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Explorations in Off-Highway Vehicle (OHV) Recreation: a High School Driver Education Extension

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Explorations in Off-Highway Vehicle (OHV) Recreation

A HIGH SCHOOL DRIVER EDUCATION EXTENSION

* adventure * choices * conservation * endangered species * expectation * family * the future *

respect.
Acknowledgments

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Introduction

BACKGROUND
Many Clark County School District High School students that graduate from a Driver Education course and receive a driver license will engage in Off-Highway Vehicle (OHV) recreation. The term “OHV” includes all-terrain vehicles (ATVs), quads, off-road motorcycles, and four-wheel drive vehicles. Although students might receive instruction on how to safely operate these vehicles, there is currently no organized course on responsible OHV recreation.

Some 360,000 Nevadans (age 16 and older) participate in OHV recreation each year. These recreationists visit Nevada’s backcountry for many reasons—to explore, to socialize with family and friends, to enjoy the thrill of overcoming new challenges, and to experience the natural world.

OHV recreation impacts Nevada significantly. The activity brings substantial economic benefit to the state: people buy equipment and spend money pursuing the sport (e.g., food, gas, lodging, etc.) However, OHV recreation can also have negative effects on Nevada’s land resources and the plants and animals that depend on them. For example, the U.S. Forest Service estimates that OHV motorists create about 10 miles of unauthorized new track each year in the Spring Mountains National Recreation Area, west of Las Vegas. The choices that OHV recreationists make—such as where, how, and when to ride—all greatly affect the impact they have on Nevada’s land and the species that inhabit it.

Nevada’s wild lands are vast and beautiful, but they are also fragile. Individual recreationists can prevent damage to the land; all it takes is awareness, knowledge, and skill to “tread lightly.” Your students will have many choices to make as they learn to drive, whether it be a car or an OHV.

This curriculum provides students with the tools they need to make responsible choices.

MAJOR GOALS OF THIS CURRICULUM
The lessons within this curriculum have been designed to meet the following goals:

- To increase knowledge about the natural world OHV recreationists will encounter in their exploration of Southern Nevada;
- To increase knowledge of responsible use of OHVs and principles of Tread Lightly! and Leave No Trace (both are nonprofit organizations dedicated to increasing awareness about how to minimize impacts while enjoying public and private lands);
- To increase awareness, knowledge, and understanding of land ethics;
- To allow youth to analyze personal values regarding recreational experiences, including OHV use.

CORRELATIONS
The activities within this curriculum correlate with Nevada State Standards as follows:

N.12.B.1 Students know science, technology, and society influence one another in both positive and negative ways.

N.12.B.2 Students know consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.

L.12.C.1 Students know relationships of organisms and their physical environment.

C.5.12.6 Identify major conflicts in social, political, and economic life and analyze the role of compromise in the resolution of these issues.

PERSPECTIVE: “OHV users need to be responsible users. They need to think about the future and think about their grandchildren. There is a responsibility by the American people, too. We are the stewards of the land, but it belongs to the American people.”

—JOE WALSH, U.S. Forest Service Spokesman (as quoted in Las Vegas Sun, November 3, 2005)
Activity Is What is Your OHV I.Q.?

BACKGROUND
This introductory activity is designed to foster understanding and awareness about OHV recreation in Southern Nevada. It includes facts about OHV recreation, reasons why recreation is important, and issues surrounding OHV recreation.

The federal government is the largest manager of public lands in the U.S. In fact, 86 percent of the total land area in Nevada is owned by the public. Public lands belong to everyone and everyone has an obligation to protect and preserve these precious resources.

OBJECTIVE
Students learn facts and issues about OHV recreation and the diversity of plants and animals found in Southern Nevada. Students will also describe how recreational activities impact our lives.

MATERIALS
☐ Copies of the OHV I.Q. Quiz Student Sheet
☐ Copies of the OHV I.Q. Quiz Solutions
☐ Optional: PowerPoint quiz (provided on CD)

PROCEDURE
1. Divide the class into groups of 3-4 students, and give each group a copy of the OHV I.Q. quiz. Assure the class that this quiz won’t be graded and that it’s okay if some (or all) of their answers are guesses.

2. Give students time to complete the quiz. Once all groups have finished, pass out the answers to the quiz. Have the students score their own quizzes. Afterward, discuss each of the questions and answers. Ask: How did you do? Were you surprised by any of the answers? Which ones?

3. Explain the Desert OHV I.Q. quiz was designed to highlight facts and issues—and introduce the concept of OHV as a legitimate recreation activity.

