

JUNIOR RANGER

CHANGE MAKER

ACTIVITY GUIDE



THIS BOOK BELONGS TO:

2020 Marsh-Billings-Rockefeller National Historical Park Quarter

The 54th coin of the America the Beautiful Quarters® Program



Obverse



Reverse

Get Ready to Drive Big Change in Your Community!

With this activity guide, you have all that you need to become a Junior Ranger Community Changer. This guide will teach you about key themes that are highlighted on the new 2020 quarter that features the Marsh-Billings-Rockefeller National Historical Park in Vermont.

Every year, the U.S. Mint makes billions of coins – like the penny, nickel, dime, and quarter. In 2010, the Mint began issuing the quarters in the America the Beautiful Quarters® Program. Each design features a national park or site in each state, territory, and the District of Columbia. In 2020, the Mint worked with the Marsh-Billings-Rockefeller National Historical Park in Vermont to launch a new quarter design. The coin's theme is sustainability. Sustainability means working with the environment and our communities so that they both are healthy, now and in the future.

Follow these steps to learn more about sustainability and become a Junior Ranger Change Maker:



Complete each activity

Do your best to complete the activities in this guide. Ask an adult you know for help if you have questions.



Review your work

Show an adult you know your progress after each activity is complete.



Celebrate your success

When you are done, have an adult you know reach out to MABI_Superintendent@nps.gov to request a special reward!

Did you know that every coin in your pocket tells a story?

Look at the **reverse** image of the quarter on the left page. What do you think this coin is about?

Turn the page to find out!

1 Explore and More!

Go outside and explore your community and nature. Try out at least three activities below. Circle the ones you complete. **See page 14 for more space to write or draw.**

Inspector Collector: Find a sign of an animal, like a track, scat (poop!), or a partially eaten leaf. Draw it. What animal do you think it is?

Human Nature: Use natural materials found outside (e.g., rocks, soil, sticks, leaves) to create a nature sculpture or your own self portrait.

"X" Marks the Spot: Draw a map of your yard or local park and label ten things (e.g., landmarks or natural resources) that you see.

Fall Back in Time: Imagine that you went back in time to 100 years ago. Journal or sketch what you think your neighborhood looked like.

Small But Mighty: Estimate a 12x12 inch square on the ground. Investigate what types of plants and organisms are moving or growing in this square - or micro environment. Write a poem about the connections you observe.

Picture Perfect: Take a photograph of your local community or landscape. Draw, sketch, or paint the photo.

As Far as the Eye Can See: With a friend or family member, play an "i-spy" game. Choose objects based on color, size, and/or other characteristics.

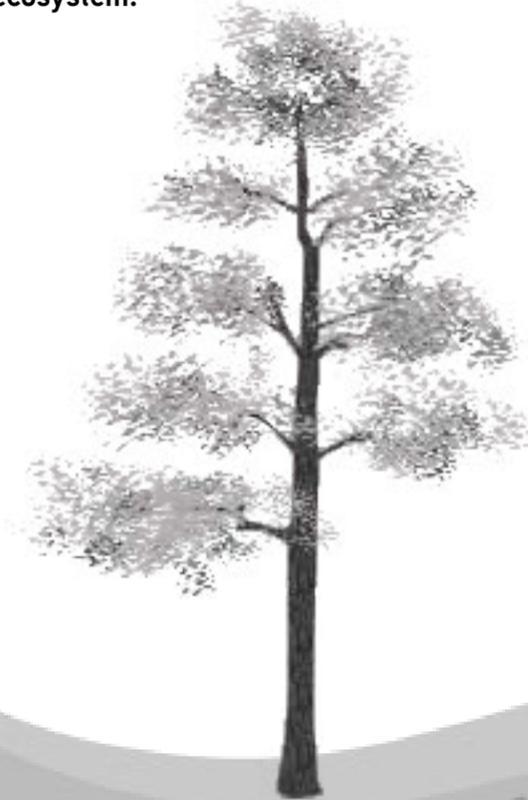
Nature Calls: Close your eyes for three minutes and listen carefully to the sounds around you. Write a song about what you heard and sing it.

Spring Forward: Imagine that you traveled 100+ years into the future. Journal or draw what you think your neighborhood will look like.

2 Making Community Connections

The Marsh-Billings-Rockefeller National Historical Park quarter design shows a young girl planting a tree near a full-grown tree, continuing the forest life cycle. Trees play an important role in the environment, helping to connect the living (**biotic**) and the non-living (**abiotic**) in our environment. For example, an oak tree takes in non-living substances (abiotic), such as sunlight, carbon dioxide, soil nutrients, and water and turns them into living (biotic) elements, such as acorns, leaves, and roots that animals (biotic, you guessed it!) eat. Trees also produce oxygen (abiotic) that most living (biotic) beings need to survive. In return, when living beings produce waste or die, they contribute to the soil, water, and atmospheric gases, such as oxygen and carbon dioxide.

