



## Post-Visit Field Trip to Sand Dunes Lesson

### Death Valley National Park



Post -Visit Field Trip to Sand Dunes Lesson  
50 minutes

**Essential Question:** How does learning about the Death Valley sand dunes help students learn about extreme desert habitats? What did students learn (educationally and personally) from visiting the Mesquite Sand Dunes at Death Valley National Park?

#### **Standard(s):**

Next Generation Science Standards:

4-ESS2-1 Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Common Core English Language Arts Standards: Reading: Informational:

RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

Common Core English Language Arts Standards: Writing:

W.4.7 Conduct short research projects that build knowledge through investigation of different aspects of a topic.

W.4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.

#### **Objectives:**

Students will be able to:

- Apply observations from the Extreme Living field trip to create a visual display (a diorama or a visitor pamphlet) of sand dunes. This will include animal and plant life, as well as geological features that influence the making of a sand dune.
- Identify and discuss five things that connect to the formation and existence of all sand dunes.

#### **Overview:**

Congratulations to you and your students for completing the Extreme Living program at Death Valley National Park! In this lesson, students will be expected to recall factual information, as well as personal experiences to create a diorama or visitor pamphlet of the Mesquite Sand Dunes. Students will participate in a science sort and a brainstorming session of observations they made while on their field trip to the sand dunes. Discussions should center around the field trip topics of weathering, erosion, and deposition, as well as including information about animal and plant life and geological features of the sand dunes. They will use this information to support the creation of their product. This lesson wraps-up the desert habitat unit by allowing students to apply what they learned and share relevant information with their classmates.

## Teacher Background Information:

Death Valley is known for being the hottest, driest, and lowest point in North America. To many people, sand dunes are the essence of the desert, but in Death Valley National Park they occur in only a few locations. Your students had opportunities to observe, record, and question the unique animal tracks and habitats that are found in these special locations. Unique plants and animals live in this environment through several adaptations such as getting water from seeds (kangaroo rat), growing long ears (jack rabbit and kit fox), raising their bodies off the sand (sidewinder snake), and only releasing water when the air is most humid (creosote bush).

## Materials:

- Heavy paper for diorama
- Scrap paper and markers
- Pictures of Death Valley sand dunes, as well as other desert sand dunes
- Scissors
- Glue
- PDF of Diorama Instructions
- PDF of Visitor Pamphlet Instructions
- PDF of Rubrics

## Lesson Hook/Preview:

Give students three sticky notes. Ask them to write one thing on each sticky note about the sand dunes they saw in Death Valley. Have the students discuss with one partner what they wrote on the sticky notes. Next put the students into groups of four and have the students pick one thing from the sticky notes to share. After a few minutes, send the students back to their seat. Write the four topics below on the board. Then have the students look at their sticky notes and place them in the topic group they think their sticky belongs.

animal life  
plant life  
geological features  
weather  
other

After all the students have placed their sticky notes, review a few of them. Ask the students to give you a thumbs up if they agree with the placement or a thumbs down if they don't agree. If the students are not sure, then they can have their thumb in the middle. (Fun extension: Snap a photo of the science sort and send it to the [Death Valley Education Program](#). We would love to see the students' work!)

## Procedure:

1. Explain to the students that now that they have had a hands-on experience during the field trip, they need to share the facts and their experience with others.
2. Review the vocabulary and discuss how the words can be used to describe the dunes they saw during their field trip.
3. Explain to the students that they are going to create a diorama and/or a visitor pamphlet to encourage other people to visit the Mesquite Sand Dunes in Death Valley. You should have a sample of each finished product for them to see. (See materials section)
4. Review the directions. Discuss the importance of including animals, plants, geological features, and evidence of weather. Discuss what the expectations are. Show them the finished samples.
5. Let students decide which product they want to create individually. Pass out the 'Create a Diorama Sheet' and/or the 'Make a Visitor Pamphlet Sheet' to the appropriate students. (See materials section)
6. Give students time to work on the diorama and/or the visitor pamphlet. Let them research additional information on the computer and in textbooks. Walk around the room and discuss with the students what they are including in their projects.

7. When all the students are done with their dioramas and/or visitor pamphlets, have the students sit in small groups on the floor. Have each student share their projects with the group. The students should be able to describe what the dunes looked like and what things they saw on and around the dunes.

### **Extension Questions or Activity:**

Provide the following questions to the students. Each student researches a different question. They will share this information to their classmates through a poem, song, poster drawing, or other creative way.

