Natural Inquirer Reader Series

Meet Dr. Roman!
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Table of Contents

Meet Dr. Roman. .......................... 1
Critical Thinking Questions. .......... 19
Glossary. ................................. 20
Try This! ................................ 21
Possibility Possum Poem. ............. 25
Woodsy Owl. ............................. Back Cover

Glossary words are in **bold**.

http://www.naturalinquirer.org
https://www.symbols.gov

USDA is an equal opportunity provider, employer, and lender.
Woodsy wants children to understand what scientists are discovering. Let’s meet Dr. Lara Roman!
During middle school, Dr. Roman discovered (dis ˈkə vərd) that she enjoyed science. Dr. Roman liked visiting science museums.

These children enjoy going to the science museum.
Dr. Roman is curious about the environment.

These children are curious about the environment, too.
Dr. Roman is a scientist who studies trees. She studies trees that grow in **urban** areas, like cities, towns, and suburbs.

Urban areas have many people, buildings, and roads.
Urban areas are different from **rural** areas.

Rural areas have few people, buildings, or roads.
Dr. Roman knew that trees can **survive** in urban areas.

Trees need soil, water, air, space to grow, and sunlight to survive.
People plant trees near roads, homes, schools, and parks in urban areas.

These two women are planting a tree along the sidewalk.
People benefit from trees in urban areas. People can enjoy the shade and beauty of trees.

This group enjoys the shade from trees while having a picnic.
Trees help keep the air and water clean. Trees give some animals a place to live.

Illustration: Stephanie Pfeiffer, SMP Illustration

Trees are good homes for many animals. Can you find all of the animals in this tree?
Dr. Roman asked, “Why do some urban trees survive and some urban trees die?”

One of these urban trees is showing signs that it may not survive. Which tree in this photo may not survive? Why do you think that?
Dr. Roman worked with other scientists to answer her question. She also worked with tree planting groups.

These scientists work together to check on urban trees. Why do you think scientists work with other groups of people?
Dr. Roman and her team of scientists observed the same urban trees for 5 years.

Dr. Roman visited many urban trees and took notes.
They used tools to collect information about each tree.

This tool measures the size of a tree’s trunk.
Dr. Roman learned about the people living near the trees.

The scientists asked people about trees.
Dr. Roman found many healthy trees during her study.

Healthy trees have bark and few broken branches. Healthy *deciduous* trees usually have leaves in spring, summer, and early fall. Leaves can be green, red, yellow, or orange. Some healthy deciduous trees lose their leaves in the winter and grow new leaves in spring.
In summer, an unhealthy deciduous tree may have no leaves or dry, brown leaves.

Unhealthy trees may also have many broken branches or missing bark.
Dr. Roman discovered that many urban trees survived during the 5 years. Some trees did not survive. Some trees were planted without following directions. Some trees were not watered. Some trees were taken out of the ground by people or hit by cars.

The scientist in this photo is measuring an urban tree that has died.
Dr. Roman found that trees in urban areas can survive if people care for the trees. People can help by following directions when planting trees. People can water urban trees. People can look after trees by not peeling bark or breaking tree branches.

These students are taking care of urban trees. What can you do to help the trees near you?
Critical Thinking Questions:

• Taking care of trees is one way to help the environment. What is another way you can help the environment?

• Name at least two things in the environment that help you. How do those two things help you?

• Dr. Roman worked with a team of scientists. Why is it good to work with others? What is a challenge of working with a group? How can you solve that challenge?

• Dr. Roman likes to ask questions. Why do you think it is important to ask questions?
Glossary:

benefit (be ˈnə fit): A good or helpful result.

curious (ˈkyûr ə s): Eager to find out about something.

deciduous (diˈsi dʒə wəs): A plant with leaves that fall off at certain times in its life.

discover (dis ˈkə vər): To search and to find.

environment (inˈvi rə(n) mənt): The living and nonliving things that are a part of the natural world.

healthy (ˈhel thē): Not sick; in good health.

observe (əb ˈɔrv): To watch something.

rural (rûr əl): About the country, people in the country, or life in the country.

survive (sər ˈvīv): To remain alive.

urban (ər bən): About the city, people in the city, or life in the city.
Try This!

Dr. Roman believes that it is important to care for urban trees. Trees need to be planted in the correct areas. Trees need to be given water. Trees need healthy bark and healthy branches. Look at the healthy and unhealthy trees pictured on pages 15 and 16. What differences do you see between healthy and unhealthy trees?

Now, go outside with your teacher, family, or friends. Walk around together and look at nearby trees. Use the space below to count the number of healthy trees and unhealthy trees you find.

Healthy Trees______________________________

Unhealthy Trees____________________________
Choose one tree and draw the tree in the space below.
My Tree Study

Study the tree you chose and answer the questions below.

What is the season? Fall □ Spring □
Summer □ Winter □

What colors are the leaves? _____________

Are the tree’s leaves living? Yes □
No □ Living and dead □

Does the tree have all of its bark?
Yes □ No □

Does the tree have broken or cut branches?
Yes □ No □

Has the tree been given water?
Yes □ No □ Not Sure □

Do you think this tree is healthy □ or unhealthy? □ Why?_____________________

____________________________________

____________________________________
Background Information: Trees are an important component of urban environments. Urban trees provide numerous ecosystem services to urban populations. These ecosystem services include shading, water filtration, and wildlife habitat. However, due to the hardships of living in urban environments, some urban trees do not survive. The scientists conducted a study in Sacramento, California, to assess urban tree survival following free yard tree giveaway. Each tree was monitored and assessed for health for 5 years. Results of the study found that 58.9 percent of the trees in the program survived for 5 years. The scientists discovered that urban tree survival was dependent on stewardship of the tree. Results show that stable homeownership improved tree survival, likely due to consistent tree care. In this Reader, students will be introduced to the concept of urban and rural areas. Students will also be introduced to the importance of urban trees and their role in urban environments. The conclusions of this research illustrate to students the importance of environmental stewardship. To read the research, visit https://www.fs.fed.us/nrs/pubs/jrnl/2014/nrs_roman_2014_002.pdf.

Note: For more background information and lesson plans, visit http://www.naturalinquirer.org and click the “For Educators” button.
Be a Possibility Possum

Scientists make things possible; They ask and answer questions. You can make things possible If you follow these suggestions.

Observe your world and wonder; Ask how, what, why, and who? Ask and answer questions To make things possible for you.

Wonder is a good thing; It is very plain to see. When I ask and answer questions, I make things possible for me.
Woodsy Owl has been inviting children of all ages to explore and care for the natural environment since 1970. Woodsy Owl, in partnership with the *Natural Inquirer* Readers Series, helps introduce children to science and the natural world. In each Reader, children meet a Forest Service scientist and learn about what that scientist studies.

Woodsy encourages children to listen to what scientists have to say, to see what scientists are studying, to ask questions, and to understand what scientists are discovering. Woody’s motto is “Lend a Hand, Care for the Land!” As you read, look for ways the scientist lends a hand and cares for the land. Help your reader discover ways to lend a hand too!