4. Optional: Use the quiz show (PowerPoint) provided on the CD. Divide the class into teams of 3-4 students and have student teams compete against each other, taking turns to answer each question.

5. The quiz provides an excellent format that engages students to explore, evaluate, and expand on new knowledge. The Quiz Solutions page provides additional detail that will help you add depth to this activity.

PERSPECTIVE:
"Whenever man with a machine comes in contact either with man without a machine or with nature, the man with the machine is rarely more than inconvenienced, while the man without a machine or nature can suffer anything from inconvenience to extinction."

—RICHARD BUTLER,
How to Control 1,000,000 Snowmobiles? Canadian Geographical Journal, 1974
What is Your OHV I.Q.?

Find out how much you know about Off-Highway Vehicle (OHV) use by taking this short quiz. Circle the correct answer for each question below.

1. Which of the following correctly lists examples of Off-Highway Vehicles (OHVs)?
   a. A skateboard, a snowboard, and in-line skates
   b. A dirt bike, a clokey catchfly, and a jet ski
   c. An all-terrain vehicle, a dune buggy, and a dirt bike
   d. A snowmobile, a snowboard, and a jet ski

2. Researchers studying OHV recreationists in Arizona discovered some interesting facts. Which of the following are among them?
   a. OHV recreation created nearly 100 new jobs in Arizona.
   b. OHV recreation caused a million-dollar economic deficit.
   c. OHV recreation provides $1 billion in salaries and wages.
   d. All of the above are correct.

3. In 1993, OHVs in the U.S. totaled fewer than three million. How many vehicles were owned in 2003?
   a. 8,000,000 vehicles
   b. 800,000 vehicles
   c. 80,000 vehicles
   d. 8,000 vehicles

4. Research on OHV impacts has revealed some interesting facts. Which of the following are among them?
   a. Because they are considered alternate-fuel vehicles, OHV use can reduce our dependency on oil.
   b. OHV noise can affect the hearing of desert kangaroo rats.
   c. An OHV traveling in a straight line has the same impact as one making sharp turns.
   d. An OHV traveling at a slow speed has greater impact on the clokey catchfly than one traveling at a fast pace.

5. OHV recreationists traveling in the Spring Mountains might be lucky enough to see a Palmer’s chipmunk. Which of the following statements are true about this small mammal?
   a. It is endemic to the Spring Mountains; this species lives nowhere else on earth.
   b. It was brought to the Spring Mountains by a New York entrepreneur, hoping to increase tourism to the mountains.
   c. Like other squirrels, it can achieve flight using the flap of skin attached to front and back legs.
   d. One of the few squirrels that are allergic to nuts, it subsists entirely on the clokey catchfly.

6. What is a clokey catchfly?
   a. A toad
   b. A plant
   c. A territorial battle between rattlesnakes
   d. A bacterial infection, popularly known as “cooties”

7. Which of the following desert species lives in one of the smallest habitat areas of any known organism?
   a. Great Basin spadefoot toad
   b. Harvester ant
   c. Coral Pink Sand Dunes tiger beetle
   d. Long-tailed pocket mouse

8. Some desert soils contain living organisms, including lichen, moss, and nitrogen-fixing bacteria. Such soils are called biological soil crusts. If damaged by an OHV traveling off-trail, how long will it take for a patch of biological soil crust to recover?
   a. 200 years
   b. 100 years
   c. 20 years
   d. 1 year

ENDEMIC (adjective)
Found nowhere else on earth.
9. **OHVs can negatively impact the desert in a variety of ways. Which of the following are true?**
   
a. Off-trail soil temperatures can increase by 18 degrees when compacted by the tires of an OHV.

b. 40 tons of soil per mile of travel can be displaced by an OHV climbing a steep slope.

c. Wind-borne dust generated at OHV areas has occasionally produced dust plumes visible from space.

d. All of the above.

10. **OHV use is restricted in the Las Vegas valley because there is too much particulate matter (such as dust) in the air. Which of the following is true of too much dust?**
   
a. Fine dust particles are especially irritating to eyes and have been associated with an increased likelihood of developing cataracts.

b. Fine particles of dust can enter the body through a variety of orifices and have been linked with cancer.

c. Fine particles like dust enter deep into the lungs and aggravate health problems like asthma.

d. All of the above.

