

NORTH DAKOTA Ag Mag

A Magazine about Agriculture for North Dakota Students



This issue of the Ag Mag focuses on weeds. The Ag Mag's information and activities are geared primarily toward the state's third, fourth and fifth graders. The Ag Mag is distributed three times per year. Subscriptions are free, but if you're not on the mailing list or if you know someone who wants to be added, contact the North Dakota Department of Agriculture at 1-800-242-7535 or ndda@nd.gov.

The magazine also is on the Web at www.ag.ndsu.edu/agmag/agmag.htm or through the North Dakota Agriculture in the Classroom Web site at www.ndaginclassroom.org.

This magazine is one of the N.D. Agriculture in the Classroom Council activities that helps you and other K-12 teachers integrate information and activities about North Dakota agriculture across your curriculum in science, math, language arts, social studies and other classes. It's a supplemental resource rather than a separate program.

Weeds, weeds, weeds!

Weeds grow in gardens, fields and pastures; along roadsides; and by rivers and lakes. They also grow in all shapes, sizes and colors. Some people define a weed as any plant growing where it is not wanted, such as a dandelion in a lawn, field bindweed in a wheat field or musk thistle in a pasture.

Many students may think a dandelion is a flower. Dandelions are considered a weed because they grow in yards, road ditches, fields and many other areas where they are not wanted. Most people do not like the little yellow weed growing in their lawn and will spray them with chemical or dig them out of the ground to kill them.

Some weeds started out as useful plants. For example, purple loosestrife was a beautifully striking purple-flowered garden plant before it aggressively spread. Saltcedar was introduced to the U.S. to reduce erosion along stream banks, but it then took over, displacing native plants. Some corn kernels may drop to the ground during harvest and grow the next year - when the field is planted to wheat.

Idea: Brainstorm weeds with students. Define weed. What weeds do they already know?

If they don't know the weed's name, have them draw a picture of what it looks like.

Idea: Have the students go outside and find as many different weeds as they can. Have them draw a picture or write a descriptive paragraph about the weed(s) they saw.

Answers to What is a Weed?

Discuss that, even though some weeds are pretty, they're harming a lawn, crop, pasture or other vegetation, those weeds aren't wanted there. Some flowers, such as wild prairie rose and wild sunflower, are considered weeds when growing in an unwanted location. Dandelions probably are the best example for students.

N.D. Agriculture in the Classroom Mission

To cultivate an understanding of the interrelationship of agriculture, the environment and people by integrating agriculture into K-12 education



Idea: Wildflower or Grass-Head Babies Activity – Cut an 8- to 10-inch portion of pantyhose, and fill the toe with a couple tablespoons of wildflower or grass seed mixture. Add a mix of potting soil and wood shavings. Tie off the bottom, and have students create a nose and ears using small rubber bands. Draw eyes and a mouth. Place the ‘baby’ in a Styrofoam cup, moisten it and set the cup in a well-lit window. Water regularly, and watch as it begins to grow grassy or wildflower hair.

Idea: Review with students the basic parts of most plants. Talk about how weeds have adapted to their environments. For example, many perennial weeds have long tap roots to grow deep to reach water.

