Healthy Soils Are Full of Life!
level 4

Fuel For Your Body
Survival Essentials

1. Make a list of twenty of your most valued possessions that you use or enjoy on a regular basis.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. Now, mark out the items that are NOT essential for survival.

3. Pretend your family has survived a catastrophic earthquake that has devastated most of the region in which you live. Make a new list of just five possessions that you feel you must have to survive.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

4. Were any of your most valued possessions also possessions necessary for survival?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

5. What environmental resources do you feel you must have to survive?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

6. Are there any aspects of your lifestyle that may have a negative impact on natural resources and/or planet sustainability?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

7. Are there any aspects of your lifestyle that conserve and/or replenish natural resources and promote a sustainable future?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Life On Earth: Feeding The World

Dinner tonight… it’s more than just the lasagna and salad you might be having; it’s a source of the nutrients and energy you need to sustain life. Human existence on Earth depends on an adequate food supply. Food production and food consumption are both vital issues for YOU in today’s world as the world population increases and agricultural resources decrease. In 2011, the world population is 6.9 billion, and it is estimated to increase to 8.2 billion by 2030. At the same time usable agricultural (arable) land is disappearing due to development, overuse, environmental pollution and erosion.

Visit http://www.census.gov/ipc/www/popclockworld.html and write the current world population. __________________________ | __________

A Future Of Well Being

Sustainability…the capacity to endure…continued survival.
To not consume more than can be reproduced or replenished.

Our consumption of natural resources plays a vital role in the sustainability of planet Earth. Increasing our “capacity to endure” will involve international and national policies, urban planning, the transportation industry, consumerism and your own individual lifestyle. What kind of impact does your lifestyle have on Earth’s capacity to endure?

Carrying Capacity:
the number of living organisms that can exist for long periods in a given area without damaging the environment.

Hectacres of Arable Land in the United States

<table>
<thead>
<tr>
<th>Year</th>
<th>Hectacres</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>185,676,000</td>
</tr>
<tr>
<td>1995</td>
<td>181,839,000</td>
</tr>
<tr>
<td>2000</td>
<td>175,368,000</td>
</tr>
<tr>
<td>2005</td>
<td>174,448,000</td>
</tr>
</tbody>
</table>

Visit http://www.census.gov/ipc/www/popclockworld.html and write the current world population. __________________________ | __________

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Food Production: Thank You To Our Farmers

Our food supply depends upon our ecosystems, and every ecosystem has a carrying capacity. Some of the components of an ecosystem that affect the organisms living within it are these: the amount of living space, the supply of nutrients, the absence or presence of predators and the number of competing organisms. Farmers can modify an ecosystem with fertilizers and pesticides to increase the carrying capacity for crops (such as corn or oranges) and decrease the carrying capacity for competing organisms (such as weeds or beetles). What does this mean for you and me? More food is available for us because of an increase in crop yields!

The Commodity

A commodity is an item that is bought and/or sold. Commodities are both exported to other countries and imported to the United States from other countries. Take a look at the labels on the food in your refrigerator or kitchen cabinets to see where the food you eat is produced. Everything you eat or drink, unless you grow or raise it yourself, began as a commodity. Commodities are produced and sold in all fifty of the United States. You might be surprised by how many states and commodities are involved in just one meal!

For example, your stomach is growling and a taco sounds really good. Before it can be passed to you through a drive-up window or packaged in a box and placed on a store shelf, the taco starts out as several commodities.

A good taco shell starts with corn. The states in the map above labeled with a “C” all produce corn as their top agricultural commodity. Fill in the following blanks with the names of those states: __________ , __________ , __________ , __________ , __________ .

Where’s the beef? The states labeled with a “B” in the map above all produce cattle as their number one commodity. List the states: __________ , __________ , __________ , __________ , __________ , __________ , __________ , __________ , __________ .

Your tacos are topped with some shredded cheese. Dairy products are the top commodity in the states labeled with a “D”. Name those states: __________ , __________ , __________ , __________ , __________ .
Wendy, who is also hungry for a taco, wants to try something different so she orders a fish taco. The fish may have come from this state, labeled with an “F”, whose top commodity is aquaculture. __________.