An **ecosystem** is a community of living and nonliving things. Cities, for example, are vibrant ecosystems made up of communities of people, buildings, squirrels, soil, pigeons, air, trees, insects, and much more-- and they are all connected in one way or another. A diversity of connections make our communities and ecosystems more resilient, meaning they are stronger and better able to adapt to change. **Walk around your community and find a space near a tree. Observe the environment for a few minutes. How do the things that you observed work together? Draw or write the biotic and abiotic things you notice. Use lines to show the connections in your ecosystem.**



What was your favorite activity? Why?

3 Getting Your Money's Worth with Trees

We cut down trees to make products we want, such as paper, furniture and houses. Yet, trees also provide for our essential needs when they continue to grow. In any ecosystem, trees play an important role. They produce the oxygen that we breathe and clean carbon dioxide (CO₂) out of the air. When too much CO₂ is in the air, the sun's heat gets trapped. This causes the ocean and Earth's temperatures to rise. Trees also help protect the environment by preventing soil from washing away and providing homes to animals. Trees provide energy savings and lead to an increase in property values.

On average, the benefits of trees are 3x greater than tree care costs. Do the exercise below to learn about the value of trees in your community.

100 trees remove the same amount of greenhouse gas emissions as driving from Montpelier to Los Angeles - 40 times!

1,760 hrs of driving



$$\begin{aligned} & \text{_____} \text{ (number of trees you see)} \\ \times & \text{ 2} \text{ (tons of CO}_2 \text{ removed per year)} \\ = & \text{_____} \text{ Total tons of CO}_2 \text{ per year,} \\ & \text{helping reduce climate change} \end{aligned}$$

100 trees remove 430 pounds of other air pollutants per year. This helps reduce medical bills related to asthma and other lung issues.



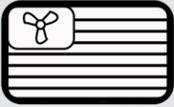
$$\begin{aligned} & \text{_____} \text{ (number of trees you see)} \\ \times & \text{ 4} \text{ (pounds of air pollutants removed per year)} \\ = & \text{_____} \text{ Total pounds of air pollutants removed per year, for better health} \end{aligned}$$

100 trees catch about 139,000 gallons of rainwater. The same amount of water as taking an 8 minute shower - 7,900 times!