North Dakota Noxious Weeds

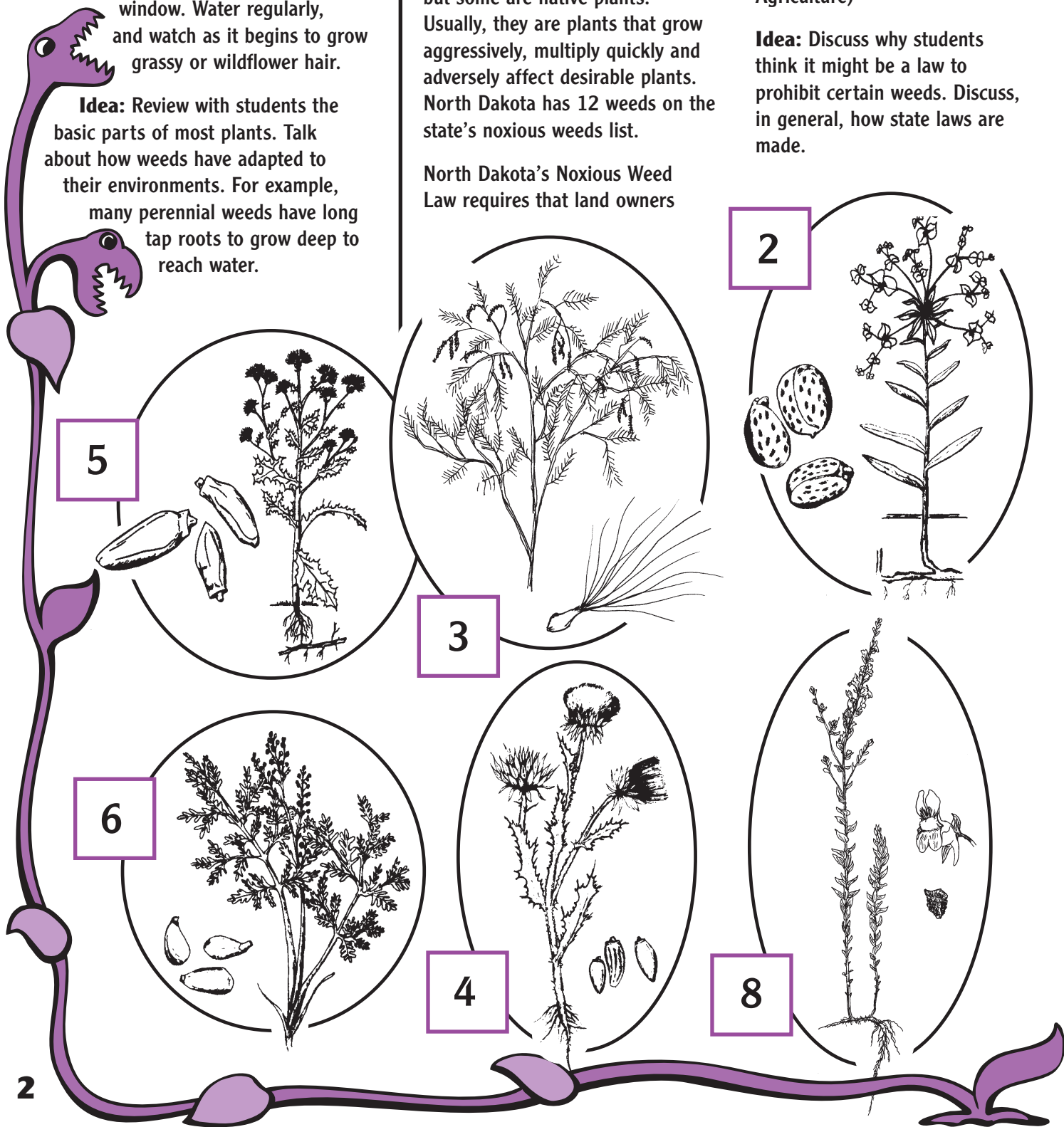
Noxious weeds are plants designated by state or national agricultural authorities as plants that are injurious to agricultural or horticultural crops, humans or livestock. Many times, they are introduced into an area by accident, but some are native plants.

Usually, they are plants that grow aggressively, multiply quickly and adversely affect desirable plants. North Dakota has 12 weeds on the state’s noxious weeds list.

North Dakota’s Noxious Weed Law requires that land owners

control noxious weeds. Weed boards are active in all of North Dakota’s 53 counties and in six cities (Bismarck, Devils Lake, Dickinson, Fargo, Grand Forks and Mandan). (Source: North Dakota Department of Agriculture)

Idea: Discuss why students think it might be a law to prohibit certain weeds. Discuss, in general, how state laws are made.



