

Articles- **NATURAL & SYNTHETIC**

Directions: Each student at your table will be given a different article to read. You will read your article and answer the questions on your worksheet. Then you will group up with someone else who has your same article. You will answer the questions from your group discussion. Then you will go back to your table and share your article with your table. Each student at the table will have a different article and a different worksheet.

**CHEWING ON PLASTIC**

- 1. What synthetic compounds does gum contain?
- 2. What is the surprising main ingredient in gum?
- 3. What was gum made from before the 1950’s?
- 4. What does biodegradable mean?
- 5. What were the artificial sweeteners replaced with?
- 6. What were the artificial flavorings replaced with?
- 7. What was the problem with having too much flavoring?
- 8. What was the problem with having too much chicle?
- 9. How long did it take to figure out the right proportions for larger amounts?
- 10. What is this natural gum called?

**EXPERT GROUP**

Directions: You will find 2-3 other people that have your same article (pink paper). As a group, you will discuss and fill in the chart from the section: Gum Gets Real.

Ingredients in Gum	Natural Ingredients	Artificial Ingredients
Chewy Base		
Sweeteners		
Moisteners		
Flavors		
Not too sticky		

## TABLE GROUPS

**Directions:** Each person at your table read a different article. They will be asking you these questions. Be prepared to answer.

1. What pollution problem can be caused by using artificial gum?
2. Seattle has a famous gum wall. Discuss what that gum wall would be like (or if it would exist) if it was only filled with “simply gum.”
3. Did the woman who invented the gum use the scientific method or the engineering design process to perfect her gum? Why?



The table below has questions for you to ask the people at your table about the articles that they read. Ask them the questions and write down their answers.

### **Cell Phone Chemistry:**

1. Choose 3 of the **elements** used in a cell phone and explain their function.
  - 
  - 
  -
2. Explain how a cell phone is a synthetic item but comes from natural resources.

### **Golf Ball Cleanup:**

1. What happens to a golf ball after it enters the ocean?
2. Why is it a problem that golf balls land in the ocean?
3. Are golf balls made from natural or synthetic substances? Explain your answer.

### **The Bizarre Quest for Artificial Blood:**

1. Why is there a need for artificial blood?
2. Does artificial blood need to be exactly the same as real human blood? Why/Why not?
3. Are there places in the world that use artificial blood? Where? Why?

## CLASS DISCUSSION

Directions: As a class, give examples of advantages and disadvantages to synthetic products.

<u>Advantages</u>	<u>Disadvantages</u>