

Diagnostic Assessment For Twin Traits

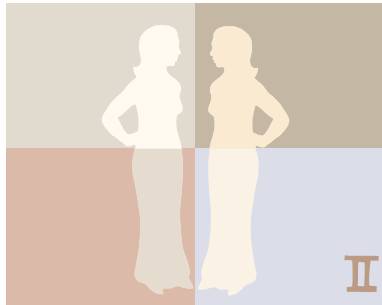


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Diagnostic Assessment Instructions

Duration: One class period

Standard (s) Assessed: LA.A.1.3.1, LA.A.1.3.4, SC.F.2.3.2.8.1, SC.F.2.3.2.8.3, SC.F.2.3.3.8.1, SC.H.1.3.2.8.2

Description of Assessment Activity: Students respond to a variety of short answer questions enabling the teacher to diagnose student understanding. The teacher will use the responses to guide future learning.

Teacher Directions:

Prior to the assessment:

1. Make one classroom set of the assessment. Students write on their own paper, but each student needs a copy of the assessment.

Day of the assessment:

1. Pass out the assessment.
2. Go over student instructions.
3. Allow students time to take the assessment.
4. Collect assessment and assess using the provided answer key. Note common misconceptions and adjust teaching as necessary.

Student Directions:

1. Listen as I go over the assessment instructions.
2. Answer the questions to the best of your ability, but realize that this is an ungraded assessment. It will be used to guide our learning in this unit. If you know an answer, write it down. If you don't know it, move on. Just remember that by not doing your best, you may cause us to have to cover material you already know.
3. Turn in your work once you have completed your answers.

Scoring Method and Criteria:

Use assessment guide to aid instruction. Questions that the bulk of students miss, should be noted and taught explicitly. Answers that are technical in nature may be explained in laymen's terms; however, in order for students to show mastery, they have to be able to explain the science behind the question.

**Twin Traits
Diagnostic Assessment**

Use your own paper.

1. List three human traits that are **dominant** and three that are **recessive**.

Dominant Traits	Recessive Traits

2. Explain how dominant and recessive traits are determined in an offspring.
3. Humans develop traits as a result of genetic information being passed from a parent to the offspring. Explain this process.
4. Some scientists believe that humans develop traits from their environment as well as the traits they inherit from their parents. List four traits people may develop from their environment.
5. Scientists debate which is more important in human development – nature or nurture? Write a paragraph explaining which one you believe is more important and why.
6. Many scientists also have questions about the nature versus nurture controversy. They study the events in the lives of twins in hopes of answering their questions. Explain the steps in the inquiry process that a scientist may use to discover this information.

7. What strategies do you use before, during, and after reading to make sure you understand the text material?

Before Reading	During Reading	After Reading

**Twin Traits
Diagnostic Assessment
Answer Key**

1. List three human traits that are **dominant** and three that are **recessive**.
(Background knowledge of SCF23281)

Students may be able to explain their answers in laymen's terms, but for mastery, they should be able to explain using the scientific terminology.

Answers will vary. But students should be able to identify dominant and recessive traits for mastery.

Dominant Traits	Recessive Traits
Curly hair	Straight hair
Free ear lobe	Attached ear lobe
Brown eyes	Blue eyes

2. Explain how dominant and recessive traits are determined in an offspring.
(SCF23281)

The genes inherited from one's parents provide the potential for many traits. Every organism has a set of genes that determines its traits. These genes occur in pairs. Each gene in a pair is known as an allele. If one of the alleles masks the effect of the other allele, it is called a dominant allele. The allele that is masked is called a recessive allele.

3. Humans develop traits as a result of genetic information being passed from a parent to the offspring. Explain this process. (SCF23283)

Students should suggest, in their own writing that the A, G, C and T bases on each chain attract loose bases floating around within the nucleus. The A Base pairs with the T base. The G base pairs with the C base. Two new identical DNA molecules are formed. The replication of DNA is key to hereditary or the passing of traits from parent to offspring.

4. Some scientists believe that humans develop traits from their environment as well as the traits they inherit from their parents. List four traits people may develop from their environment. (SCF23381)

Answers will vary, but students should be able to suggest four traits that people may develop from their environment.

Possible answers- musical ability, athletic ability, talkativeness or shyness, number of words read per minute.

5. Scientists debate which is more important in human development – nature or nurture? Write a paragraph explaining which one you believe is more important and why. (Essential question)

Student opinions will vary, but students should be able to show knowledge that nature means hereditary genetic makeup and nurture means the things that happen to a person after birth, including treatment by parents, peers, community, and society.

6. Many scientists also have questions about the nature versus nurture controversy. They study the events in the lives of twins in hopes of answering their questions. Explain the steps in the inquiry process that a scientist may use to discover this information. (SCH13282)

Scientists begin with a question that needs to be answered and they then form a hypothesis. Then they design an experiment with a set of steps to follow in order to test the hypothesis.

7. What strategies do you use before, during, and after reading to make sure you understand the text material? (*Background check* for LAA131, LAA134)

Answers will vary. Check for accuracy. Answers are suggested.

Before Reading	During Reading	After Reading
Activate background knowledge /predict	Verify/reformulate predictions	Evaluate predictions and questions
Generate Questions	Locate answers to questions	Extend and elaborate on textual information
Look at titles, headings, pictures, etc.	Identify vocabulary	Summarize