



### Genetics vs. Environment Lesson 1: The Solve

#### Student Handout

#### I. Read/Watch the Mosa Mack Mystery

Either on your own, in a small group, or as a class (your teacher will let you know), read or watch Mosa Mack's comic on Genetics vs. Environment. Then, fill out the questions below. Include a page number/time code in your answer as evidence of where you found your answer.

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

Date: \_\_\_\_\_

#### Episode Questions

1. Why do Mo and Jasper have the same genes?
2. Why are Jasper and Mo arguing?
3. What do Mosa, Billy, and the researchers review about genes?
4. True or false: one gene always determines one trait.
5. What are examples of environmental factors?
6. What example do the researchers give of genetics and environment working together?
7. As the group looks at Twin Studies, the researchers tell them that:
  - 1) the more a trait is shared by identical twins, the more it is because of \_\_\_\_\_.
  - 2) the less a trait is shared by identical twins, the more it is because of \_\_\_\_\_.

Fill in the blanks in the sentences above and give examples of each below.

8. What did Mosa figure out? What makes us who we are?



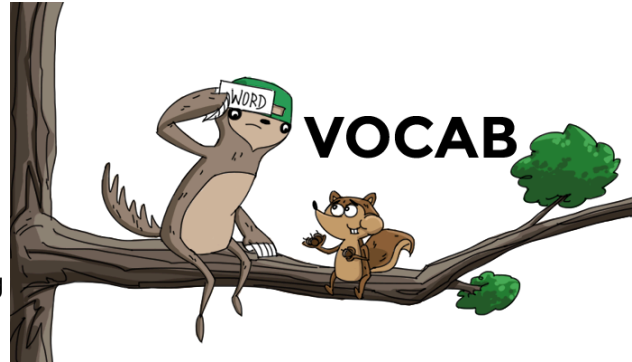
# MOSA MACK SCIENCE

## STUDENT GUIDE

### II. Vocabulary Activity

Note: Your teacher will tell you whether you will complete this activity [online here](#), or offline by following the instructions below.

1. Using the materials at your table, cut out your vocabulary cards along the **solid lines**.
2. Write the definitions on the back of the cards. Then, match the vocabulary word with the correct picture on the Genetics vs. Environment Mind Map. When you're ready to glue, raise your hand so you can check your Mind Map with your teacher.
3. Fold along the dotted line on each vocabulary card to create a flap. Put glue **ONLY** on the hinge of your vocabulary cards ( the word should be on top). **You should be able to open the flap to see the definition and the picture underneath.**
4. Discuss with your group:
  - a. What is the difference between "gene" and "genetics"?
  - b. What are examples of environmental factors you experience every day?
  - c. What are some traits you or your partner have?

