

Food Inc. Film Watching Guide
2017-2018

According to Food Inc., what changes to food production have occurred in the last 50 years?

What are the different methods that our food supply is being manipulated by corporations?

What are some things about meat production you were unaware of?

What are some things about plant production you were unaware of?

What are your thoughts on the part of the film where the farmer was on the blacklist for seed washing?

What GM issues does Food Inc. address? What is your stance?

Should there be a nationwide policy for labelling food products? Why or why not?

What steps if any, will you take concerning your food habits after watching Food Inc.? If you won't be taking any, why not?

Honors Biology

Energy Budget Lab – Pre-Lab Activity

You will log your food and drink intakes for 7 days and bring your log to class for a lab later in the unit. Due date is: _____ Begin logging for a 7 day period by: _____

Directions:

1. Go to www.myfitnesspal.com to create an account.
2. Click “MY HOME”
3. Click “Add Food”

Here is a sample of the screen you should see:

Of course, the calories remaining will be different depending on your goals.

4. Choose “Add Food” under the breakfast tab (the screen should look like this:)

	Calories	Carbs	Fat	Protein	Sodium	Sugar
Totals	0	0	0	0	0	0
Your Daily Goal	2,570	166	88	298	2,300	99
Remaining	2,570	166	88	298	2,300	99

5. You can choose to put in a food (you can search by brand like McDonalds Egg McMuffin, or you can choose from a list that will develop as you add foods. You can even click the recipes tab and create a recipe for your Grandma’s pancakes (if she will give you the recipe), and then it will be remembered whenever you want to include it.

Add Food To Breakfast

Search our food database by name [Quick add calories](#)

Or, add your favorites for: **Breakfast** Sort by: **Default** ▼

<input type="button" value="Add Checked"/>	RECENT	FREQUENT	MY FOODS	MEALS	RECIPES
<input type="checkbox"/>	Mcdonald's - Sausage Biscuit With Cheese	Qty: 3	of	1 Sandwich	▼
<input type="checkbox"/>	Pineapple, raw, all varieties	Qty: 0.375	of	1 cup, chunks	▼
<input type="checkbox"/>	Cheese - Goat, soft type	Qty: 2	of	1 oz	▼
<input type="checkbox"/>	Generic - Maple Leaf Breakfast Sausage Link	Qty: 1	of	1 link	▼
<input type="checkbox"/>	Generic - Coffee With 2% Milk	Qty: 4	of	6 oz coffee (3 tbs of milk)	▼
<input type="checkbox"/>	Sweet potato hash	Qty: 1	of	1 serving	▼
<input type="checkbox"/>	Morning smoothie	Qty: 1.5	of	1 serving	▼

6. Continue this process for everything you ate for breakfast, then click the “Add Checked” button, which is found at the bottom of the page. When finished with breakfast, do the same for lunch, and/or snacks you have had.

7. Now do the same basic process for your activity. This program breaks it down into cardiovascular activities and strength building activities. The screen looks like this:

Your Exercise Diary for: ◀ **Thursday, July 14, 2016** ▶

Cardiovascular	Minutes	Calories Burned
Stretching, hatha yoga	20	108

[Add Exercise](#) | [Quick Tools](#)

Daily Total / Goal	20 / 30	108 / 342
Weekly Total / Goal	20 / 150	108 / 1,710

Strength Training	Sets	Reps/Set	Weight/Set
Add Exercise Quick Tools			

8. You will need to continue this process every day (every meal, snack, and drink as well as all your activities) for one week (7 days). After the week has passed you can click the “View Report” button and choose the dates you would like to look at. We will print this out for class. Here is what the report looks like:

Printable Diary for Preps

2016-07-13 Show: Food Diary Food Notes [change report](#)

2016-07-14 Exercise Diary Exercise notes

July 13, 2016

DS	Calories	Carbs	Fat	Protein	Cholest	Sodium	Sugars	Fiber
kfast								
cdonald's - Sausage Biscuit With Cheese, 3 Sandwich	1,440	87g	66g	42g	135mg	3,840mg	6g	6g
TOTAL:	1,440	87g	66g	42g	135mg	3,840mg	6g	6g

July 14, 2016

DS	Calories	Carbs	Fat	Protein	Cholest	Sodium	Sugars	Fiber
kfast								
arbucks - Vente Latte Regular, 24 oz	180	0g	0g	0g	0mg	0mg	0g	0g
nuckers Natural - Peanut Butter, 4 T	400	12g	32g	14g	12mg	210mg	4g	4g
y Toast - 2 Slices, 2 slice	140	19g	2g	4g	0mg	0mg	2g	3g

Exploring Cases: Fat Tax Resources and Questions

Goal:

Working in small groups explore the different resources related to a tax being imposed on sugary drinks and foods with high fat content. Each student is independently responsible for two sources (but may need to explore others to fully answer the questions) and completing the questions below as well as evaluating the sources (see guide). The questions may very well have multiple answers that contradict each other, determining the best answer is part of the collaborative process. Once you have answered the questions, get together with your group and compare answers—come to a consensus for each question.

Resources:

1. <http://www.medicalnewstoday.com/articles/150999.php>
2. <http://www.dailymail.co.uk/debate/article-2044855/Why-fat-tax-best-way-save-NHS-billions.html>
3. <http://theweek.com/articles/467316/should-adopt-fat-tax>
4. <http://www.healthycommunitieshealthyfuture.org/learn-the-facts/economic-costs-of-obesity/>
5. <http://www.cdc.gov/obesity/data/adult.html>
6. <http://www.npr.org/templates/story/story.php?storyId=94812584>
7. <http://news.harvard.edu/gazette/story/2013/09/the-whys-of-rising-obesity/>
8. <http://www.foxnews.com/story/2006/10/24/should-government-regulate-what-eat.html>
9. <http://america.aljazeera.com/articles/2014/2/2/who-tighter-economicregulationneededtoreverseobesityepidemic.html>
10. <https://www.ced.org/blog/entry/the-skinny-on-the-fat-tax>
11. <http://nypost.com/2013/12/28/why-govt-should-regulate-food-like-tobacco-alcohol/>
12. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2080455/>
13. <https://www.theguardian.com/us-news/2016/jun/16/philadelphia-passes-soda-tax-first-city-sugar>
14. <http://khn.org/news/soda-taxes-gaining-steam-or-getting-steamrolled/>

Collaborative Questions:

1. What does it mean to be “healthy”?
2. What costs must be considered when determining the effects of obesity on society? What are those estimated costs in the United States?
3. Besides a fat-tax, have there been other attempts to address the rising obesity epidemic?
4. Have there been other health issues addressed by a tax? Were they found to be effective?
5. Who is at the highest risk for obesity?
6. How many people are obese in the United States today?
7. Why are more people obese today than 50 years ago?
8. Does the government have a right to legislate the behavior of its citizens?
9. If there is an obesity-related health crisis occurring, should the government restrict the type of food or the size of portions offered to the public?
10. Should the government require fast food chains to provide healthy options?
11. Who is responsible for the health of the American public? The individual or society?

Complexity of a “Fat Tax”

Use your previous research and/or gather more information to come up with ideas on what the impact of a fat tax might be to different types of stakeholders. First summarize the fat tax proposal, then work together to fill out the table below with how each of the different perspectives may view this type of proposal.

Summary of Fat Tax Proposal: (What is it?)

Perspectives/Effects			
Economic	Political	Scientific	Social

At this point in your research, would you support or oppose a fat tax? Explain your reasoning.

Biology

Name:

Period:

Research and Summation of Policy

Summary of Policy/Proposal/Ban: (What is it?)

Perspectives/Effects			
Economic	Political	Scientific	Social

After doing some research, would you support or oppose this type of policy? Does this policy appear to affect people's behavior? Explain your reasoning.

Sources:

Biology

Student Instructions for Timeline of Food Regulations

Goal: Students will explore scientific, social, political, and economic dimensions of the issue of a fat tax, by investigating historic trends in government promotion of health and nutrition. **Note: The information you collect today will be used as evidence later in the unit when you are asked to argue for or against a fat tax.*

Part 1:

In small groups choose one of the following nutrition guidelines promoted by the U.S. government

- Basic 7
- Basic 4
- My Pyramid
- WIC
- Philadelphia Soda Tax
- SNAP
- Healthy Hunger Free Kids Act
- Food Guide Pyramid
- My Plate
- US Dietary Guidelines

On green paper summarize the guideline your group chose. It should include:

- Date it was implemented
- Summary of what it intended
- Summary of what it promoted and what it discouraged
- Sources used

Place the paper on the timeline (based on the date of implementation). As a class discuss the following questions:

- Where did you find resources? How did you determine if they were to be trusted?
- What was interesting or surprising about the recommendations you researched?
- What was interesting or surprising about the other recommendations on the timeline?
- What patterns or trends do you see in the recommendations?
- Do these patterns or trends tend to make you support or oppose a fat tax? Why?

Part 2:

In the same small groups choose one international food related event to explore:

- World War 1
- Dust Bowl
- Diet-Heart Hypothesis
- 7 Countries Study
- McGovern Committee
- Green Revolution
- World War 2
- Norwegian Butter Crisis
- Noakes Trial

On blue paper summarize the event your group chose. It should include:

- Date it was implemented
- Summary of what it intended
- Summary of what it promoted and what it discouraged
- Sources used

Now examine your issue from different perspectives, write a summary of how each perspective interpreted the issue. Place the different summaries on corresponding colors of paper.

