Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Age of Polymers**

1. Give 2 example of natural polymers AND 2 examples of artificial (synthetic) polymers:

Natural polymers- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Synthetic polymers- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. What is the common starting material for most manmade polymers?

3. In fractional distillation \_\_\_\_\_\_\_\_\_\_\_\_ molecules travel to the top of the fractionating tower while \_\_\_\_\_\_\_\_\_\_\_\_ molecules collect at the bottom.

4. Arrange the following fractions in order from lightest to heaviest: asphalt, jet fuel (kerosene), propane gas, gasoline, diesel fuel

5. Draw an ethylene molecule and write its formula:

6. What is meant by a chain reaction?

7. What polymer is produced in the largest quantities?

8. Name three products that are made of polyethylene:

9. Describe the differences between high and low density polyethylene.

10. What are some properties of cross-linked polyethelene?

11. What was the key to the design of PETE soft drink bottles?

12. Why are polymers so widely used in the automobile and aircraft industries?