11. **OHV recreationists must abide by the rules of the land-management agencies that govern the use of the land. OHV riders in Southern Nevada will likely be traveling on land managed by which of the following agencies?**
   
a. Clark County; National Park Service; and Bureau of Land Management

b. Bureau of Land Management; Department of Transportation; and U.S. Air Force

c. National Park Service; Tennessee Valley Authority; and U.S. Fish & Wildlife Service

d. Clark County; Department of Homeland Security; and U.S. Forest Service

e. All of the above
What is Your OHV I.Q.? ANSWER KEY

1. ANSWER: C. In Nevada, an Off-Highway Vehicle (OHV) is defined as a motorized vehicle that is designed primarily for off-highway and all-terrain use, including all-terrain vehicles (ATVs), dune buggies, and dirt bikes. The identity of a comma skipper will be revealed later in the quiz results.

2. ANSWER: C. In 2002, Arizona State University conducted a year-long economic study (Silberman, 2003) of recreational OHV use in Arizona, gathering data from 16,000 randomly selected Arizona households. One finding of this study was that OHV recreation provided $1.1 billion in salaries and wages for Arizona residents. The full report is available at: www.gf.state.az.us/pdfs/w_c/OHV%20Report.pdf

3. ANSWER: A. According to a report produced by the U.S. Forest Service, OHV annual sales more than tripled between 1995 and 2003, to more than 1.1 million vehicles sold in 2003. ATVs continue to account for more than 70 percent of the OHV market. The population of OHV users in the U.S. grew nearly as fast, increasing 174 percent between 1993 and 2003. In just 10 years, the total number of OHVs has grown from fewer than three million vehicles to more than eight million in 2003.

4. ANSWER: B. The desert kangaroo rat (Dipodomys deserti) is a small desert mammal that can live its entire life without a drink of water. It gets all the water it needs by metabolizing the carbohydrates found in the seeds it eats. Hopping like a kangaroo, this species can cover six feet in a single bound. The desert kangaroo rat relies on its keen sense of hearing to alert it to potential dangers, such as an approaching rattlesnake. Without its hearing, the desert kangaroo rat becomes easy prey. Additionally, desert kangaroo rats and other desert inhabitants who live in underground burrow dwellings—such as desert tortoises and burrowing owls—are negatively impacted when their homes are collapsed by an OHV traveling off-trail.

5. ANSWER: A. The Spring Mountains are called “Sky Islands” because they are tall mountains surrounded by a “sea” of desert. These mountains are a cool, forested ecosystem isolated from other similar habitats by large expanses of the Mojave Desert. Because of this, the Spring Mountains are home to dozens of endemic species, which are found nowhere else on earth—including the Palmer’s chipmunk.

6. ANSWER: B. The clokey catchfly (Silene clokeyi) is among the 30-odd endemic plants found in the Spring Mountains and nowhere else on earth. OHV recreationists in Southern Nevada are likely to encounter many beautiful plants, including phacelia, mormon tea, and the rare bear poppy. Clokey catchfly photos are available at:www.birdandhike.com/Veg/Species/Forbs-P/C_Catchfly/C_Catchfly.htm

7. ANSWER: C. An active predator, the Coral Pink Sand Dunes tiger beetle has a striking appearance with large white wing cases, white hairs covering much of the body and legs, and particularly large eyes. It also has one of the smallest geographic ranges of any known organism: the entire population lives on an eight-mile-long dune in southern Utah, making this species vulnerable to extinction. Although Coral Pink Sand Dunes is a popular OHV area, riders must ride in designated areas to protect this species. Photos and video are available at: www.arkive.org/species/GES/invertebrates_ terrestrial_and_freshwater/Cicindela_limbata_abissima/Southern Nevada also has beetles living in sand dune areas frequented by OHV recreationists. Endemic beetles that live in Big Dune include: Giuliani’s Big Dune scarab beetle (Pseudocotalpa siulianii); large aegilian scarab beetle (Aijialia manifica); Big Dune aphodius scarab beetle (Aphodius sp.).

8. ANSWER: A. Because they help reduce water loss and provide vital nutrients to plants, biological soil crusts are critical to providing desert plants with the nutrients and water they need to survive. Even a hiker can cause serious damage to these sensitive soils. People are often surprised to learn that it can take 200 years for a damaged soil crust to repair itself.

9. ANSWER: D. OHVs can negatively impact the desert in all of the ways listed. Fortunately, most OHV recreationists
are responsible drivers that: 1) stay only on roads, trails, or other areas designated for OHV use; 2) try to stay in the middle of the trail to avoid widening it; 3) avoid roosting around the apex of the turn when climbing or brake-sliding during descent, both of which gouge the trail; and 4) on slick trails, moderate the throttle and use the clutch to gain maximum traction with minimum wheel-spin.