Perspective:	Paper Color:
Political	Pink
Scientific	Red
Economic	Orange
Social	Yellow
Other	Lavender

Place the different colored papers under the appropriate date on the timeline. Then address the following questions:

- Were the types of sources used to explore these events different than the ones you used for the U.S. regulations? If yes, in what way?
- How do you think other historical events influenced the event you researched?
- What trends do you see in regulations and events concerning food and health?
- Do these patterns or trends tend to make you support or oppose a fat tax? Why?

Name: _____ Date: _____

Nutrition Analysis Lab: Using Food Labels

In your small group, write a working definition of “healthy food.” Be prepared to share your definition. We will develop a consensus definition as a class.

Healthy Food is:

Work on the example below to analyze the macromolecule composition of pepperoni and then you are going to do the calculations for the food that you chose.

On the label below is information about pepperoni:

Amount/Serving	% DV	Amount/Serving	% DV
Total Fat 13g	20%	Total Carb. 0g	0%
Sat. Fat 6g	30%	Fiber 0g	0%
Cholest. 35g	12%	Sugars 0g	0%
Sodium 490mg	20%	Protein 5g	
Vitamin A 0%	Vitamin C 0%	Calcium 0% Iron 2%	

Nutrition facts

Serv. Size 14 slices (28g)

Servings per container 8

Calories 140

Fat Calories 120

Percent Daily Values (DV) are based on a 2,000 calorie diet.

How many grams of fat are there per serving? _____ X 9 calories/g = _____ calories/serving

How many grams of protein are there per serving? _____ X 4 calories/g = _____ calories/serving

How many g of carbohydrate are there per serving? _____ X 4 calories/g = _____ calories/serving

What is the total number of calories per serving? _____

If pepperoni is considered a meat, what would you expect to see as the major component?

Protein Fat Carbohydrate (circle one)

Determine the % of fat calories _____ (fat calories)/total calories _____ = _____ %

Determine the % protein calories _____ (protein calories)/total calories _____ = _____ %

Now analyze the food label that you brought:

Food: _____

How many grams of fat are there in a serving? _____X9 calories/g= _____ calories/serving

How many grams of protein are there in a serving? _____X4 calories/g= _____ calories/serving

How many g of carbohydrate are there in a serving? _____X4 calories/g= _____ calories/serving

What is the total number of calories per serving _____

Determine the % of fat calories _____(fat calories)/total calories _____ = _____%

Determine the % protein calories _____(protein calories)/total calories _____ = _____%

Determine the % of carbohydrate calories _____(carb calories)/total calories _____ = _____%

What are carbohydrates primarily used for in your body?

What are lipids primarily used for in your body?

What is protein primarily used for in your body?

Name:

ORGANIC MACROMOLECULES WEBQUEST

Work through the following questions using the web link

<http://faculty.nl.edu/jste/biochem.htm>

Carbon & Carbohydrates

1. What kind of chemistry is the chemistry of **life**? What is the chemistry of **biological molecules** (biochemistry)?
2. What makes carbon so important?
3. Why can carbon be thought of as a tinker toy, and why is it so versatile?
4. What are the three main categories of carbohydrates, and how do they differ?
5. What is the name for the most common monosaccharide, and how is its structure related to nearly all other carbohydrates?

Lipids

1. What is distinctive about the solubility of lipids?
2. Describe the general structure of fatty acids.
3. How are the structures of saturated and unsaturated fatty acids different?

Proteins

4. What are monomers (building blocks) of proteins?

5. Define what a protein is.

6. List three important biological functions of proteins and provide an example of each.
 -
 -
 -

7. Why is primary structure fundamental to protein structure? What happens if the primary structure is changed?

Atkins or “Fadkins”?

by

Karen E. Bledsoe

Biology Department

Western Oregon University, Monmouth, OR



Part I – Macronutrients and Energy

Two friends of yours, Janine and Mitchell, join you at lunch. During your conversation, Janine comments on Mitchell’s choice of food: a small bowl of cottage cheese, a chicken salad with vinegar and oil dressing, and a glass of ice water.

“What, are you on some kind of a health kick?” Janine asks, as she plows her way through a cheeseburger and a basket of fries. “First jogging every morning, now rabbit food?”

“It’s this new diet I’m trying,” Mitchell says. “Someone told me it’s really good. And I thought I could lose some weight.”

“From where?” Janine asks, looking Mitchell up and down. As you look at your friend, you have to agree with Janine: tall, lanky Mitchell doesn’t look like he has an ounce of spare fat on him.

“Wait a minute,” Janine says, “You’re not on that Fadkins diet, are you? That diet where you eat all protein and no carbs?”

“Yeah, I am,” Mitchell says, defensively. “I hear it’s really good. Someone my brother knows lost ten pounds in like a month.”

“Don’t you know those high-protein diets are bad for you?” Janine says, taking another sip of her milkshake. “If you eat way too much protein and not enough carbs you can ruin your kidneys forever because of all the nitrogen you have to process breaking down the protein,” Janine says. “Haven’t you heard that in the old days, the mountain men used to get really sick and sometimes die if they had nothing to eat but venison and rabbits and lean meat like that? And there was some high-protein, low-carb, no-fat diet back in the 70’s or 80’s or something that people were dying from. Besides, if your brain doesn’t get carbs—well, glucose, anyway—you get really cranky. You have to have enough carbs.”

“Well, yeah,” Mitchell says, “that’s if you only eat lean protein and nothing else. But this diet lets you have fat, and you burn that for energy so you don’t get problems like the mountain men had. See,” Mitchell goes on, before Janine can interrupt him, “the thing is, carbs are like easy energy or something, so your body burns carbs when it can get them and leaves your body fat alone. If you cut down on carbs, you train your body to burn fat instead. Once you get your body trained, then you can start eating some carbs again, and you keep your weight down.”

Janine snorts in laughter. “*Train* your body to burn fat?! Like it doesn’t know how already? Come on! If you’re gaining weight, it’s because you’re taking in more calories than you’re burning up. Everyone knows that. A calorie is a calorie. It’s just a measure of energy in your food. If you want to lose weight, what you have to do is either cut back on the calories you take in or exercise to burn up calories—or both. But why

are we even talking about this? You don't need to lose weight at all, so what are you dieting for, anyway? It's better to like yourself just the way you are."

"What do *you* think?" Mitchell says, turning toward you. "You're taking biology. Don't you think high-protein diets make a lot of sense? You think I should stick with this one?"

"Tell him he's being ridiculous!" Janine insists. "He's going to make himself sick."

Questions

1. First, find out what nutrients Janine and Mitchell are talking about. Using a biology textbook and the resources listed, describe what the following molecules are and what they are used for in the human body. List some specific examples of each. Also list major dietary sources of each.
 - a. Proteins
 - b. Carbohydrates
 - c. Fats
2. Janine made this statement: "... if your brain doesn't get carbs—well, glucose, anyway—you get really cranky. You have to have enough carbs." Find out if Janine is right. How does the nervous system use glucose?
3. Janine also said: "If you eat way too much protein and not enough carbs you can ruin your kidneys forever because of all the nitrogen you have to process breaking down the protein." Find out if Janine is right about this, too. Check a biology textbook for information on protein, fats, and carbohydrates. To find out how these substances can be used for energy, look up information on cellular respiration.
4. The words "calorie" and "energy" come up a lot in discussions of diet and nutrition. Use a biology textbook to define both of these terms. Then suppose you found a product that was labeled "calorie-free energy drink." Why would that label be misleading?
5. Which substances supply energy to the human body?

Resources

USDA My Pyramid:

<http://mypyramid.gov/index.html>

National Institutes of Health nutrition information:

<http://health.nih.gov/topic/Nutrition/WellnessLifestyle>

<http://health.nih.gov/topic/WeightLossDieting>

Part II – Metabolism and Detox

Recall that you, Janine, and Mitchell were talking about the high-protein, low-carb diet that Mitchell decided to go on. Now you're sitting down to lunch with the pair again. While you still don't have a full answer for them, the conversation turns to diets again.

"What is that green glop you're drinking?" Janine asks, staring at a cup that Mitchell is holding.

"It's this great new herbal detoxifier that I found at the health food store," Mitchell says.

"Detoxifier?" Janine asks. "What the heck is a detoxifier?"

"Obviously you've never studied dieting," Mitchell says, with a superior air. "You see, if you eat a lot of junk food like *some* people do"—here Mitchell gives the evil eye to Janine's milkshake and pizza—"you get all these toxins building up in your cells. That changes your body's set point for fat. If you don't get those toxins out, especially out of the fat cells, your body can't get rid of fats. So if you drink herbal detoxifiers like this, you get rid of toxins, and then you can raise your set point and rev up your metabolism so that you lose a lot of weight. I just started this and I dropped like two pounds in a day."

"Two pounds?" Janine asks. "Do you have the container? Let me see the ingredients."

Mitchell digs into his back pack and pulls out a plastic canister of green powder. Janine reads the label.

