We’re #1!

Idea: Ask the students what it means to be #1. Who are some of their #1 teams? What do they think North Dakota ranks #1 in?

North Dakota usually ranks #1 or #2 among the states for production of 16 agricultural products. The 2017 information (the latest available) was released in May 2018 by the National Agricultural Statistics Service and is available at www.nass.usda.gov/Statistics_by_State/North_Dakota/Publications/Miscellaneous/Top_Commodities/2018/ND_rank18.pdf.

Here are the percentages of the U.S. production provided by North Dakota in 2017 for each #1 and #2 product.

- Spring Wheat .......... 50 percent
- Durum Wheat .......... 53 percent
- All Wheat ............... 14 percent
- Flaxseed ................ 89 percent
- Pinto Beans ........... 62 percent
- Navy Beans ............ 40 percent
- Black Beans .......... 28 percent
- Great Northern Beans ... 5 percent
- Dry Edible Beans ........ 35 percent
- Dry Edible Peas ........ 52 percent
- Oil Sunflowers .......... 34 percent
- Non-oil Sunflowers ...... 23 percent
- All Sunflowers ........... 32 percent
- Canola ..................... 82 percent
- Lentils .................... 29 percent
- Honey ..................... 23 percent

Note: The government counts several kinds of beans separately but also combines navy, pinto, black and other kinds of beans into another category of all dry edible beans. Same with wheat and sunflowers.

Answers to Crop Categories

- Oilseeds
- Flaxseed
- Oil Sunflowers
- Canola

- Legumes
- Pinto Beans
- Navy Beans
- Dry Edible Beans
- Dry Edible Peas
- Lentils
- Black Beans
- Great Northern Beans

- Cereal Grains
- Spring Wheat
- Durum Wheat
- All Wheat

- Other
- Non-oil Sunflowers
- Honey
Idea: Have students list the foods they ate yesterday and then circle the foods that came from North Dakota’s #1 or #2 products. See if they also can categorize the foods into oilseeds, legumes, cereal grains and other categories.

Idea: Ask a local farmer, the local elevator manager, your high school agriculture teacher or an Extension agent to help gather samples of these and other crops. Have students sort them by category.

Idea: Have students bring from home items that contain North Dakota’s #1 and #2 products. Have a display or have students guess which products the items contain.

Idea: Compare oil and non-oil sunflower seeds. Both can be purchased at stores: oil as birdseed and non-oil in shell or as kernels. How do they look similar? How are they different? What is each used for?

Idea: Have students create pie charts illustrating the percentages of North Dakota production for various crops.

Discuss the Agriculture Cycle. Ask students what they know about the production, processing, distribution and consumption of any of the state’s #1 and #2 commodities.
Honey Production

Answers to Honeybee Math

1. **36 bees**
   
   12 bees/teaspoon \times 3 teaspoons/\text{tablespoon} = 36 bees to make 1 tablespoon

2. **440,000 miles**
   
   55,000 miles/pound \times 8 pounds = 440,000 miles

3. **52.5 miles**
   
   15 miles/hour \times 3.5 hours = 52.5 miles

4. **6.5 pounds**
   
   1.3 pounds/person \times 5 people = 6.5 pounds

5. **10,000,000 flowers**
   
   2,000,000 flowers/pound \times 5 pounds = 10,000,000 flowers

6. **14 tablespoons**

   \[0.875 \text{ cup}\]
   
   2 tablespoons/trip \times 7 trips = 14 tablespoons, 14 tablespoons ÷ 16 tablespoons/cup = 0.875 cup

7. **45 lbs.**

   34,000,000 pounds ÷ 755,000 people = 45 pounds per person

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**Idea:** Make banana pops to show students that honey is part of a nutritious diet.

**Ingredients:** ground toasted almonds, flaked coconut, candy sprinkles and/or graham cracker crumbs; honey; peeled bananas; popsicle or craft sticks

Spread toppings on plates. Cut bananas in half crosswise. Insert a stick into each cut end. To assemble, hold each banana half over a plate or waxed paper to catch drips. Spoon about 1 tablespoon honey over banana, rotating and smoothing honey with back of spoon to coat all sides. (Or squeeze honey from a plastic honey bear container and smooth out with spoon.) Roll banana in topping of choice until coated on all sides, pressing with fingertips to help topping adhere. Place pops on waxed paper-lined cookie sheet. Repeat with remaining bananas, honey and topping. Serve at once.

