

# Lesson 1

**Objective:** Record observations of the Mojave Desert.

## Launch 5 minutes



### Teacher Note

Throughout the module, Science Logbook pages often include space for students to write alongside their drawn observations. These writing opportunities provide scaffolding as students develop the ability to write independently, and the resulting student work enables teachers (and parents) to track progress over time. In earlier lessons, encourage students who are ready to begin writing independently to include written observations. As the module progresses, all students should attempt to include written observations. As necessary, write students' responses for them or conduct one-on-one interviews with students to support them and to adequately capture their understanding.

Display the map of North America (Lesson 1 Resource A).

## Agenda

Launch (5 minutes)

Learn (25 minutes)

- Notice and Wonder about Wonderland of Rocks (5 minutes)
- Examine Scientist's Notebook (8 minutes)
- Explore Wonderland of Rocks (12 minutes)

Land (5 minutes)



Direct students' attention to the highlighted area on the map, and tell students that this is the location of the Mojave Desert. 🗺️ Point out students' own location on the map, and help students compare their own location with the location of the Mojave Desert. Then ask the following question.

- ▶ If we were in the Mojave Desert, what do you think we would see? 🗺️
- *I think there might be sand there.*
  - *We'd probably see camels there because that's what I've seen in cartoons.*
  - *Deserts are really hot, so I think we'd see the Sun shining brightly.*

Acknowledge all responses, and tell students they will learn more about deserts as they explore the Phenomenon Question **What do we notice when we explore the Mojave Desert?**



#### Teacher Note

The Mojave Desert is named for the Mojave people, who lived in that region for thousands of years—and still do. One translation of *Mojave* is “beside the water.” The Mojave people lived along the Colorado River in parts of what are now the US states of Arizona, Nevada, and California.

At this point in the module, avoid revealing the meaning of *Mojave*. Consider providing this translation later in Concept 1, when students learn about water sources in the desert (3D).



#### Teacher Note

This discussion provides students with an opportunity to share what they already know about deserts. However, students do not need prior knowledge about deserts, and they may have misconceptions at this point in the module. All students will build knowledge about deserts throughout these first three lessons.

## Learn 25 minutes

### Notice and Wonder about Wonderland of Rocks 5 minutes

Reveal to students that they will begin their exploration of the Mojave Desert by watching a video that was taken from above. Play the Mojave Desert flyover video (<http://phdsci.link/1628>). As students watch, ask the following questions.

► **What do you notice about the desert?**

- *It looks very brown.*
- *I notice lots of rocks on the ground.*

► **What do you wonder about the desert?**

- *Do any plants or animals live there?*
- *What is the weather like?*
- *Do people live in the desert?*

After students share, explain that a **desert** is a very dry area and that there are deserts in many different parts of the world.



#### English Language Development

Introduce the term *desert* explicitly by using a process such as this:

- Pronounce the word *desert*, and have students repeat it.
- Say *de-sert* in syllables, and then repeat the full word.
- Providing the Spanish cognate for *desert* (*desierto*) may be helpful.
- Consider sharing photographs of different deserts around the world.

After introducing *desert* and other important terms, provide scaffolds for English learners as they use the words when speaking, writing, and investigating. For more information, see the English Language Development section of the Implementation Guide (3D).

Tell students that the class will go on video tours to take a closer look at two locations in the Mojave Desert. Emphasize that students will need to make detailed observations during these tours.

## Examine Scientist's Notebook 8 minutes

To frame the practice of recording observations, display the entry from a scientist's notebook (Lesson 1 Resource B).



### ► What do you notice about this picture?

- *There's a big tree on one side of the picture.*
- *I notice people there too.*
- *There's a mountain and a house far away.*

Tell students that a scientist created the drawing. Explain that the scientist, Alfred Russel Wallace, traveled to different parts of the world and learned about the people, plants, and animals in the places he visited. 📄 📄 Tell students that he recorded his observations by drawing them.