10. ANSWER: C. OHV use increases the amount of particulate matter in the air. By complying with Environmental Protection Agency (EPA) regulations, approximately 15,000 lives each year will be saved, and it is anticipated that there will be reduced risk of:
   • hospital admissions by thousands each year, and fewer emergency room visits, especially among the elderly and those with existing heart and lung diseases;
   • symptoms associated with chronic bronchitis, with tens of thousands fewer cases each year;
   • respiratory symptoms in children, with hundreds of thousands fewer incidences of aggravated coughing and difficult or painful breathing;
   • asthma aggravation, with hundreds of thousands fewer incidences each year, in children and adults with asthma; and
   • susceptibility to childhood illnesses.

11. ANSWER: A. Public land areas in Southern Nevada are managed by the National Park Service, Bureau of Land Management, and Clark County, as well as by the U.S. Forest Service and U.S. Fish and Wildlife Service. The responsibility falls on the OHV recreationist to follow the rules of the road. Land-use rules vary by land-management agency, so the recreationist must find out what type of land they plan to drive on and which rules apply.

LEAVE NO TRACE PRINCIPLES
- Plan Ahead and Prepare.
- Travel and Camp on Durable Surfaces.
- Dispose of Waste Properly.
- Leave What You Find.
- Minimize Campfire Impacts.
- Respect Wildlife.
- Be Considerate of Other Visitors.

Learn more at: www.lnt.org

TREAD LIGHTLY! PLEDGE
- Travel and recreate with minimum impact
- Respect the environment and the rights of others
- Educate yourself—plan and prepare before you go
- Allow for future use of the outdoors, by leaving it better than you found it
- Discover the rewards of responsible recreation

Learn more at: www.treadlightly.org
BACKGROUND
More than half of all Nevadans enjoy various trail experiences, including OHV activities. Each of these outdoor enthusiasts has expectations for the experience. Some desire solitude and communion with nature. Some enjoy sharing the experience with friends or family. Others seek to fulfill goals such as reaching the top of a mountain. Such diverse expectations and values can lead to conflicting needs. What might happen if OHV recreationists choosing to enjoy a group outing on a remote trail meet up with a hiking group seeking to enjoy the solitude of natural scenery? Is one right and the other wrong?

OBJECTIVE
Students reflect on personal priorities and objectives for outdoor recreation. They understand that different people have different expectations for their outdoor experiences. Students investigate ways to provide diverse recreational opportunities for visitors seeking to enjoy our public lands with differing and perhaps conflicting priorities and objectives.

MATERIALS
- Outdoor Recreation Blocks (1 sheet per student; on CD)
- Preference Peak (1 sheet per student; on CD)
- Scissors (if having students cut out their own blocks)

PROCEDURE
1. Have students brainstorm different outdoor recreational activities that they enjoy. Record answers on the board. Encourage students to remember his or her most enjoyable outdoor experience, and then to determine what exactly made it so memorable. Was it being with family and friends? Was it getting to the top of a mountain or reaching another goal? Was it experiencing nature? Explain that the purpose of the Preference Peak activity is to help students define personal values, expectations, and priorities for outdoor recreation.

2. Give each student a pair of scissors and copies of the Outdoor Recreation Blocks and Preference Peak sheets. Explain that the blocks are labeled with 15 different conditions, expectations, or components of an outdoor recreation experience. Have the students read through all the words on the blocks. Students should think about what each word means to them; they might elaborate on the space on the back of each block or on another sheet of paper. Ask students to consider which of these components are most important to their recreational experience.

3. Students begin by cutting out the blocks and ranking all the components from most important to least important. Have students organize the blocks on Preference Peak. The most important component—the most valuable part of their recreation experience—should be the top block. Students then arrange the next two most important components on the next tier, and so on. Once the students have arranged all the blocks, have them mark each block with the number that reflects the priority they gave it. The priority rating numbers should be 1 through 5, corresponding to the tiers of the peak.

4. Review aloud the list of outdoor recreation activities that your students brainstormed. Ask the following question: What form of recreation allows you to really meet your priorities? Now, tally the different “first-level” or number-one priorities for the whole class. Encourage students to volunteer insight into their prioritizations.

EXAMPLES OF OUTDOOR RECREATIONAL ACTIVITIES
- Birdwatching
- Boating
- Camping
- Hiking
- Fishing
- Horseback Riding
- Mountain Biking
- OHV Use
- Rock Climbing
- Skiing
- Snow Mobiling
- Swimming in a Lake or River
- Trail Running
- Wildlife Viewing
MAP Centerfold
MAP Centerfold
Tally the “second-level” priorities. Finally, tally the “fifth-level” priorities. Identify factors that influenced students’ choices in ranking their priorities. How do priorities differ among individuals?

