



**Lesson Title: Weeds: Unwanted Neighbors**

*Grade: 5-7*

*Duration of Lesson: 3- 45 minute classes*



*Brief: Students will understand that certain weeds are more prevalent in their area and will research and identify them, list control methods, and illustrate their findings in a concept map.*

***Materials:***

Montana Noxious Weed Education folder

Cards included in folder – 32 cards on each species of noxious weeds in Montana

Montana Noxious Weed Education poster

Examples of noxious weed plants if available

Project vocabulary list and *Plant Identification Basics*, located in Montana Noxious Weed Education folder, or at: <http://agr.mt.gov/agr/Programs/AgClassroom/> choose K-8 Projects then Montana Noxious Weed Project then Resources.

## Key Terms

Refer to vocabulary sheet for project – also available online at:

<http://agr.mt.gov/agr/Programs/AgClassroom/> choose K-8 Projects then Montana Noxious Weed Education, then Resources

### MONTANA COMMON CORE STANDARDS:

#### ELA: 5. Reading Information Text

**1. Key Ideas and Details:** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

**7. Integration of Knowledge and Ideas:** Draw on information from multiple print or digital resources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

**9. Integration of Knowledge and Ideas:** Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

#### ELA: 5. Writing

**8. Research to Build and Present Knowledge:** Recall relevant information from experiences and gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.

**9. Research to Build and Present Knowledge:** Draw evidence from literary or informational texts to support analysis, reflection, and research.

### NGSS 5. Earth's Systems

#### Disciplinary Core Ideas, ESS3.C: Human Impacts on Earth

Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environment.

### NGSS 4. Structure, Function, and Information Processing

#### Disciplinary Core Ideas, LS1.A: Structure and Function

Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)

#### Students will know:

How to research noxious weeds in their area, pinpoint identification traits, and demonstrate control methods including biological control methods

#### Students will be able to:

Organize information gathered into a concept map that disseminates information on a variety of noxious weeds.

### Performance / Observations

#### Performance Task(s):

Research and list noxious weeds in Montana locations, identify characteristics, list control methods, form a comparison between weed structures

#### Other Evidence:

Students will use internet weed identification and structure information to use in their concept map

### Learning / Inquiry Activities

## Introduction

Noxious weeds are a widespread problem across Montana, affecting many living organisms including humans, wildlife, native flora, farmers and ranchers, and even waterfowl and fish. One of the first steps

in stopping the spread of noxious weeds is to understand how to identify them, followed by understanding control methods. In this lesson students will use a list of resources to help them become more active in the fight against noxious weeds in their area, focusing on identification and facts about each weed.

### ***Learning / Inquiry Activities:***

Show students the Montana Noxious Weed Education packet, cards, and poster. Inform them that noxious weed varieties vary across Montana due to different habitats. Let students look at and study the cards from the Montana Noxious Weed Education project (32 cards).

Show students the CBS News video *Invasive Species Spreading across America* to help them understand the physical changes environments undergo when invasive species become an issue.

<http://www.cbsnews.com/video/watch/?id=50152745n>

Step 1: Tell students they will be identifying invasive noxious weeds which are most prevalent in their area. Students may contact their local Weed Control District for this information. Local Weed Control Coordinators can be found by choosing **Find My Weed Coordinator** at Montana Weed Control Association's website: [Montanaweed.org](http://Montanaweed.org) They may follow the links to Weed ID and find geographical information on each of the listed weeds at this website as well.

Step 2: Ask students to pick 8 weeds from the Montana Noxious Weed Education card set that they want to focus on. See the concept map diagram in Appendix 1. Inform students that they will be making their own concept map for the 8 weeds they have chosen. (The format of the concept map is up to the instructor, we suggest something similar to this with illustrations as students can expand their concept maps into posters or bulletin boards). For more on concept maps see Appendix 2.

Step 3: Students will need to have the following information on their concept maps for each of the 8 noxious weeds. We suggest making a list for each noxious weed prior to starting the concept map.