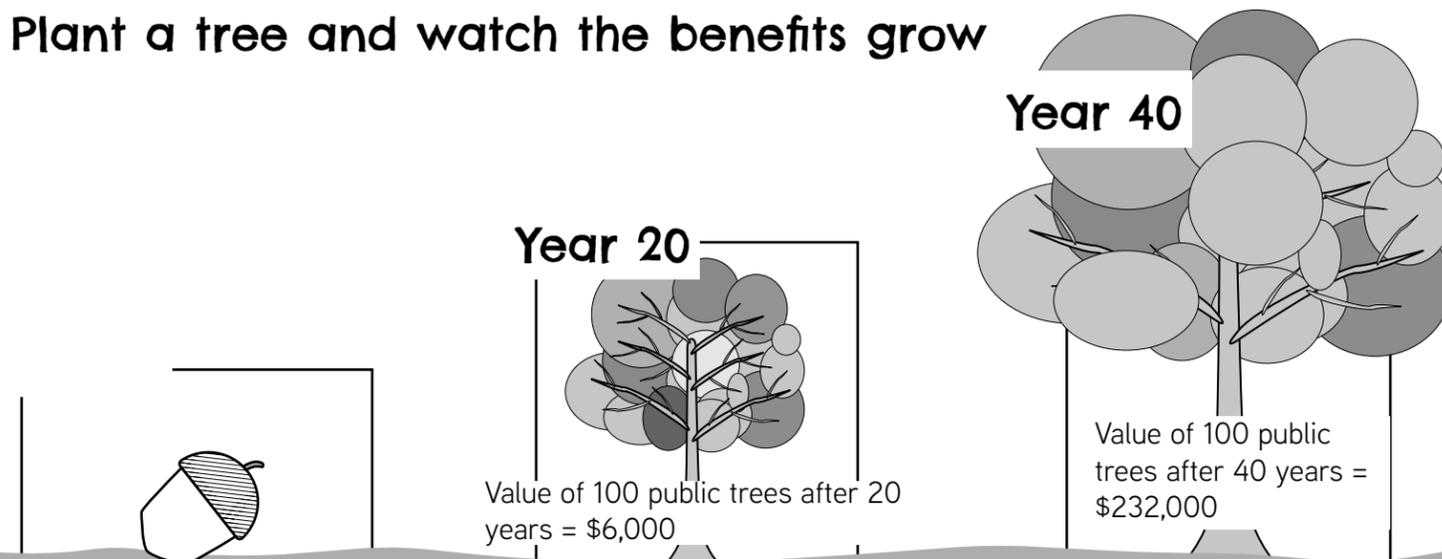


$$\begin{aligned} & \text{_____} \text{ (number of trees you see)} \\ \times & \text{ 1,390} \text{ (gallons of rainwater saved per tree)} \\ = & \text{_____} \text{ Total gallons of rainwater saved per year, protecting water supplies} \end{aligned}$$

Check out more ways trees can benefit you and your community in the chart below.

Quantity	Value	Equivalent
Strategically placed trees...	Save up to 56% on annual air-conditioning costs.	For an average household spending \$265 per year on air conditioning, this can save \$148 per year! 
Large specimen trees...	Can add 10% to property value.	"For a \$100,000 property, this is an extra \$10,000." 
Each large front yard tree...	Can add 1% to the house sales price.	"For a \$50,000 house, this is an extra \$500!" 

Plant a tree and watch the benefits grow

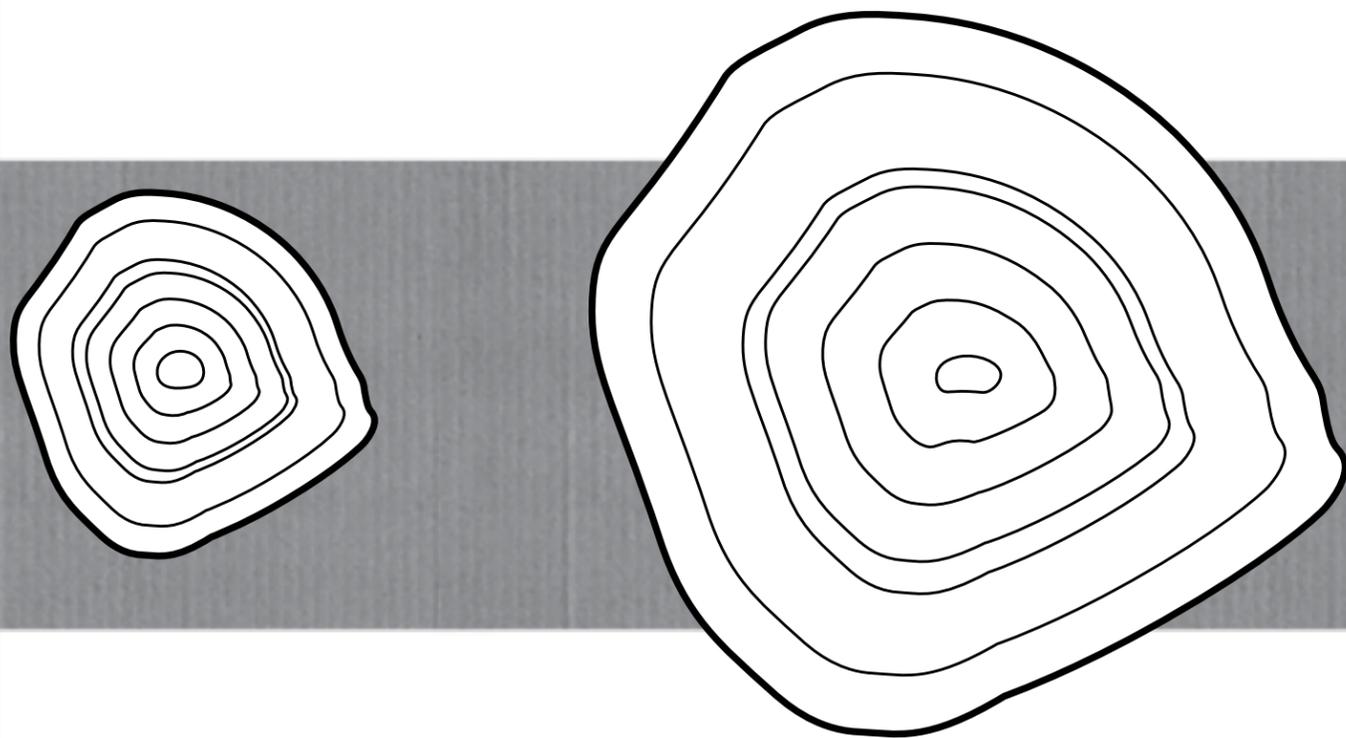


4 You Can Count on Trees

Marsh-Billings-Rockefeller National Historical Park tells a story about how people can use and care for the land and the community where they live. Over 200 years ago, George Perkins Marsh saw that many trees were being cut down to make sheep pastures. Without trees, many things happened: rain washed away the soil, animals lost their homes, and rivers became too muddy for fish to survive.

