

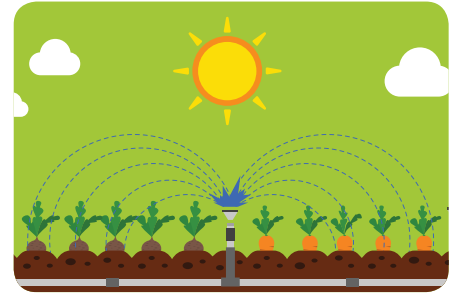
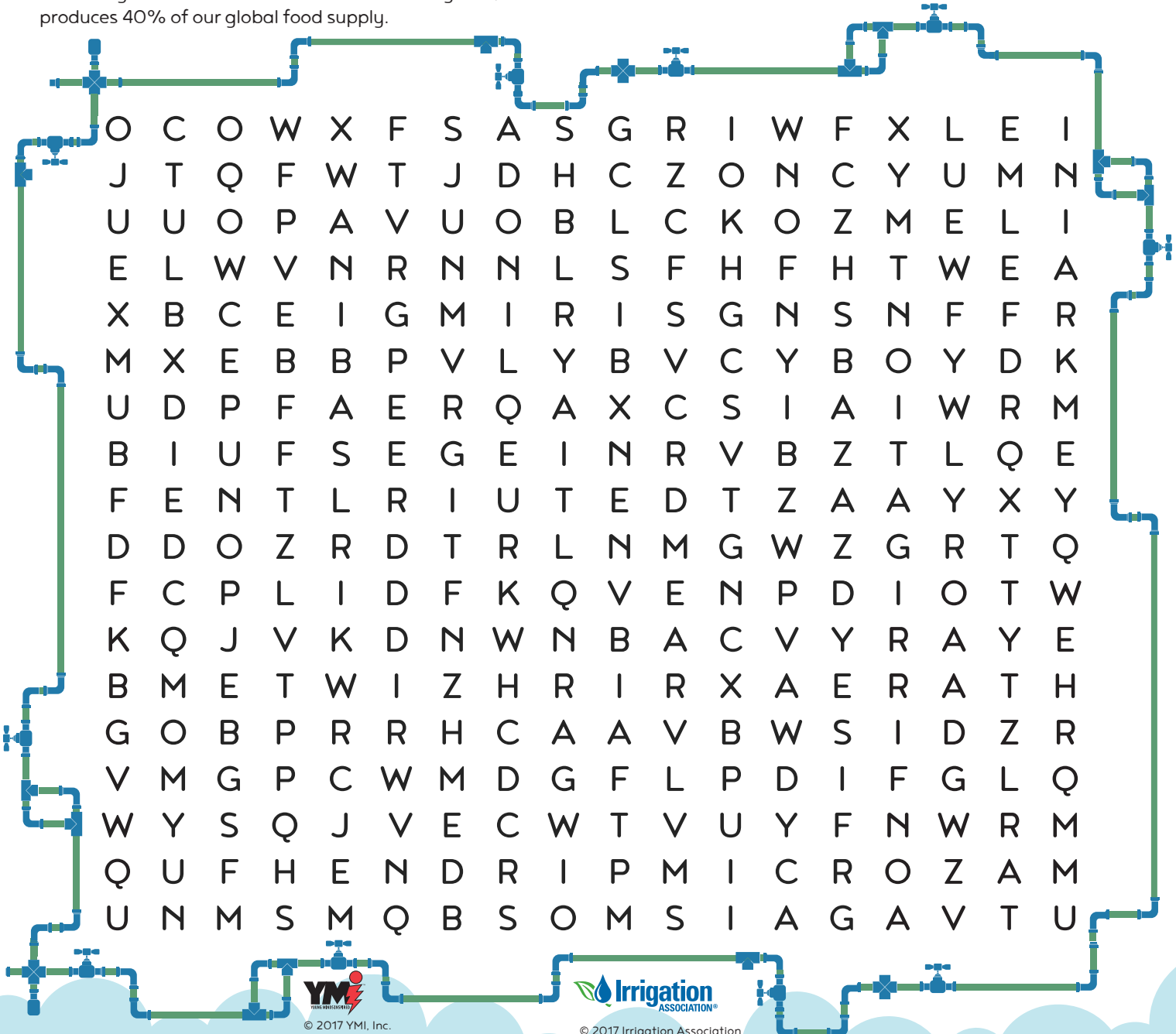
# HELPING THE HARVEST

## PART 1: ON THE FARM

Water is necessary for farmers to grow the food we need. Use the capitalized words in this word bank to solve this word-find puzzle.