1. Do all sand dunes have some similar features?
2. Where in the United States can you find sand dunes?
3. What animals are endemic to Eureka Dunes in Death Valley?
4. What are the different types of dunes? (transverse dunes, crescent dunes, linear dunes, star dunes) How are they different?
5. Watch one of the following videos, take notes with a bubble map and then create a one-page flyer about sand dunes. Be sure to include facts that you learned.

[DragonFly TV kids](https://www.youtube.com/watch?v=DRuulKcowfc) - <<https://www.youtube.com/watch?v=DRuulKcowfc>>  
[Singing Sand Dunes](https://www.youtube.com/watch?v=4mbypyJqghk) -<<https://www.youtube.com/watch?v=4mbypyJqghk>>  
[Sand dunes- Curiosity show](https://www.youtube.com/watch?v=YdOCIRWOHpU) - <<https://www.youtube.com/watch?v=YdOCIRWOHpU>>

### **Support for Struggling Learners:**

- Show pictures from the field trip. Create a list of words as a class to describe what they see in the pictures. Display this list for students to use while working on their projects.
- Visitor Pamphlet Activity:
  - Provide exactly five topics for students to research instead of giving a choice among seven topics.
  - Put students in groups of five. Each student completes one topic. The group puts everyone's work together to make one pamphlet.
- Diorama Activity:
  - Pre-make the diorama template. Each student then decorates their own diorama.

### **Vocabulary:**

1. **Gusting:**
2. **Immense:**
3. **Habitat:**
4. **Unique:** b

## Assessment:

### Pamphlet Rubric

	4	3	2	1	0
Writing	Paragraphs have 5 or more sentences with correct punctuation and grammar.	Paragraphs have at least 4 sentences with correct punctuation and grammar.	Paragraphs have at least 4 sentences with minimal punctuation and grammar errors.	Paragraphs are very brief with a lot of punctuation and grammar errors.	No evidence
Visuals (Illustrations or Pictures)	Visuals are present on each page, support each paragraph, and have labeled parts.	Visuals are present on each page and support topics in paragraph.	Some relevant visuals are present in the pamphlet.	Some visuals are incomplete or do not relate to sand dunes.	No evidence
Facts	Five or more accurate facts about sand dunes are present in the pamphlet. References of where each fact was found is listed or cited.	At least four accurate facts about sand dunes are included in the pamphlet.	At least three accurate facts about sand dunes are included in the pamphlet.	Less than three accurate facts about sand dunes are included in the pamphlet.	No evidence
Personal experience	Five or more comments about personal experience on the field trip are in the pamphlet.	At least four comments about personal experience on the field trip are in the pamphlet.	At least three comments about personal experience on the field trip are in the pamphlet.	Less than three comments about personal experience on the field trip are in the pamphlet.	No evidence

## Diorama Rubric

	4	3	2	1	0
<b>Animals or tracks on the sand dunes</b>	Five or more (animals) pieces of evidence	Four (animals) pieces of evidence	Three (animals) pieces of evidence	Very little evidence- Two or less animals on the dunes	No Evidence- no animals present
<b>Plants on the sand dunes</b>	Five or more (plants) pieces of evidence	Four (plants) pieces of evidence	Three (plants) pieces of evidence	Very little evidence- Two or less plants on the dunes	No Evidence- no plants
<b>Environment around the dunes (ie: mountains, buildings, rocks, etc)</b>	Five or more (environment) pieces of evidence	Four (environment) pieces of evidence	Three (environment) pieces of evidence	Very little evidence- Two or less environmental features.	No Evidence- no environmental features on the sand dunes

## References:

[DragonFly TV kids](https://www.youtube.com/watch?v=DRuulKcowfc) - <<https://www.youtube.com/watch?v=DRuulKcowfc>>

[Singing Sand Dunes](https://www.youtube.com/watch?v=4mbypyJqghk) -<<https://www.youtube.com/watch?v=4mbypyJqghk>>

[Sand dunes- Curiosity show](https://www.youtube.com/watch?v=YdOCIRWOHpU) - <<https://www.youtube.com/watch?v=YdOCIRWOHpU>>

[Death Valley National Park Sand Dunes- Death Valley explorer](https://www.youtube.com/watch?v=5g-kACJhr4Y&t=471s) - <<https://www.youtube.com/watch?v=5g-kACJhr4Y&t=471s>>

This lesson plan was developed through the Teacher-Ranger-Teacher Program.