## Name: Date: Period:

Genetics and Structure Study Guide

# Traits and Heredity

1. Where is DNA located in your cells?

## What are the four chemical bases that make up DNA? Which match up?

## If DNA is made of only four chemicals, how does it contain so much information?

## What is the difference between a gene and a chromosome?

## What is the difference between inherited and acquired traits?

## What is the difference between a dominant and a recessive trait? Give an example of each.

## Are dominant traits always more common in a population than recessive? Explain.

## What is the difference between a pure-bred( homozygous) and a hybrid?

## What do the words homozygous and heterozygous mean?

## What is the difference between genotype and phenotype?

# Use this information to answer the following questions.

## Long horns (H) Short horns (h)

Tail (T) No tail (t)

No spots (G) Spots (g)

1. Write the genotype of a creature that is a pure-bred long horn, hybrid for tail, and has spots.

## What is the phenotype of this creature? Hh tt GG

# Reproduction

## What is the difference between sexual and asexual reproduction?

## Name three ways that organisms can reproduce asexually.

## Give three examples of organisms that reproduce asexually.

## Give examples of organisms that reproduce sexually.

1. Name two **advantages** to reproducing sexually.
2. Name two **disadvantages** to reproducing sexually.
3. Name two **advantages** to reproducing asexually.
4. Name two **disadvantages** to reproducing asexually.

## If you lived in an environment that changes a lot, which would be a better way to reproduce?

# Adaptations

## What is an adaptation?

## What is a structural adaptation? Give an example.

## What is a behavioral adaptation? Give an example.

## How are adaptations connected to genetics?

1. List some PLANT adaptations that would be useful in each of these environments:

Tundra—Wetlands—

Desert—Deciduous Forest—

1. List some ANIMAL adaptations that would be useful in each of these environments: Prairie—Taiga—

Temperate Rainforest—Tropical Rainforest—

1. Give an example of an adaptation that would be useful to an organism in one environment, but harmful in another environment.

## Explain how camouflage can be both a structural and a behavioral adaptation.

## What is mimicry? Give an example.

## How is mimicry different from disguise? Give examples of each.

## Shape can be important to adapting. List 3 shapes of bird beaks and what the bird would eat.

## Give another example, besides bird beaks, of how the shape of a body part can be an adaptation.

## Explain why pollution in England caused Peppered moth populations to change color.

1. Do individuals creatures adapt or do adaptations form over an entire population? **Explain.**

## What is natural selection?

## How does natural selection influence adaptations?

## Give two examples of how selective breeding has changed a common plant or animal.

## What is hybridization?

## Give two examples of genetic engineering (genetic modification).

## Give one example of how genetic modification can be beneficial to us.

## Give one risk that comes with genetic modification.