### WATER WORD BANK

- **RAIN** does not provide enough water to grow all the food we buy at the grocery store.
- **IRRIGATION** moves water to fields and helps farmers overcome drought.
- **LIVESTOCK** like cows, pigs, and chickens need water to drink and eat food produced with irrigation. These animals provide us with cheese, milk, bacon, and other meats.
- While only 20% of the world's **FARMLAND** is irrigated, it produces 40% of our global food supply.
- A **CENTER PIVOT** is a huge device that rotates from a central source and sprays a large quantity of water evenly across large fields.
- **DRIP MICRO** is a series of tubes and tunnels with small holes that deposit water directly to the roots of the plant.
- **SPRINKLER SYSTEMS** spray water across an area of land to irrigate a large area quickly with minimal labor.

O	C	O	W	X	F	S	A	S	G	R	I	W	F	X	L	E	I
J	T	Q	F	W	T	J	D	H	C	Z	O	N	C	Y	U	M	N
U	U	O	P	A	V	U	O	B	L	C	K	O	Z	M	E	L	I
E	L	W	V	N	R	N	N	L	S	F	H	F	H	T	W	E	A
X	B	C	E	I	G	M	I	R	I	S	G	N	S	N	F	F	R
M	X	E	B	B	P	V	L	Y	B	V	C	Y	B	O	Y	D	K
U	D	P	F	A	E	R	Q	A	X	C	S	I	A	I	W	R	M
B	I	U	F	S	E	G	E	I	N	R	V	B	Z	T	L	Q	E
F	E	N	T	L	R	I	U	T	E	D	T	Z	A	A	Y	X	Y
D	D	O	Z	R	D	T	R	L	N	M	G	W	Z	G	R	T	Q
F	C	P	L	I	D	F	K	Q	V	E	N	P	D	I	O	T	W
K	Q	J	V	K	D	N	W	N	B	A	C	V	Y	R	A	Y	E
B	M	E	T	W	I	Z	H	R	I	R	X	A	E	R	A	T	H
G	O	B	P	R	R	H	C	A	A	V	B	W	S	I	D	Z	R
V	M	G	P	C	W	M	D	G	F	L	P	D	I	F	G	L	Q
W	Y	S	Q	J	V	E	C	W	T	V	U	Y	F	N	W	R	M
Q	U	F	H	E	N	D	R	I	P	M	I	C	R	O	Z	A	M
U	N	M	S	M	Q	B	S	O	M	S	I	A	G	A	V	T	U

# HELPING THE HARVEST (continued)

## PART 2: GREEN PASTURES

More than 55 million acres of U.S. land are irrigated. The states listed below use the most irrigation water. Label them on the U.S. Precipitation Map provided by your teacher.

**Arkansas** - mainly poultry; primary crops are rice, soybeans

**California** - mainly dairy cows; primary crops are fruits, vegetables, greenhouse plants

**Idaho** - mainly dairy cows and beef cattle; primary crop is potatoes

**Kansas** - mainly beef cattle; primary crops are wheat, corn

**Nebraska** - mainly beef cattle; primary crops are corn, soybeans

**Texas** - mainly beef cattle; primary crops are cotton, corn

1. Using the U.S. Precipitation Map, compare and contrast the climates and natural resources of these states. What are the pros and cons of growing crops in these environments?

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2. Why do these states need more water?

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3. What kinds of livestock, crops, or garden plants grow where you live? What are the water requirements of these plants?

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**PART 3:** Rainfall can vary greatly from year to year, so farmers irrigate to make sure crops always get the right amount of water. Become an irrigation expert. Read the text below, then answer the questions.

*The state of Nebraska is an important agricultural center in the U.S. Farmers in the "Sagebrush State" raise cows and sheep for dairy and meat, and grow crops like corn, soybeans, and potatoes. Crops and livestock need a lot of water.*

*The western part of the state gets much less rain than the east, and crops only grow for part of the year. For example, corn grows between May and September and needs at least 20-25 inches of rain. It needs the most water during the summer months of July and August. In addition, some of the rainfall evaporates before it can be used. As a result, Nebraska has to irrigate nearly 9 million acres of land.*

*Nebraska's main source of water is the Ogallala Aquifer. The Ogallala Aquifer is one of the largest in the world. An **aquifer** is a region under the ground where the earth is saturated with water. Water is usually pumped out from wells. The Ogallala Aquifer runs beneath 8 states that use it for irrigation. Most of the water in the Ogallala Aquifer came from glaciers that melted millions of years ago. It is*

*replenished by rainfall. The surrounding states need to be careful not to take more water out of the aquifer than nature can replenish. Farmers and government agencies are working hard to install efficient irrigation systems.*

1. Nebraska is known for which important crops and livestock?
  - a. Grapes and chickens
  - b. Corn and cows
  - c. Lettuce and sheep
2. Why does Nebraska irrigate nearly 9 million acres of land?
  - a. Because the state is experiencing a drought
  - b. Because Nebraska has desert-like temperatures
  - c. Because rain is not enough to help the crops grow
3. How are farmers working to preserve the Ogallala Aquifer?
  - a. By pumping more water into the aquifer
  - b. By seeding the clouds to deliver more rain
  - c. By making their irrigation systems more efficient