



Human Impact Experiment

1. Go outside and set up a heat lamp over an area with natural substrate and an area with concrete.
2. Place a thermometer on the ground underneath the heat lamps.
3. Discussion questions:

Which has the highest temperature?

What does that tell you about humans' impact on the desert?

What do they all have in common?

What are some negative AND positive effects humans have on the desert environment?

Record your thoughts in Research Journal

*Optional: Do this experiment again, but with heat lamps overpainted concrete, dirt, asphalt, or other student suggestions. Compare results.



Evaporative cooling

1. Feel the temperature of your arm or hand without spraying water.
2. Then spray water, wait a while, and feel the temperature during evaporative cooling.
3. Discussion questions:
 - What does the hand with water sprayed feel like? Is it cooler than the other hand?
 - Why would spraying water help you feel cooler?
 - Which desert animals use evaporative cooling and how do they use it?

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*Optional: Check out asknature.org to see more desert adaptations



Rabbit ears 3D model

1. Place model under heat lamp and observe how the ears change color (they have a temperature changing paint on them).
2. Discussion questions:
 - When the ears are not under the heat, what color are they?
 - When you place them under the lamp, what color do they change to?
3. Record how long it takes the ears to change colors.
4. Read the Inquiry Card together to understand more about how their ears help to regulate the temperature of the organism.
5. Discussion questions:
 - Why is this adaptation so important for desert animals?
 - What might the rabbit ear adaptation tell us about the abiotic or biotic factors they deal with in the desert?
6. Record your thoughts in Research Journal



Camel fur 3D model

1. Place camel model with cover under heat lamp.
2. After 1 minute, observe how the inside has changed color, and record the temperature.
3. Take off the cover and place it back under the heat lamp.
4. Record the temperature at 30 seconds and 1 minute, and observe how the inside changes color quicker.
5. Discussion questions:
Which version became hotter quicker?
Does the fur (cover) help to manage the temperature?
Why do you think that a thick layer of fur would be useful in the desert?

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Coyote fur

1. Feel the layers of fur.
2. Place fur under heat lamp for 1-2 minutes.
3. Feel the layers of fur again. Use the thermometer if needed.
4. Read through the Inquiry Card together.
5. Discussion questions:
 - What did you notice about the different layers of fur?
 - Do you think light colored fur or dark colored fur would be better in the desert?
 - Why is fur a good desert adaptation?

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Saguaro

1. Pull out the middle part of the model and observe how the ridges between each section are different. One shows before a rainstorm, the other shows after the saguaro receives water.
2. Read through the Inquiry Card together.
3. Calculate: One mature saguaro can hold 200 gallons of water. A gallon of water weighs 8.32 pounds. How many pounds would a saguaro be if it was holding all 200 gallons of water?

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