You’ve got a friend, Caden, who says “Forget the beef… a chicken taco is the way to go.” The states labeled with a “P” (for poultry) produce broilers as a commodity. What states are they? __________, __________, __________, __________, __________, __________, __________, __________, __________.

Those taco shells have to be fried to get that crunch you bite into. Your taco shell may have been fried in soybean oil. Soybeans are a top commodity in the states labeled with an “S”. List those states: __________, __________, __________.

Your buddy, Ty, just doesn’t do crunchy. He likes his tacos in a soft shell made with whole wheat. Wheat is a top commodity in the states labeled with a “W”. What are those states? __________, __________.

A taco wouldn’t be a taco without some taco sauce made with tomatoes. Those tomatoes may have come from plants that were started in a greenhouse. The states labeled with a “G” identify greenhouse/nursery as their top agricultural commodity. Identify those states: __________, __________, __________, __________, __________, __________.

The tacos gave you a craving for something sweet. Lucky for you apples are available at the drive-thru as a healthy choice for a side. The apples may have been grown in ________ since apples are its top agricultural commodity. Look for the state labeled with an “A”. If you decide on an apple turnover, you’ll need a commodity from these two states, labeled with “SC”. They produce cane for sugar as one of their top three commodities. __________, __________.
You “fuel up” your body every day with food in the same way a car is “fueled up” with gasoline. If a car gets bad gasoline, it doesn’t run well, filters get clogged, fuel can’t get where it needs to go and the engine can even be permanently damaged. Your body is the same way. If it doesn’t get the nutrients it needs from the food you eat, it doesn’t function well.

The nutrients your body must have to function at its peak are these:

**Proteins for growth and repair.** Lean meat, fish, poultry, beans and eggs are high in protein.

**Carbohydrates for energy.** Starches and sugars are carbohydrates. Rice, wheat, corn, oats and potatoes are rich sources of carbohydrates. Sugars are not essential foods. They provide energy but no nutrients.

**Fats and oils to make fat soluble vitamins available for use in the body.** Avoid saturated fats. Get fats from nuts, fish, and liquid oils like olive, soy or canola.

**Minerals for overall body function.** Important minerals for the body include iron, calcium, sodium, potassium, iodine, magnesium, zinc, and copper. Calcium builds strong bones and teeth. The best sources of calcium are milk and hard cheese. Iron builds red blood cells. Good sources of iron are meats (especially liver), egg yolks, and dark green vegetables.

**Vitamins for health and wellness.** Every vitamin needed by the body plays a specific role. For example, Vitamin A is needed for good vision and healthy skin, and it is found in both dark green and yellow fruits and vegetables. Vitamin B helps maintain the nervous system and is found in whole grain breads and cereals. Vitamin C is needed for building connective tissue and healthy blood vessels and can be found in citrus fruits.

**Water for life.** Every cell in the body must have water to survive. Water is part of the chemical reactions within the body. It is needed to carry nutrients, to regulate body temperature, and to help eliminate wastes. Water makes up over 50% of your body weight.
Feel Your Best.
Give Your Body
The Right Kinds & Amounts Of Fuel!

Drive-up windows, Internet cafés, television commercials, “lean and mean” or deep-fried and sugar coated…

Today’s consumer is bombarded by choices of what to eat. It is a challenge to make good decisions regarding your nutrition - how you are going to “fuel-up” for the day. Let’s see how you do. Look at the menu and fill out your order. Sum up your score using the “Fuel Choices” chart on the back page.

**ENTRÉES**

**Bacon Cheeseburger**
Cheddar cheese and crispy bacon top a thick burger on a toasted bun. Served with lettuce, tomatoes, pickles and onions.

**Grilled Salmon**
Seasoned with a garlic/ginger marinade and served on a bed of rice pilaf.

**Spicy Chicken & Pasta**
Blackened chicken breast served over fettuccine noodles tossed in a spicy Cajun sauce.

**DESSERTS**

**Chocolate Lover’s Brownie**
A moist chocolate brownie topped with rich chocolate fudge. Served with chocolate chip ice cream.