So, Marsh wrote a book called *Man and Nature*. This book discusses the role that humans play in taking care of our environment, so it will be in a healthy state for future generations. This echoes what one of the first human occupants of the land, the Abenaki peoples, believe. Humans are a part of nature, not apart from it, so strong relationships between people and the places they live are vitally important. The Abenaki also understand that decisions made today will affect future generations.

Both the Abenaki and the Marsh, Billings, and Rockefeller families have cared for this land so we can enjoy it today and in the future. Many of the trees planted by the Billings family in the late 1800s and early 1900s still exist today—in fact, some trees in the park have survived since the 1700s, before we became the United States. At Great Basin National Park they discovered a tree that reached 4,862 years old. They call it Prometheus. How did they know how old it was? They counted the rings in its trunk.



Can you tell how old these trees are by counting their rings? Although they are different sizes, they are the same age. Some trees grow faster and have wider rings. The ring size also depends on how much sun, water and nutrients the tree was able to get that year to grow. **Do you notice a year where some of these resources might have been hard to find? Mark it with an X on each of these trees.**

Explore the different stages of a tree's growth over the past 50 years and the historical events they have lived through. Pick three of the events from the list below and draw a line from each to the corresponding tree ring.

February 14, 2005

YouTube, the online video-sharing platform, is launched

June 26, 1997

Harry Potter and the Philosopher's Stone is published in the United Kingdom

August 26, 1992

President George H.W. Bush signs law that creates the Marsh-Billings-Rockefeller National Historical Park

