

MATH: Problem-Solving, Model Mathematical Situations, Communicate Mathematical Ideas and Reasoning, Apply to the Real World, Number Sense & Operation (Percents), Measurement (Convert Values), Central Tendency and Data Analysis, Variables, Operations, Perimeter, Area and Circumference

# US Agriculture and the World Market

## Background

More than likely you are wearing something that was not made in the United States. Your shoes may have been made in Mexico or your shirt in Turkey or China. Perhaps you have eaten bananas from Costa Rica or grapes from Chile. Because of world trade, countries can buy goods from, or sell goods to, other countries of the world. There are rules to be followed regarding trade, and an international organization, the World Trade Organization (WTO), works to keep world trade as fair and equal as possible for all countries.

Creating goods for export to other countries stimulates a country's economy. New jobs are created, and living standards are raised. There is less reliance on foreign aid. Because of trade, consumers get a larger selection of products, and the competition can help keep quality up and prices down. Manufacturers also have more markets in which to sell their product.

Some people are wary of global trade, however. Imported goods that are similar to what is produced domestically may increase competition and cause citizens to lose their jobs. To help prevent this and alleviate such fears, some countries add tariffs to imported goods to bring the price up so they are more expensive than domestically-produced goods. Unfortunately, tariffs make it harder for poor countries to sell their goods.

Agricultural subsidies are payments made to farmers by the government. Farmers who get subsidy payments can sell their goods for less money and still have enough income to support their families. Subsidies help keep food prices low for consumers, but farmers from countries without subsidies cannot sell their goods for as little as the subsidized farmers and so find it difficult to find markets for their products. World trade is a complicated matter; it is not always easy to make it fair for all involved.

Background sources: The World Bank, US Department of Agriculture Economic Research Service

## Activities

1. Provide copies of the import and export charts included in this lesson along with the questions.
  - Students use the charts to answer the questions.
  - With a partner or in a small group, students discuss and justify their answers.
2. Students choose five products that the US imports AND exports.

### P.A.S.S.

#### GRADE 6

**Math Process**— 1.1,3,4,6;  
2.1,2; 4.1,2; 5.1,2,3,4

**Math Content**— 1.2,4;  
2.2d; 4.2; 5.1,3

#### GRADE 7

**Math Process**— 1.1,3,4,6;  
2.1,2; 4.1,2; 5.1,2,3,4

**Math Content**— 1.2; 2.2b;  
5.1,3

#### GRADE 8

**Math Process**— 1.1,3,4,6;  
2.1,2; 4.1,2; 5.1,2,3,4

**Math Content**— 1.1d;  
5.1,3

—Students select a graphing method to compare the values and/or volumes of those five products from one of the four time periods listed in the table (December 2006, January 2007, October-January 2006, or October-January 2007).

3. Using either export or import values, students select the most appropriate graphing method and graph the percent change for either time period listed (December-January, or 2006-2007) for all products. Find the Central Tendency of the graph. A review of graphing is included in the “Resources” section.

### Extra Reading for Students

Andrews, Carolyn, *What is Trade?* (Economics in Action), Crabtree, 2008.

Haerens, Margaret (editor), *The World Trade Organization (Opposing Viewpoints)*, Greenhaven, 2010.

Miller, Debra A., *Fair Trade (Current Controversies)*, Greenhaven, 2010.

Thompson, Gare, *What is Supply and Demand?* (Economics in Action), Crabtree, 2009.

### Resources Needed

calculators (optional)

