

In this lesson, students will learn how to read plat maps and determine what area is being described. This lesson will be based on Stutsman County, but we encourage you to adapt it to your own county for students to have a more relevant learning experience.

## Supplies

- Plat maps from either Digital Horizons or your own county. Almost every farmer in your area will own them.
- Worksheets

## Objectives

- Students will understand townships and land descriptions.
- Students will learn how to determine an area on a map based on land descriptions or from land descriptions based on what they see on the map.
- Students will be able to determine the acreage of a land description.

## Background

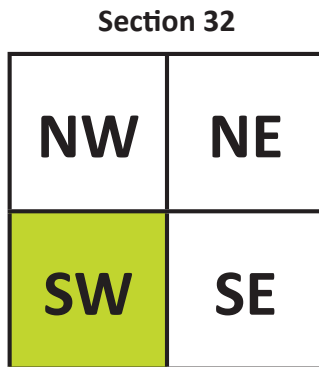
“This land is your land, this land is my land; From California to the New York Island.” Students may be familiar with this catchy tune, but it is not the way land ownership works in the state of North Dakota or elsewhere in the nation. Farmers and ranchers need to know what, exactly, constitutes their own land. If they plant or spray someone else’s land or let their cattle graze on others’ land, they run the risk of not only losing money but also potential legal troubles. North Dakota is divided into 53 counties. Counties are divided into townships, most of which are roughly 6 miles by 6 miles square. When homesteaders made land claims, they would generally choose a quarter of land (160 acres) in a township. Plat maps can be used to find out who owns which parcels of land. Generally, townships are divided into 36 sections each containing 640 acres, as shown in the township example.

Township

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Land descriptions show exactly what land is being described and were used during homesteading to indicate land that people would make claims to. Each section was made up of quarters of land that people could claim.

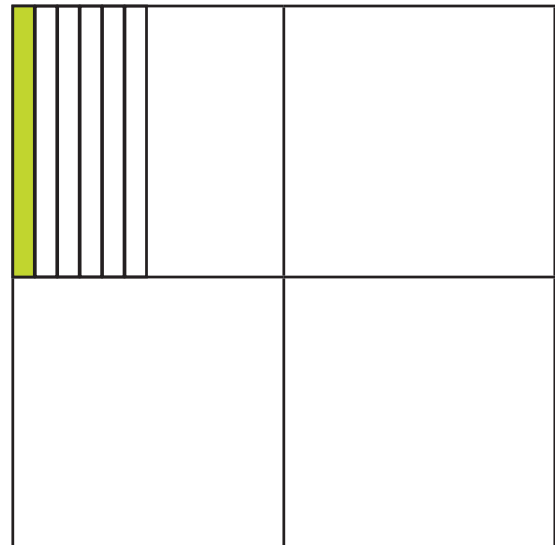
A quarter of land is  $\frac{1}{4}$  of 640 acres or 160 acres. So a person may make a claim on the SW  $\frac{1}{4}$  Section 32 as indicated by the green square below:



Township

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	3 2	33	34	35	36

**Section 5**



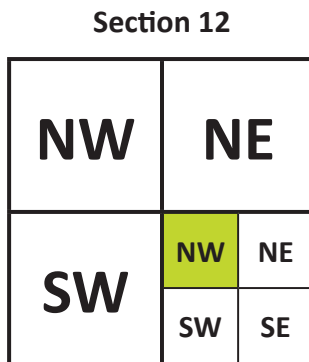
To determine the acreage of the above land description, you would also do the math starting from the end of the description. Reminder: A section of a township is 640 acres. A quarter of a section is 160 acres ( $\frac{1}{4}$  of 640), half of that is 80 acres,  $\frac{1}{6}$  of 80 is 13.3 acres. It's a good lesson as to why you want to designate who inherits your land so that it is not simply divided among all living members of your family, leaving not enough land to farm or live off.

As land is sold or divided, the land descriptions become more complex. To understand where the land is located precisely, one needs to know how to read the land descriptions. The key to reading land descriptions is to read them backwards. As an example, someone may own the W  $\frac{1}{6}$  of the W  $\frac{1}{2}$  of the NW  $\frac{1}{4}$  of Section 5. So in the figure above, you would find Section 5, divide it into quarters, and locate the NW quarter. Then that quarter would be divided into an east and west  $\frac{1}{2}$  and the owner has the W  $\frac{1}{6}$  of that  $\frac{1}{2}$  as indicated in the visual below.

