## Spotted Knapweed Activities
### Ranch Land Money Rodeo
#### Play Audio Track #17
(20 minutes)

<table>
<thead>
<tr>
<th>Levels</th>
<th>Grades 4-8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects</td>
<td>Science, Mathematics, Art</td>
</tr>
<tr>
<td>Skills</td>
<td>Designing, Identifying, Assessing, Solving</td>
</tr>
<tr>
<td>Concepts</td>
<td>Structure and functions of living things; interactions among technology, science and society</td>
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<tr>
<td>Objectives</td>
<td>Students will learn economic considerations used to plan a land management strategy for infested land. Students will learn how to assess and solve questions using mathematics.</td>
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### Time Considerations
- Preparation: 5 minutes
- Activity: 20 minutes

### Lesson Overview
- **Ranch Land Money Rodeo**
  (20 minutes)

### Background
Weed infestations expand when nothing is done to manage their spread. The number of weed seeds grow exponentially. Many farmers and ranchers move to metropolitan areas vacating their traditional lifestyles because the expense of managing weed populations exceeds the value of their land.

In the Jackson Hole Weed Management Area of Wyoming alone, $1,500,000 is spent each year treating noxious weeds. **How much money does your county, or local farmer spend each year?**

Combining management methods is known to reduce the overall cost of managing weeds. Integrating all the management tools gives the environment a better chance to retain vigor. **If you were a land manager - what would you pay?**

### RANCH LAND MONEY RODEO LESSON DETAILS

#### STEP ONE.
Tell the students to form 4 groups with 5 in each group. Pass out a piece of drawing paper and a marker to each student. Ask each student to draw their dream ranch on 100 acres. Tell them they have 5 minutes to complete the drawing.

#### STEP TWO.
Give each student $5,000 in Monopoly money. Tell them that the money represents ranch profit last year after all bills were paid. Next, give each student a fake letter from the county weed district explaining to them that they have a noxious weed problem. If you have time, make each letter represent a different weed or a different amount of weeds.

#### STEP THREE.
Tell each group to agree on two or three methods, estimate how much time each method will take, and multiply the hourly rate for the method to come up with a total cost. Collect the total cost in Monopoly money from each group and ask the students to compare who spent what and why.

**Why is hand pulling not appropriate for all weed species?** (only hand pulling tap rooted plants is effective-rhizomatous root systems send out signals to grow more shoots when hand pulled)

**When do you need to read the label on the herbicide package?** (every time)

**Could you combine distribution of biological control insects for the center of the large infestation and apply herbicide around the perimeter to keep it from spreading?** (this is highly effective on leafy spurge in some sites)

Explain the difference between mechanical methods using large equipment such as bull dozers, and cultural methods such as seeding machines, tillers, mowers. Some land managers suggest that visible results from your management actions will take about three years to see.