graph paper

### Vocabulary

**export**—to ship goods out of a country

**import**—to bring goods into a country

**subsidy**—financial aid that encourages the production of a product

**tariff**—tax on imported goods

# US Agricultural Exports

## Year-to-Date and Current Months

	Dec.	Jan.	Change	Oct.-Jan.	Oct.-Jan.	Change
Item	2006	2007	Dec.-Jan.	2006	2007	'06-'07
<b>Ag export values</b>	<b>million dollars</b>	<b>million dollars</b>	<b>percent</b>	<b>million dollars</b>	<b>million dollars</b>	<b>percent</b>
live animals	105	28	-73	365	423	16
red meats & products	466	448	-4	1,590	1,873	18
poultry meats & products	241	237	-2	1,055	1,034	-2
dairy products	146	153	4	521	622	19
hides & skins	161	177	10	570	666	17
grains and feeds	1,860	1,917	3	5,972	7,248	21
wheat	398	464	17	1,581	1,560	-1
rice	128	122	-5	445	415	-7
corn	796	677	-15	1,845	2,897	57
animal feeds & oil meal	410	429	5	1,574	1,709	9
soybeans	821	1,003	22	3,125	3,896	25
vegetable oils	204	175	-15	583	730	25
fruits & products	305	309	1	1,217	1,330	9
fruits, fresh	222	232	4	943	1,001	6
fruits, prepared	83	77	-7	274	329	20
fruit juices	82	80	-3	271	309	14
vegetables & products	358	336	-6	1,253	1,377	10
vegetables, fresh	158	156	-1	514	597	16
vegetables, processed	200	180	-10	739	780	6
tree nuts and preparations	296	250	-15	1,372	1,346	-2
cotton & linters	239	240	0	1,142	834	-27
sugar & tropical products	217	213	-2	785	925	18
<b>Volumes</b>	<b>1,000 metric</b>	<b>1,000 metric</b>	<b>percent</b>	<b>1,000 metric</b>	<b>1,000 metric</b>	<b>percent</b>
red meats & products	197	196	0	688	784	14
poultry meats	221	207	-7	903	946	5
nonfat dry milk	17	17	0	66	78	18
wheat	1,918	2,274	19	57	54	-6
rice	323	296	-8	1,409	1,112	-21
coarse grains	5,140	4,513	-12	19,328	20,410	6
corn	4,785	4,024	-16	17,529	18,838	7
sorghum	315	408	29	1,634	1,310	-20
soybeans	3,060	3,676	20	13,027	15,146	16
oil meal	733	695	-5	2,594	2,834	9
vegetable oils	253	208	-18	687	899	31
fruits, fresh	222	252	13	991	952	-4
fruits, prepared or preserved	44	42	-4	162	173	7
fruit juices	81	81	0	376	306	-19
vegetables, fresh	174	151	-13	666	649	-3
vegetables, preserved or processed	169	153	-9	689	689	0
nuts & preparations	76	64	-16	351	368	5
cotton & linters	176	170	-3	922	610	-34

Source: Economic Research Service compiled from Census Bureau data, US Department of Commerce.)

# US Agricultural Imports

## Year-to-Date and Current Months

	Dec.	Jan.	Change	Oct.-Jan.	Oct.-Jan.	Change
Item	2006	2007	Dec.-Jan.	2006	2007	'06-'07
<b>Ag import values</b>	<b>million dollars</b>	<b>million dollars</b>	<b>percent</b>	<b>million dollars</b>	<b>million dollars</b>	<b>percent</b>
live animals	222	232	5	1,023	975	-5
red meats & products	431	430	0	1,796	1,717	-4
beef & veal	273	288	5	1,133	1,090	-4
pork	96	85	-11	436	390	-11
dairy products	228	221	-3	1,007	949	-6
cheese	101	71	-30	360	392	9
grains & feeds	467	474	1	1,660	2,008	21
grain products	309	316	2	1,205	1,376	14
oilseeds & products	317	298	-6	1,013	1,177	16
vegetable oils	272	247	-9	862	990	15
fruits & preparations	611	787	29	2,025	2,316	14
fruits, fresh or frozen	501	653	30	1,598	1,837	15
fruits, prepared	110	133	22	427	478	12
fruit juices	104	132	26	326	446	37
vegetables & preparations	620	760	23	2,497	2,533	1
vegetables, fresh or frozen	441	577	31	1,864	1,810	-3
vegetables, prepared	168	172	2	597	681	14
tree nuts & preparations	97	90	-8	404	392	-3
cotton & linters	0	1	448	4	3	-39
wine	347	340	-2	1,369	1,570	15
malt beverages	297	291	-2	975	1,223	25
essential oils	184	179	-3	730	700	-4
cut flowers & nursery stock	105	143	36	463	509	10
sugar & related products	230	204	-11	961	882	-8
confections	94	92	-1	389	411	5
cocoa & products	264	230	-13	942	931	-1
coffee & products	267	318	19	942	1,128	20
rubber, natural	119	159	34	609	659	8
<b>Volume</b>	<b>1,000 metric</b>	<b>1,000 metric</b>	<b>percent</b>	<b>1,000 metric</b>	<b>1,000 metric</b>	<b>percent</b>
wine 1/	70	71	0	269	303	13
malt beverages 1/	288	275	-4	920	1,171	27
cattle & calves	196	150	-24	988	841	-15
beef & veal	80	88	9	351	323	-8
dairy products	31	24	-21	122	117	-4
processed grains, e.g, feed	85	89	5	350	376	7
fruits, fresh or frozen	681	859	26	2,508	2,769	10
fruits, prepared	94	117	24	387	409	6
vegetables, fresh or frozen	483	606	26	1,964	1,949	-1
vegetable oils	288	253	-12	861	969	13
sugar & related products	280	239	-15	1,335	1,018	-24
cocoa & products	124	111	-10	443	416	-6
coffee & products	110	130	18	424	463	9