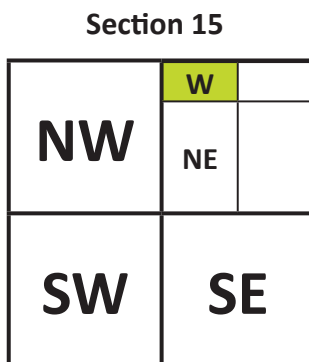
## Activity

1. Use the background information above to teach students what a county, township, and land description is.
2. Go through several examples where students determine the land location based on the land description.

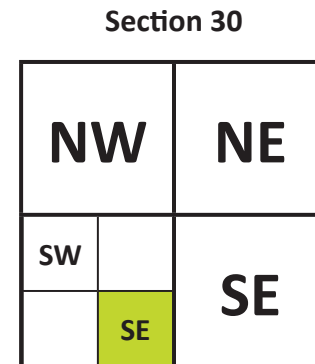
a. The NW 1/4 of the SE 1/4 of Section 12



b. The W 1/2 of the NW 1/4 of the NE 1/4 of Section 15



c. The SE 1/4 of the SW 1/4 of Section 30



3. Go through several examples where the students determine the acreage of a land description.
  - a. The NW 1/4 of the SE 1/4 of Section 12
    - i.  $640 \times 1/4 = 160$
    - ii.  $160 \times 1/4 = 40$  acres
  - b. The W 1/2 of the NW 1/4 of the NE 1/4 of Section 15
    - i.  $640 \times 1/4 = 160$
    - ii.  $160 \times 1/4 = 40$
    - iii.  $40 \times 1/2 = 20$  acres
  - c. The SE 1/4 of the SW 1/4 of Section 30
    - i.  $640 \times 1/4 = 160$
    - ii.  $160 \times 1/4 = 40$  acres
4. Once students understand the exercise, have them use the map of Griffin Township in Stutsman County and the Stutsman County map to complete the worksheet.

## Extension

1. Use your own county map to have students understand where they live.
2. Assign the students a parcel of land and use the Bureau of Land Management records to see who homesteaded the land.
3. Have students use land maps to see where they would choose to live and then determine if the landowners who obtained the land patent were able to hold on to their land.
4. Cities use descriptions of homes in town as well. When you buy a house, it has a land description similar to those listed above. Have students determine where the school, businesses, or homes are located.
5. Have the students research their own homes/homesteads.

