Activator)		Soil is a very important for humans, plants and wildlife to live. Soil is used to grow crops and plants. Soil is considered living because it has physical and chemical components, but they also serve as habitat for micro and macroorganisms such as earthworms, fungi, and ants. Describe the difference between micro and macro-organisms.
Warm-Up		<p>Turn & Talk: What do you know about soil? What types of decomposers live in the soil? Have you ever seen decomposer on the playground?</p>
15-20 Mins	Me: Modeled	<p>Review the different types of decomposers that live in the soil or have niches that contribute to the “making” of soil. Describe their individual roles in the creation of soil and explain that their activities (roles). Note that the combination of their activities contribute to the development and health of soils. Using images will assist students in identifying decomposers outside. Keys can also be made for students to take with them.</p> <p>Review procedures for recording scientific observations. Review the proper way to collect organisms making sure that students understand that they are living and caution should be taken during collection to ensure they live and they are returned to the same location (i.e. their home) the students found them.</p>
10-15 Mins	We: Shared	<p>Discuss Warm- up as a class. Focus discussion with questions like these:</p> <ul style="list-style-type: none"> Do we expect to find different decomposers in different types of

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		<p>soils and habitats? If yes, explain why this may be the case.</p> <ul style="list-style-type: none"> • How do decomposers move within the soil? Are there certain patterns that they make? • Have you ever looked at an old tree log or under a pile of leaves in the woods? Did you notice anything living on or under the leaves? How about under the soil? What types of things did you find? <p>Students should be in pairs or small groups.</p>
<p>20-25 Mins</p>	<p style="text-align: center;">Few: Guided Practice</p>	<p>Guide them through the procedure of identifying decomposers outside and the proper procedures for collecting the samples. Note that the samples are living and students need to handle them with care so they can be returned to the habitat where they were collected.</p> <ul style="list-style-type: none"> ➤ Using a collection plate, show students areas where decomposers are likely to live based on previous classroom discussions. ➤ Using a pile of leaves or a log as an example, ask the students to predict what types of decomposers they might expect to live in, on or under these objects and if they are considered micro or macro-organisms. ➤ Lift the pile of leaves and appoint one student to collect a few decomposers and place them on the tray. ➤ Using the hand-lens, have groups of students observe the sample. ➤ Explain to students how these organisms contribute to the development of soils by their ability to breakdown materials found in the woods by consuming them. ➤ Distribute materials to student: 1 tray and individual hand-lens per group. Assign roles to students if necessary including: a sample collection leader, a recorder and a photographer. ➤ Define an area where the students can collect samples. ➤ Ask groups to record what they find by taking pictures with their iPads and recording them in their field notebooks. Tell them to make note of where they found them so they can return their samples. ➤ After each group has collected samples, share the samples with the class and discuss where the organisms were found and each ones role in developing soil. ➤ Tie the concept of habitat to the samples and ask students to describe the different types of habitat where they found their samples. ➤ Ask students to return samples to the location they collected them.
<p>10-15 Mins</p>	<p style="text-align: center;">You: Independent Practice</p>	<p>In science field notebooks, write a journal entry summarizing their procedures and observations. Encourage them to state what they learned as well as how they learned it, such as “Did they find the same organisms living under the logs that they found living under the leaves?” “Was the area where they found the organisms wet or dry?” “Does the type of season influence the amount and types of organisms found?”</p>

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5-10 Mins	Summary	Have each group present their findings: Ask students to show pictures of their organisms that they took with their iPads, have them describe where they found them and which organisms were their favorites and why.
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