1/ = thousand hectoliters.

Source: Economic Research Service compiled from Census Bureau data, US Department of Commerce.)

Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, the Oklahoma Department of Agriculture, Food and Forestry and the Oklahoma State Department of Education.

# US Agriculture and the World Market

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Use the **JANUARY 2007** columns in the import and export tables to fill in the blanks below. Notice that the items are listed under values and volumes.

1. The value of US exports of live animal values is what percentage of imports? \_\_\_\_\_
  2. The value of US exports of red meats and products is \_\_\_\_\_ % more/less (Circle one.) than that of imports.
  3. US dairy product export values equal \_\_\_\_\_% of US import values.
  4. The value of US grain and feed exports is \_\_\_\_\_ times that of grain and feed imports.
  5. What percent less is US vegetable oil imports than the value of vegetable oil exports?\_\_\_\_\_
  6. What percent less is US fruit juice imports than the value of fruit juice exports?\_\_\_\_\_
  7. The US exports \_\_\_\_\_ times as many tree nuts as it imports.
  8. The US exports \_\_\_\_\_% of the **VOLUME** of the prepared fruits it imports.
  9. The US is only \_\_\_\_\_% short of having equal **VOLUMES** of vegetable oil entering and leaving the U.S.
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1 metric ton = 1,000 kg; 1 kg  $\approx$  2.2 pounds;

1 American short ton = 2,000 pounds; 1 pound = 16 ounces; 1 dram  $\approx$  1.77g;

1 stone = 14 pounds; 1 scruple  $\approx$  6.48 carats; 1 carat = 0.2 grams

1 ounce = 16 drams

Create a word problem, using the measurements shown above and the import/export charts. Work out the problem and write/justify how you solved it.

# US Agriculture and the World Market

## (answers)

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Use the **JANUARY 2007** columns in the import and export tables to fill in the blanks below.

1. The value of US exports of live animal values is what percentage of imports? 12.07%
  2. The value of US exports of red meats and products is 4.19% more/less (Circle one.) than that of imports.
  3. US dairy product export values equal 69.23% of US import values.
  4. The value of US grain and feed exports is 4.04 % times that of grain and feed imports.
  5. What percent less is US vegetable oil imports than the value of vegetable oil exports? 29%
  6. What percent less is US fruit juice imports than the value of fruit juice exports? 39%
  7. The US exports 2.78 times as many tree nuts as it imports.
  8. The US exports 36% of the volume of the prepared fruits it imports.
  9. The US is only 17.79% short of having equal volumes of vegetable oil entering and leaving the U.S.
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1 metric ton = 1,000 kg; 1 kg  $\approx$  2.2 pounds;

1 American short ton = 2,000 pounds; 1 pound = 16 ounces; 1 dram  $\approx$  1.77g;

1 stone = 14 pounds; 1 scruple  $\approx$  6.48 carats; 1 carat = 0.2 grams

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