October 17, 2019

First all-woman spacewalk conducted on the International Space Station

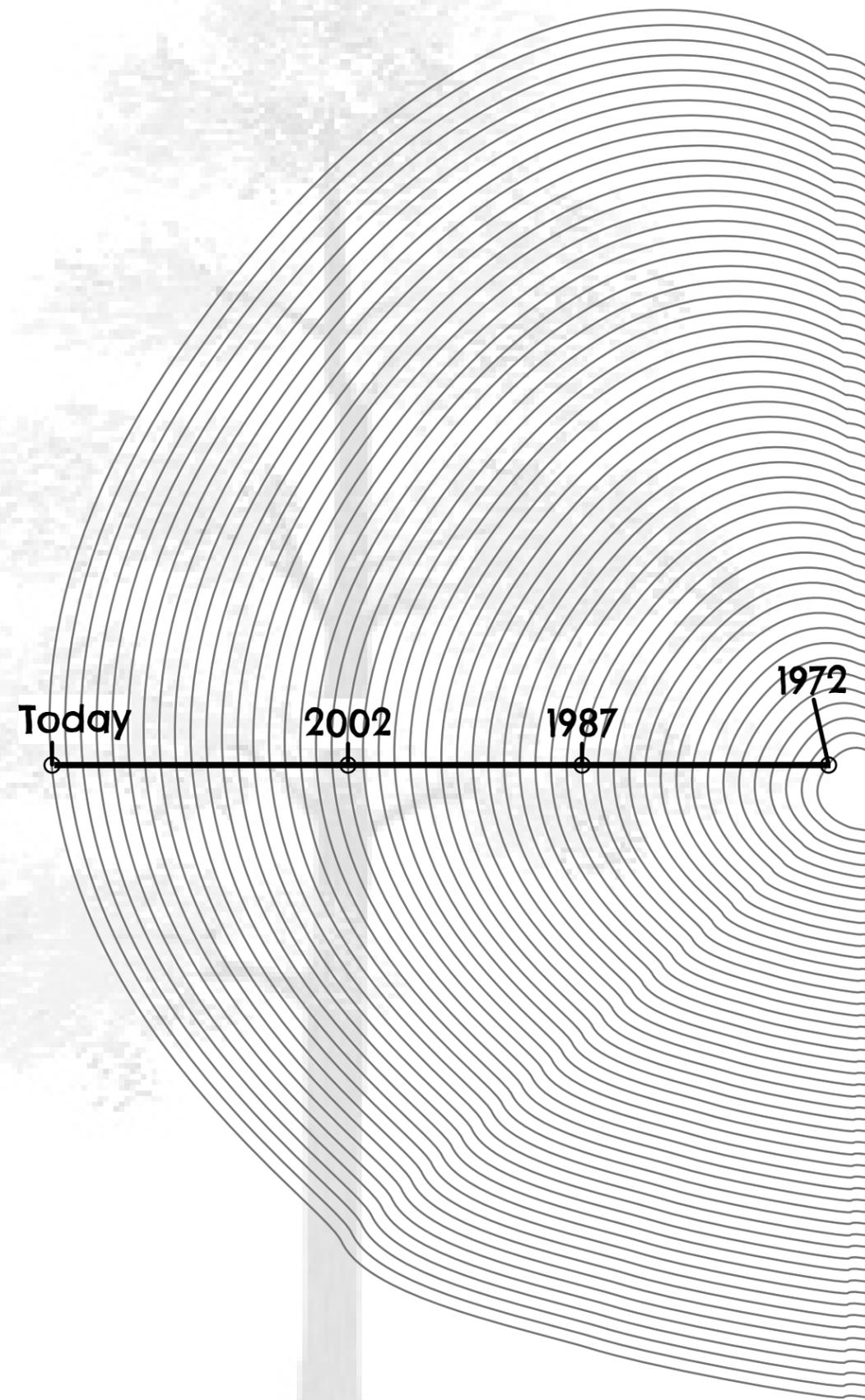
May 25, 1977

Star Wars Episode IV – A New Hope is released in theaters

November 29, 1972

First video game, Pong, is released by Atari

Mark the tree ring to note the year you were born.



5 Making Change

The theme of the 2020 Marsh-Billings-Rockefeller National Historical Park quarter is sustainability. Sustainability is caring for and protecting our community, both now and in the future. This can include natural resources in the environment as well as the people around us and the places we live. This means using our resources from nature wisely so that we do not waste them and they are shared equitably. Every choice we make can impact ourselves, our communities, and our world. The United Nations Sustainable Development Goals were developed so that we could all join forces on these efforts. Even small actions can make a big difference, especially when we work together.

Learn about UN Sustainable Development Goals (in italics below and at un.org/sustainabledevelopment) and how you can work towards big change.

To Play: Use a small toy or rock as your game piece and place it on START. With a partner, take turns flipping a coin to move your piece: heads you move one space, tails you move two spaces.

START

No Poverty - At birthday parties, offer the option to donate money to a charity instead of a birthday gift.
MOVE AHEAD 2 SPACES

Zero Hunger - Support local farmers by buying food at farmer's markets
MOVE AHEAD 1 SPACE

Quality Education - Donate books to public libraries or public schools in need.
MOVE AHEAD 1 SPACE

Good Health and Well-Being - Eat a healthy diet, stay hydrated, exercise daily, and get enough sleep.
MOVE AHEAD 2 SPACES

Quality Education - Donate books to public libraries or public schools in need.
MOVE AHEAD 1 SPACE

Clean Water and Sanitation - Turn off the tap when brushing your teeth and while soaping in the shower.
MOVE AHEAD 1 SPACE

Decent Work and Economic Growth - Research the elements of a healthy work environment and share with your school.
MOVE AHEAD 1 SPACE

Affordable and Clean Energy - Use energy-efficient lightbulbs and set your household appliances on low-energy settings.
MOVE AHEAD 2 SPACES

Responsible Consumption and Production - Don't keep clothes or other items you are not using. Donate them.
MOVE AHEAD 1 SPACE

Climate Action - Only take what you need when you eat and compost the rest.
MOVE AHEAD 2 SPACES

Protect Life Below Water - Use fewer plastic products, which often end up in oceans killing marine animals.
MOVE AHEAD 1 SPACE

Protect Life on Land - Eat seasonal fruits and vegetables. They are more environmentally friendly.
MOVE AHEAD 2 SPACES

Reduced Inequalities - Eat lunch once a week with students who are different than you, whether in race, culture, or beliefs.
MOVE AHEAD 1 SPACE

Sustainable Cities and Communities - Use public transport, city bikes, car pools, and other modes of environmentally friendly transport.
MOVE AHEAD 1 SPACE

Partnership for the Goals - Practice teamwork at home. Do your part and share chores.
MOVE AHEAD 1 SPACE

Peace, Justice and Strong Communities - Host or participate in local community events to get to know one another in safe environments. This can be at sports events, barbecues and so on.
MOVE AHEAD 2 SPACES.

Efficient Industry, Innovation and Infrastructure - Pass on your old, working electronic devices or recycle as certain parts can be recovered.
MOVE AHEAD 1 SPACE

Gender Equality - Know women's rights and stand up for them.
MOVE AHEAD 2 SPACES.