Idea: Ask your local weed control officer or Extension agent to speak to your class. Ask a farmer to tell the students about how weeds affect his crop fields and pastures. Ask them to bring samples of weeds, including noxious weeds, if possible.

Definitions:

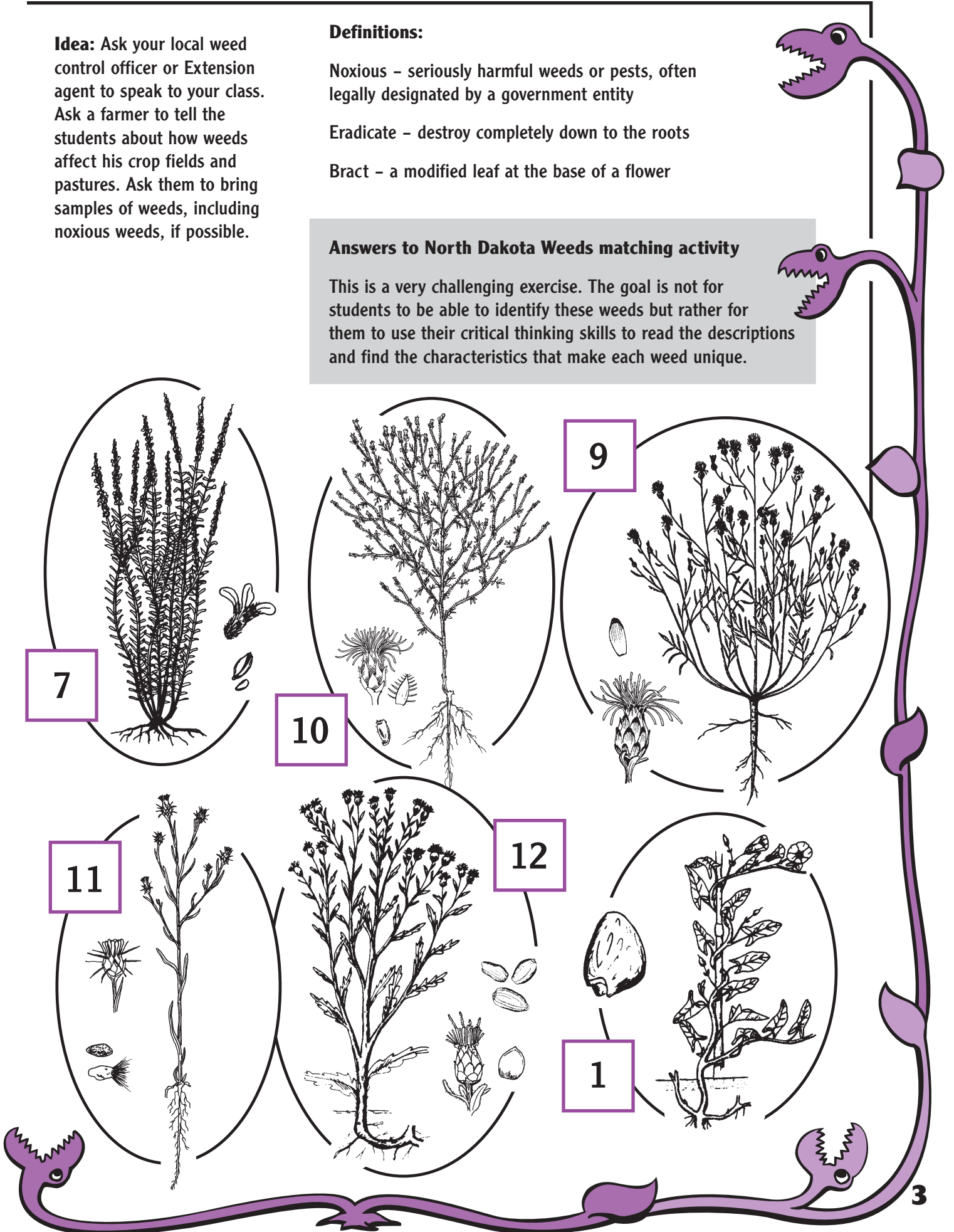