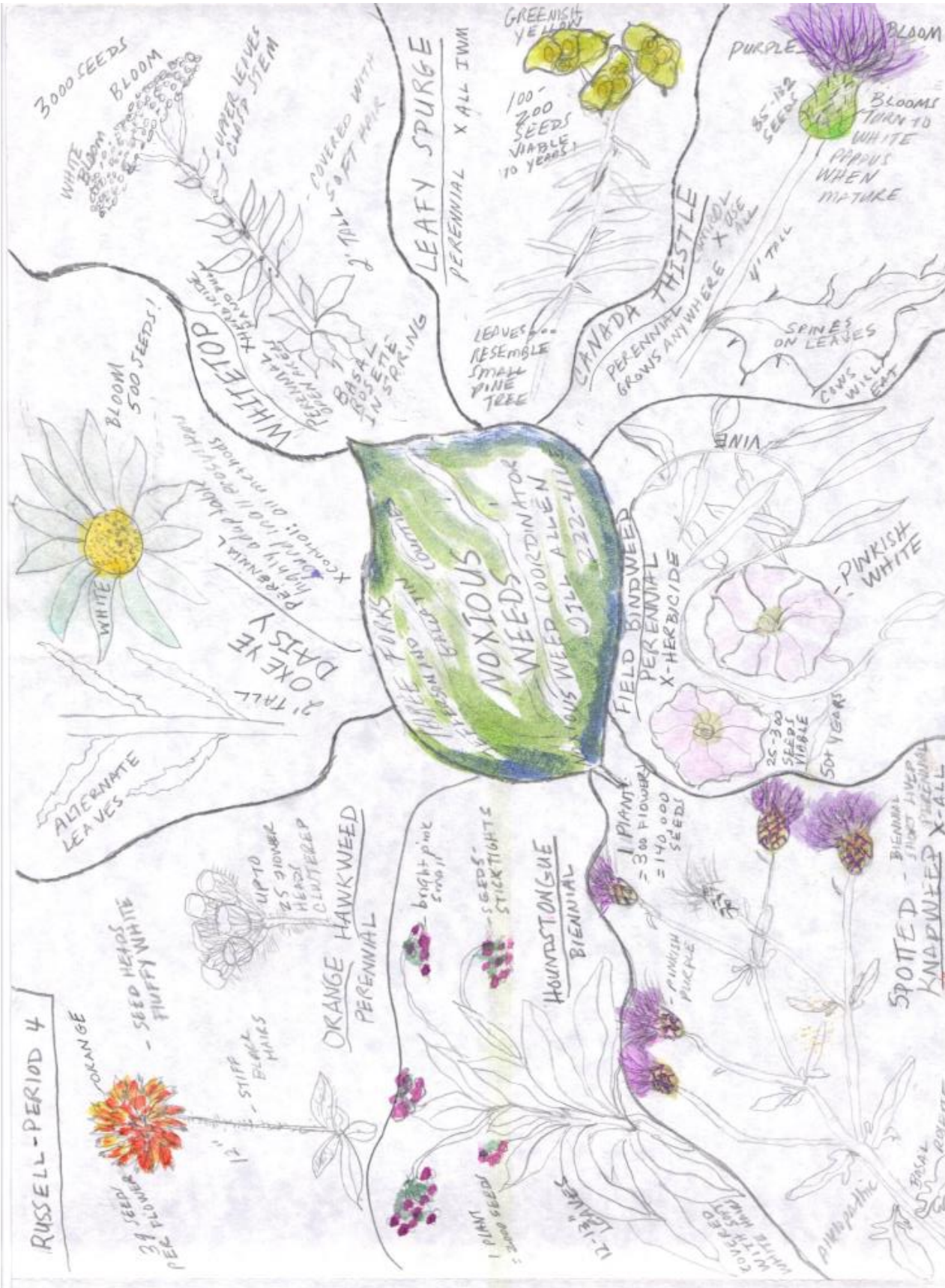
- A. Noxious weed's name
- B. Noxious weed's flower color
- C. Noxious weed's seed bearing capacity
- D. Some distinguishing characteristics about the noxious weed such as leaf shape and color, hairy characteristics, leaf growth pattern, root system and other terms which relate to the project's vocabulary
- E. Noxious weed's lifespan
- F. Control methods for noxious weed
- G. Any other information they find useful in identification and control

Step 4: Ask students to divide their concept map paper into 8 sections, using light pencil marks. Each section of the map will provide information on one of their chosen noxious weeds. Show the example attached in Appendix 1.

Step 5: Ask students to make concept maps on either legal size paper or on poster board.

Step 6: Bulletin boards extension: Create a bulletin board with student's concept maps and visual elements from the Montana Noxious Weed Education folder.

Thank you for being part of the solution to noxious weed control in Montana!



## Appendix 2 CONCEPT MAPPING

Concept mapping is the technique used by individuals and groups to organize, represent, and visualize knowledge and ideas in graphical formats. It is used to develop a structured framework in order to plan or evaluate various types and sizes of projects. Sometimes called knowledge maps, the graphical technique is based on graphically describing topics within one concept and/or relationships found among different concepts.

The diagram used to visualize these relationships among various concepts is called a *concept map*. Within a concept map, networks are drawn that consist of nodes, which represent concepts. Connecting lines, or links, represent a particular relationship between two concepts. Linking words, phrases, and symbols, used to describe relationships between nodes, often appear on the links.

Concept maps are generally, but not always, created so they are read from the top downward. Some concept maps are simple designs that examine one central theme and only a few associated topics. Other concept maps contain complex structures that describe multiple themes and relationships.

Source: <http://www.education.com/reference/article/concept-maps/>