"Ah hah!" she says. "Just as I thought. Parsley, dandelion, green tea—those are herbal diuretics. You're not losing fat, my friend. You're just losing water. That can be dangerous, you know. Too much diuretic can mess up your system."

"But it says it flushes fat from your body," Mitchell protests. "Look, right there on the label."

Janine gives him a patient, though pained, look. "Have you ever noticed an oil slick in the toilet after you've used it?"

"Um... no?"

"Then what exactly does 'flush fat' mean?"

"Um, maybe it makes it break down or something?"

Janine shakes her head. "You're drinking the stuff and you don't even know what it's doing to your body."

"Look, all I know is that it works," Mitchell says. "I believe in this stuff."

"Believe all you want," Janine says. "It's still a crock. And I still don't see why you think you need to be on a diet to lose weight. Eating healthy, yes, but losing weight? You?"

"I just really feel fat sometimes," Mitchell mumbles. "I look in the mirror at gym class and all these other guys look so buff. And there's Steve in my dorm who keeps poking me in the stomach and yelling 'marshmallow!'"

Janine nods in understanding. "Maybe all you need is a little more exercise to tone up. But really, Mitchell, you're on the thin side. Maybe you have a body image thing going here."

“What do you think?” Mitchell asks, handing you the canister of green powder. “Isn’t there something to the idea of detoxifying the body? Isn’t set point a real thing?”

“Tell him all he really needs is to eat healthy foods and get a little exercise,” Janine says. “Muscles use up lots of calories, so the only way to increase your metabolism is to gain some muscle. This green glop is going to drain his wallet and make him sick.”

Questions

1. Find out how the medical community defines “obesity.” What factors contribute to obesity?
2. What is “set point theory”? Are toxins involved? Describe how body size and homeostasis are related.
3. What is “metabolism”? What does human metabolism have to do with energy balance and body weight?
4. Janine said that increasing muscle mass increases metabolism. Is she right? If so, how does this work? If not, why not? Check a biology textbook for information on the structure of muscle cells for clues.
5. Mitchell said that the herbal product “detoxifies” the body. Janine said it’s a diuretic. Find out what a diuretic is and what effect it has on the body. How does its action affect homeostasis of fluid balance?
6. What body systems remove toxins from the body? What are “toxins,” and where do they come from? Are all “toxins” alike? Do toxins really cause you to gain body fat or prevent you from losing weight?
7. Body image and dieting go hand-in-hand. When body image is distorted, people can diet to excess. Do you think that Mitchell has a body image problem? What further health problems can result from a body image problem?

Resources

Set Point Theory (MIT Medical):

http://medweb.mit.edu/pdf/set_point_theory.pdf

WebMD article on detox diets:

<http://www.webmd.com/food-recipes/features/detox-diets-purging-myths>

BBC news article on detox diets:

<http://news.bbc.co.uk/2/hi/health/7808348.stm>

National Institutes of Health information:

<http://health.nih.gov/topic/WeightLossDieting>

<http://health.nih.gov/topic/EatingDisorders>

Part III – Hormones and Homeostasis

It's lunch time, and once again you meet Janine and Mitchell at lunch. You notice that today Janine has chosen a turkey sandwich on whole wheat, a green salad, and a carton of milk instead of her usual burger, fries, and milk shake.

"Yeah," Janine says, a little self-consciously. "With all this talk about diets, I've been reading up on nutrition and health. I figured that eating more veggies and fiber and a little less fat wouldn't be a bad thing. I'm going to start taking walks, too. I've been eating a lot of fast foods this school year because it's convenient. Between that and sitting around studying a lot more than I used to I've seen my weight go up a few pounds—well, okay, more than a *few*," she adds, ruefully. "Switching to healthier habits just makes sense. I figure a few small changes at a time will be easier to manage than trying to change everything at once."

Mitchell now arrives at the table with a large green salad, two hard boiled eggs—and a small muffin.

"Low-carb muffin?" Janine asks with a grin.

"Nooo," Mitchell admits. "It's just that, well, I get pretty hungry and tired and cranky eating nothing but the low-carb stuff I'm supposed to have. And I was getting headaches. Okay, so I'm cheating a little bit. But man, you can't believe the cravings I've had for bread and cereal and stuff. So I started eating some, and I feel better."

You give Janine a quick nudge before she can say, "I told you so."

Janine changes her smug expression to a sympathetic one. "It's a blood sugar issue," she says. "If your blood sugar dips too low, you can get tired and cranky. And get headaches, too. It has to do with insulin, if I remember right."

Mitchell looks surprised. "I'm not diabetic. I don't take insulin."

"No," says Janine, "but insulin is a hormone we all have and it controls blood sugar. I forget how it works, but if you don't get enough sugar in your blood, you have problems. And if you get too much sugar in your blood, you can get problems, too. It has something to do with the hormones, and the carbs and sugars you eat, and if the sugar is moving into the cells or not ... oh, I forget how it works."

"Oh," Mitchell replies. "I thought blood just carried oxygen. I didn't know it had any sugar in it." He looks worried. "Sugar is unhealthy, right? What if I have sugar in my blood? Is that a bad thing?"

Janine has learned some empathy, you think, as this time she visibly restrains herself from laughing and puts on a serious look. "You have to have *some* sugar. It's what your brain needs. It's just that you don't want to have too much or too little blood sugar, but the right amount."

Mitchell looks a little quizzical. "How do I know if I've got the right amount?"

"Your doctor can do a glucose test at your next check-up. It's pretty routine. Or you can ask about it at the student health center."

"Oh." He looks puzzled again. "So is that what's making me hungry? Low blood sugar? I heard some guys in the gym saying something about low blood sugar."

“Kind of,” Janine says, then stops to think about it. “I *think* low blood sugar can make you crave carbs or something. But appetite, being just plain hungry—well, there’s a bunch of hormones someone discovered that affect appetite. There’s an article in a magazine I ran across the other day. I’ll have to dig that out.”

Mitchell looks a little downcast. “The fact is I’m tired of this diet. It’s hard to stay on it, and after those first few pounds dropped, I haven’t lost any more. It’s frustrating.”

“Then let it go,” Janine urges him. “You’re fine just like you are. Stop worrying about counting carbs or protein or calories or grams of this or that or whatever. Just eat good food, not too much of it, and get some exercise. That’s what I’ve decided to do.” She gestures to her lunch selections. “Nothing extreme. I threw away the chips and stuff in my room, but if I want an ice cream bar once in a while, that’s okay. I figure if I eat sensibly most of the time, and start getting more active, like taking a walk every day, I’ll improve my health. That’s the important thing.”

“But still,” Mitchell insists, “the diet seems like it should work. It worked for other people. Why isn’t it working for me?” Mitchell now turns to you. “What do you think? How come I’m not losing weight on this low-carb diet? Am I doing something wrong?”

“Tell him to quit dieting,” Janine insists. “He doesn’t need to diet at all.”

Questions

1. What is meant by “sugar”? What is a “carbohydrate”? How are sugars and carbohydrates related?
2. Janine mentioned blood sugar levels, which puzzled Mitchell. What does blood have to do with sugar? How do endocrine hormones control blood sugar levels? Why is the homeostasis of sugar balance important for overall body health? Include a brief discussion of diabetes and hypoglycemia in your answer.
3. What other hormones could affect Mitchell’s appetite? Where do these hormones originate, and what are their effects? Use the textbook and the resources from the resource list (*NOVA* video, *Science News* article, NIH website) to answer this question. Note that this is a relatively new area of research and new information may arise at any time.
4. Why could a low-carb diet cause headaches, fatigue, and carbohydrate cravings?

Resources

NOVA Science Now: Obesity

<http://www.pbs.org/wgbh/nova/sciencenow/3313/03.html>

Science News articles, “The Hunger Hormone?” (February 16, 2002; Vol. 161 #7), and “Still Hungry?” (April 2, 2005; Vol 167 #14). Check the *Science News* website at <http://www.sciencenews.org/> for this and the newest findings on appetite hormones. Also check your library to see if they carry print copies of this magazine.

National Institutes of Health Weight Loss:

<http://health.nih.gov/topic/WeightLossDieting>

Part IV – Summary Essay

Now that you've explored some answers to questions that came up during your conversations with Janine and Mitchell, give Mitchell the advice you think he needs. Throughout this case you've been exploring homeostasis in weight change and hormone systems, so be sure you thoroughly discuss homeostasis of these systems in your response. Janine had concerns about Mitchell's body image, so discuss body image and factors affecting both actual weight and perceived body size in your response. Include the information that you've collected about: proteins, carbs, and fats; obesity and body image; hormonal control of blood sugar levels, water balance, and appetite; possible effects of low-carb diets on the brain and the kidneys; a definition of metabolism and what controls it. Finally, state your advice about what Mitchell should do, if anything, about his diet.

Case copyright ©2009 by the National Center for Case Study Teaching in Science. Originally published June 26, 2009 at <http://www.sciencecases.org/atkins/case1.asp>. Licensed photo of food on scale ©Karens4 | Dreamstime.com. Please see our [usage guidelines](#), which outline our policy concerning permissible reproduction of this work.