**Nutritional Information**

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<th>Per Serving</th>
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<tbody>
<tr>
<td>Calories: 224</td>
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<tr>
<td>Calories from Fat: 39%</td>
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<tr>
<td>Carbohydrates: 35.2 g</td>
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<tr>
<td>Cholesterol: 0 mg</td>
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<tr>
<td>Dietary Fiber: 3.26 g</td>
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<tr>
<td>Fat Total: 11.6 g</td>
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<tr>
<td>Protein: 4.98 g</td>
</tr>
<tr>
<td>Sodium: 3.8 g</td>
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</table>

**Source:** The National Honey Board, www.honey.com

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**Idea:** Download and use National Honey Board activity sheets and posters at www.honey.com/the-bees/educational-materials.

**Idea:** Use the lesson “Buzzy Buzzy Bee” from Project Food, Land & People to learn about the honeybee’s role in plant pollination.

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**Idea:** Have each student or team of students research the crops in which North Dakota usually ranks #1 or #2 among the states in production. How does the crop grow? In what part of the state does it primarily grow? How is it processed? What is it used in?

**Idea:** Grow pinto beans or another kind of dry edible bean in small containers. Study the parts of the plants. How are various dry edible bean plants alike? How are they different?

**Idea:** Have the students use various colors, shapes and sizes of beans or other legumes or grains to make picture frames or mosaics or to copy famous paintings. Pencil designs on Styrofoam plates or cardboard first, then glue down beans, legumes and grains.

**Idea:** Make stained glass pictures with canola oil. On white paper, draw a picture using colored felt markers. Place the page on a sheet of newsprint or a paper towel. Using an old paint brush, cover the entire drawing with a light coating of canola oil. Let dry. Once dry, place or hang the picture in a window. See the sun shine through your drawing.

Source: Northern Canola Growers Association
Distribution

Idea: Have students write a list of North Dakota’s #1 and #2 commodities, and then go to the N.D. Department of Agriculture’s Pride of Dakota website at www.prideofdakota.nd.gov. Have students complete a scavenger hunt to find at least two Pride of Dakota products that come from each commodity.

Idea: Discuss imports and exports with students. What other products does North Dakota export? What products do we import? Why?

Idea: Have each student select one of the countries from “Where in the World?” and research the country further. Have students develop booklets or give presentations to learn from each other.

Idea: Use the lesson “From Sea to Shining Sea” from Project Food, Land & People to have students learn about the top products produced in each state.

Career Corner

Idea: Have students or teams of students select one of North Dakota’s #1 or #2 products and research careers related to that product. Have a career day to share what they’ve learned.

Idea: Have students research and gather the different beans and seeds AGT processes.
Idea: Discuss why North Dakota doesn’t produce many products in the vegetable, fruit and milk groups.

Idea: Ask students why they think oils are not a food group. Explain that oils do provide essential nutrients, but only small amounts of oils are recommended, primarily because of their high calories.

Idea: Make Cowboy Caviar with the students.

1 (14 ounce) can black beans, drained and rinsed
1 (15.5 ounce) can black-eyed peas, drained and rinsed
1 (14 ounce) can garbanzo beans, drained and rinsed
1 (15 ounce) can white corn, drained
1 cup finely chopped sweet onion
2 cloves garlic, minced
1 cup finely chopped fresh parsley
(3 tablespoons dried parsley)
2 teaspoons finely chopped fresh basil
(½ teaspoon dried basil)
1/3 cup canola, sunflower or other vegetable oil
1/4 cup red wine vinegar
1 teaspoon salt
1/2 teaspoon ground black pepper
1/2 teaspoon dry mustard powder
1/2 teaspoon hot pepper sauce
(or amount to taste)

Stir the black beans, black-eyed peas, garbanzo beans, white corn, onion, garlic, parsley and basil together in a bowl.

To make the dressing, mix the oil, red wine vinegar, salt, pepper, dry mustard and hot sauce together in a small bowl until well blended. Pour over the bean mixture and toss to mix evenly. Refrigerate for 24 hours before serving.

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**Consumption**

Answers to Crossword Puzzle

![Crossword Puzzle]

Answers to Pack MyPlate

![MyPlate Puzzle]

**GRAINS**

<table>
<thead>
<tr>
<th>Spring Wheat</th>
<th>All Wheat</th>
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<tbody>
<tr>
<td>Durum Wheat</td>
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**NOT ON MYPLATE LIST**

<table>
<thead>
<tr>
<th>Oil Sunflowers</th>
<th>Flaxseed</th>
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</thead>
<tbody>
<tr>
<td>Non-oil Sunflowers</td>
<td>Canola</td>
</tr>
<tr>
<td>All Sunflowers</td>
<td>Honey</td>
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</tbody>
</table>