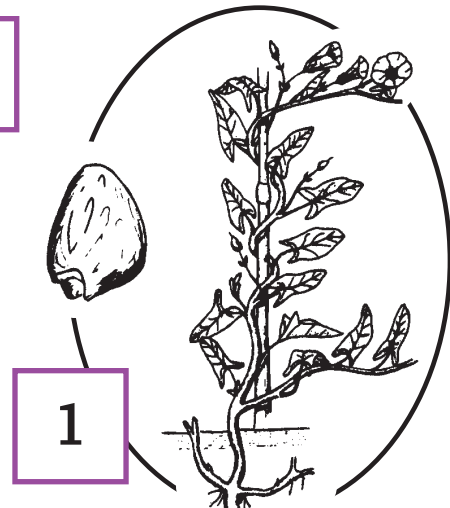
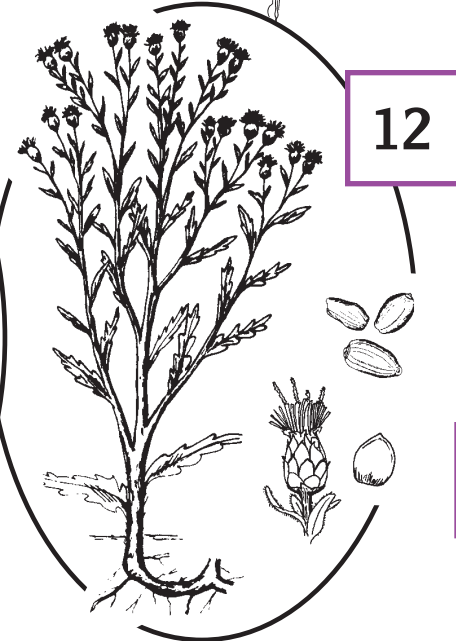
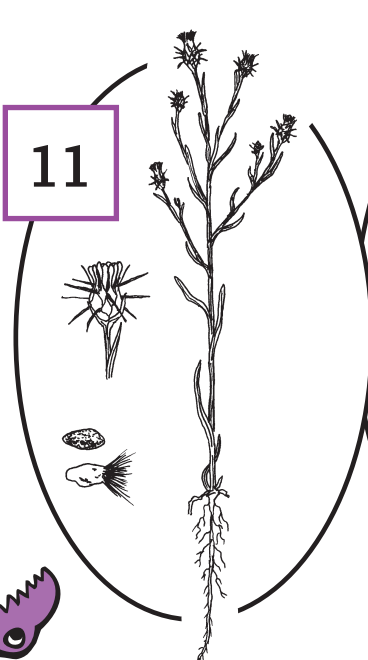
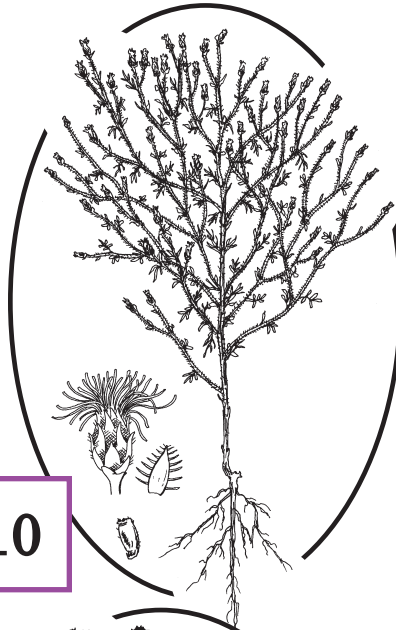
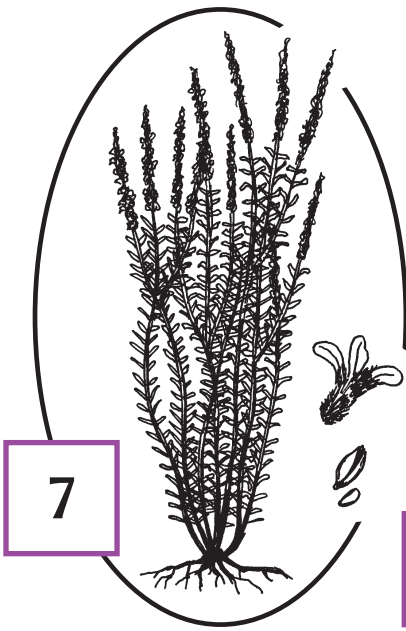
Noxious – seriously harmful weeds or pests, often legally designated by a government entity

