

Tree Detectives

Great Basin National Park Quarter

Grades Two and Three



OBJECTIVES

Students will understand the life cycle of the Bristlecone Pine tree. Students will demonstrate an understanding of the graphic novel writing process.



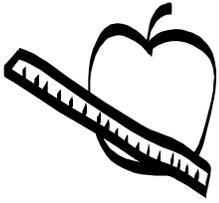
SUBJECT AREA CONNECTIONS

- Science
- Language Arts



SUMMARY

1. Display and examine the “Great Basin National Park Quarter” page. Locate this site on a class map. Note its position in relation to your school’s location. Tell the students that the front of a coin is called the “obverse” and the back is called the “reverse.” Explain to the students that the United States Mint began to issue the quarters in the America the Beautiful Quarters® Program in 2010. By the time the program ends in 2021, there will be a total of 56 designs. Each design will focus on a different national site—one from each state, territory and the District of Columbia.
2. Locate and bookmark Web sites and age-appropriate texts that give information and images of Bristlecone pine trees. As a class, examine these images and share background information about Bristlecone pines, which are among the oldest trees in the world. Inform the students that these trees can live up to 5,000 years.
3. Ask the students to consider how scientists can determine the age of trees. Introduce the students to the science of dating and studying tree age, also known as “dendrochronology.” Ask the students to brainstorm ideas about what we can learn by studying tree rings. Lead students to understand that tree rings can tell us the age of a tree, as well as climate and environmental conditions that this tree endured, including droughts, fires, infestations and lightning strikes.
4. Divide the class into pairs or small groups. Introduce the students to the “Tree Ring Clues” worksheet. Review the directions together. Have the students complete the worksheet. Ask the students to share their observations and findings with the rest of the class. Key: At year 4, fire damage; year 6, bad growing conditions (thin ring); year 9, good growing conditions; year 11, insect damage.
5. Lead a discussion about how trees, through their rings, can tell us stories of the past. Ask students to select a tree at their home, in their neighborhood or on the school grounds. Alternatively, show students an image of a tree. Encourage the students



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to spend some time observing the tree and imagining its history. Introduce the students to the “A Tree’s Story” worksheet. Review the directions together and lead a discussion on the graphic novel format. Have the students complete the worksheet. In small groups, provide time for the students to share their tree stories and discuss the ways they interpreted their story graphically.



ASSESSMENT

- Take anecdotal notes about the students’ participation in class discussions and activities.
- Evaluate the students’ worksheets for understanding of the lesson objectives.
- Utilize the “A Tree’s Story Checklist” to assess students’ work.



RESOURCES

- Worksheets:
 - “Great Basin National Park Quarter”
 - “Tree Ring Clues”
 - “A Tree’s Story”
 - “A Tree’s Story Checklist” (1/2 page per student)
- An age-appropriate text that gives information about trees, such as:
 - *Bristlecone Pines* by Kelli M. Brucken
 - *Are Trees Alive?* by Debbie S. Miller
 - *A Day in the Ancient Bristlecone Pine Forest* by Mark Schlenz
- Age-appropriate, relevant Web sites, such as:
 - United States Mint America the Beautiful Quarters® Program lesson plans: www.usmint.gov/kids/teachers/lessonPlans/atb/
 - National Parks Service: www.nps.gov/index.htm
 - Great Basin National Park: www.nps.gov/grba/index.htm
 - www.nps.gov/grba/planyourvisit/identifying-bristlecone-pines.htm#CP_JUMP_63558
 - www.fs.usda.gov/detail/inyo/learning/nature-science/?cid=stelprdb5138621
 - www.nwf.org/Wildlife/Wildlife-Library/Plants/Great-Basin-Bristlecone-Pine.aspx



