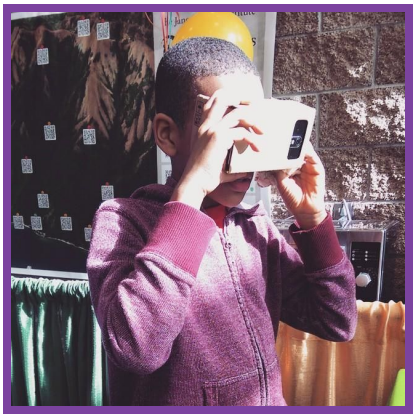
CARDBOARD BINOCULAR ACTIVITY GUIDE

Pull up a pair of paper binoculars and travel through technology to Gombe National Park



Cardboard binoculars provide an immersive 3D experience for youth to explore Gombe National Park in Tanzania, where Dr. Jane conducted her groundbreaking chimpanzee research. Use this tutorial for recommended locations to explore, hidden sites to find, and sample discussion questions. Play "Tour Guide" with your students or turn this into a completely self-directed activity where your young people decide where they are interested in visiting.

1. SET UP YOUR CARDBOARD

Check out the Technical Instructions to get your Cardboard Binoculars set up: www.rootsandshoots.org/cardboard.

2. START EXPLORING

The technical instructions in Step 1 have you test out your binoculars by looking at Dr. Jane's House, so we recommend starting your exploration there! Click on the image titled Jane's House

When Dr. Jane first arrived at Gombe, she lived in a tent with her mother, Vanne. Shortly after, this house was built and Dr. Jane lived here during most of her research. She still stays here whenever she visits Gombe. More fun facts about Dr. Jane's Gombe home:

- The house has electricity provided by small solar panels installed on the roof. They provide enough energy for highly efficient LED lights and some charging tasks. Although, Dr. Jane still prefers the warm golden light of candles to the bright harsh electric lights. Can you see some of the candles?
- Dr. Jane travels almost 300 days a year, so WHO lives at her house when she's not there? Other scientists will stay there when they're doing research, but there are many residents besides humans.
    - At any time one might find 10-20 geckos hunting on the walls and ceiling, several species of Skinks and the occasional snake can be spotted as well. At night, bushbabies can be heard calling back and forth above the house.

- The roof of Dr. Jane's house is made of corrugated metal panels covered with grass thatching. Can you guess why?
    - The corrugated metal keeps out the rain, but would be incredibly hot under the African sun and unbearably loud when it rains. To solve these issues Dr. Jane has always had her metal roof covered with grass thatching, a traditional roof material used throughout Africa. If you look up, you can see the inside of the metal roof.

3. OBSERVE CHIMPANZEES, JUST LIKE JANE!

Click on the image titled Chimpanzee in a Tree

You are in the thick of the forest at Gombe. Are there any chimpanzees hanging around? HINT: Don't forget to look up!

- How long did it take you to find Gizmo the chimpanzee up in the tree?
- Change position (turn around 90 or 180 degrees) and see if you can find him again. Was it easier or harder?
- Imagine you are a researcher at Gombe trying to follow chimpanzees every day. What are some of the challenges you face when trying to spot them up in the trees?

4. GOMBE IN DANGER?

Click on the image titled Deforestation Outside of Gombe

Can you tell which direction Gombe National Park is in? HINT: It's the side with dense tree cover. "Standing" on this ridge you can clearly see the park boundary and the deforestation that has taken place right up to the boundary.

- What do you think are some of the leading causes of deforestation around Gombe National Park?
    - Answer: Conversion of forest to food crops, such as cassava, and cash crops, like Palm Oil.
- Discuss some of the impacts of deforestation on people, animals, and the ecosystem.
- The Jane Goodall Institute is working directly with communities around Gombe to develop village land use plans that will improve resource management and protect habitat, learn more by visiting http://www.janegoodall.org/our-work/our-approach/conservation-science/.