5. Explain that public lands are owned by the public and shared among individuals. These lands often serve to host diverse recreational experiences because visitors have diverse expectations regarding outdoor experiences. Ask students to consider what types of conflicts could potentially arise among those with differing recreation priorities? List as many potential conflicts as possible. Have students review the Preference Peak if they run out of ideas. For example, a conflict might arise between those who most highly value conservation and those who place highest value on adventure (e.g., a conservation group for an endangered species vs. a group seeking to build an ATV hill-climbing area). Another example might elaborate on a potential conflict in trail use between horseback riders and mountain bikers.

6. Explain that conflicts often occur in “multi-use” areas in which the different types of recreationists have sharply contrasting needs. Ask students to choose a potential conflict or conflicts (see part 5, above) and brainstorm ideas on how to resolve or prevent the issue. See inset (right) for a real-world example of how land managers have sought to reduce conflicts and/or impacts from recreation on public lands. Students should consider how both individuals and groups can reduce the effect of negative impacts.

7. Optional Tread Lightly! activities (on CD , included with permission):
   - To understand personal conflict resolution styles see Conflict in the Canyon (Tread Lightly! Activity 4.2, pp. 30-31).
   - To assess alternate viewpoints regarding land use see One for All and All for One (Tread Lightly! Activity 6.2, pp. 42-43).

“TEMPORAL” ZONING: A WAY OF AVOIDING CONFLICT

The following example shows how motorized boats and kayaks can enjoy the same stretch of river without conflict.

Black Canyon is a popular boating area within Lake Mead National Recreation Area below Hoover Dam. Managers have designated days of the week that each recreational activity can occur. For example, on Sundays and Mondays only canoes, kayaks, row boats, and rafts are allowed—motor boats and Personal Watercraft (PWCs include jet-skis) are not permitted. This allows paddlers to enjoy a quieter river. Motorized boats are allowed Tuesday through Saturday. Paddlers are not prohibited, but must share the river with these other vessels.

This schedule changes according to time of year.
Activity 3: Trail Tactics

BACKGROUND
OHV recreation can be fun and adventure-filled, but it can also be damaging. The choices OHV recreationists make—from planning a ride to executing it—will affect how much of an impact they have on the land. Most OHV recreationists do conduct themselves responsibly and thoughtfully. How do your students compare?

OBJECTIVE
Students understand the consequences of different OHV driving practices and identify responsible OHV practices that minimize impacts to the land.

MATERIALS
- Trail Tactics Game Cards (on CD); print the double-sided cards (one set per group), cut out cards, and place each set into an envelope
- Trail Tactics game dice (enclosed); one die per student team

PROCEDURE
Explain that this activity is essentially a board game, in which players progress from one row to the next as they consider responsible and irresponsible driving practices. Players progress from one row to the next by drawing (by roll of the die) the card that describes a responsible choice in OHV recreation. The twist is that the students must decide for themselves whether or not the card describes a responsible or irresponsible choice.

1. Divide students into groups. Give each group a set of Trail Tactics cards. Have the students organize cards, image-side up, in four rows (Rows A through D); there are three cards in each row. Row A should be closest to the student group; Row D should be farthest.

2. Beginning at Row A, students roll the die and choose the card that matches the outcome of the die roll. One student turns the card over and reads the back of the card to the group. Some cards describe events or actions that represent responsible choices (students get to move on to the next row) while some represent irresponsible choices (students must roll the die to choose another card from the same row).

3. Once one student has read the card, the group decides whether the card represents a responsible choice or an irresponsible choice. The group organizes drawn cards into “responsible” and “irresponsible” piles. Then, they roll the die again, choosing from the same row if the card was “irresponsible” or the next row if the card was “responsible.”

4. Once students have successfully moved through all four rows, have them read the cards they didn’t draw. Next ask them to consider the following questions: Which OHV actions seem to have the most negative consequences? Which actions have positive outcomes? What were you surprised to learn?

Note: OHV recreation is not the only outdoor recreation that can negatively impact the land. Hiking, mountain biking, rock climbing—and many other forms of recreation—can all impact the land in positive and negative ways, depending on the choices we make.

Print cards from the CD included with this guide!
Activity 4: Sim Trail—OHV Park

BACKGROUND
By completing Activity 1: What is Your OHV I.Q.? students discover the rich diversity of plants and animals in Southern Nevada, and they learn about the fragile soils that support life in the desert. Activity 2: The Recreational Experience provides a framework into which students organize their own recreational expectations and priorities. Participation in Activity 3: Trail Tactics imparts important tips on responsible riding practices that will minimize impact on the land. This culminating activity, Activity 4: Sim Trail—OHV Park encapsulates all that your students have learned as they work to design a fictitious OHV park.