Name: _____

Date: _____

BioLit Quiz: Macromolecules

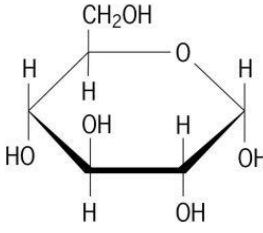
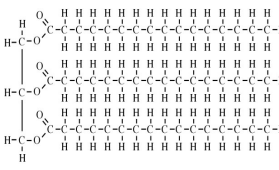
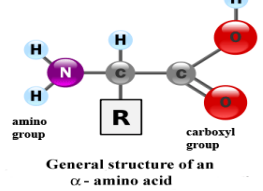
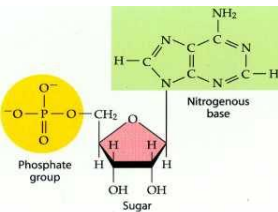
Multiple Choice: Write the correct letter choice on the line beside the number.

- _____ 1. When placed in the same container, oil and water do not mix because
a. they are both polar
b. water is polar and oil is nonpolar
c. they are both nonpolar
d. water is nonpolar and oil is polar
- _____ 2. All organic compounds contain the element
a. carbon
b. nitrogen
c. calcium
d. sodium
- _____ 3. Lipids are
a. polar molecules
b. similar to water molecules
c. water soluble
d. nonpolar molecules
- _____ 4. Macromolecules are large organic molecules that have many chemical bonds that
a. store energy
b. are easily dissolved in water
c. dissolve only in vinegar
d. exist only in cells of plants
- _____ 5. The two types of nucleic acids are
a. chlorophyll and retinal
b. DNA and RNA
c. lipids and sugars
d. glucose and glycogen
- _____ 6. DNA stores
a. fat
b. carbohydrates
c. protein
d. heredity information
- _____ 7. Another word for carbohydrate is
a. Fat b. Polypeptide c. Polysaccharide d. Monomer
8. Refer to the energy graph above to address the following question.
a. Which line shows a reaction catalyzed by an enzyme? How can you tell?

Essay Questions: Pick one (1) of the following questions to answer. Use complete sentences and write answer in paragraph form to receive full credit. (4 pts)

1. Explain the differences between saturated fats and unsaturated fats. What are they “saturated” with and what are the health aspects of each?
2. Explain the process of a dehydration synthesis reaction and when you are likely to see this type of reaction.

Complete the following table by assigning EACH of the options in the word bank to the appropriate blank on the chart. You may use the numbers of each option instead of writing out the entire word or phrase.

Polymer	_____	Lipids	_____	Nucleic Acids	_____
Elements Present	_____	_____	_____	_____	_____
Chemical Structure			 <p>General structure of an α-amino acid</p>		
Monomer	_____	_____	_____	_____	
Main function(s)	_____	_____	_____	_____	
Example(s)	_____	_____	_____	_____	

Word Bank:

1. Glucose
2. Store hereditary information
3. Amino Acid
4. DNA
5. Waxes
6. Immediate source of energy
7. C, H, O in a 1:2:1 ratio
8. Speed up chemical reactions
9. Nucleotide
10. C, H, O, N, P
11. Proteins
12. Fats and Oils
13. Functional or structural
14. Monosaccharide
15. Hemoglobin and keratin
16. Carbohydrates
17. Steroids
18. Long-term energy storage
19. C, H, O, N
20. Enzymes
21. RNA
22. Glycogen
23. Fatty Acid Chains
24. C, H, and O only in no specific ratio

Energy Budget Virtual Lab

Goal: Students will be able to

- Describe the relationship between food intake and exercise output, in terms of an energy budget.
- Explain how a person's choices about what and how much to eat, and how much to exercise can lead to imbalances in the person's energy budget.
- Explain how imbalances between a person's energy intake and energy output can result in changes in the person's body weight.

Procedure:

1. Using your www.myfitnesspal.com account, create a report of your food intake over the past 7 days. Click the "View Report" button and choose the dates you would like to look at., and print a copy for class. Your report should resemble this example:

[Printable Diary for Prepps](#)

2016-07-13	Show:	<input checked="" type="checkbox"/> Food Diary	<input checked="" type="checkbox"/> Food Notes	<input type="button" value="change report"/>
2016-07-14		<input checked="" type="checkbox"/> Exercise Diary	<input checked="" type="checkbox"/> Exercise notes	

July 13, 2016

DS	Calories	Carbs	Fat	Protein	Cholest	Sodium	Sugars	Fiber
kfast								
cdonald's - Sausage Biscuit With Cheese, 3 Sandwich	1,440	87g	66g	42g	135mg	3,840mg	6g	6g
TOTAL:	1,440	87g	66g	42g	135mg	3,840mg	6g	6g

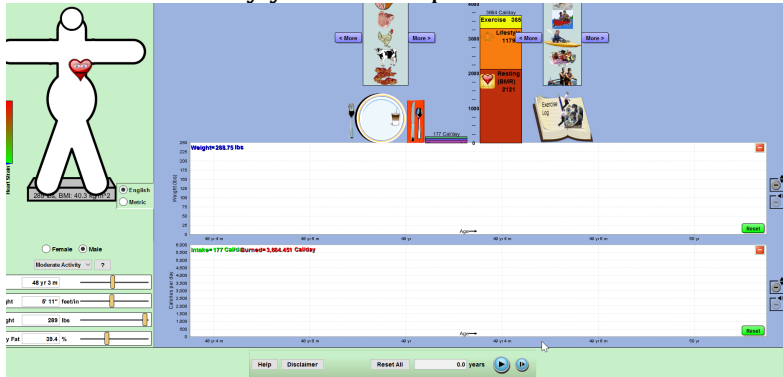
July 14, 2016

DS	Calories	Carbs	Fat	Protein	Cholest	Sodium	Sugars	Fiber
kfast								
arbucks - Vente Latte Regular, 24 oz	180	0g	0g	0g	0mg	0mg	0g	0g
muckers Natural - Peanut Butter, 4 T	400	12g	32g	14g	12mg	210mg	4g	4g
y Toast - 2 Slices, 2 slice	140	19g	2g	4g	0mg	0mg	2g	3g

2. Using the data from the report we need to calculate the Daily Averages for the following:
 _____ Calories _____g Carbohydrates _____g Fat _____g Protein
3. Once you have the averages calculated go to:
<http://phet.colorado.edu/en/simulation/legacy/eating-and-exercise>

You will need to sign in to the site in class. The beginning page looks like this:

At this site you will find a simulator that will show you what will happen to your body over time if you eat and exercise the way you did the past week. Here is what the page looks like:



4. Enter your age, height, weight, and activity level on the bottom left.
5. Create a meal that approximates your averages for calories, fats, proteins, sugars, and carbohydrates that you calculated from your food log.
6. Create a daily activity that approximates your week's activities averages.
7. Now run the simulator and **write down** what happens to your weight and your heart over **two years'** time. There is a graph that shows your projected change in weight and one that shows your calories burned versus the calories eaten.
8. **Repeat** the simulator with different calorie amounts, different amounts of fat, sugars carbohydrates, and proteins, and different amounts of activity (you might even change your age), *one change at a time*. Record your changes and the results.

Questions

Once you have run the simulator **several times**, answer the following **questions**:

1. What factor seems to make the biggest difference in your weight? How do you know?
2. Based on your food log and lab results, is your diet a good one for you? Why or why not?
3. How would you define a healthy diet?
4. *From your food log*, identify 5 health-promoting foods and tell why you consider them to be health-promoting. Do the same for 5 foods that you consider *not* health-promoting. Use evidence from the app and/or the simulation to justify your choices.
5. Using your 2 lists of foods, look up the prices of those foods at the store where you or your family shop. Find the serving size, and calculate the **cost per serving size** for each of the 10 foods. **Compare** the cost per serving among these foods. What do you notice?
6. If you were going to change the ratio of macromolecules you eat (fat, protein, & carbohydrates [this would include sugars]) in order to have better health, what would you change and why?
7. Using your 2 lists of foods, determine the **grams of sugar per serving** for each of the 10 foods, and **compare** sugar per serving among these foods. What do you notice?
8. If a tax were added to all items with more than 3 grams of sugar per serving, would this affect you (look at your food log for evidence)? In what way? Would you be satisfied with this proposed tax? Why or why not?

Energy Budget Assignment: How Might a Fat Tax Affect You?

Goal: Students will be able to

- Design a lifestyle plan that addresses eating and activity choices to promote a healthy weight.
- Assess potential affects a fat tax could have on their lifestyles.

