

TITLE: Inherited Traits and Learned Characteristics

AUTHOR:


TEAM MEMBERS:

DATE LESSON TO BE TAUGHT:

GRADE LEVEL: 5

CONCEPT(S):

Inherited traits are passed from one's parents. Each parent contributes half of their chromosomes to their offspring, creating many possible outcomes for the offspring's gene combination, and ultimately their physical appearance. Additionally, the behavior of animals can be attributed to their inherited traits. This phenomenon is known as a predisposition. Combined with inherited traits, animals can behave by observing other animals. This occurrence is referred to as a learned behavior. Students are expected to engage in activities in which they can properly identify inherited traits of an individual given the traits of their parents. Also, students will identify scenarios in which acquiring learned behaviors is beneficial to an individual.

OBJECTIVES The student will be able to:	Evaluation Question for each Objective
Define inherited trait.	An inherited trait is ____. A. a characteristic an individual has that does not change. B. a characteristic that can be inherited from a sibling C. a characteristic that can be inherited from one's parents
Identify whether a characteristic is an inherited trait or a learned behavior.	Which of the following answer choices best represents a learned behavior? A. A puppy barks at the mailman every time he drops off the mail. B. A hen lays an egg. C. A deer runs away from a loud noise in a bush.
Identify inherited traits given an image of parents and their offspring.	 Using the illustration provided, identify 3 inherited traits of the 3 children from their parents.

Compare and contrast traits of parents and their offspring



Using the chart provided, identify a trait the mother has which is not passed to her children.

TEKS

(5.2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:

(A) plan and implement descriptive and simple experimental investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;

(B) collect information by observing and measuring;

(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;

(D) communicate valid conclusions; and

(E) construct simple graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate information.

(5.10) Science concepts. The student knows that likenesses between offspring and parents can be inherited or learned. The student is expected to:

(A) Identify traits that are inherited from parent to offspring in plants and animals; and

(B) Give examples of learned characteristics that result from the influence of the environment

MATERIALS LIST:

For the teacher:

- Pictures of siblings and then with their parents. (personal or artificial)
- Markers or Crayons or Color Pencils
- Box for supplies
- Tape

For each student:

- Sentence strip
- Hand out, BLM 4 (per student)
- One blue index card
- One yellow index card

For each group:

- A pair of dice
- Masking Tape
- Male Parent
- Female Parent
- Crayons, markers, colored pencils

ADVANCED PREPERATIONS:

The instructor will have to prepare all materials prior to instruction.

SAFTEY:

With materials, ensure students use them properly. Additionally, students will create illustrations. Make sure they are appropriate.

ENGAGEMENT		
What the Teacher Will Do	Eliciting Questions/ Student Responses	What the Students Will Do
<p>A sentence strip should be placed for each student on the desks.</p> <p>The instructor will carry out a discussion with students about the definition of the term “gender”.</p> <p>Inform the students of the word “gender” and the students will copy a sentence and fill in the blanks of traits that define themselves.</p> <p>*Change sentence from color to left or right hand.</p>	<p>Can anyone define the word “gender”? What does it mean?</p> <p>Gender is a term used for the state of being either a male or a female. Let’s think about the types of genders in our classroom. How many students in the class are male? <i>Students will answer.</i></p> <p>How many students are female? <i>Students will answer.</i></p> <p>Can you make a sentence based upon this information?</p> <p>What other sentence could you make?</p> <p>At your desk, I would like you to write a sentence using the information we discovered.</p> <p>Would anyone like to share their sentence?</p> <p>The purpose of doing that activity was to introduce the term “conclusion”. What do</p>	<p>Students will participate in the class discussion.</p> <p><i>Gender means a boy or a girl.</i></p> <p>Have students copy the sentence and fill in the blanks with traits that describe themselves.</p> <p><i>We can say that there are more __ than __ in our class.</i></p> <p><i>We can say there are less ____ than ____ in our class.</i></p> <p><i>Students will create various sentences, and turn them in.</i></p> <p><i>Students will share their work.</i></p>