OBJECTIVE
Students design an OHV park, incorporating what they have learned about practices that minimize impacts to the plants, animals, and soils of Southern Nevada.

MATERIALS
- Chart paper
- Copies of the 11” x 17” OHV Park Topo Map (see centerfold and also provided on CD; one per student team)
- Several feet of yarn (any color); cut the yarn into 6” sections (6” of yarn represents one mile of trail)
- Scotch tape
- Copies of paper money (on CD; several sets per team; cut out)
- Copies of OHV Park Topo Map Icons (on CD; one set per student team with several extra available)
- Copies of budget sheet (on CD; one per student team)

PROCEDURE
Explain that the City of Rockford has many OHV enthusiasts. These citizens have agreed to pay a special OHV tax to build a new riding course. The Rockford City Council has decided to award this money to a team with the skills to most successfully design and operate this OHV park. Each student team will design an OHV park and operate it for three years. They will receive an initial grant of $10,000 for the first year. They will then receive $5,000 for each additional year. Teams can also earn revenue by providing services to riders, such as charging admission, opening a snack bar, or providing an OHV repair shop. The facilitator oversees all transactions involving money and activity pieces. The team that has the most revenue at the end of this period will win the contract.

WHAT’S A TOPO MAP?
Topographic (“topo”) maps demonstrate topography with curved lines called contour lines. Contour lines connect points of the same elevation. If you were to walk along a single contour line, you wouldn’t have to climb uphill or downhill.

Elevation changes rapidly where lines are very close together (i.e., the area is very steep). Areas where lines are far apart have little elevation change (i.e., the area is relatively flat). The numbers on the map are elevation in feet.

Note that this topographic map also indicates sensitive areas, either due to the presence of a protected species or biological soil crust.
1. Give each student a copy of the OHV Park Topo Map and a sheet of chart paper. Have them tape the map to the chart paper.

2. Inform students that the topographic map they’ve been given represents the area in which the OHV park will be constructed. The map shows the hills, valleys, drainages and other features of landscapes. By reading the map correctly, the team will be able to decide where to build OHV trails that will cause the least amount of impact. For example, building a trail up a steep slope results in massive soil erosion. This will impact the drainage of the area and ultimately Rockford’s water supply. City of Rockford planners will ask teams to mitigate this type of damage, generally at a cost of $500 per mile of trail.

Students will see that there are some existing gravel roads in the area where they will be placing their OHV park. Students may choose to incorporate these existing roads as part of their OHV park—with the exception of the road to Rockford, as this is how people will be traveling to and from the area.

3. Each student team starts with $10,000. Write the price list of typical OHV park features (below) on the board.

4. **Year 1.** Have students decide on a name for their OHV Park. Have them create a budget. They’ll need to answer the following questions: *How long will your trail be? What kind of visitor services (if any) will you provide? What kind of parking will you provide?*

Students should anticipate spending money to mitigate (fix) any unforeseen problems associated with erosion, endangered species, or visitor issues that occur. Once the team has agreed on a budget and completed the budget sheet for year one, have the team send a member to buy the selected items.

5. The teams must decide where to place the trail, any visitor services they may have purchased, and the parking area. Teams use tape to affix the map icons to their topo maps. Six inches of yarn represents one mile of trail.

6. Once the teams have finished, tell the students that you have been hired by the Rockford City Council to inspect the areas for environmental impact. If teams have built any of their items on steep slopes, or in a river bed, assign them a $500 mitigation fine for each infraction; if the teams don’t have enough money to pay fines, they may sell back items to gain funds.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>FEATURE DESCRIPTION</th>
<th>COST</th>
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<td>TRAIL</td>
<td>One mile of Trail</td>
<td>$1,500</td>
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<td></td>
<td>Trail Maintenance and Upkeep (per year)</td>
<td>$500</td>
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<td>VISITOR SERVICES</td>
<td>Donation Box</td>
<td>$500</td>
</tr>
<tr>
<td></td>
<td>Fee Booth</td>
<td>$1,500</td>
</tr>
<tr>
<td></td>
<td>Garbage/Recycling Bins and Collection Service (per year)</td>
<td>$500</td>
</tr>
<tr>
<td></td>
<td>Information Kiosk (trail maps/safety information/responsible riding information)</td>
<td>$1,000</td>
</tr>
<tr>
<td></td>
<td>Picnic Area</td>
<td>$500</td>
</tr>
<tr>
<td></td>
<td>Repair Shop</td>
<td>$3,500</td>
</tr>
<tr>
<td></td>
<td>Snack Bar</td>
<td>$3,000</td>
</tr>
<tr>
<td></td>
<td>Way Station (restrooms/water fountain)</td>
<td>$3,000</td>
</tr>
<tr>
<td>PARKING</td>
<td>Gravel Parking Lot</td>
<td>$1,000</td>
</tr>
<tr>
<td></td>
<td>Paved Parking Lot</td>
<td>$3,000</td>
</tr>
<tr>
<td>MITIGATION</td>
<td>Trail Damage Repair (per mile)</td>
<td>$500</td>
</tr>
<tr>
<td></td>
<td>Other Mitigation (dust, erosion, habitat encroachment, biological soil crust damage)</td>
<td>$500</td>
</tr>
</tbody>
</table>