Directions: Students are assigned the creation of a diet and exercise plan to achieve a specific goal of weight *loss, gain or maintenance* in a 30-day period. In other words:

- You will design a plan to help you either lose weight, gain weight, or stay the same. Include current weight and goal weight. (If your goal is to gain or lose weight, be sure that your goal is achievable in the 30-day period. It could be a temporary goal. If your goal is to maintain your current weight, the two values should be the same.)
- This will require you to see how many calories you need, and how many fats, carbohydrates, and proteins you need to remain healthy.
- This will require you to use what you've learned about calories and macromolecules and find foods that will provide the correct amount for you.
- Create a one-week sample menu (all meals and snacks) to meet your goal.
- Price the items needed to follow your one-week menu (cost for one person).
- Create an activity plan to help you balance your energy budget. This plan should have specific activities, for specific lengths of time, and for a set number of days.
- If your plan requires equipment or a specific space that you do not already have, calculate the cost of purchasing them or joining a gym to use the equipment. If you have the required equipment and/or space, specify this on your plan.
- Once you calculate the cost of the food items and activities, multiply by how many people live with you. Ask the people living with you if this number seems high or low. What tips can they offer for helping you stick to your plan. For example, if the cost seems high, how might they reduce expenses? What substitutions for foods or activities would they advise, to achieve the same goals? What suggestions might they have to improve your plan?
- Based on the answers your family gives, discuss the impacts a sugar or fat tax would have on your family's food budget.
- Based on what you have learned, would you support such a tax? Why or why not?

The assignment is due on _____

The assignment is worth 85 points (5 points for each task mentioned above)

Name _____ Date _____ Block _____

Respiration and Homeostasis Lab

Why might some nutritionists recommend that athletes drink Gatorade during long intense workouts? (Answer in space below.)

All living cells undergo cellular respiration. Cellular respiration is the process by which glucose or food energy is broken down to provide cellular energy in the form of ATP. This begins in the cytoplasm and then into the mitochondria. There are two types of cellular respiration: aerobic, which uses oxygen and anaerobic, which happens without the presence of oxygen.

Homeostasis is the ability of the body or a cell to seek and maintain a condition of equilibrium or stability within its internal environment when dealing with external changes.

Based on the cellular respiration equation: $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{Energy (ATP)}$, there are several ways one could measure the respiration rate of an individual. In this activity you are going to measure the respiration rate based on the amount of CO_2 produced during rest and after physical activity.

Background:

When CO_2 is blown into water it creates an acidic solution. BTB is an indicator that is normally blue, but becomes yellow in the presence of an acid. When an acidic solution is neutralized by a base such as ammonia, this change is indicated by the BTB's becoming blue again.

Problem Statement/Testable Question:

Hypothesis:

Procedure:

1. Put 75 ml of BTB into an appropriately sized Erlenmeyer flask.
2. Put a straw into the flask and breathe in through your nose and out through the straw. Breathe normal for two minutes. Note any color changes.
3. Now remove the straw and add the dilute ammonia solution one drop at a time, swirling the flask after each drop. Stop when the solution returns to a blue color for one minute. Record the number of drops below.
4. Rinse the flask out with water and put another 75 ml of BTB into it. Engage in physical activity for two minutes. Now repeat steps two and three.

Data Table: Create a data table in the space below and record your lab data.

Analysis:

1. Why did the BTB turn yellow after you breathed into it?
2. Write the chemical equation for cellular respiration. (Label the reactants and the products)
3. Compare the number of drops in the data table at rest versus physical activity. Which value was greater? Why? (relate your answer to cellular respiration and energy)
4. Now that you know about this relationship, why is Gatorade the “sideline drink of choice?” In other words, why would Gatorade benefit an athlete during an intense workout?
5. How does this lab demonstrate your body’s ability to maintain homeostasis in regards to the pH levels of your blood? (Think about the CO₂ in the BTB solution)

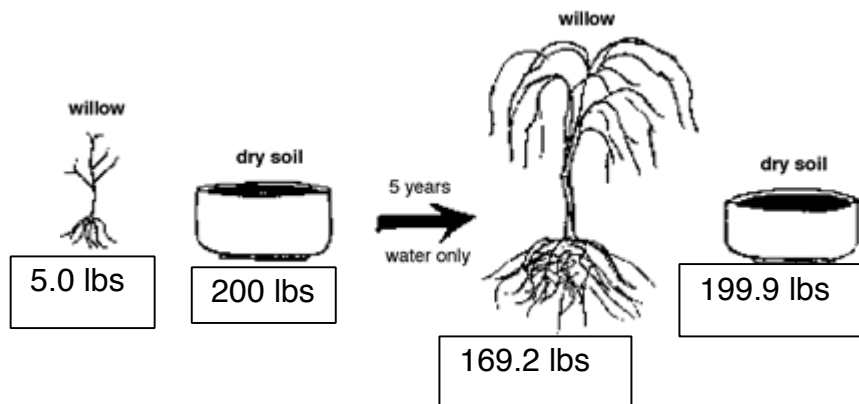
Station 1: H₂O (Water)

Jean Baptista van Helmont (1577-1644) performed one of the classic experiments in plant physiology. His research was published posthumously in *Ortus Medicinae* (in 1648) and is one of the first examples of the use of the "scientific method".

Interestingly, this work was not truly original (it was mentioned by the Greeks and Da Vinci did a similar unpublished experiment with pumpkins).

In the following paragraph, van Helmont describes his experiment. Read the paragraph and then analyze the experiment by answering the questions that follow.

By this apparatus I have learned that all things vegetable arise directly and in a material sense from the element of water alone. I took an earthen pot and in it placed 200 pounds of earth which had been dried out in an oven. This I moistened with rain water, and in it planted a shoot of willow which weighed five pounds. When five years had passed the tree which grew from it weighed 169 pounds and about three ounces. The earthen pot was wetted whenever it was necessary with rain or distilled water only. It was very large, and was sunk in the ground, and had a tin plated iron lid with many holes punched in it, which covered the edge of the pot to keep air-borne dust from mixing with the earth. I did not keep track of the weight of the leaves which fell in each of the four autumns. Finally, I dried out the earth in the pot once more, and found the same 200 pounds, less about 2 ounces. Thus, 164 pounds of wood, bark, and roots had arisen from water alone. (Howe 1965)















Station 2: CO₂ (Carbon Dioxide)

Bromthymol Blue is a dye that indicates a change in the pH (acidity) of the solution. The water that has the blue color has a pH of about 8. When the blue color changes to yellow, the solution has a pH of about 6, and is slightly acidic. When carbon dioxide is added to the water it forms carbonic acid and the water turns yellow. When the carbon dioxide leaves the water the color will return to a bluish color.

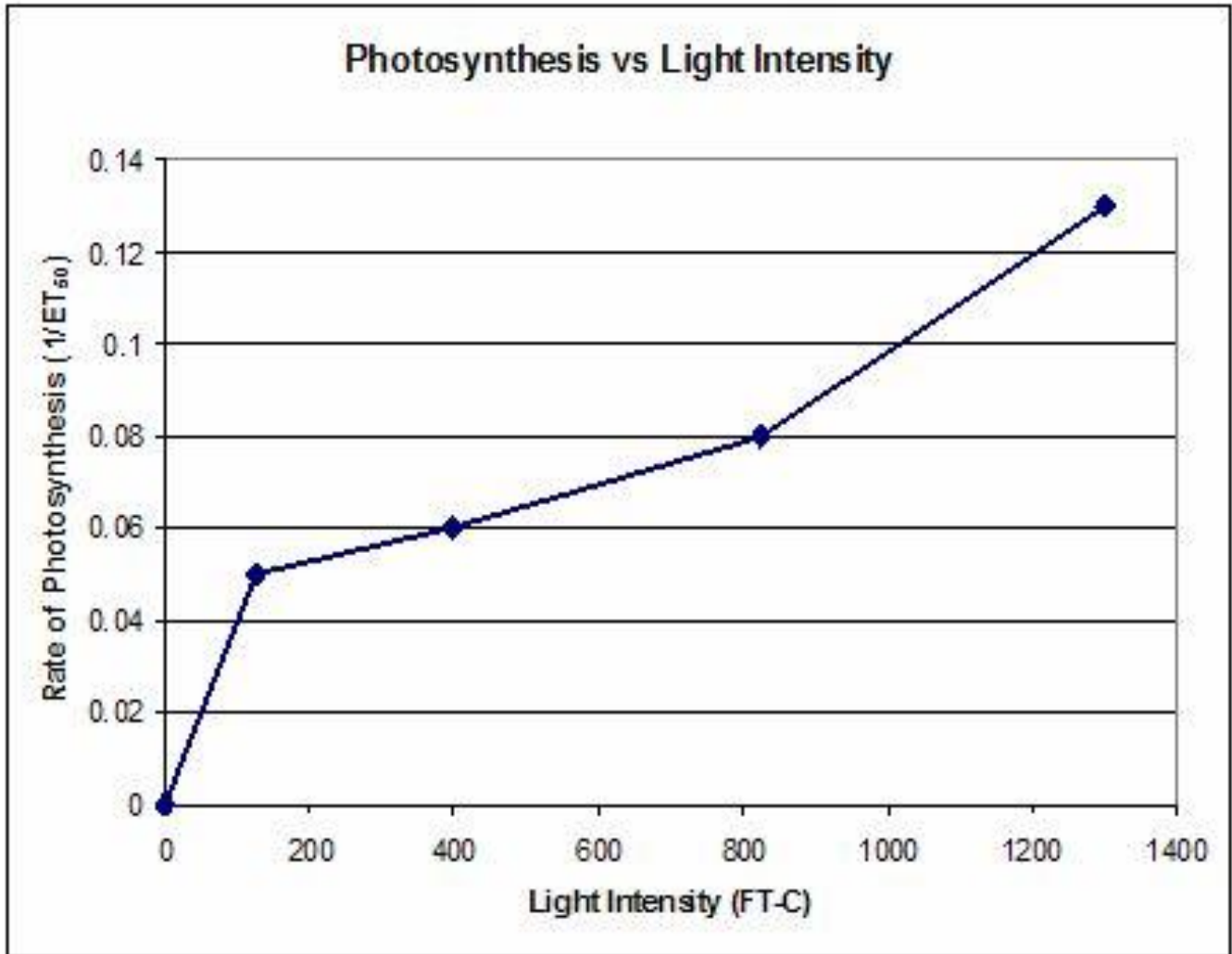
Earlier in the day your instructor placed a sprig of Elodea into two test tubes with Bromothymol Blue and high levels of CO₂, two test tubes with Bromothymol Blue and high levels CO₂ and , two test tubes with Bromothymol Blue and low levels of CO₂. Your instructor then placed one set of the test tubes in the light and the other set of the test tubes in the dark.