	<p>you think a “conclusion” is?</p> <p>A conclusion is a result of reasoning using facts. We gathered facts- how many boys and girls are in this class. Then were we able to make a conclusion- there are more ___ than girls ___. There ___ boys and ___ girls in our class.</p> <p>This is a simple example of how scientists make conclusions everyday about more complex questions and observations.</p>	<p><i>A conclusion is a sentence made by using information we found. (Answer may be similar. If not guide students towards the right idea).</i></p>
<p>Ask questions to the students about their traits.</p> <p>Show pictures of siblings to</p>	<p>Let’s see if we can more observations and conclusions.</p> <p>What eye color do most of the students in our class have?</p> <p>Do you think other classes will have the same results?</p> <p>When you fold your arms, which arm is on top?</p> <p>All of these different things, what you look like, how you do something, how you behave, are types of traits. Why do you think you have these traits?</p> <p>Has anyone ever commented that you look like your parents? The likenesses between you and your parents are called inherited traits.</p> <p>What traits do you share with your brothers and sisters?</p>	<p><i>Students will provide answers according the demographic of the classroom.</i></p> <p><i>I got my traits from my parents.</i></p> <p><i>Students will share various answers.</i></p> <p><i>Students will share various answers.</i></p>

<p>the class. This will incite a conversation about likeness</p> <p>Explain the likenesses between offspring from their parents are traits.</p> <p>*You can take the opportunity to create a T-chart or simply have a discussion with the class.</p>	<p>What traits do you have that your parents don't?</p> <p>Let's continue to think like scientists. I have a few pictures of children. Looking at these pictures what would you conclude is true about all of these groups of children?</p> <p>Well let's look at one group of siblings with their parents. What do they have in common with their father? With their mother?</p>	<p><i>The pictures show kids with their siblings.</i></p>
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TRANSITION
Now that we understand more about our traits and know that we inherit them from our parents, we are going to make an offspring that will inherit both its parents' physical traits.

EXPLORATION		
What the Teacher Will Do	Eliciting Questions/ Student Responses	What the Students Will Do
Create imaginary parents from the traits listed in the book.		
<p>Explain the directions thoroughly.</p> <p>Split tables into groups of 2.</p> <p>Remind them the dice aren't for throwing.</p>		<p>Roll dice for each trait to see which they get.</p> <p>In their science notebooks, they will write down their results.</p> <p>Then, draw the traits of the offspring of the parents on given handout.</p>
Put the drawings up on the board for everyone to see.	Do some of the physical traits appear more often than others?	
	Are there any twins? Triplets? Quadruplets?	
	Is clothing an inherited trait?	
	Can we choose what physical traits we inherit?	Identify the traits that each offspring inherited and from which parent they are

	Can parents choose what physical traits their offspring will inherit?	inherited.
	What is an inherited trait?	

TRANSITION		
Now that we are done making our faces, we are going to compare the different traits on the faces and see how the offspring may or may not relate to the parent face.		

EXPLANATION		
What the Teacher Will Do	Eliciting Questions/ Student Responses	What the Students Will Do
Have the students tape their pictures to the board and ask questions about them.	Are all the faces the same?	Tape the pictures of the traits to the board.
	Are the faces the same as the parents?	Answer questions about why each person has different traits.
	Who decides which traits are passed onto the offspring?	
	Is there a way to make sure the offspring has a certain trait?	
	Why do we all look different?	
	Why do twins and triplets and quadruplets look the same?	
	explain the traits you have and how they relate to the real world.	

TRANSITION		
Now that we are fully aware of what traits are and how they are passed on by the parents to the offspring, we are going to learn the difference between a trait that is inherited and a behavior that is learned over time.		

ELABORATION		
What the Teacher	Eliciting Questions/	What the Students

Will Do	Student Responses	Will Do
Ask questions before reading the passage.	What does "behavior" mean?	
	Can someone learn to behave a certain way? Can someone learn a behavior?	
	What have you learned since you were born?	
	Did you know these things without practice or having someone show you or teach you?	
Ask the students to read the passage in the book in class.	What is the difference between an inherited trait and a behavior? (before and after)	Read the passage as a class.
	What are some of your behaviors?	Answer the questions.
	What are some of your inherited traits?	
	How do we get behaviors?	
	How do we get traits?	
	Can our behaviors change?	
	Can our traits change?	
Pass out Index cards to each student, and designate colors to "Inherited" response or "Behavior" response.		
Ask Questions and allow cards as answers to assess knowledge	A 5 th grader has blue eyes. A dog fetches a stick when thrown by its master.	Raise up cards silently in response to questions.
	A teacher writes on the board with his or her left hand.	