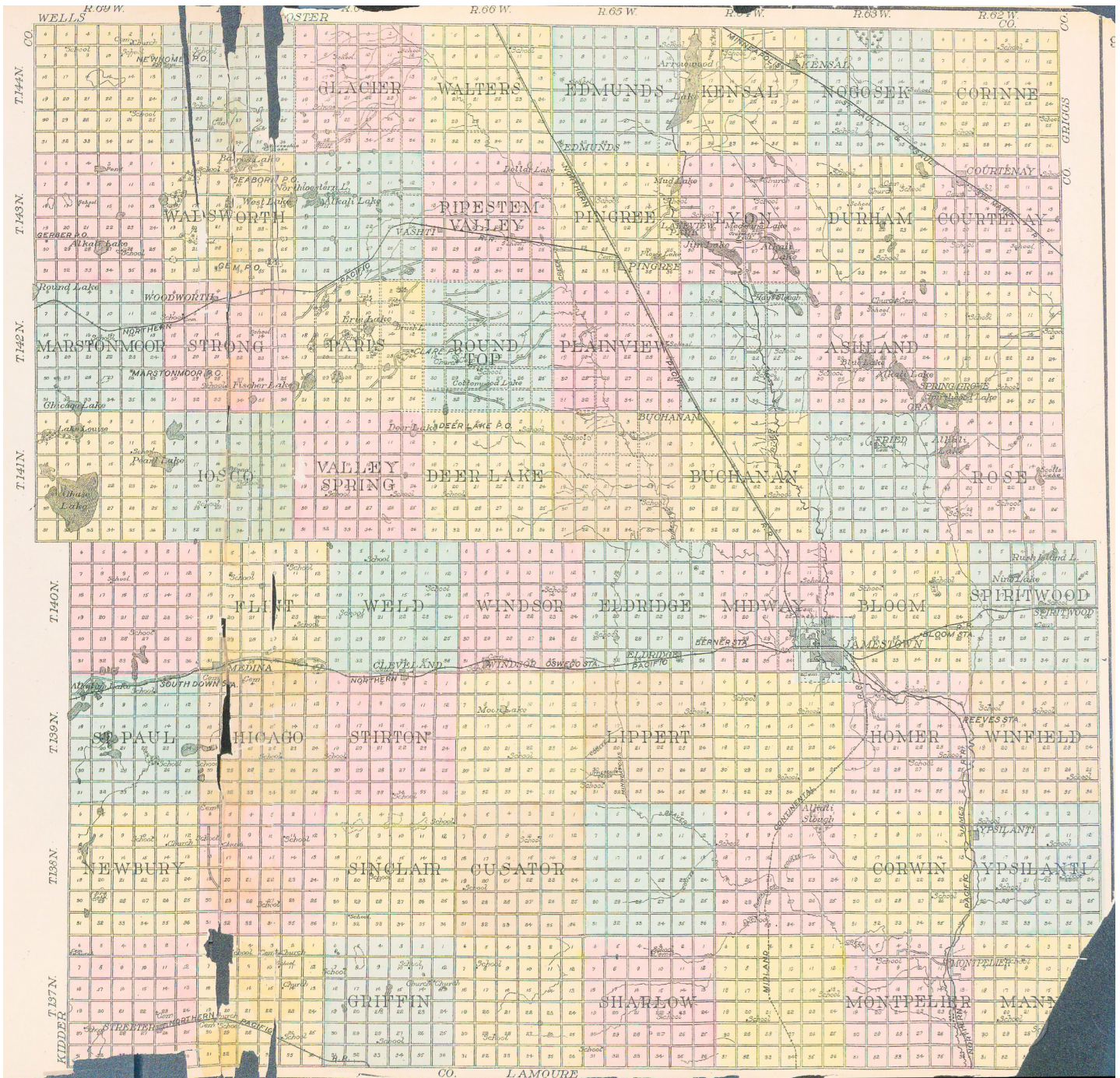
## Reflection questions

1. Why is this relevant to you today?
2. What land do you think was most sought after by homesteaders and why?

Interactive map of counties and townships

Name \_\_\_\_\_

## Stutsman County Map With Townships



Questions 1-2: Find the answers using the Stutsman County map.  
[digitalhorizonsonline.org/digital/collection/p16921coll2/id/4486/rec/101](http://digitalhorizonsonline.org/digital/collection/p16921coll2/id/4486/rec/101)

1. Identify the city of Jamestown on the map. What township is Jamestown mostly located in?

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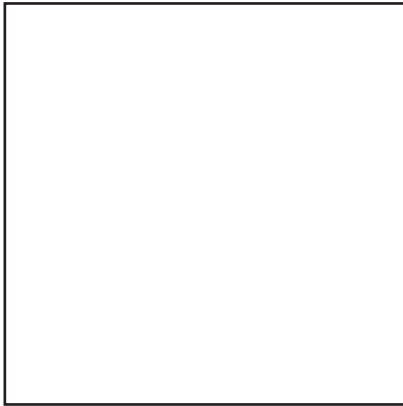
2. In Corwin Township, in what section is the school located?

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*Questions 3-5:* Each square below represents a township. Shade in the indicated areas requested. Finally, calculate how many acres are included in each land description. Write the answer in the space provided.

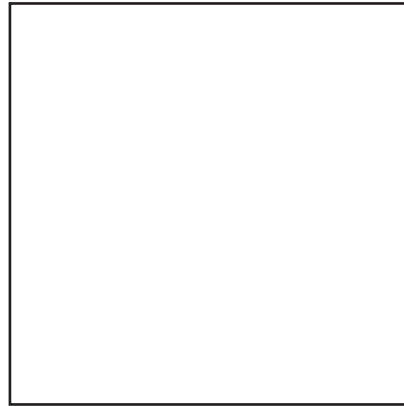
3. Shade the W  $\frac{1}{3}$  of the N  $\frac{1}{2}$  of the SE  $\frac{1}{4}$  of a section. How many acres is that?

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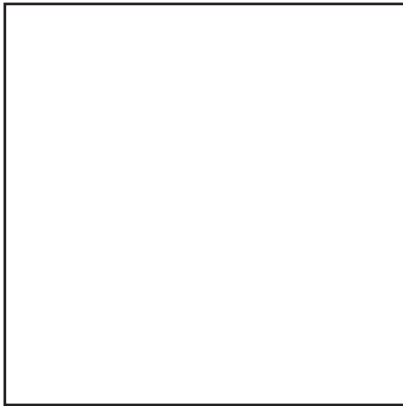
4. Shade the NE  $\frac{1}{4}$  of the S  $\frac{1}{2}$  of a section. How many acres is that?

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5. Shade the E  $\frac{1}{8}$  of the W  $\frac{1}{2}$  of the NW  $\frac{1}{4}$  of a section. How many acres is that?

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Questions 6-8: Find the answers using Stutsman County's Griffin Township plat map.

6. Who owns the SW 1/4 of the SW 1/4 of Section 8?

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7. What would be the land description for John Rivinius' land in Section 22?

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8. Name two people who own full sections of land.

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