1. Look at the experimental results and fill in the data table below. Remember to provide a title too.

Title:

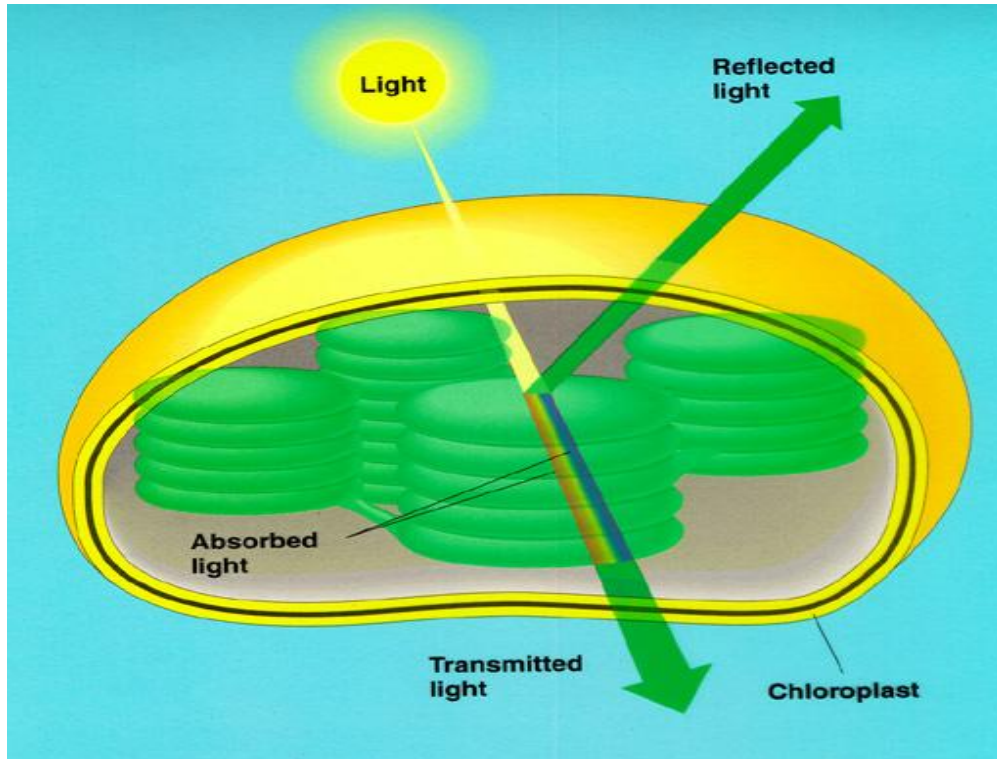
Light Set-up	Before: Test Tubes at Beginning			After: Test Tubes after Exposed to Light		
Test Tube	#1 	#2 	#3 	#1 	#2 	#3 
Water Color	Yellow	Yellow	Blue	Blue	Yellow	Blue
CO ₂ Level	High	High	Low	Low	High	Low
Dark Set-up	Before: Test Tubes at Beginning			After: Test Tubes after Exposed to Dark		
Test Tube	#4 	#5 	#6 	#4 	#5 	#6 
Water Color	Yellow	Yellow	Blue	Yellow	Yellow	Blue
CO ₂ Level	High	High	Low	High	High	Low

Station 3: Light

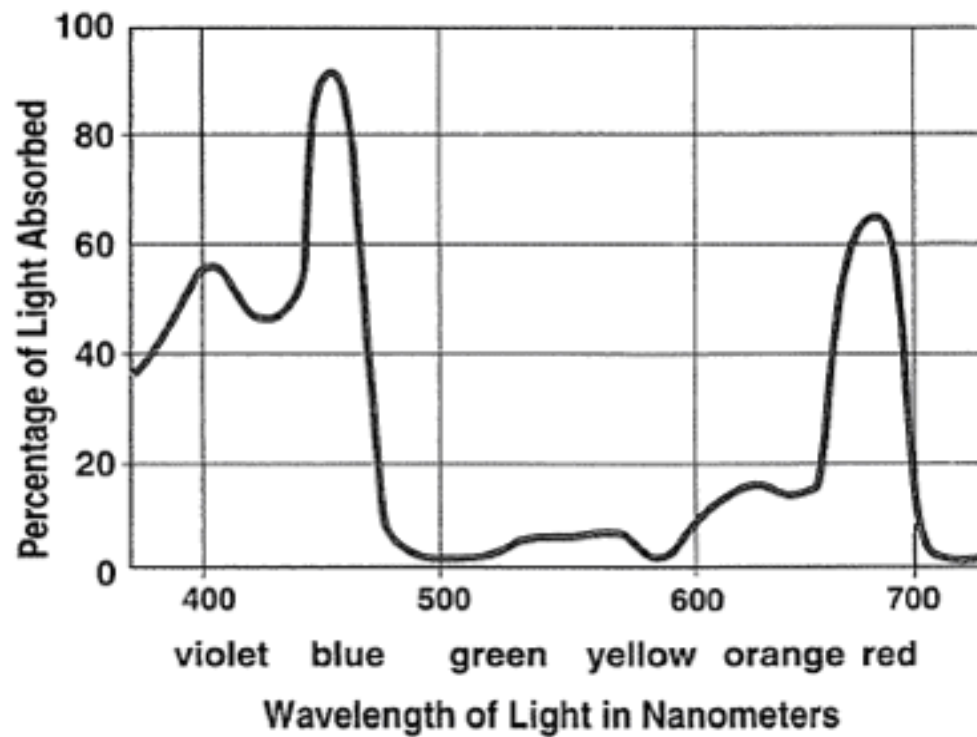


Station 4: Chlorophyll

Green plants contain chlorophyll, the pigment that absorbs light energy during photosynthesis. Chlorophyll is contained within the chloroplast of plants.



Light Absorption by Chlorophyll

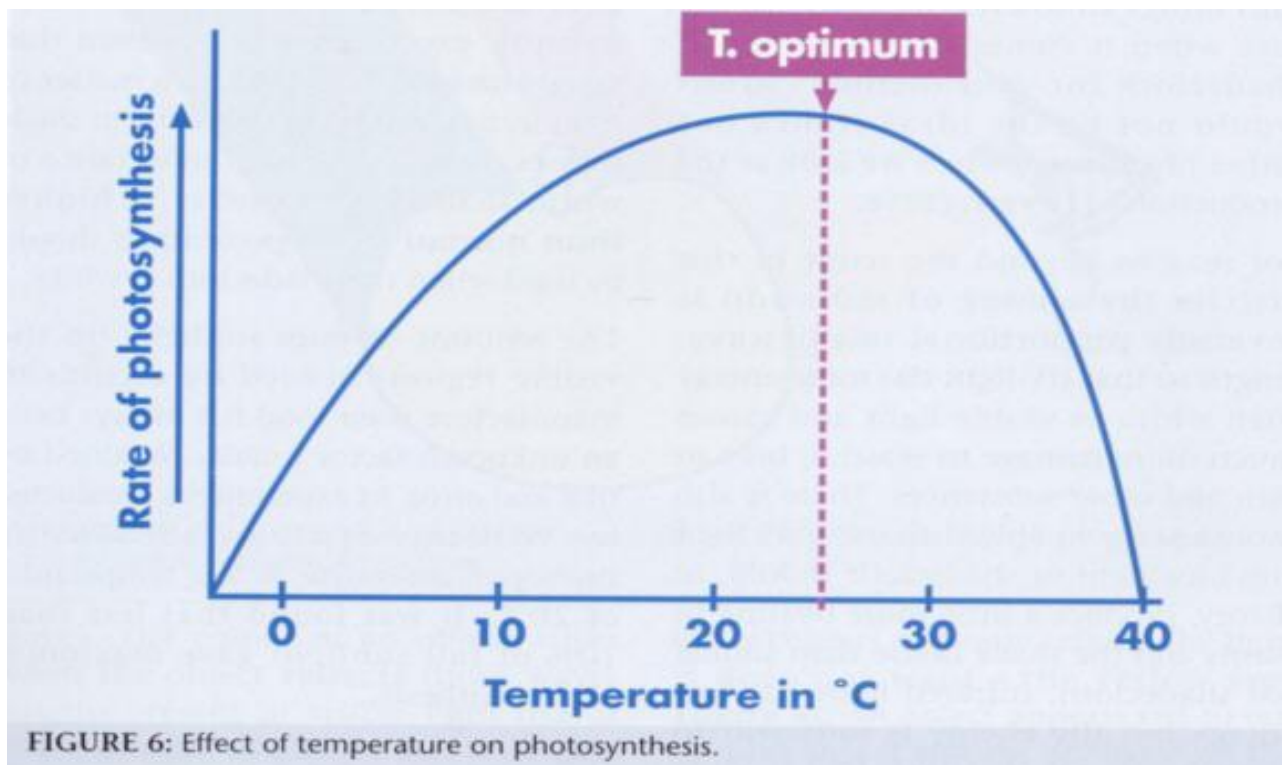


Station 5: Enzymes

Visit the following link for a short description of enzymes and answer the associated questions on your lab sheet.