Eradicate – destroy completely down to the roots

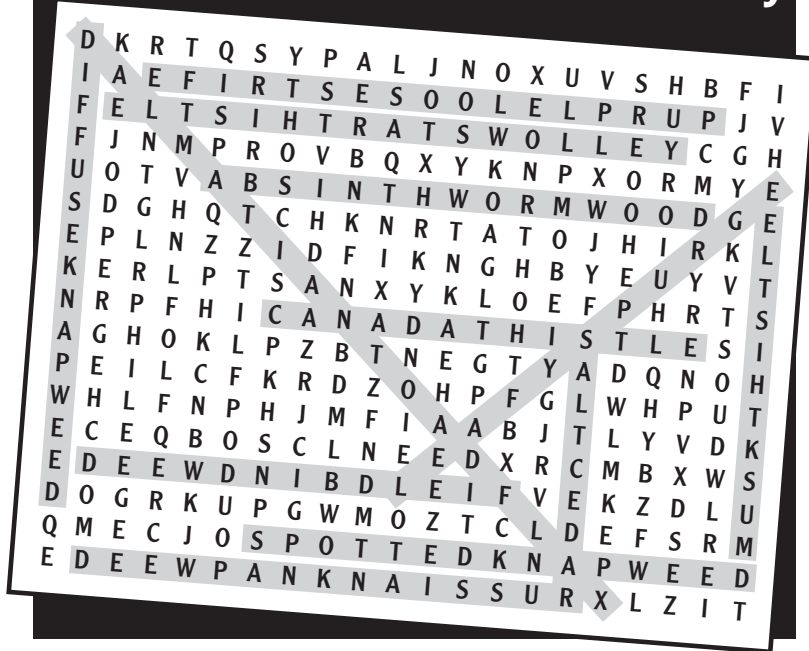
Bract – a modified leaf at the base of a flower

Answers to North Dakota Weeds matching activity

This is a very challenging exercise. The goal is not for students to be able to identify these weeds but rather for them to use their critical thinking skills to read the descriptions and find the characteristics that make each weed unique.

