

# Great Expectations

## Background

Modern domestic cattle evolved from a single ancestor, the aurochs (pronounced or oks). Prehistoric paintings on cave walls help us see what the aurochs looked like. Early cattle served a triple purpose for the humans who raised them. They provided meat, milk, and labor. Today, cattle are raised primarily to provide people with meat.

Bovine is the scientific name for beef or dairy cattle. A bull is a mature male bovine. A sire is a bull used for breeding and is not usually used for meat. Most of the beef that people eat comes from beef steers. A steer is a bull which has been castrated. A bull is more muscular, which makes its meat less tender.

People who raise cattle usually have one bull for every 25 cows. During the breeding season, the bulls are placed in a pasture with heifers and cows. A heifer is a young female that has never given birth, and a cow is an older female that has given birth. The time the bulls and the females are together is called a breeding season. A breeding season usually lasts three to four months. Most producers have their cattle bred in the fall or spring. Once breeding season is over, the bulls are moved to another pasture until the next breeding season. The bred females will then have a nine-month (285-day) gestation period. Gestation is the period of time that begins when the cow is bred and ends when she gives birth to her calf. A group of calves all born in the same season to cows belonging to one producer is called a calf crop.

It is very important for beef producers to know when their animals will give birth to calves. They must be prepared to have shelter and the proper supplies available, in case of an emergency. One way a producer can estimate the date the calves will be born is by using a gestation table. A gestation table makes it easier for the producer to count the days from the time the cow was bred by the bull to the time she should give birth.

## Math

1. Summarize background.
2. Hand out student worksheets.
  - Look at the chart with students and help them understand how to read it. Point out that the shaded numbers in bold print are the numbers that show when the cow was bred and the unshaded numbers in regular print are the numbers showing when the calf should be born.
  - Students will use the chart on Student Worksheet A to answer the questions on Student Worksheet B. (See answers below.)

## P.A.S.S.

### GRADE 2

**Math Process**—1.1; 4.4

**Math Content**—5.1b

**Science Process**—1.2;  
4.1,2,3

**Life Science**—2.1

### GRADE 3

**Math Process**—1.1; 4.4

**Math Content**—5.1b

**Science Process**—1.2;  
4.1,2,3

### GRADE 4

**Math Process**—1.1; 4.4

**Math Content**—5.1a

**Science Process**—1.2; 4.2

### GRADE 5

**Math Process**—1.1; 4.4

**Math Content**—5.1b

**Science Process**—1.2; 4.2

## Vocabulary

**aurochs**—an extinct bovine mammal of northern Africa, Europe and western Asia, believed to be the forerunner of domestic cattle

**bovine**—an animal of the family Bovidae; cattle

**breeding season**—a set period of time when male animals and female animals are placed together for breeding

**bull**—adult male bovine mammal

**cow**—the mature female of any bovine animal

**calf crop**—the total number of calves born in a calving season to cattle belonging to a particular cattle producer

**domesticate**—to train or adapt (an animal or plant) to live in a human environment and be of use to humans

**gestation**—the time period beginning when a female animal is bred and ending with the birth of her offspring

**gestation table**—a table used by producers showing the approximate date an animal will give birth, based on the conception

**heifer**—a young cow that has not given birth to a calf

**steer**—a young bovine animal castrated before sexual maturity and raised for beef

## Ag in Your Community

Have a local rancher or producer visit the class to talk about the breeding program he or she uses with his or her herd.

## Science

1. Have students research to find the gestation periods of a variety of animals—elephants, horses, giraffes, pigs, dogs, etc., and make gestation tables for them.
2. Contact your county Extension office about the 4-H Chick Embryo Science Program (see “Additional Resources”), and have your class do a chick embryo project so they can view the different stages of embryo development.

## Extra Reading

Miller, Robert, *Cowboys*, Silver Burdett, 1991.

## Answers

1. Oct. 13; 2. March 15; 3. Jan. 11, April 9; 4A. Jan. 20; 4B. Nov. 21; 4C. Nov. 16, no; 4D. 75 days

Name \_\_\_\_\_

# Great Expectations

# A

The table below is a gestation table. Gestation is the period of time that begins when the cow is bred and ends when she gives birth to her calf. The gestation table below is based on a 285-day gestation period. In each segment, the shaded line represents the day the cow was bred by the bull, and the white line represents the day the cow should calve. Use the table to answer the questions on Student Worksheet A.

<b>Jan 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		
Oct 13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	Nov	
<b>Feb 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>					
Nov 13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10					Dec
<b>Mar 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		
Dec 11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	Jan	
<b>Apr 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>			
Jan 11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	Feb		
<b>May 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		
Feb 10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	1	2	3	4	5	6	7	8	9	10	11	12	Mar	
<b>Jun 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>			
Mar 13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	Apr		
<b>Jul 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		
Apr 12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	May	
<b>Aug 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		
May 13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	Jun	
<b>Sep 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>			
Jun 13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	Jul		
<b>Oct 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		
Jul 13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	Aug	
<b>Nov 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>			
Aug 13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	Sep	
<b>Dec 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		
Sep 12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	Oct	

**bold = bred**

plain = born

Name \_\_\_\_\_

# Great Expectations B

It is very important for beef producers to know when their animals will give birth to calves. They must be prepared to have shelter and the proper supplies available, in case of an emergency. One way a producer can estimate the date the calves will be born is by using a gestation table. Gestation is the period of time that begins when the cow is bred and ends when she gives birth to her calf. Use the gestation table on Student Worksheet B to answer the questions below. Remember, the numbers that are shaded and bold show when the cow was bred; the numbers that are not shaded and plain show when the calf was born.

1. If a cow is bred on January 1, the calf should be born on what day? \_\_\_\_\_
2. On Christmas Day, a cow belonging to Rancher Harry Jones gives birth to a calf. What day was the cow bred? \_\_\_\_\_
3. Workers at the Circle R Ranch need to figure out how long their calving season will last. They have 20 cows to breed. The first cow is bred on April 1, and the last cow is bred on June 28. On what date will the first calf be born? \_\_\_\_\_ On what day will the last calf be born? \_\_\_\_\_
4. Circle R Ranch is considering a fall calving season. They want all their calves to be born before it starts to turn cold. The weather man has predicted the first cold spell will be in Oklahoma by November 1.
  - A. To ensure no calves are born after November 1, what is the last day a cow can be bred? \_\_\_\_\_
  - B. If the first calf is born on September 2, what day was the cow bred? \_\_\_\_\_
  - C. The last cow of the herd was bred on February 4. When was her calf born? \_\_\_\_\_ Did she calve by the November deadline? \_\_\_\_\_
  - D. How long was Circle R's fall calving season, starting from the first calf born to the last calf born? \_\_\_\_\_