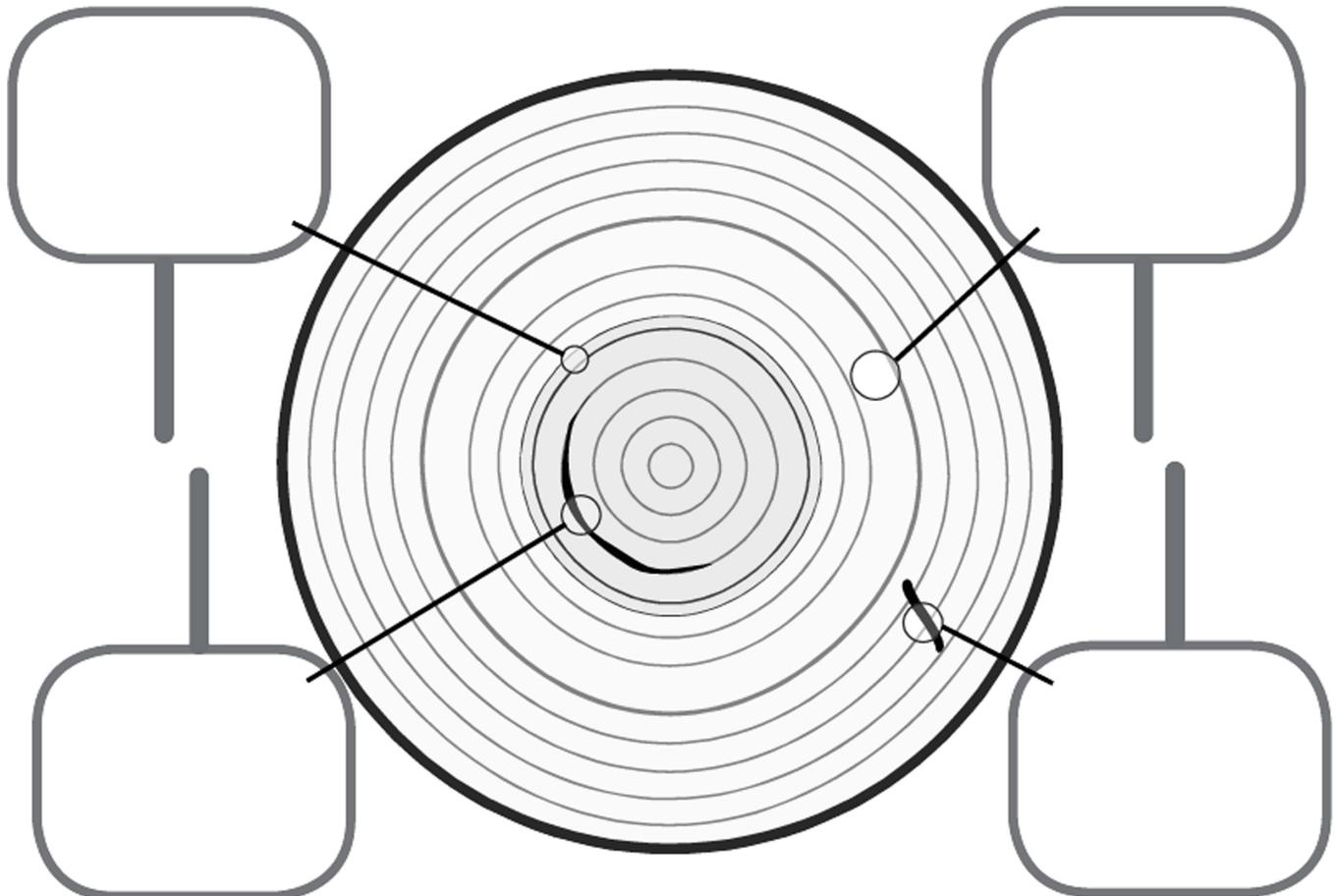
Name _____

Tree Ring Clues

Directions: Read the “Tree Ring Clues” to learn more about tree rings. In each of the magnifying glasses, record your best guesses about what might have happened to this tree.

TREE RING CLUES

- Just under the bark, you can find the newest layers of wood. The oldest layers are in the center of the tree.
- Each tree ring has two parts: a light area that grew in the spring and summer and a darker area created in the winter. Each year, trees produce a new ring.
- The width of a ring tells us whether or not it was a good year for growth. Wider rings mean better growing conditions.
- Insects can leave tunnels. Fires can leave dark, uneven places.



How old was this tree? Count the rings (include bark). _____ years

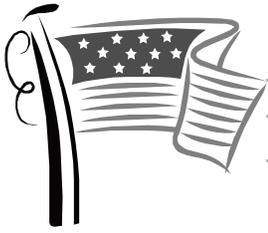


Name _____

A Tree's Story

Directions: Imagine the life story of your tree. Tell the tree's story as a graphic novel, using words and pictures to write your story in these boxes.





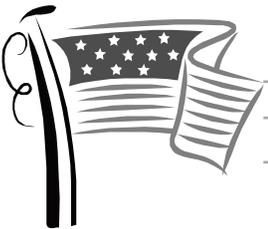
Name _____

A Tree's Story Checklist

This student:

- ___ Effectively told the story of the tree in words and pictures.
- ___ Used the graphic novel format to tell their story.
- ___ Included a clear beginning, middle and end to their story.
- ___ Used creativity in illustrating their story.

Notes:



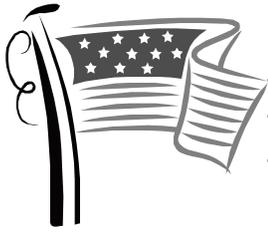
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Great Basin National Park Quarter



The United States of America