END

6 Change that Makes Cents

Did you know that coins can last thousands of years? Every time you hold a coin, you are holding a piece of history. The subjects on our coins today will tell future generations about our culture and what we cared about. Each coin design means something different.

Coins can honor people who have made significant contributions to the United States. For example, a 2020 \$1 coin design honors Septima Clark, a civil rights leader. She designed literacy and citizenship education workshops that became an important part of the civil rights movement.

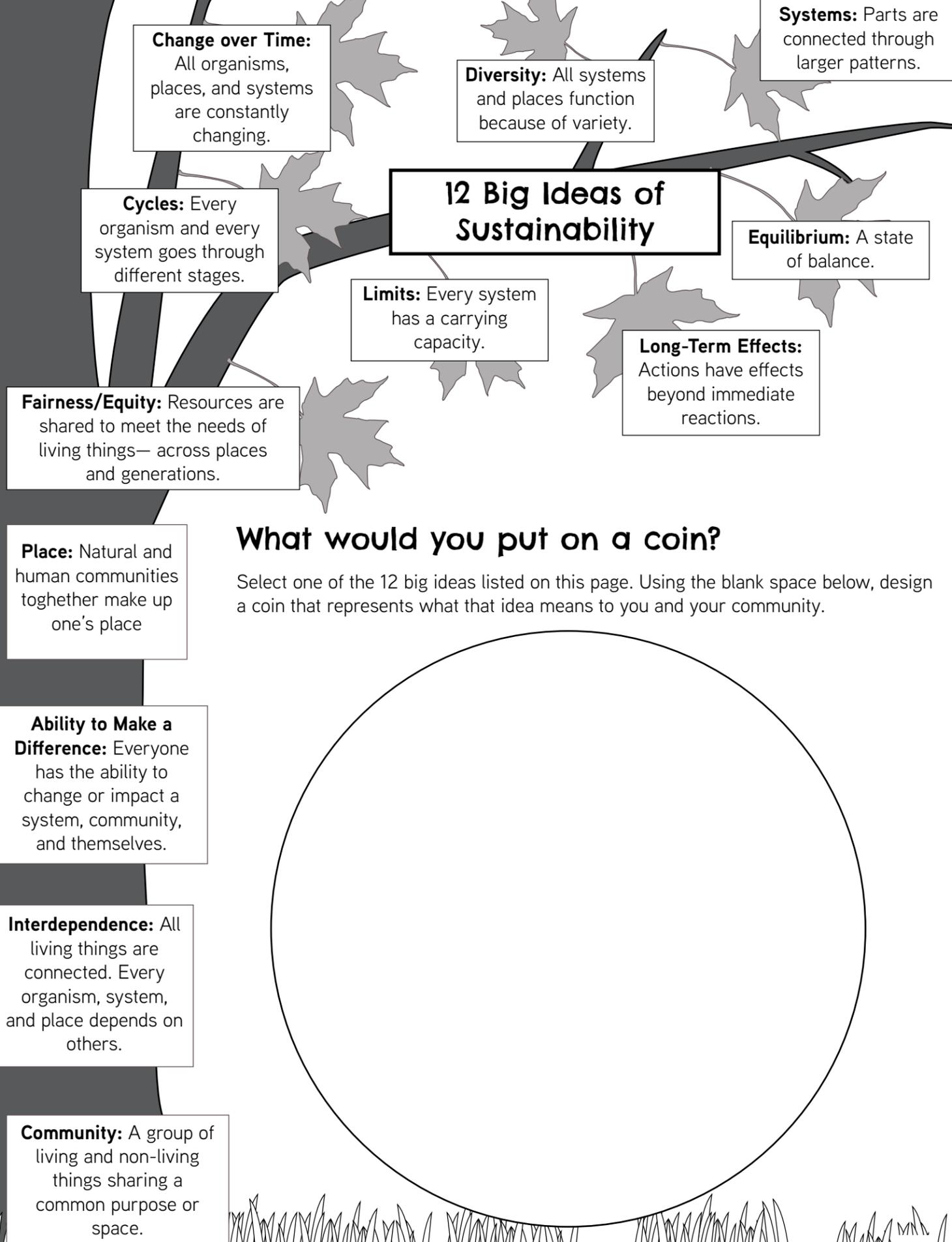


Many coin designs involve symbols, like Liberty. This evokes the ideals of freedom, courage, and hope. One version was designed by world-renowned sculptor Augustus Saint-Gaudens. You can learn about him at the Saint-Gaudens National Historical Park in New Hampshire.



