WEEKDAY WONDERS

Content developed by the Tennessee Aquarium Education Department

TENNESSEE AQUARIUM

Inherited Characteristics: Day 2

This week, Weekday Wonders encourages young scientists to discover what makes each of them unique. Your young scientist will make observations to help him or her learn why parents and offspring often look alike but are never exactly the same. Young scientists will also get a glimpse into how environmental factors can change our genetics and the way we look.

These curated activities are listed in a suggested sequence but may be done in the order that works best for you and your young scientists. Learn more about this series in the Introduction to Weekday Wonders.

Question of the Day

How are parents and offspring the same, and how are they different?

Daily Nature Journal

Ask your young scientists to spend some time outside completing their daily nature journal. Use the Guide to Nature Journaling to support them in nature journaling each day.

It Runs in the Family

In yesterday's Weekday Wonders movement activity, your young scientist explored how many people in the family or household have particular traits. In this activity, your young scientist will take a closer look at the traits and any patterns found within a family. Choose whether you would like for your scientist to examine his or her own family or if s/he would rather find a picture of a family on the Internet.

On a piece of paper, have your young scientist make a chart like the one on the next page. There should be a column for each member of the family your scientist is exploring. Your scientist should write in the name of each family member at the top of the column. He or she can also just write the underlined words for each trait. In the example, we give both the complete question as well as the possible descriptions.

Trait	Family Member #1	Family Member #2	Family Member #3	Family Member #4
What is the person's <u>hair color?</u> brown, black, blonde, red				
What is the person's <u>hair type?</u> curly, wavy, straight				
What is the shape of the person's <u>hairline?</u> straight, Widow's peak (V-shaped above forehead)				
What is the person's <u>eye color?</u> blue, green, brown				
Does the person have <u>freckles?</u> many, some, none				
Does the person have <u>dimples?</u> yes, no				
What is the person's <u>face shape?</u> rounded, oval, square				
What is the person's <u>skin tone?</u> light, medium, dark				
Which hand is the person's <u>dominant hand?</u> right, left, both				
What is the person's <u>height</u> compared to others his or her age? tall, average, short				
Does the person <u>like broccoli?</u> yes, no				

Have your scientist fill out the chart. If your scientist is using family members, s/he may need to interview them for some questions. If your scientist is using photos, s/he may need to skip a few questions.

Ask your scientist to examine his or her findings and look for patterns. Tell him or her to focus on how children are similar and different to parents and how siblings are similar and different. Discuss the findings, and ask what your scientist thinks the observations might mean.

You might discuss with your scientist how some traits are inherited from a person's mother or from the father. In some cases, siblings will inherit the same version of a trait, and in some cases, they will not.

You can extend this lesson for older scientists by having them include grandparents, aunts, uncles, and cousins. See if they can figure out which traits occur most often within the family.

Passing the Torch

Set up an obstacle course to help your young scientist learn more about the traits humans inherit from their parents. For each station along the course, place a sign with the task on it.

Have your young scientist either call out their answers for you to record or have him or her write it on the task sheet.

Station tasks could include the following:

- Jumping on one foot for 5 seconds to see which foot is dominant
- (Safely) throwing a ball or shoot a basketball to see which hand is dominant
- Clasping hands to see which thumb is on top
- Wink an eye to see which eye is dominant
- See if they can roll their tongue or not
- Do a cartwheel to see which foot goes first

Have your young scientist do the obstacle course at least 3 times to see if the answers are the same each time. You may need to remind him or her to do the task in the way that comes naturally. Once your young scientist has determined the natural way s/he does each activity, challenge him or her to run the course using the opposite side to lead the task.

Have each member of the family or household run through the course and record the results. Discuss the characteristics that the different people have in common. Can your scientist find any patterns within the results? Your young scientist may notice patterns within the results of one person, such as a sibling favoring the right side for all tasks, or s/he may notice a pattern within the results of a specific trait itself, such as everyone in the family being unable to roll their tongue.

Nature Journal

Ask your young scientist to reflect on whether they look like someone else. Maybe someone said that s/he looks like another person, whether it is a relative or a celebrity. Then have him or her write or draw answers to the following questions.

- Does your scientist think s/he looks like the person? Why or why not?
- What are the similarities and differences between your scientist and that person?

Next have your young scientist find two objects in nature that might be related. Then write or draw about these questions.

- What are the similarities that made your scientist think the two objects might be related?
- Are the similarities the same as the ones he or she wrote about with the humans? Why did your scientist choose that answer?