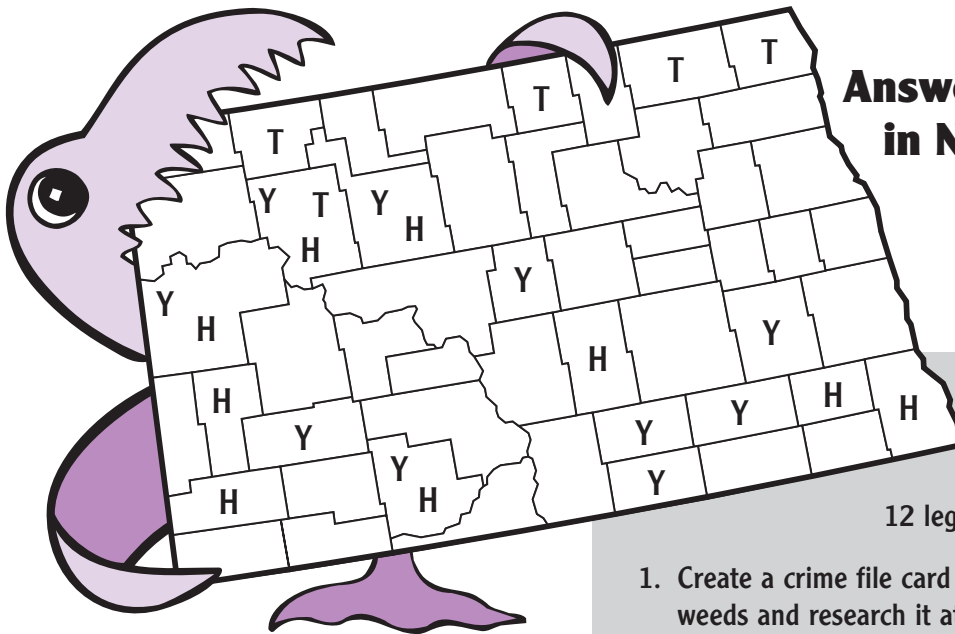
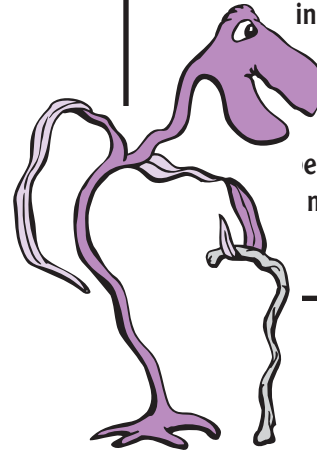


Answers to Word Search Activity



Annual, Biennial or Perennial?

Idea: Discuss annuals, biennials and perennials. Have students list some of the plants in your area and research whether they're annual, biennial or perennial. What makes the three different?



Answers to Weeds in North Dakota

Idea: Weed Crime File — Wanted: North Dakota Noxious Weeds! Allow students to become “detectives” of North Dakota’s 12 legally noxious weeds.

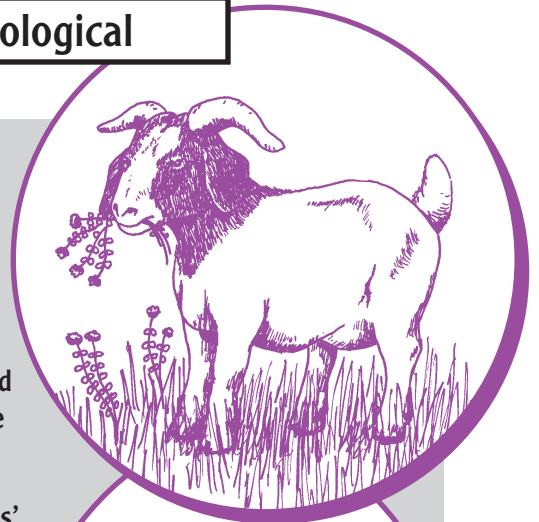
1. Create a crime file card – Have students pick one of the 12 noxious weeds and research it at the North Dakota Department of Agriculture Web site at www.agdepartment.com/programs/plant/noxiousweeds.html or with other resources.
2. Arrange information under headings –
 - What is its crime? (Why is the weed a problem?)
 - What does it look like?
 - Where did it come from?
 - What control method is best to use?
3. Create a wanted poster – Design a wanted poster to go with the crime file card. Encourage students to be creative.

Mountrail county has yellow toadflax, common tansy and houndstongue.

McKenzie, Grant and Ward counties have yellow toadflax and houndstongue.

Discussion: Do some weeds apparently grow better in some parts of the state than other locations? Why do you think that is?

biological



Answers to Control Those Weeds!