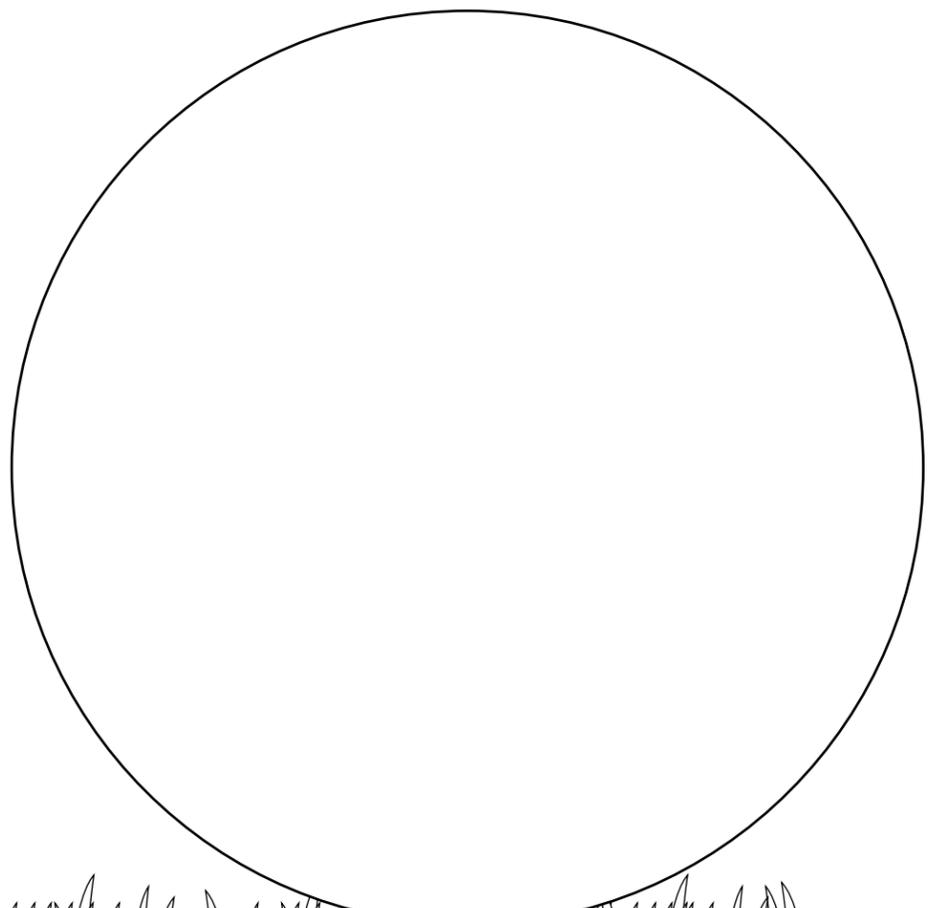
Coin designs can also highlight places, like a national park or historic site. The 2020 Marsh-Billings-Rockefeller quarter was designed to show the importance of sustainability. Sustainability is important because it improves the quality of life for all, both now and for future generations. **Explore the 12 big ideas of sustainability on the next page. Think about what each idea means to you and your community.**

12 Big Ideas of Sustainability



What would you put on a coin?

Select one of the 12 big ideas listed on this page. Using the blank space below, design a coin that represents what that idea means to you and your community.



7 Be the Change!

Sustainability starts with you. There are many things you can do to care for your community and environment and help make sure the natural resources that you enjoy today are available for future generations.

The Marsh-Billings-Rockefeller National Historical Park was created to help people make more sustainable decisions. This means to treat your community, its resources, and each other with respect.

Learn more about ways that you can be more sustainable. **Circle 3 or more things that you and your family can do today to be more sustainable.**

Ride a bike instead of taking the bus or car	Start a clothing drive to donate clothes to a local shelter	Petition your principal for healthy, locally grown produce at your school
Plant a tree with enough sunlight to grow	Avoid using plastic straws when drinking beverages	Drink water from reusable containers instead of plastic bottles
Plant a community garden	Carry reusable grocery bags	Take short showers instead of baths to save energy and water

This is just the beginning! Read some examples of a pledge to commit to sustainability. Write your own using the space on the next page.

Examples:

I promise to be a friend to the environment and practice ways to protect nature and its resources.

I promise to teach others about the importance of sustainability and preserving the environment for future generations.

I will continue to explore different ways to be more environmentally-friendly within my community.



My Sustainability Pledge

Write your sustainability pledge in the space below. Keep this page to continually remind yourself what you will do to be more sustainable!