**PROTEIN**

<table>
<thead>
<tr>
<th>Lentils</th>
<th>Black Beans</th>
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<tbody>
<tr>
<td>Great Northern Beans</td>
<td>Navy Beans</td>
</tr>
<tr>
<td>Dry Edible Beans</td>
<td>Pinto Beans</td>
</tr>
<tr>
<td>Dry Edible Peas</td>
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</tbody>
</table>
Answers to We’re #1 Vocabulary Practice Worksheet

**Oilseeds** – definition: crops used to produce vegetable oil; examples: canola oil, sunflower oil, soybean oil

**Legumes** – definition: crops that grow in pods and produce foods that humans and animals eat and are high in protein; examples: dry peas, pinto beans, lentils, navy beans

**Cereal crops** – definition: crops that are mainly grasses that have an edible fruit, which is a grain; examples: spring wheat, durum wheat

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**Additional Educational Material**

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**Organizational Resources**

- National Honey Board, www.honey.com
- Northarvest Bean Growers Association, www.northarvestbean.org
- Northern Canola Growers Association, www.northerncanola.com
- Ameriflax, www.ameriflax.com
- Northern Pulse Growers Association, www.northernpulse.com
- NDSU Extension, www.ndsu.edu/eatsmart
- U.S. Department of Agriculture, www.choosemyplate.gov

**You Tube Video Clips**

- Pride of Dakota: A Touch of Honey (3 minutes), www.youtube.com/watch?v=q2I4GXOLvrA
- Dakota Growers Pasta, www.youtube.com/watch?v=PoTAJcOV-iA
- North Dakota Ships Durum Wheat, www.youtube.com/watch?v=n5ifBXqQTzU
- North Dakota’s Wheat Production, www.youtube.com/watch?v=ZVktysjCnWI
- Sunflower Harvest in North Dakota, www.youtube.com/watch?v=m9eMlxRJGM0

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**Other Resources**

- National Geographic MapMaker Interactive, https://mapmaker.nationalgeographic.org
- North Dakota Farm Bureau at www.ndfb.org/edusafe/teachers
  - There’s Barley in There (video)
  - Dry Beans: Ag in the Elementary Classroom (video & lesson plans)
  - Our Pride is Growing (video - about beans)
  - The Honey Bee (12 study posters)
  - The Honey Files- A Bee’s Life (video & lesson plan)
  - What’s Buzzin’ (video)
    and more

**Books**

These books are available for a two-week checkout from North Dakota Farm Bureau at www.ndfb.org/edusafe/teachers.

- “Hooray for Beekeeping” by Bobbie Kalman
- “How do Bees Make Honey?” by Anna Claybourn
- “The Life and Times of the Honeybee” by Charles Micucci
- “The Magical School Bus: Inside a Beehive” by Joanna Cole
- “Sunflower” by David M. Schwartz
- “Sunflower House” by Eve Bunting
  and more
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. See past issues at www.ag.ndsu.edu/agmag.

Send feedback and suggestions for future Ag Mag issues to:
Becky Koch
NDSU Agriculture Communication
701-231-7875
becky.koch@ndsu.edu

Another AITC teacher resource is Project Food, Land & People (FLP). Using the national FLP curriculum, N.D. Ag in the Classroom provides credit workshops in person and online 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 (FLP) is a curriculum with many lessons developed for K-12 educators to integrate easily into the classroom. The instructional units address core content and North Dakota state standards and benchmarks with inquiry-based learning activities.

Participants receive the entire curriculum plus North Dakota specific materials and information about available resources.

See details at www.ndfb.org/edusafe/FLP.

For information, contact:
Jill Vigesaa
FLP Coordinator
701-799-5488
jill.vigesaa@gmail.com

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 application information are at www.nd.gov/ndda/ag-classroom.

Applications are due Sept. 21 each year.

For information, contact:
Tam Maddock
N.D. FFA Foundation
tmaddock@ndffa.org
www.teamabovo.com/ndffa

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:
Jeff Beck
North Dakota Geographic Alliance
701-858-3063
jeff.beck@minot.k12.nd.us

North Dakota Agriculture in the Classroom Council

Kim Alberty – Agassiz Seed and Supply, West Fargo
Aaron Anderson – N.D. Dept. of Career and Technical Education
Nancy Jo Bateman – N.D. Beef Commission
Sheri Coleman – Northern Canola Growers Association
Kirk Olson – McKenzie County Farm Bureau
Nicole Wardner – NDSU Extension Sheridan County
Statutory Member: Superintendent of Public Instruction Kristen Baesler (Bob Marthaller, representative)
We’re Number #1 AgMag Standards and Benchmarks

English Language Arts and Literacy Content Standards for Reading Informational/Nonfiction Text

Gr. 3, RI.1 Ask and answer questions to demonstrate understanding of a text (textual evidence), referring explicitly to the text as the basis for the answers.

