**Group Names:\_\_**

**Period:\_\_\_\_\_**

**Plastics Go Green**

**Directions:**  *Before reading*, in the first column, write “A” or “D” to indicate your agreement or disagreement with each statement. As you read, compare your opinions with information from the article. In the space under each statement, cite information from the article that supports or refutes your original ideas.

|  |  |  |
| --- | --- | --- |
| **Me** | **Text** | **Statement** |
|  |  | 1. The Ford automobile company produced a car using plant materials in 1941.
 |
|  |  | 1. Many plastics today are made from crude oil.
 |
|  |  | 1. Bioplastics are produced from proteins in plants.
 |
|  |  | 1. One common bioplastic, PHA, is produced naturally by bacteria.
 |
|  |  | 1. All PHA molecules are the same.
 |
|  |  | 1. One company is making water bottles from corn starch.
 |
|  |  | 1. Producing bioplastics requires far less fuel than producing conventional plastics.
 |
|  |  | 1. When bioplastics are sent to landfills for disposal, they create two greenhouse gases, CO2 and CH4.
 |
|  |  | 1. Conventional plastics and bioplastics should be recycled together.
 |
|  |  | 1. Reusing is better for the environment than recycling.
 |

***Directions***: In the chart below, compare the two bioplastics, including the starting materials, production, and disposal.

|  |  |  |
| --- | --- | --- |
|  | **PLA** | **PHA** |
| **Starting materials** |  |  |
| **Production** |  |  |
| **Disposal** |  |  |

**Analysis Questions**

1. Who is credited with the original idea of a “green” car?
2. What are plastics made of?
3. How are plastics made?
4. How are bioplastics made?
5. What are the two main types of bioplastics?
6. Why is water a problem when chemists attempt to produce polylactic acid (PLA) directly from lactic acid?
7. What are smaller chains of repeating units called?
8. List three environmental concerns involving the production of bioplastics.
9. Composting is usually thought to be an environmentally friendly way to deal with organic waste. Why is composting of bioplastics expected to be an environmental concern in the future?
10. OK, so let’s put them in landfills instead. What’s the problem with that?
11. List two environmental concerns involving the recycling of bioplastics.
12. What are two advantages to using switchgrass, rather than corn, as a source for bioplastics?
13. What is an even better idea than recycling?