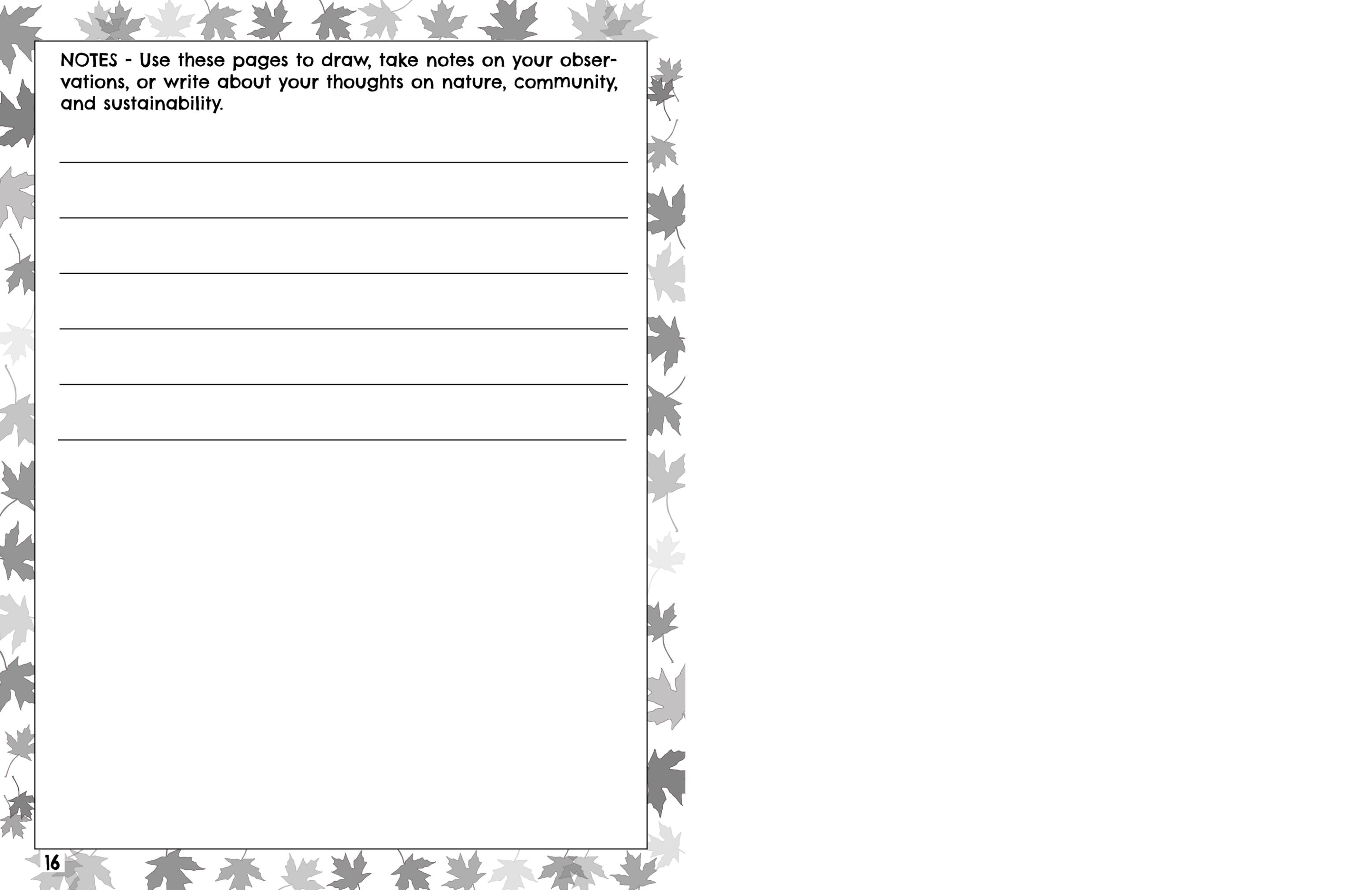
I, _____ (name) promise to _____

Signed: _____ Date: _____



NOTES - Use these pages to draw, take notes on your observations, or write about your thoughts on nature, community, and sustainability.

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The Junior Ranger Community Changer activity guide was created through the partnership of the National Park Service (NPS), Marsh-Billings-Rockefeller National Historical Park, Shelburne Farms, and the United States Mint Education Outreach team.

More to Explore!

To learn more about the Marsh-Billings-Rockefeller National Historical Park, visit <https://www.nps.gov/mabi/>.

To learn more about Shelburne Farms, visit <https://shelburnefarms.org/>.

To learn more about the U.S. Mint, including free online games and activities, visit www.usmint.gov/kids or reach out to education.outreach@usmint.treas.gov to request resources.