### ► Why did Alfred Russel Wallace draw his observations?

- *I think drawing helped him remember what he saw.*
- *He could bring his drawings home and show other people what he saw.*

Acknowledge that there are many reasons that scientists record their observations. Explain that recording information in notebooks can help scientists make more detailed observations, remember what they observed, share information with other people, and ask new questions. 🧠



### Teacher Note

Alfred Russel Wallace was a 19th-century British scientist who spent years living in Brazil and then the Malay Archipelago. Wallace published more than 20 books and hundreds of articles and essays about the people, plants, and animals in the areas he visited. He created the drawing shown here during his 8-year journey around the islands of the Malay Archipelago (Camerini 2021).



### Teacher Note

Some students may have the misconception that trees are not plants. Consider pointing out the trees shown in Wallace's drawing and emphasizing that trees are plants too.



### Spotlight on Knowledge and Skills

Detailed observation and careful questioning are valuable practices for students to adopt inside and outside the classroom. Encourage students to start their own notebooks to capture their observations of the natural world and to document the questions those observations spark (K.2A, K.2C).

Tell students that sometimes scientists record details about just one plant or animal, but other times they record details about everything they see around them. Point out that in this drawing Alfred Russel Wallace tried to record his observations of an entire environment. Explain that an **environment** is everything around a plant or animal. 📄

## Explore Wonderland of Rocks 12 minutes

Tell students they will take a video tour of an area in the Mojave Desert called the Wonderland of Rocks. Encourage students to imagine that they are going on a field trip.

Instruct students to observe the different parts of the Wonderland of Rocks during the tour. Then begin playing the Wonderland of Rocks tour video (<http://phdsci.link/1629>). Pause the video near the end to display an image for students to refer to during the discussion.

### ► What did you observe during the video tour? 🗣️

- *I saw lots of rocks and sand.*
- *The Sun was out, and there were some clouds in the sky.*
- *I noticed that there were some hills.*
- *I saw some small bushes.*

Highlight student responses that include descriptive details. Explain that scientists pay careful attention to details such as these when making and recording observations. Tell students that they will watch the video a second time and that they will then record their observations in their Science Logbooks (Lesson 1 Activity Guide). As students watch, encourage them to look for features they did not notice the first time.

Play the Wonderland of Rocks tour video (<http://phdsci.link/1629>) again. Then provide time for students to record their observations in their Science Logbooks (Lesson 1 Activity Guide). ✅ As students work, encourage them to draw as many features of this environment as they can, just like Alfred Russel Wallace did in his drawing.



### English Language Development

Remind students of the definition for *environment*: everything around a plant or animal. Consider showing students a photograph of an animal such as a polar bear or lion and having students describe the environment they see (3D).



### Teacher Note

Convey to students that drawing and writing are just two of the ways that people can record and share scientific knowledge. Explain that many cultures use oral storytelling and song to share observations and information. In later lessons, students will learn more about how the Serrano people, who are indigenous to the Mojave Desert region, use oral traditions to share knowledge across generations.



### Spotlight on Knowledge and Skills

Encourage students to accurately describe the scale and quantities of features they observe. Students can then represent these details when they record their observations (K.2C, K.2D).



### Check for Understanding

In this lesson, students record observations (K.2D) of the desert. As students work, look for evidence that their drawings represent features of the environment they observed. To determine what students are drawing, consider asking questions such as the following:

- What part of the Wonderland of Rocks are you drawing?
- How does your drawing show what you observed in the video tour?

If students need additional support, revisit the scientist's notebook entry (Lesson 1 Resource B) from earlier in the lesson. Ask students to think about what details the scientist captured in his drawing.

Have students share their work with a partner. Then prompt pairs to discuss the following question.

- ▶ What parts of the Wonderland of Rocks did you both draw?

Invite pairs to share their findings with the class. As students share, ask the rest of the class to use nonverbal signals to show whether they also included each feature.

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## Land 5 minutes

Post two students' Science Logbook entries in an area visible to all students, or use a document camera to display the two pages. Wonder aloud about why the drawings look different even though both students took the same video tour. Invite students to share their ideas.

*Sample student responses:*

- *Different people draw things differently.*
- *Maybe they noticed different details about the desert.*
- *One person drew the parts of the desert up close. The other drew them from far away.*

Confirm that there are many reasons that recorded observations may look different. Point out that each student's drawing shows important parts of this desert environment but that students have chosen to represent these parts in different ways.

### Optional Homework

With supervision from an adult at home, students look for an outdoor environment that has a variety of plants. Students write or draw their observations of this environment.