WEEKDAY WONDERS

Content developed by the Tennessee Aquarium Education Department

TENNESSEE AQUARIUM

Inherited Characteristics: Day 3

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

What characteristics can be passed on from parents to offspring?

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. Have your scientist try to find two or three of the same living thing and then make observations about similarities and differences between or among them.

Heads or Tails?

Ask your scientist if he or she thinks that all daisies or all dandelions are exactly the same as others. Then ask why your scientist decided on that answer.

In this activity, your scientist will explore how a new generation of flowers can be similar or different from one another. Have your young scientist gather a coin, paper, and something they can use to color, such as crayons, markers, or colored pencils.

Tell your scientist that there are two flowers. Each of the flowers can be described by looking at the descriptions in one column of the table on the next page. If you think it would be helpful, you can have your young scientist draw each of the flowers.

Trait	Flower 1 Description (Heads)	Flower 2 Description (Tails)
Stem length	One pointer finger long	Two pointer fingers long
Number of leaves	Five	Three
Size of center disk	Large	Small
Color of center disk	Brown	Yellow
Petal formation	One row of long petals	One row of long petals with a row of short petals on top
Petal color	Yellow-orange	Red

Next, have your young scientist flip the coin to find out the features of an offspring plant. Your scientist should start by flipping the coin to see the length of the flower's stem. If it lands on heads, s/he will draw a stem like Flower 1 and if it lands on tails, s/he should draw a stem like Flower 2. Have your scientist repeat the process for each additional trait (row).

Have your scientist draw at least two more flowers. Then ask him or her to compare the offspring, thinking about the similarities and differences between them. Have your scientist also compare the offspring to the parent flowers, deciding if any of the offspring are exactly like one of the parents or not.

Discuss your scientist's ideas about the flowers. Share with your scientist that parents pass on information about their traits to the offspring, but that there are many different combinations that can happen. So even though each of the offspring flowers' traits are like either Flower 1 or Flower 2, they are most likely different from each other and from the parent flowers. With studying six traits, as in the case of these flowers, there are 64 different combinations that could occur!

Are We Related?

Print the photos on pages 3 and 4 and then cut them apart. Place the offspring photos (left column on both pages) in a container. Then take the parent photos (right column on both pages) and place them around the house or the yard. For younger scientists, consider leaving the frog and butterfly sets out, as the offspring and parents are at different stages of the life cycle.

Have your young scientists draw an offspring photo from the hat. Then he or she should run around looking for the adult that is likely related to it. Once your scientist has found a match, have him or her draw another card and race around to find the match. Continue for all of the cards.

Once the race is complete, ask your scientist(s) why they made the matches they did. Have him or her focus on traits, such as both turtles having yellow stripes on their necks and heads, rather than just claiming that both pictures are of the same kind of living thing.

Nature Journal

Have your young scientist choose a living thing. Then have him or her draw or write about the traits s/he thinks it would pass on to its offspring. Add to the challenge by finding pictures of the living thing and its offspring to compare to your scientist's predictions.

Are We Related? Card Set