5. RECLAIMING THE FOREST

Click on the image titled Glitter and Gossamer

You might spy chimpanzee mom Glitter and her daughter Gossamer, but what we're really looking for is a lone Oil Palm tree. HINT: It looks a lot like a Palm tree. And it will look different from all the other trees you see.
When Dr. Jane first came to Gombe, the forest was much less dense and had become overrun with introduced vegetation like Oil Palm trees. Now, the forest is much healthier and represents a more traditional forest habitat.

- What do you think were some of the impacts of introducing species like Oil Palms on chimpanzees?
    - Answer: Oil Palms are not native to Tanzania and their presence in the park meant that people were living there and planting these as a cash or food crop. In the 1970s, Gombe was overrun with

Oil Palms and lacked the diversity a healthy forest habitat needs, and chimpanzees were eating a lot of Oil Palm fruit.

- After Gombe was designated a national park, native vegetation began to come back and has slowly overtaken introduced vegetation like Oil Palms and Mango Trees. The native vegetation, like the vines you can see in this view, provide important and varied sources of food for chimpanzees.

6. EXPLORE YOUR COMMUNITY

Use the cardboard to explore your own community:

- In the Street View App
- Type in a street address or a latitude/longitude for where you want to start exploring in your community
- Click on a red dot and then the cardboard icon, and insert the phone into the Cardboard (just like before)
    - What do you see?
    - Is it what you expected? If not, how does it look different through this lens?
    - Can you tell what season it is?
    - Are there people or animals in your Street View?
    - What nature do you see in your Street View?

Now that you've "visited" Gombe National Park and have seen your local community through Google Street View, it's time to Get Mapping!

Check out STEP 2: "Map It!" on www.rootsandshoots.org/mapping to start exploring your community and the ways you can make an impact locally through your Roots & Shoots Campaign.

Make sure to share your project (http://www.rootsandshoots.org/howtosubmitaproject) on the Roots & Shoots website! By sharing your project, you can help other youth across the globe get started on their own projects and you may even get recognized as Roots & Shoots Project of the Month.

But wait what will you find when you look at the rest of the images in the collection?

GOMBE COLLECTION CHEAT SHEET:

LOCATION NAME	DESCRIPTION
Baboons Lounging on the Beach	Research on baboons (Papio cynocephalus Anubis) in Gombe National Park began in 1967 and continues to this day. Projects have focused on mother-infant relations, development, male movements between groups, dominance and female reproduction.
Gombe Stream Research Center	Founded in 1965, the Gombe Stream Research Center was created to further develop the long-term primate research projects begun by Dr. Jane Goodall. It has contributed research to more than 350 scientific publications.
Chimpanzee in Tree	*See Above*
Google, the chimpanzee, Climbing a Tree	In June 2009, Gaia gave birth to a healthy baby boy which was named Google after the longstanding partnership between JGI and Google.
Chimpanzees Crossing Stream	Meet Golden and Glama as they cross a stream in Kakombe Valley. The chimpanzees spend the majority of their time in the valleys of the riverine forests of Gombe. There, they find an abundant variety of fruits, leaves, and vines.
Mkenke Waterfall	Chimpanzees have been spotted here doing 'waterfall displays' here, dances that express their sense of awe at the power and beauty of the falls.
The Peak	The top of this peak is Jane's favorite spot in Gombe. It is a superb vantage point from which she could easily locate chimpanzees, observe them forage, hunt, use tools and interact with each other.

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Glitter and Gossamer	*See Above*
Brachystegia Woodland Habitat	This Brachystegia longifolia tree is found in miombo woodland habitats on the upper slopes of Gombe National Park (above 1200 meters altitude).
Uapaca Woodland Habitat	This Uapaca kirkiana tree is found in open miombo woodland habitats on the upper slopes of Gombe National Park (above 1200 meters altitude). Its fruit is an important source of food for chimpanzees and a traditional food for the local people.
Human-ignited Wildfires	Fire poses a serious threat to the ecosystem. The vast majority of fires are believed to be human-ignited and to far exceed the scope and severity of natural fires. While fires may be ignited for specific purposes such as land clearances, those fires often burn out of control due to weather conditions and spread to unintended areas. This can inhibit tree regeneration; alter vegetation composition and cause soil erosion, among other unwanted results.
Deforestation Outside of Gombe	*See Above*