Top to bottom: biological, mechanical, chemical, integrated (note both the rototiller and the insects)

Discussion: How do the students' families control weeds in their yards or gardens? What are some issues a farmer or rancher should consider when trying to decide which weed control method to use? (too many acres to pull weeds by hand, don't use chemicals too close to streams or ponds since chemical may run off into the water, worth it to take care of goats, can afford to hire a spray plane, will beetles survive the winter, etc.)

mechanical



chemical



integrated

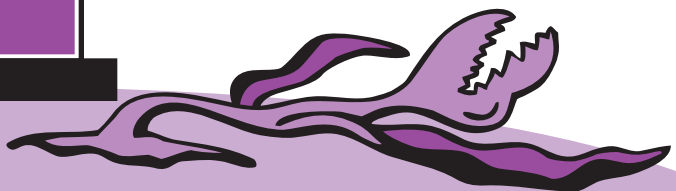
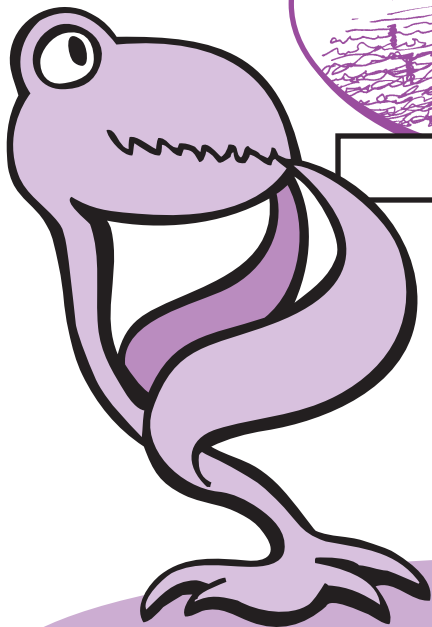
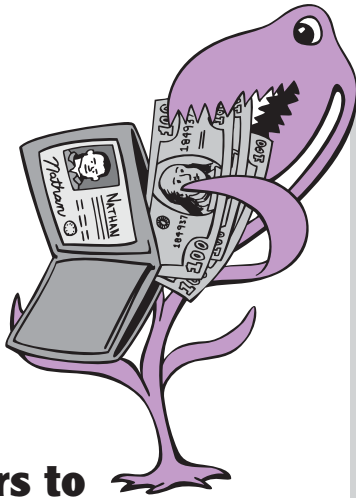


Write which picture is a mechanical, biological, chemical or integrated pest management control method.

Answers to Math Problems

- 100 acres - 30 acres = **70 acres**
- 47 bushels per acre X 70 acres = **3,290 bushels**
- 3,290 bushels X \$7 per bushel = **\$23,030**
- 1,410 bushels X \$7 per bushel = **\$9,870**
- \$23,030 + \$9,870 = **\$32,900**
- \$23,030 - \$15,000 = **\$8,030**

Idea: Have each student create a math problem that illustrates a farmer's or rancher's loss from weed infestation.



Answers to How Weeds Travel

Rufus is playing in a yard full of dandelions. As the **wind blows**, the white seeds from the dandelions drift across the yard.

Dandelion seeds **cling to Rufus' long, shaggy hair**. He gets warm from playing in the hot sun and jumps in the river to cool down. As Rufus jumps into the water, the dandelion seeds attached to his hair end up **floating in the river**. The dandelion seeds travel on the water until they reach the shore. At the shoreline, the seeds germinate, and a new patch of dandelions begins.



Idea: Have students write a short poem or creative story about weed seed traveling by wind, water, hitchhiking on an animal or human, or another method.

Idea: Select a weed that is especially troublesome in your community, and have students develop a public service/educational campaign to encourage people in the area to eradicate it.

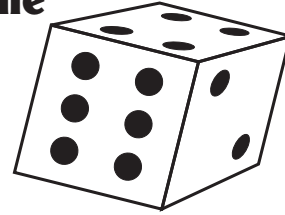
Idea: Use global positioning systems to map a weedy area. Trunks with GPS supplies and instructions may be able to be checked out through county offices of the NDSU Extension Service.

Idea: Have students complete a service learning project, possibly keeping up a flowerbed at a nursing home, pulling noxious weeds out of a public right of way or educating the public on what they can do to prevent the spread of noxious weeds.



North Dakota Noxious Weeds Board Game

Have students create their own board games to learn about North Dakota's weeds. Here are ideas to intersperse on the board:



Your pet ate a noxious weed and got sick
– Go back 1 space

Absinth wormwood spreads more rapidly than you could control
– Go back 1 space.

