

## Photo Description



A small crab sits on sandy beach ground near its burrow hole. The crab has a hard shell, two eye stalks, and several legs. You can see the sandy dirt all around where the crab has been digging.

## Scientific Phenomena

This image represents the anchoring phenomenon of animal habitat construction and adaptation. The crab is exhibiting natural burrowing behavior, which occurs because crabs need safe places to hide from predators, stay moist, and regulate their body temperature. The crab uses its specialized claws and legs to excavate sand, creating a tunnel system that serves as both shelter and protection. This behavior is an inherited trait that helps the crab survive in its beach environment.

## Core Science Concepts

1. Animal Habitats: Living things need specific places to live that provide food, water, shelter, and space to survive.
2. Animal Adaptations: Crabs have special body parts (claws, legs, hard shells) that help them dig burrows and survive on beaches.
3. Animal Behaviors: Animals do certain things (like digging) to meet their basic needs for survival.
4. Environmental Interactions: Animals change their environment (moving sand) to create what they need to live.

### Pedagogical Tip:

Use the "See, Think, Wonder" routine with this image. Have students observe what they see, think about why the crab might be doing this, and wonder about questions they have. This builds scientific thinking skills.

### UDL Suggestions:

Provide tactile experiences by bringing in different types of sand, shells, or crab models for students to explore. This supports kinesthetic learners and students who benefit from hands-on investigation.

## Zoom In / Zoom Out

1. Zoom In: At the microscopic level, the crab's gills need to stay moist to extract oxygen from both air and water. The burrow helps maintain the humidity the crab's respiratory system requires to function properly.
2. Zoom Out: This crab is part of a larger beach ecosystem that includes other burrowing animals, shore birds, plants, and marine life. The crab's digging activity helps aerate the sand and creates habitat for other small organisms, contributing to the health of the entire coastal environment.

## Discussion Questions

1. What do you notice about how the crab's body parts help it dig? (Bloom's: Analyze | DOK: 2)
2. Why do you think the crab needs to make a burrow in the sand? (Bloom's: Evaluate | DOK: 3)
3. How is a crab's home different from your home, and how are they the same? (Bloom's: Compare | DOK: 2)
4. What other animals do you know that dig homes in the ground? (Bloom's: Apply | DOK: 1)

## Potential Student Misconceptions

1. Misconception: "The crab is just playing in the sand like kids do."  
Reality: The crab is performing essential survival behavior to create shelter and meet its biological needs.
2. Misconception: "All crabs live in the ocean."  
Reality: Some crabs, like this one, live on land but still need moisture and may return to water to reproduce.
3. Misconception: "The crab is making a mess."  
Reality: The crab's digging is organized behavior that creates a structured burrow system for protection and survival.

## NGSS Connections

- Performance Expectation: 2-LS4-1: Make observations of plants and animals to compare the diversity of life in different habitats
- Disciplinary Core Ideas: 2-LS4.A - The diversity of life forms found in a place is influenced by environmental factors
- Crosscutting Concepts: Structure and Function - The shape and stability of structures are related to their function

## Science Vocabulary

- \* Burrow: A hole or tunnel that an animal digs in the ground for shelter
- \* Habitat: The natural place where an animal lives and finds everything it needs
- \* Adaptation: Special body parts or behaviors that help animals survive
- \* Shelter: A safe place where animals can hide and be protected
- \* Predator: An animal that hunts and eats other animals

## External Resources

### Children's Books:

- A House for Hermit Crab by Eric Carle
- Crab Moon by Ruth Horowitz
- What Is a Life Cycle? by Bobbie Kalman

### YouTube Videos:

- "Crab Digging Burrow Time Lapse" - Shows actual crab burrowing behavior in real time: <https://www.youtube.com/watch?v=6TGbg5HDhB4>
- "Beach Animals and Their Homes" - Educational video about various beach animal habitats: <https://www.youtube.com/watch?v=mK8gm8ZOW2c>