“All About Enzymes” By Anne Thompson

<https://youtu.be/e1HSp0OPWO8>



Station 6: C₆H₁₂O₆ (Glucose)

Background information:

This geranium plant has been in the dark for two days. At the time when the plant was taken out of the dark, some of the leaves were covered halfway with aluminum foil. The other leaves were left exposed.




For the next 24 hours, the geranium was under the plant lights. After the 24 hours, the aluminum foil was removed from the leaves. Some normal leaves and some aluminum foil leaves were then boiled in water and alcohol to remove all of the chlorophyll. The leaves were then immersed in iodine. Iodine turns a dark color in the presence of starch. Therefore, if the leaves turn dark then starch is present in the leaves. (starch is a whole bunch of glucose molecules together.)

Experiment: Boiled Geranium

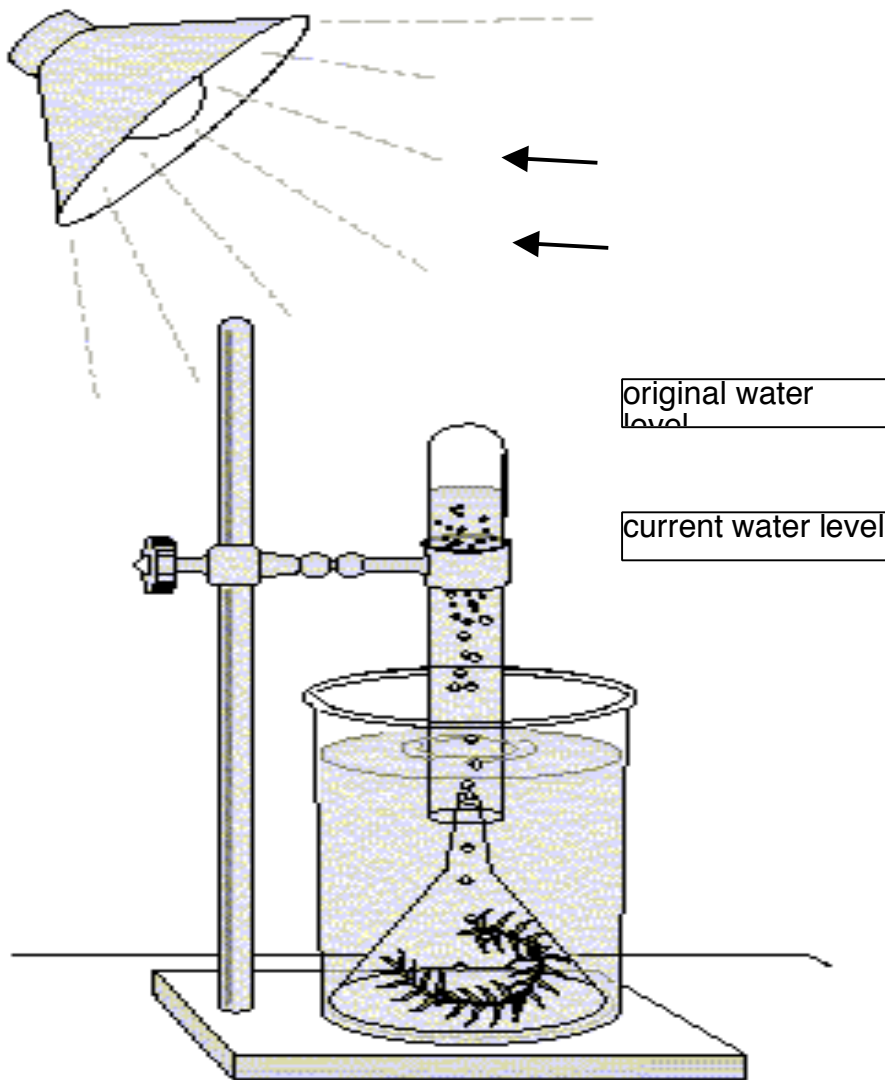
Masked leaves – half covered with aluminum foil



Geranium leaves after boiling & staining:

		
normal leaf before boiling & staining	whole leaf exposed to light	half of leaf covered

Station 7: O₂ (Oxygen)



When first set up, the test tube was full of water. The water level has lowered to its current point.

Biology

Photosynthesis Lab Planning Sheet

Group member names:

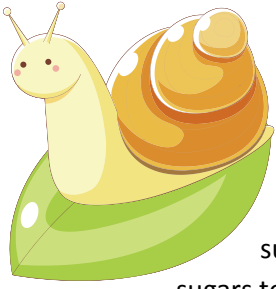
1. What independent variable will you test?
2. How will you measure the rate of photosynthesis? AKA what results will you collect?
3. Write a problem statement:

How will _____ impact/affect _____?

4. Write a hypothesis. You may use "if/then" format, but you do not have to. What do you think will happen? Why?
5. Describe the setup of your control group (remember this is the normal condition used as a basis for comparison).
6. What will you have constant across each condition?
7. Write your procedure, a list of steps that must be followed to carry out your experiment. BE SPECIFIC.

Cellular Respiration Virtual Lab

Carbon Transfer Through Snails and *Elodea*



Background:

All organisms are dependent on a healthy **carbon dioxide-oxygen balance**. Photosynthesis and cellular respiration are key processes in maintaining this balance. Plants, through the process of photosynthesis, use energy absorbed from sunlight, water, and carbon dioxide to produce sugars and oxygen. Animals **and** plants, through the process of cellular respiration, use oxygen and sugars to produce carbon dioxide, water, and the energy needed to maintain life.

Purpose:

To determine how carbon dioxide cycles through a biological system by performing the “**Carbon Transfer Through Snails and *Elodea***” virtual experiment found on this webpage:

http://www.classzone.com/cz/books/bio_07/resources/htmls/virtual_labs/virtualLabs.html

Procedure: Follow the steps to the lab given on the screen until you complete all seven (7) steps. You will need to fill in the lab notebook as you go, but you will *only be graded on what you put on this assignment sheet*.

1. Read through the **problem** tab. Create your own question for what you are **investigating** in this experiment.
 - a. **Problem (in question form):**

2. **Explore** the lab to learn what is available to you in your investigation. You must click on **each** item in the checklist. Describe the materials you will be using in this lab.
 - a. What is **Bromthymol Blue**? Why is the BTB in the beaker **green**?

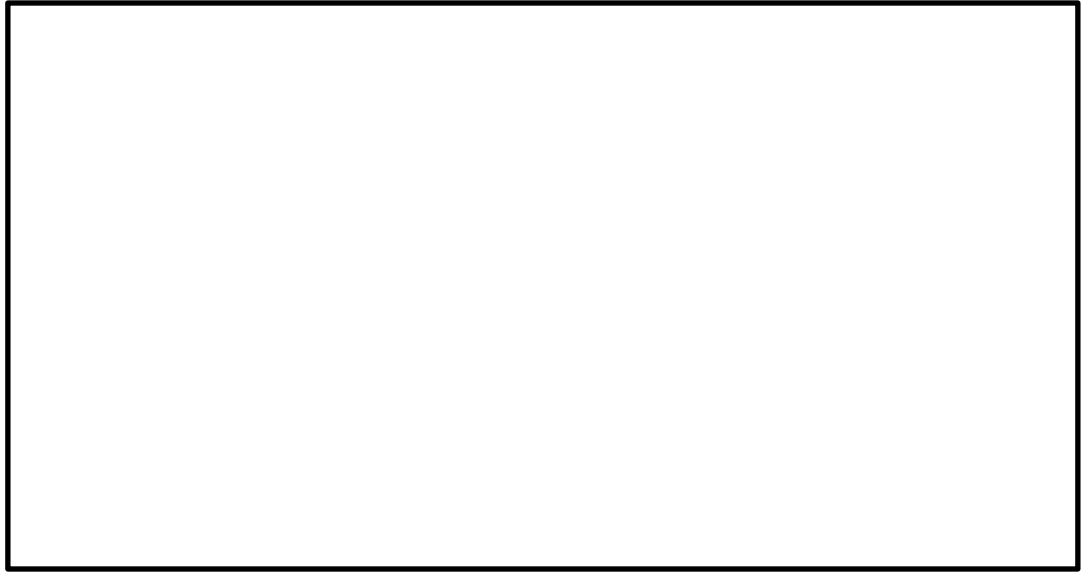
 - b. If snails use lungs to breathe, you can conclude that they **release** which *gas* into their environment as a result of **respiration**?