*Table of OHV park features and their prices.*
7. Now announce that the OHV park has just celebrated its grand opening and recreationists are visiting the park. As the facilitator, it is your job to make the game fun and interesting by having a variety of occurrences unfold for each team. Positive and negative outcomes can result from choices the team has made; although, some may be a result of luck. For example, the following list represents a series of events that might take place at an OHV park:

- **Revenue Earning:** Teams that build visitor services such as a snack bar, donation box, or a repair shop earn $1000 in revenue. Teams that have not invested in such services will probably notice others receiving the reward.

- **Eco Award:** Teams that place a trail in an environmentally friendly location earn an “Eco Award” of $500.

- **No Information Kiosk:** By not investing in an Information Kiosk, there are no safety or “ride responsibly” messages—and a lot of OHV motorists speed through the park. This results in too much erosion and dust. The team must pay a $500 mitigation fine.

- **Other Events:** As facilitator, you may choose to have some other negative events occur at the OHV parks. Use the examples below or create your own. Be careful to make the intervals between the additional negative events infrequent—but frequent enough to keep the teams on their toes.

A biologist has just discovered that (Wow! Great News!) an endangered bear poppy population has expanded and is now growing adjacent to a section of trail. The team must pay a mitigation fee and relocate that section of trail.

A patch of cat claw acacia is causing many riders to avoid the area; the team must pay to relocate the section of trail in question.

It is a drought year, and all OHV trails are producing too much dust; the Environmental Protection Agency has determined the dust is a health hazard and the team will have to pay a mitigation fee.

Irresponsible OHV drivers have ruined a section of trail. The trail is closed until the repairs can be made; the team must pay a repair crew.

8. **Year 2:** Give teams between $3,000 and $5,000, depending on the number of visitor services they have provided. More services lead to more business, which in turn leads to more taxes being collected and distributed back to the park. Furthermore, teams that have invested in trail maintenance should enjoy more visitation than those that have not—thereby generating more money. Continue allowing teams to add to their parks, passing out and collecting money as you did during Year 1.

9. **Year 3:** Give teams between $4,000 and $6,000—depending again on the number of visitor services and trail maintenance they have provided. Continue to collect and distribute funds as in the previous years.

10. **Conclusion:** Have the teams review each other’s OHV parks. Ask the following questions: What worked well for the park? What didn’t work quite so well? How much revenue did each team earn? What are some of the conclusions the teams can draw? What kinds of features would they like to see in a real park? Has this activity changed the way individuals think or feel about public lands? If so, explain how.

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**PERSPECTIVE:**
"In the end, we conserve only what we love, we love only what we understand, and we understand only what we are taught."

—BABA DIOP, Senegalese Conservationist
**Ethical Tools for Improving Choices**

**BACKGROUND**

Your *Explorations in OHV Recreation* kit includes a video produced through a cooperative effort of the International Hunter Education Association, Tread Lightly! Inc., the Specialty Vehicle Institute of America (SVIA), and Silvertip Productions, Ltd. This video contains several scenarios designed to make students aware of the range of ethical choices they may face when making decisions while engaged in recreational activities, such as riding OHVs, hunting, or driving with friends.

The video is designed to help you and your students examine the types of factors that influence personal decision-making. These factors include peer pressure, personal motivation and values, knowledge about the consequences of various choices, and emotional state. The video and its accompanying activity sheets offer opportunities for your students to reflect on and discuss what choices they might make in similar situations. What are the positive and negative outcomes of the decisions? Which behaviors are appropriate and why? Which are inappropriate?

**OBJECTIVE**

Students reflect on what choices they should/would make when values, preferences, and needs conflict. Students consider the factors that influence their own decisions, whether they result in appropriate or inappropriate behaviors.

**MATERIALS**

- Video
- General Student Worksheets (on CD)
- The complete instructor manual developed by the International Hunter Education Association, Tread Lightly! Inc., the Specialty Vehicle Institute of America (SVIA) and Silvertip Productions, Ltd. is included in the enclosed CD.

