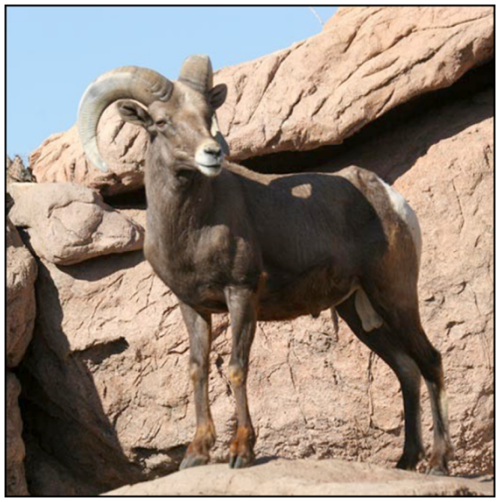
Investigation Booklet
Setting the Stage & the Scientific Process in Action



Lesson 1: Setting the Stage & the Scientific Process in Action

1. What is the research question for this unit?

How might being able to drive from Los Angeles to Las Vegas in just four hours put bighorn sheep at risk?

2. What geographic area defines each bighorn sheep population?

By the mountaintop on which they live.

3. How have people changed bighorn sheep habitat and what is the economic motivation for making these changes?

People have built large highways that cut off different mountaintop populations from each other. These highways make travel for people much easier and quicker and have increased Las Vegas tourism revenue.

4. How do highways affect mating between different sheep populations?

They will not breed with sheep populations that are separated from them by a highway.

5. Clinton Epps made this statement in the video:

> I have to be able to see the landscape to visualize the important questions. I have to experience the landscape to really be able to think well about what I want to study, how I want to study— I can't do that studying at a desk.

Why do you think he feels this way?

He can't really understand what is happening in wild populations without actually experiencing it for himself. Without the familiarity, he feels like he can miss something crucial.

Use the population breeding activity as your guide to answer the next two questions (refer to the diagram of three populations with three geometric shapes):

6. Use *X*s and *O*s as your alleles to draw two populations that show **high** levels of breeding.

Answers will vary but should show populations that have similar numbers of the same type Popsicle sticks (i.e. both groups will have about the same numbers of Xs and 0s).

X X X 0 0 0 X *0 0 0 0 X X X* *0 0 X X 0 0 0*	*X X 0 X 0 0 X* *0 0 X X X 0 0* *X X X 0 0 0 0*

7. Use *X*s and *O*s as your alleles to draw two populations that show **low** levels of breeding.

Answers will vary but should show a population with little similarity in numbers of types of Popsicle sticks (i.e. one group will have mostly X type Popsicle sticks and one group will have mostly 0 type Popsicle sticks).

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