 - c. If *Elodea* is an aquatic plant, you can conclude that it **releases** which *gas* into its environment as a result of **photosynthesis**?

 - d. What is the purpose of the **growth light**?

 - e. What is the purpose of the **test tube rack cover**?

f. **Draw** the picture seen on the CO₂ – O₂ Cycle poster.



g. If **no carbon dioxide** is present in your test tube it will be a _____ color. If a **medium** amount of CO₂ is present, your test tube will be a _____ color. If a **large** amount of CO₂ is present, your test tube will be _____.

3. **Hypothesis:**

Explain how carbon dioxide (CO₂) cycles in aquarium water through snails and *Elodea*.

If _____ I add a snail and elodea to a test tube with bromthymol blue _____

then _____

because _____

4. The **independent variable** in an experiment is the variable which will be **altered** by you, the scientist. In the case of this experiment, the independent variable will be **the number of snails and/or number of elodea plants** in each test tube.

a. Identify the **dependent variable**(what you, the scientist, will **measure**) in this experiment:

5. **Data/Results:**

You will be using **8 test tubes** for this experiment. Fill your test tubes and perform the experiment **according to the data chart** found below.

First Test Tube Rack – Placed under the growth light:

TEST TUBE WITH BTB	INDEPENDENT VARIABLES	BEGINNING COLOR	COLOR PREDICTION	COLOR RESULT
Tube # 1 (control)	No snails, No <i>Elodea</i>	<i>Green</i>		
Tube #2	2 snails	<i>Green</i>		
Tube #3	2 <i>Elodea</i>	<i>Green</i>		
Tube #4	2 snails, 2 <i>Elodea</i>	<i>Green</i>		

Second Test Tube Rack – Placed under the test tube cover:

TEST TUBE WITH BTB	INDEPENDENT VARIABLES	BEGINNING COLOR	COLOR PREDICTION	COLOR RESULT
Tube # 1 (control)	No snails, No <i>Elodea</i>	<i>Green</i>		
Tube #2	2 snails	<i>Green</i>		
Tube #3	2 <i>Elodea</i>	<i>Green</i>		
Tube #4	2 snails, 2 <i>Elodea</i>	<i>Green</i>		

6. Conclusions:

Complete the following sentences.

- a. In the test tubes which contained only snails....
- b. In the test tubes which contained only Elodea under the light....
- c. In the test tubes which contained only Elodea in the dark.....
- d. In the test tubes which contained both snails and Elodea under the light....

Discussion:

1) **Conclude.** What is the relationship between snails and *Elodea*?

2) **Analyze.** Why did the color of the Bromthymol Blue (BTB) solution change in certain test tubes?

3) **Analyze.** What was the importance of a control in your experiment? What would you conclude if the color of the solution in the control changed?

4) **Infer.** When you began the experiment, was there CO₂ in the water? In the test tubes that contained Elodea, where did the CO₂ go?

5) **Infer.** Which gas did the snails release? What observation supports this inference?

6) **Apply.** Based on the results of your experiment, explain why you need to add the Elodea to your snail aquarium.

Name: _____ Date: _____

Globesity: Fat's New Frontier Questions

Answer the questions as you watch the video. Be prepared to share your answers with the class during the group discussion.

Summarize the issues and explain the possible causes for each country that is featured in *Globesity*:

Country: Mexico

Main issue:

Causes:

Country: China

Main issue:

Causes:

Country: Brazil

Name: _____ Date: _____

Main issue:

Causes:

Country: India

Main issue:

Causes:

Conclusion Questions:

Obesity Policy Statement Assignment

Goal of assignment: You should be able to demonstrate an understanding of the obesity epidemic in the United States and to formulate a plan for dealing with the epidemic from the viewpoint of the government, a corporation, or a Non-governmental Organization.

You will begin by individually coming up with the Claim, Evidence, and Reasoning to state your individual position on this issue using Google forms. Based on your responses we will divide into groups to finish the complete policy statements.

How do I write a policy statement? There are several parts to a policy statement as outlined below:

- **Paragraph I: Introduction.** Begin by stating: the problem, who you are representing, why that entity has an interest in the problem, and a brief description of your proposed solution.
 - End the paragraph with a clear **THESIS** which lays out the central points of your proposal
- **Paragraph II: The Policy.** Explain the problem and policy in detail. This should be backed up with data (gleaned from articles and other research). Then explain your solution (policy) in detail. What is it? Who will be involved? How will it be paid for? Use research to support your solution.
- **Paragraph III: The Argument in Favor (Benefits).** You have stated the solution you think is best, now defend it. You must include evidence (at least 50% of your evidence must be numeric). This evidence should be found in articles we have read, lab results, data tables, maps, and models explored or created in class or found online.
- **Paragraph IV: The Argument Against (Disadvantages).** Look for problems with your solution. You should acknowledge where your evidence (see criteria for evidence above) is weak or missing and explain why that is not a reason to abandon your solution.
- **Paragraph V: Implementation and Effects.** You will need to explain how the policy will be implemented. Answer these questions: Which groups would likely be in favor of your policy? Why? Which groups would likely oppose your policy? Why? How will the policy be introduced to the stakeholders? Who is responsible for enforcing the policy? What are the consequences of not following the policy? How will we measure the effects of the policy implementation? How do the stakeholders get a voice in the continuation or abandonment of the policy?
- **Paragraph VI: Summary.** You will need to write a concise one paragraph summary of your position-which states the problem, your solution, and the predicted effects of the policy going into effect.
- **Works Cited page.** You must provide a page that lists the sources you used for your research. All your citations should follow MLA format.

And

When is it due? The final draft (as a Google Doc) and any other campaign materials is due on:_____.

Student Checklist (Use this to help edit your assignment before you turn it in):

Section:		Yes (2)	Partly (1)	No (0)	Points assigned:
P A R T 1	<u>Stating the problem:</u> Did you clearly state what the problem is and why we think it is a problem?				
	<u>Whom are you representing:</u> Did you clearly state who you represent in this case and why you decided to represent this stakeholder?				
	<u>Interest:</u> Did you clearly state why the group you are representing is interested in this issue?				
	<u>Your solution:</u> Did you clearly and concisely explain your proposed solution?				
P A R T 2	<u>Explain the problem in detail:</u> Did you explain not only what the problem is, but why it is a problem?				
	<u>Evidence:</u> Did you give both qualitative and quantitative evidence to show there is a problem?				
	<u>Possible solutions:</u> Did you list other possible solutions?				
	<u>Evaluate solutions:</u> Did you list the pros and cons of each of the possible solutions?				
	<u>Choose a solution:</u> Did you choose a solution and explain why this is the best solution based on the evidence?				
P A R T 3	<u>Evidence:</u> Did you include examples, quotes, calculations, test results, data tables, diagrams and/or graphs to support your claim?				
	<u>Numeric:</u> Is at least 50% of your evidence numeric in nature? In other words is it quantitative (does it involve counting, calculating, or measuring)?				
	<u>Classwork:</u> Did at least three-fourths of your evidence come from work done in class (maps, articles, videos, lab results, models, diagrams, etc.)? Did the other fourth come from reliable				

	sources (using our checksheet)?				
P A R T 4	<u>Weaknesses</u> : Did you list the weaknesses in your argument?				
	<u>Evidence</u> : Did you mention missing evidence <u>and</u> why you think your argument is correct in spite of the missing evidence?				
P A R T 5	<u>Prediction</u> : Did you ask: Which stakeholders will support your solution? Why? Which stakeholders will oppose your solution? Why?				
	<u>Implementation</u> : Did you explain how your solution will be introduced to the stakeholders?				
	<u>Enforcement</u> : Did you explain who is responsible for enforcing the new policy? <u>And</u> did you explain the consequences for not adhering to the new policy?				
	<u>Measurement</u> : Did you describe the method which will be used to measure the effects of the policy?				
P A R T 6	<u>Evaluation</u> : Did you formulate a plan for the stakeholders to give feedback as to the effectiveness of the policy?				
	<u>Summary</u> : Did you summarize the policy by restating the problem, the solution, and the predicted outcome?				
Q U A L	<u>Conciseness</u> : Is your summary only one paragraph in length, clear, and concise?				
	<u>Communication</u> : Did you write your assignment in a clear, engaging, and professional (grammatically correct) manner? In other words, can other students read and understand your work without having to ask you for clarification? AND is it written in a way				

I T Y	that keeps their interest?				
D R A F T	<u>Turn in Rough Draft:</u> Did you have the rough draft completed, with a copy for the grader, on time for class?				
	<u>Grading the Rough Draft:</u> Did you mark the rough draft, using this checklist, and provide comments?				
G R O U P	<u>Responsibility to the Group:</u> Did you take a full share of the work on the project, completing your parts, doing quality work, and turning it into your group on time?				
F O R M A T T I N G	Times New Roman, 12 pt. font				
	Double spaced				
	Headings are used to separate each part of policy statement				
	Title Centered				
	In-text citations used correctly				
	Works Cited page titled correctly				
	Entries are alphabetized				
	Entries are double spaced				
	Correct use of hanging indention				
	Entries follow MLA format				
Total Points					/ 70