**PROCEDURE**

Show one or more video segments. The following scenarios fit well with this curriculum:

- ATV, Wetlands
- ATV, User Conflict
- Ethical Use of ATVs by Hunters

Background information for each video scenario is available in the instructor manual.

Tread Lightly! has developed two student activity sheets for students to fill out while watching the video scenarios. One activity sheet has students decide what decisions the characters in the video could have made vs. those they should have made, and what decision the student would have made in the same situation. The other sheet simply has the student evaluate the video scenario in terms of behavior choices that were appropriate and those that were not. Use the activity sheet you feel is most appropriate and have the students fill it out while watching each video scenario.

After watching each video scenario, facilitate a discussion that allows students to reflect on and understand their own ethical reasoning and the potential consequences of their choices.

The following section from the instructor manual (pp. 2-3) describes how the factors that can most influence decision-making have been incorporated in these video scenarios. Use this information to help guide the discussion with your students.

Suppose we were faced with the dilemma of whether to cross a fence and hunt on land we aren’t sure is part of the parcel where we have permission to hunt. It is more likely that we would make the responsible decision and not trespass if we:

- ...understand the full range of consequences to ourselves, to the landowner, to other hunters, and to hunting.

  *Hunters need to be aware of the consequences of the behaviors they are considering.*

- ...if we think the consequences of trespass are important.

  *Hunters must not only know the consequences of their actions, but view them as being important to themselves and to others.*
• place importance on doing what is right, especially if our enjoyment of hunting is dependent on that.

_Hunters’ definitions of quality hunting should include doing what is “right.”_

• value the opinion of others—friends, family, landowners—and know they would disapprove of crossing the fence.

_Hunters should be aware that those people whose opinions they value approve or disapprove of the hunting decisions they make._

• understand ourselves and know that in the excitement of the hunt we sometimes need to stop and consider our actions to avoid letting factors such as our emotions or peer pressure skew our priorities.

_Hunters should be aware of the factors which will influence good and bad decisions in the field._

• have previously thought about how we would act in this sort of situation and why.

_Hunters should have an opportunity to think through the choices they will face and their consequences—before they are confronted with the choices in the field under a moment of stress, excitement or other emotions._

• know that we can enjoy the day on this side of the fence and we can find out who owned the land across the fence for another day of hunting in the future.

_Hunters need to be aware of their options in the decision._

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10 Ways to Minimize Your Impact with an ATV by Tread Lightly!

1. Stay only on roads, trails or other areas designated for ATV use.

2. Try to stay in the middle of the trail to avoid widening it.

3. Cross streams only at designated fording points, where the trail crosses the stream. Approach the stream slowly, crossing at a 90-degree angle.

4. On switchbacks, avoid roosting around the apex of the turn when climbing or brake-sliding during descent, both of which gouge the trail.

5. On slick trails, moderate the throttle and use the clutch to gain maximum traction with minimum wheel-spin.

6. Try to avoid muddy trails, save them for future trips when they are dry.

7. Following a ride, wait your ATV and support vehicle to avoid spreading the next time you ride.

8. Observe proper human waste disposal. Bury your waste at least six inches deep and camouflage the hole or pack out your waste.

9. Take an ATV training course to maximize safety. Always wear a helmet, eye protection and other safety gear.

10. To find places to ride, ATV enthusiasts should contact local land managers.

_Tread Lightly! provides additional tips and materials at www.treadlightly.org._
CD Menu

Explorations in OHV Recreation Manual
Activity 1: What is Your OHV I.Q. Powerpoint Quiz
Activity 2: Outdoor Recreation Blocks
Activity 2: Preference Peak
Activity 2: Tread Lightly! Conflict in the Canyon
Activity 2: Tread Lightly! One For All and All for One
Activity 3: Trail Tactic Cards
Activity 4: OHV Park Topo Map
Activity 4: Paper Money ($500 & $1,000 denominations)
Activity 4: Trail Map Icons
Activity 4: Budget Sheet

Ethical Tools for Improving Choices:
Portions of the Instructor Manual and two Activity Sheets

Additional Resources
U.S.G.S. brochure: Biological Soil Crusts
Leave No Trace brochures & pamphlets
Tread Lightly! brochures & pamphlets (English /Spanish)
This publication was funded by the Southern Nevada Public Land Management Act and developed by the Public Lands Institute at the University of Nevada, Las Vegas on behalf of the Bureau of Land Management, National Park Service, U.S. Fish & Wildlife Service, and U.S. Forest Service.