Be AIS Aware Unit Summary

 dez. Student will be introduced to aquatic invasive species (AIS) that are potential threats to Montana waters. These lessons will explore pathways of introduction, methods of dispersal, potential environmental impacts, distribution of these organisms, as well as, adaptations that make these species invasive.

Unit Lessons
#1. Wonder Whys of AIS
#2. Food Web Challenge
#3. Mapping AIS Mayhem
#4. Mussel Mania
#5. Most Unwanted AIS
#6. Amazing AIS Adaptations
#7. Managing AIS

Unit Sequence
Although each lesson can be taught independently, we recommend using one of the sequences below:

#1. Wonder Whys of AIS
#2. Food Web Challenge
#3. Mapping AIS Mayhem

Pick ONE:
#2. Food Web Challenge
OR
#3. Mapping AIS Mayhem
OR
#4 Mussel Mania

#4. Mussel Mania

Pick ONE Summative Lesson:
#5. Most Unwanted AIS Poster OR #6. Amazing AIS Adaptations

#6. Amazing AIS Adaptations

NOTE: This lesson can be inserted anywhere after lesson #1.

#7. Managing AIS
Online Source for AIS Unit Materials
All printable lesson materials are available on the associated thumb drive or on our website:
https://flbs.umt.edu/newflbs/k12teachingmaterial

<table>
<thead>
<tr>
<th>AIS Lesson</th>
<th>Materials provided in AIS teaching trunk</th>
<th>Materials provided by instructor</th>
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</thead>
</table>
| #1. Wonder Whys of AIS      | ● Teacher resources #1-10 (8 laminated sets)  
● Distribution maps #1-5 (4 laminated sets)  
● 6 N.W. Aquatic Species Guides  
● 8 AIS Threatening the Crown of the Continent Flipbooks  
● 8 AIS Pocket Guides  
● 10 Montana Reference maps **  
● 2 Pressed flowering rush samples  
● 2 Pressed Eurasian milfoil samples                                             | ● Copies of student worksheets #1-2 |
| #2. Food Web Challenge      | ● Laminated food web cards (6 sets)                                                                      | ● Copies of student worksheets #1-2  
● Color pencils or markers  
● Glue/glue stick (1/group)  
● 2’ x 3’ Poster paper (1/group)  
● 4” x 6” lined index card or 8 ½” x 11” wide-ruled paper (1/group)  
● Optional: Computer/Chromebook                                               |
| #3. Mapping AIS Mayhem      | ● 6 Columbia River Basin maps  
● 6 Flathead Lake Region maps  
● 6 Major U.S. watershed maps  
● 10 Montana Reference maps**                                                                                           | ● Copies of student worksheets #1-2  
● One water bottle and two bowls of water                                     |
| #4. Mussel Mania            | ● 8 Zebra mussel anatomy posters  
● Mussel anatomy cards (8 sets)  
● 3-4 Zebra vs. quagga resin mounts  
● 3-4 Zebra/quagga/Asian clam resin mounts  
● 6-8 Zebra and quagga shell size resin mounts  
● 3-D printed mussel shells (set of 20)  
● 8 Freshwater mussel life cycle posters  
● 8 Invasive mussel life cycle posters  
● 9 Mussels of Montana posters (1 large)                                                                                   | ● Copies of student worksheets #1-5  
● Colored pencils                                                             |
| #5. Most Unwanted AIS       | ● Teacher resources #2-3 (12 laminated copies)                                                          | ● Copies of student worksheets #1-5  
● Copies of teacher resource #1  
● Computer/Chromebook and printer access for each student  
● Electronic poster: Individual access to presentation software  
● Hardcopy poster: 8 ½” x 11” assorted colored paper or construction paper, scissors, rulers, glue, and colored pencils |
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<tr>
<td>#6. Amazing AIS Adaptations</td>
<td>• Laminated adaptation cards (22 animal and 14 plant/algae cards)</td>
<td>• Copies of student worksheets #1-8</td>
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<td>• Colored pencils</td>
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<td>#7. Managing AIS</td>
<td>• Student readings A-F (4 laminated sets)</td>
<td>• Copies of student worksheets #1-2</td>
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### Unit Standards

#### Be AIS Aware Lesson

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<th>NGSS Standards</th>
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#### NGSS Crosscutting Concepts

- Patterns: ✓
- Energy & Matter: ✓
- Cause & Effect: ✓
- Stability & Change: ✓

#### NGSS Core Concepts

- LS1A: ✓
- LS1.B: ✓
- LS2.B: ✓
- LS2.C: ✓
- LS4.B: ✓
- LS4.C: ✓

#### NGSS Science & Engineering Practices

- Constructing Explanations: ✓
- Developing & Using Models: ✓
- Obtaining, Evaluating, & Communicating Information: ✓
- Engaging in Argument: ✓

#### MT Content Standards for English Language Arts & Literacy

- WHST.6-8.4: ✓
- WHST.6-8.9: ✓
- SL.6-8.4: ✓

#### MT Social Science Standards

- Content Standard 1: ✓
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