

## Soybean Ag Mag - Vocabulary

### Synonyms and Antonyms

**Directions:** Choose the answer that means the same or about the same as the underlined word.

1

Soybeans were thriving in Massachusetts in 1829.

- A Declining
- B Failing
- C Losing
- D Flourishing

2

In 1898, the USDA introduced several varieties of soybeans from Asian countries.

- A Closed
- B Made known
- C Finished
- D Erased

3

William J. "Bill" Morse joined the USDA and devoted his life to studying soybeans.

- A Neglected
- B Wasted
- C Committed
- D Threw away

4

George Washington Carver discovered a method of extracting soybean oil from soybeans.

- A Adding
- B Removing
- C Inserting
- D Introducing

## Soybean Ag Mag - Vocabulary

### Synonyms and Antonyms

**Directions:** Choose the answer that means **opposite** of the underlined word.

5

Henry Ford took an ax to a car trunk made with soybean plastic to demonstrate its durability.

- A Unreliability
- B Sturdiness
- C Cohesion
- D Permanence

6

In 1804, James Mease, a physician and amateur horticulturalist, reported that soybeans had adapted to Pennsylvania.

- A Acclimated
- B Modified
- C Objected
- D Adjusted

7

Studies show that soyfoods may even boost mental ability.

- A Increase
- B Hinder
- C Advance
- D Raise

8

Today, 1 in 7 people are malnourished.

- A Overweight
- B Skinny
- C Emaciated
- D Starving

# Soybean Ag Mag - Math - Powers of Ten

Directions: Choose the best answer.

**1**

The 4 in 98,642 means \_\_\_\_\_.

- A  $4 \times 10^0$
- B  $4 \times 10^1$
- C  $4 \times 10^2$
- D  $4 \times 10^3$

**2**

$6 \times 10^6$  means \_\_\_\_\_.

- A 600
- B 60,000
- C 600,000
- D 6,000,000

**3**

63,982 equals \_\_\_\_\_.

- A  $(6 \times 10^4) + (3 \times 10^3) + (9 \times 10^4) + (8 \times 10^3) + (2 \times 10^2)$
- B  $(6 \times 10^3) + (3 \times 10^2) + (9 \times 10^1) + (8 \times 10^0) + 2$
- C  $(6 \times 10^2) + (3 \times 10^4) + (9 \times 10^3) + (8 \times 10^2) + (2 \times 10^1)$
- D  $(6 \times 10^4) + (3 \times 10^3) + (9 \times 10^2) + (8 \times 10^1) + 2$

**4**

The 9 in 4,932 means \_\_\_\_\_.

- A  $9 \times 10^2$
- B  $9 \times 10^3$
- C  $9 \times 10^4$
- D  $9 \times 10^5$

# Soybean Ag Mag - Math - Powers of Ten

Directions: Choose the best answer.

**5**

3 million is the same as \_\_\_\_\_.

- A  $3 \times 10^2$
- B  $3 \times 10^3$
- C  $3 \times 10^6$
- D  $3 \times 10^8$

**6**

$9 \times 10^4$  means \_\_\_\_\_.

- A 900,000
- B 90,000
- C 9,000
- D 900

**7**

743 equals \_\_\_\_\_.

- A  $(7 \times 10^3) + (4 \times 10^2) + (3 \times 10^1)$
- B  $(7 \times 10^2) + (4 \times 10^2) + (3 \times 10^1)$
- C  $(7 \times 10^2) + (4 \times 10^1) + 3$
- D  $(7 \times 10^6) + (4 \times 10^1) + 3$

**8**

200,000 equals \_\_\_\_\_.

- A  $2 \times 10^5$
- B  $2 \times 10^9$
- C  $2 \times 10^2$
- D  $2 \times 10^3$

# Soybean Ag Mag - Reading Passage

Taken from *The Super Soybean* by Raymond Bial

Soybeans are super-easy to grow. The plants grow quickly—it takes about four months from planting to harvest. And they don't need much fertilizer. This is because the soybean is a legume. Other legumes are peanuts, peas, beans, lentils, and clover.

Legumes have small growths, or nodules, on their roots. Rhizobia bacteria in these nodules take nitrogen from the air in the soil. Both the bacteria and the soybean plant use the nitrogen to thrive, and eventually, the nitrogen is released back into the soil to make it more fertile. Farmers often plant soybeans one year and another crop, like corn, in the same field the next year because the soybean crop has improved the soil.

Soybeans do need warm weather and the right amount of moisture. In the four months or so from planting to harvesting, soybeans grow best with rainfall of at least eight to ten inches. Soybeans also require average daily temperatures between seventy and eighty degrees Fahrenheit (twenty-one and twenty-six degrees centigrade.) The number of long warm days, known as “the growing season,” affects the flowering and ripening of soybeans and the kinds that are planted.

Most soybeans are grown in the Midwest, where vast stretches of land are fertile and the summers are hot and humid. The most are grown in Illinois and Iowa. In the United States, more than 75 million acres of soybeans are planted every year.

Soybeans are planted with a special “planter,” which is pulled behind a tractor. The planter digs long rows or troughs, about one to one and one-half inches deep and about thirty inches apart. The planter then drops seed beans one at a time about two inches apart and covers them with a layer of soil.

Four to seven days after planting, the soybean seed grows a little tail-like root called a radical. This becomes the main root, or taproot. Soon, many other lateral, or sideways, hairlike roots spread out from it. The taproot can reach depths of four to eight feet in some soils, but it is usually about two feet long. Most of the lateral roots are in the upper six to twelve inches of soil. At the same time the radical starts to grow, the cotyledon, a stem and a little round leaf, pops through the ground. Then groups of three, or trifoliate, leaves open up.

In Illinois, by early June tiny soybean plants have sprouted from the nutrient-rich black soil, and the crop is on its way.

## Soybean Ag Mag - Reading Passage

**Directions:** Read each question and choose the best answer.

1

Farmers rotate crops, planting soybeans one year and a different crop the following year because soybeans improve the soil by releasing \_\_\_\_\_ into the soil.

- A Oxygen
- B Fertilizer
- C Potassium
- D Nitrogen

2

Soybeans are legumes like \_\_\_\_\_.

- A Corn
- B Wheat
- C Peanuts
- D Cotton

3

How many acres of soybeans are planted every year in the United States?

- A 70 thousand acres
- B 75 million acres
- C 90 billion acres
- D 100 thousand acres

4

The main root on a soybean plant is called the \_\_\_\_\_.

- A Lateral root
- B Hairlike root
- C Cotyledon
- D Taproot

## Soybean Ag Mag - Reading Passage

**Directions:** Read each question and choose the best answer.

5

How many months does it take for a soybean to grow, from planting to harvest?

- A 4 months
- B 5 months
- C 6 months
- D 7 months

6

Leaves of a soybean are trifoliate, which means they grow in groups of \_\_\_\_\_.

- A 2
- B 3
- C 4
- D 5

7

Taproots can reach depths of up to \_\_\_\_\_ feet, but are usually around two feet long.

- A 2
- B 4
- C 6
- D 8

8

Soybeans need \_\_\_\_\_ to grow.

- A Cool temperatures
- B Dry soil
- C Warm temperatures
- D None of the above



### Extended Response—SOYBEANS

Many of the soybeans grown in Illinois are exported around the world. How are the soybeans grown in Illinois being used around the world? Be sure to consider both edible and non-edible items made from soybeans.