**Tropical Fruit & Island Dip**
Fresh pineapple, mango and papaya served with a creamy coconut yogurt dip.

**SIDES**

- Baked Potato
- Loaded Baked Potato
- Caesar Salad
- French Fries
- Steamed Broccoli
- Cheesy Rice Casserole
- Steamed Asparagus

**Checking The Fuel Guage**

Unscramble each of the clue words. Each of the words can be found in the articles on pages 2 & 3. Copy the letters in the numbered cells to the other cells with the same number to solve the puzzle.

**SIILINTUBSAAYT**

| 37 | 12 | 30 |

**CACPYIAT**

| 27 | 10 |

**VASLIURV**

| 9 | 3 |

**SITPNMONOU**

| 28 | 8 | 34 | 15 | 32 | 23 |

**RERSUESOC**

| 25 | 5 | 19 | 14 | 18 |

**BEARAL**

| 12 |

**NUILOPTOPA**

| 20 | 21 | 24 | 17 |

**NAPETL**

| 11 | 22 | 26 |

**NEDVEELMPT**

| 7 | 33 | 6 |

**SYLTFEELI**

| 4 | 29 | 13 | 16 | 34 |

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The menu items were evaluated based on the following criteria: calories, fat, saturated fat, sodium, carbohydrates, dietary fiber, sugars, protein, vitamins A & C, calcium and iron. Foods were assigned a point value based on potential nutritional value in comparison to other menu items in that category.

<table>
<thead>
<tr>
<th>Spinach &amp; Artichoke Dip</th>
<th>+3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crunchy Onion Rings</td>
<td>-5</td>
</tr>
<tr>
<td>Bacon Cheeseburger</td>
<td>+1</td>
</tr>
<tr>
<td>Grilled Salmon</td>
<td>+3</td>
</tr>
<tr>
<td>Spicy Chicken &amp; Pasta</td>
<td>+1</td>
</tr>
<tr>
<td>Grilled Sirloin</td>
<td>+3</td>
</tr>
<tr>
<td>Grilled Chicken Salad</td>
<td>+4</td>
</tr>
<tr>
<td>with Light Dressing</td>
<td></td>
</tr>
<tr>
<td>Baked Potato</td>
<td>+6</td>
</tr>
<tr>
<td>Loaded Baked Potato</td>
<td>+1</td>
</tr>
<tr>
<td>Steamed Broccoli</td>
<td>+6</td>
</tr>
<tr>
<td>Cheesy Rice Casserole</td>
<td>+3</td>
</tr>
<tr>
<td>Caesar Salad</td>
<td>-1</td>
</tr>
<tr>
<td>French Fries</td>
<td>-1</td>
</tr>
<tr>
<td>Steamed Asparagus</td>
<td>+8</td>
</tr>
<tr>
<td>Chocolate Lover’s Brownie</td>
<td>-3</td>
</tr>
<tr>
<td>Tropical Fruit &amp; Island Dip</td>
<td>+7</td>
</tr>
</tbody>
</table>

Add Up Your Points!

<table>
<thead>
<tr>
<th>Appetizer</th>
<th>Entrée</th>
<th>Side</th>
<th>Side</th>
<th>Dessert</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How healthy is your fuel?

- **Premium**
  - 20 - 30 points
- **Unleaded**
  - 10 - 20 points
- **You need a Tune-Up**
  - 10 and under

Meet A Farmer/Rancher

Hi, we want to tell you about our Dad, Brian who is a cow/calf producer in Texas. We are both in 4-H and show Beefmaster heifers. Our mom, Tamara’s, family has been ranching since 1880. Dad reminds us how much work it takes to raise the food that people eat everyday. Our family uses good grazing practices and we are good stewards of the land. If our family had not been good stewards of the land, we would not have been able to continue ranching since 1880! Thanks!
- Elizabeth and Emily Daniel

Special thanks to the NACD S&E Committee & reviewers

Content written by T.D. Southerland

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