Gr. 3, RI.2 Determine the main idea of a text and recount the key details to explain how they support the main idea.

Gr. 3, RI.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

Gr. 4, RI.1 Refer to details and examples in a text (textual evidence) when explaining what the text says explicitly and when drawing inferences from the text. Summarize the text.

Gr. 4, RI.2 Determine the main idea of a text and explain how it is supported by key details.

Gr. 4, RI.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

Gr. 5, RI.1 Quote accurately using textual evidence when explaining what the text says explicitly and when drawing inferences from the text. Summarize the text.

Gr. 5, RI.2 Determine two or more main ideas of a text and explain how they are supported by key details.

Gr. 5, RI.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

Craft and Structure

Gr. 3, RI.4 Determine the meaning of general academic and domain specific words and phrases in a text relevant to a grade 3 topic or subject area.

Gr. 4, RI.4 Determine the meaning of general academic and domain specific words or phrases in a text relevant to a grade 4 topic or subject area.

Gr. 5, RI.4 Determine the meaning of general academic and domain specific words and phrases in a text relevant to a grade 5 topic or subject area.

North Dakota Mathematics Content Standards

Number and Operations in Base Ten

5.NBT.5 Fluently multiply multi-digit whole numbers using strategies flexibly, including the standard algorithm. Mastery of the standard multiplication algorithm is expected at this stage.

North Dakota Mathematics Content Standards

Number and Operations-Fractions

3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts.

4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number.

Measurement and Data

3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units.

4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.

Health Content Standards

Standard 1: GROWTH AND DEVELOPMENT

Body Systems

3.1.4 Describe the effects of healthy and unhealthy foods on the body (e.g., healthy foods provide nutrients for growth and development; unhealthy foods contribute to a lack of energy and obesity)

5.1.2 Explain the maintenance of human body systems (e.g., skeletal: choose foods high in calcium and vitamin D, be physically active)

Standard 6: CONSUMER HEALTH

4.6.1 Describe the characteristics of valid health information, products, and services (e.g, choosemyplate.gov, USDA, FDA, nutrition labels, CDC)
We’re Number #1 AgMag Standards and Benchmarks

ND Social Studies Standards and Benchmarks

Standard 1: Skills and Resources:

Resources

Benchmark 3.1.3 Use a variety of resources (e.g., maps, charts, bar graphs, Internet, books) to gather information about people, places, and events.

Benchmark 3.1.4 Describe current events using print and electronic media (e.g., newspaper, children's news magazines, television, Internet).

Benchmark 4.1.4 Interpret current events using print and electronic media (e.g., newspaper, children's news magazines, television, Internet).

Benchmark 5.1.3 Evaluate current events using print and electronic media (e.g., newspaper, children's news magazines, television, Internet).

Standard 3: Economic Concepts:

State Economics

Benchmark 4.3.2 Identify ways that natural resources (e.g., soil, people, trees) contribute to the economy of the local community and of North Dakota.

Benchmark 4.3.4 Identify principal exports of North Dakota (e.g., crops, energy, livestock).

Science Standards and Benchmarks

Standard 4: Students understand the basic concepts and principals of life science.

3.4.1. Structure and Function: Identify parts of an organism that have specific functions (e.g., roots absorb water, heart pumps blood).

3.4.2. Life Cycles: Describe the life cycles of plants and animals (e.g., birds, mammals, grasses, trees, insects, flowers).

4.4.4. Organisms and Their Environments: Identify ways that an organism’s pattern of behavior is related to the nature of the organism’s environment (e.g., the availability of food, space, and resources).

Standard 6: Students understand relations between science and technology.

4.6.1. Technological Design: Evaluate the effects of technology on people and the environment (e.g., new construction, oil drilling, electric cars).

Standard 7: Students understand relations between science and personal, social, and environmental issues.

4.7.2. Science and Social Issues: Identify ways in which science and technology have greatly improved human lives (e.g., food quality and quantity, transportation, health, sanitation, communication).

5.7.2. Science and Social Issues: Explain ways humans benefit from Earth’s resources (e.g., air, water, soil, food, fuel, building materials).

Standard 8: History and Nature of Science.

3.8.1. People In Science: Identify ways people of all ages, genders, and backgrounds use science in their careers and in daily life (e.g., children check temperature conditions to decide what to wear, farmer uses genetic grains, hikers use GPS, depth-finder in boat, hearing aids for disabilities).

4.8.1. People In Science: Identify a variety of careers in the field of science.
# Vocabulary Practice

## OILSEEDS

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<th>Examples</th>
<th>Non-examples</th>
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## LEGUMES

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## CEREAL CROPS

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