Assignment Number:\_\_\_\_\_

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour:\_\_\_\_

**Genetic Engineering**

**What is genetic engineering?**

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (not accidental) alteration of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ material of an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* An advanced technology – way beyond selecting which plant to cross with another (watch out Mendel)
* Often involved the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a \_\_\_\_\_\_\_\_\_\_\_\_\_ from one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**How can this be done?**

* \_\_\_\_\_\_\_\_ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - genes substituted from one organism into another to achieve a desired \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or product

**Genetic Engineering in Plants**

1. Increases \_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. Allows for faster production, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ food \_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Increased \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. Allows for the reduction of use of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or herbicides
3. Increase \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Genetic Engineering in Animals**

1. Grow \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Increase \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/ less \_\_\_\_\_\_\_\_
3. Produce \_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_ with greater \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ value

**Genetic Engineering in Medicines**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, needed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, is produced by genetically engineered \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. Prior to \_\_\_\_\_\_\_\_\_, diabetics had to use insulin from \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_ (cattle/pig) sources
      1. This insulin caused \_\_\_\_\_\_\_\_\_\_\_\_\_ reactions in ~\_\_\_\_% of people
      2. The genetically engineered insulin is much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ tolerated by humans
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have a bleeding disorder due to the lack of a specific \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, called Factor VIII
   1. Transfused Factor VIII from human donors has resulted in the transmission of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to hemophiliacs from donors
   2. Genetic engineering has been able to produce Factor VIII that carries \_\_\_\_\_\_\_\_ of these \_\_\_\_\_\_\_\_\_\_\_\_