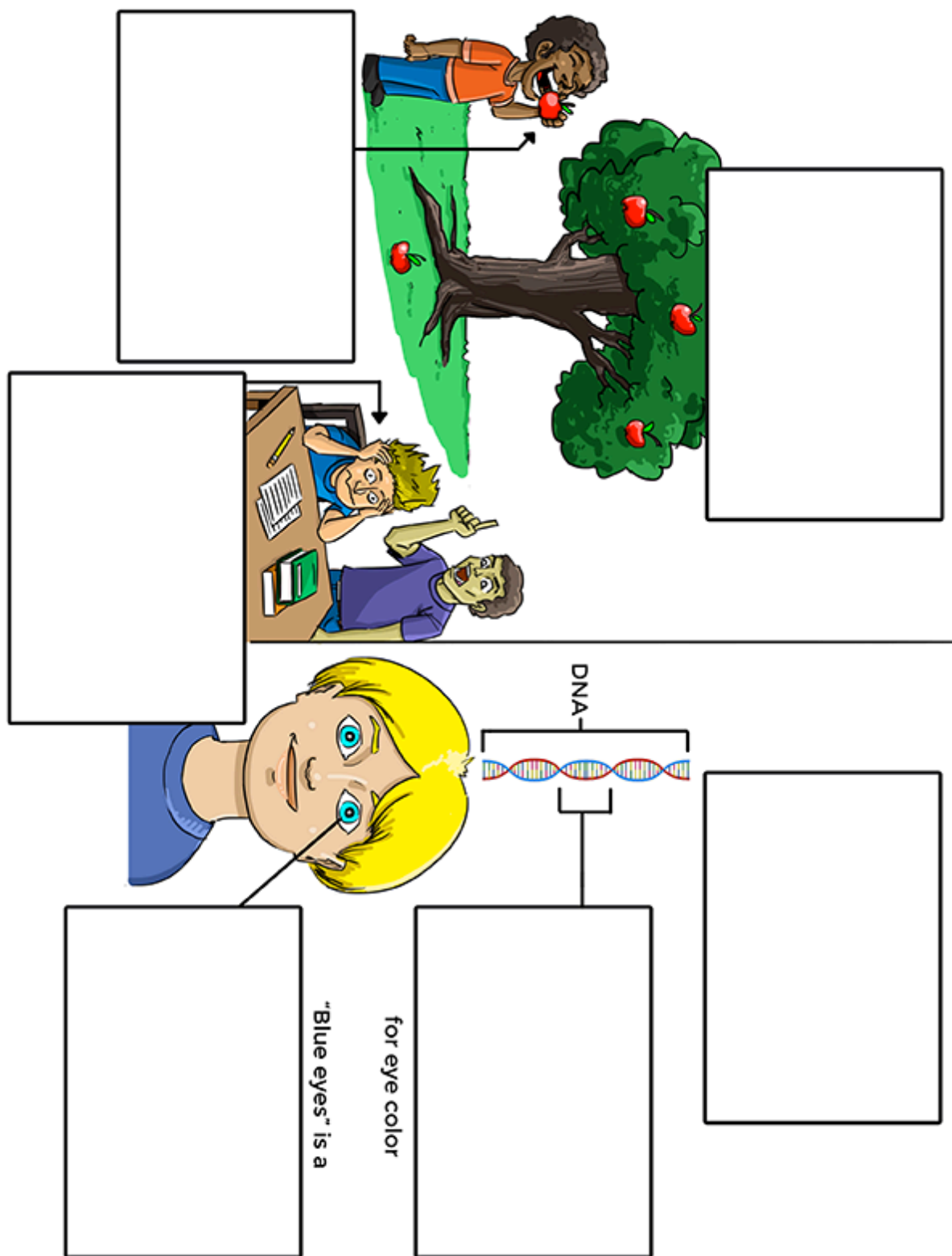




# MOSA MACK SCIENCE

## STUDENT GUIDE

### Mind Map





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## STUDENT GUIDE

Stress	Trait	Nutrition
Environment	Genetics	Gene

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### Vocabulary

- **Stress:** a state of emotional strain or tension
- **Trait:** quality or characteristic feature of an organism
- **Nutrition:** food necessary for health and growth
- **Environment:** the surroundings or conditions in which an organism operates
- **Genetics:** DNA properties that can be inherited
- **Gene:** a section of DNA that codes for a specific trait



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### III. Quiz: Check for Understanding

Complete the exit ticket below or you can take the quiz online!

**Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_

1. Diet and stress are mostly examples of which type of factors?
  - a. Genetic
  - b. Environmental
  - c. Nutritional
  - d. Inherited
2. Eye color is mostly caused by:
  - a. Genetics
  - b. Environment
  - c. Nutrition
  - d. Inherited
3. If a trait varies greatly within a pair of identical twins, it is most likely caused by what?
  - a. Genetics
  - b. Environment
  - c. Nutrition
  - d. Inherited
4. A section of our DNA that codes for a specific trait is called a \_\_\_\_\_.
  - a. Environmental Factor
  - b. Genetic Factor
  - c. Gene
  - d. Chromosome
5. True or False: one gene always codes for one trait.
  - a. True
  - b. False
6. True or False: both genetics and environment are responsible for making you who you are.
  - a. True
  - b. False