You help your dad spray the lawn for dandelions
– Go ahead 1 space

Weeds took over your field because you forgot to spray for them
– Go back 2 spaces.

You accidentally spread weeds on your boots
– Go back 1 space

You picked all of the weeds in your garden
– Go ahead 2 spaces

You turned your sheep out into a pasture to eat the leafy spurge
– Go ahead 1 space

You forgot to tie the dog up and he spread dandelion seed all over the yard
– Go back 2 spaces.

Each player rolls the die and moves to a square according to the number thrown. Students must throw the exact number to finish the journey through the state and become the official weed whacker.

Sources

North Dakota Department of Agriculture – www.agdepartment.com

United States Environmental Protection Agency – www.epa.gov

North Dakota State University Extension Service – www.ag.ndsu.edu

Department of Primary Industries and Fisheries, Queensland Government – www.dpi.qld.gov.au

The Kids Garden – www.thekidsgarden.co.uk

Landcare Research, Manaaki Whenua – www.landcareresearch.co.nz

North Dakota Agriculture in the Classroom Activities

This **Ag Mag** is just one of the North Dakota Agriculture in the Classroom Council projects.

Each issue of the Ag Mag focuses on an agricultural commodity or topic and includes fun activities, bold graphics, interesting information and challenging problems. Send feedback and suggestions for future Ag Mag issues to:

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Another council teacher resource is **Project Food, Land & People (FLP)**. Using the national FLP curriculum, N.D. Ag in the Classroom provides 600-level credit workshops for teachers to instruct them in integrating hands-on lessons that promote the development of critical thinking skills so students can better understand the interrelationships among the environment, agriculture and people of the world. Teachers are encouraged to adapt their lessons to include North Dakota products and resources.

Project Food, Land & People has 55 lessons, including:

- Amazing Grazing
- Cows or Condos?
- Seed Surprises
- Schoolground Caretakers
- Could It Be Something They Ate?
- What Piece of the Pie?
- and many more.

For information, contact:

Gail Scherweit
N.D. Farm Bureau Foundation
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gails@ndfb.org

Educators may apply for **mini-grants for up to \$500** for use in programs that promote agricultural literacy. The Agriculture in the Classroom Council, working with the N.D. FFA Foundation, offers these funds for agriculture-related projects, units and lessons used for school-age children. The mini-grants fund hands-on activities that develop and enrich understanding of agriculture as the source of food and/or fiber in our society. Individuals or groups such as teachers, 4-H leaders, commodity groups and others interested in teaching young people about the importance of North Dakota agriculture are welcome to apply.

Examples of programs that may be funded: farm safety programs, agricultural festivals, an elementary classroom visiting a nearby farm and ag career awareness day. Grant funds can be used for printing, curriculum, guest speakers, materials, food, supplies, etc. More ideas and an application are at www.ndaginclassroom.org.

For information, contact:

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(701) 224-8390
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The N.D. Geographic Alliance conducts a two-day **Agricultural Tour for Teachers**. The tour includes farm and field visits, tours of agricultural processing plants to see what happens to products following the farm production cycle, and discussions with people involved in the global marketing of North Dakota farm products.

For information, contact:

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Agricultural Science in the Virtual Classroom is a pilot project in which middle school and high school science classes are paired with North Dakota State University agriculture faculty and North Dakota ag industry leaders. The pairs will use videoconferencing, Web pages and other technologies to share knowledge about biofuels, food safety or similar ag topics.

For information, contact:

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Since teachers must relate work to education standards, the council worked with North Dakota State University to identify which Project Food, Land & People lessons meet North Dakota's **academic standards** for grades K-8. The North Dakota Agriculture in the Classroom Web site at **www.ndaginclassroom.org** includes links to these standards alignments, educational materials, statistics, resources and activities for students and teachers.

For information, contact:

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