Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class Period:\_\_\_\_\_\_\_\_\_\_

**Ms. Taylor** **Living Environment**

**DO NOW:**

1. How are enzymes “specific?”
2. Describe the pH of the stomach.
3. What is “digestion?”
4. In which organ do nutrients diffuse into the bloodstream?
5. What is a hormone?
6. What part of the target cell receives the hormone?
7. What is diffusion?
8. Can starch diffuse across a membrane?
9. In a controlled experiment, why should the sample size be large?
10. Name 2 functions of the placenta:

**Call Now and We’ll Double Your Offer!**

There are many products advertised as “scientifically proven” in order to attract consumers. Print ads, labels, and commercials are often loaded with scientific-sounding vocabulary that the average American knows nothing about.

Claims are presented as scientific, but the unfortunate reality is that they are nothing but a load of fancy words, biased opinions, misleading statements, and false data to scam buyers.

Use your knowledge of biology and your instincts to determine the validity of the following weight loss advertisement.

While reading the ad, look for:

* **Questionable claims**
* **Questionable data**
* **Questionable substances**
* **False statements**

**Read, Underline, Circle:** **Ask Questions, Take Notes:**

*Weight Lozz Pro-X is a new fat-burning pill created by PsuedoSci Incorporated. A full-page advertisement in HEALTH Magazine reads:*

Summer is around the corner and **Weight Lozz Pro-X** is a scientifically proven substance that is going to get you that beach body faster than ever before. WLP-X is designed to decrease your craving for food, pump extra starches out of your cells, and help you burn food faster.

WLP-X has 2 active ingredients- Exonase- an enzyme, and Calacin- a hormone. Exonase is a super enzyme that breaks down carbohydrates in the mouth 10 times faster than salivary amylase. Exonase will also work to speed up the digestion of fats in your stomach up to 25 times faster than any natural stomach enzymes can! Exonase alone can help you metabolize your food fast enough to shed 1 pound per week.

But, that is not all. The effects of Calacin are what make WLP-X the most effective weight loss pill on the market. Calacin stops of the craving of food by interacting with the ventral striatum of the human brain. This is the part of the brain that controls cravings. Calacin has been proven to change these cells and reduce the craving for sweet food. Calacin also has an amazing effect on the cells lining the wall of the stomach. Eat as much food as you want, but Calacin will direct the stomach to absorb LESS than 50% of your digested nutrients! 50% less nutrients in the blood means 50% less junk cramming into your cells and 50% less weight gained!

For WLP-X to work as effectively as possible, users should reduce the amount of starches in their diets. Bread, rice, and French fries are starches that go right from your stomach to your cells. The starches build up in your cells and cause weight increase. WLP-X is a pill that naturally causes the large buildup of starches to leave the cell. The extra starches are destroyed in the bloodstream by WLP-X dextroglucosamino-Z boosters. The fat will literally burn right off of you!

This all seems too good to be true, but don’t just take our word for it. The effectiveness of WLP-X has been scientifically proven.

Our top scientists at PseudoSci Laboratories studied 8 participants over the course of 4 weeks. Weight Lozz Pro-X was taken twice daily- at 10am and 6pm. Weight of each participant was recorded daily by a PseudoSci professional to ensure accurate data. After the first week alone, participants lost an average of 2.17 pounds. After 5 weeks, the average weight loss of the group was 15.85 pounds! Participants said that they felt energized, refreshed, and looked better than they ever had before.

“I couldn’t believe the results! Weight loss has never been easier- It was like the pounds just fell off of me! I still surprise myself every time I look in the mirror. I could not have done it without WLP-X!”

*WLP-X has been ranked the #1 weight loss pill in America- supplies are limited- so get your order in now! 1 800 BUL CRAP*

1. Identify 3 factors that decreased the validity of the PseudoSci Inc. experiment.

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1. Design a *valid* controlled experiment to test the effects of WLP-X on weight loss.

**In your experiment, be sure to include:**

* Hypothesis
* Experimental Group
* Control Group
* 3 variables that should be kept the same between both groups
* Why the sample size should be large

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3. Designed a controlled experiment to test *one other claim* made in this advertisement. **In your experiment, be sure to include:**

* Hypothesis
* Independent variable
* Experimental group
* Control group
* Data to be collected
* Results that would support the claim

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4. The Food and Drug Administration is the government branch that is designed to protect the health of Americans. The FDA carefully tests food, drugs, and cosmetics before giving approval. Approval by the FDA means that valid scientific research has been done which supports that the product *actually works*, and that the product is *safe* for human use.

Most “miracle” pills have a **disclaimer** that reads:

*\*These claims have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.*

Would you recommend pregnant women to take any substance with such a disclaimer, even if the product is being advertised to benefit females? Why or why not- **be SPECIFIC!**

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