*Activity Summary:*

*Participants use their math skills to decide on the best forest fragments to connect in order to create a larger forested habitat for the wild golden lion tamarin’s population to grow healthy and strong.*

Target Audience & Setting:

* 8 years old and up
* informal setting
* small group or large group; space depends on the size of group
* the major part of this activity would take about 15 minutes to complete

Goals:

* Learn where golden lion tamarins are from
* Learn why golden lion tamarins are an endangered species.
* Understand the threats currently faced by GLTs—specifically, urban expansion and fragmentation—and what is needed for the long-term survival of the species.
* Feel empowered to solve and act in protection of GLTs and their habitat, including supporting organizations such as *Save the Golden Lion Tamarin* (SGLT) and its Brazilian partner the *Associação Mico Leão Dourado* (AMLD).

Theme & Messages:

* Corridors and conservation
* Corridors are essential to the long-term survival of golden lion tamarins.  They help connect populations of GLTs and ensure genetic diversity.
* We can help support corridor restoration and maintenance by donating to the *Trees for GLTs* program. More information at <https://www.savetheliontamarin.org/replant-glt-habitat>

Equipment Needed:

* Map #1 São João River Watershed
* Map #2 Forest Fragments
* Timer
* Note paper
* Pens/pencils/calculators
* Picture 1 Poço das Antas Corridor
* Picture 2 Wildlife Overpass

Instructions:

* Show participants Map 1 identifying the São João River Watershed. The lowland Atlantic Forest in the state of Rio de Janeiro, one of the most threatened and biologically diverse habitats in the world, covers an area close to 3,000 km² (or 1,158 mi²; a distance you can drive through in less than 2 hours). This is the only place in the world where GLTs are found in the wild today. These forests are 100 km (62 miles) from the Rio de Janeiro metropolitan area (where in 2019 more than 13 million people lived) and 25 miles from Brazil’s largest offshore oil extraction site in the city of Macaé. The São João River Watershed is also intersected by one of the most heavily travelled highways in Brazil, the BR-101, which connects some of the most populated areas in the coast.
* Share that human activities such as deforestation, over-extraction of forest products, agriculture, cattle ranching, and urban expansion are the biggest challenges to this habitat and have greatly reduced these areas into smaller fragmented forest patches of mostly secondary vegetation. In other words, what humans are doing to their surrounding environment is drastically changing and challenging natural areas all over the world. The more degraded a natural area becomes, the harder it is for nature to thrive into the future.
* Show the Forest Fragments Map 2 and explain that these are the largest fragments in the São João Watershed Map 1. Each color in this map represents a forest fragment and the numbers represent the estimated number of tamarins living in each fragment. The main threat to the wild tamarin population today is the further fragmentation of their habitat into small forest “islands” caused by urban expansion and other human activities.
* Ask what are some of the barriers tamarins face in trying to cross between fragments. Explain that the main barriers have been created by humans -- some examples are pastures, towns, roads and highways. Discuss with them some of the ways we can help conserve the tamarin’s habitat. One example is the work being done by organizations such as the Brazilian *Associação Mico Leão Dourado* (AMLD) which encourages local landowners to reconnect and protect remaining forest fragments that create larger forests for a healthier wild tamarin population.
* Share that scientists have determined that for the GLT species to survive for the next 100 years, there must be 2,000 tamarins living in at least 25,000 hectares (about 60,000 acres) of *connected* forest.  Conservation efforts today concentrate on planting trees to create forest corridors and building man-made structures (such as green bridges) so GLTs can cross between the remaining fragments of habitat, to form families with unrelated mates.
* Ask them for help to connect forest fragments to generate more habitat for the wild tamarin population. Do the activity individually or in groups. Tell them they have a few minutes (1-3 minutes depending on general age level of the group) to plan where to plant 2 forest corridors to reach that goal. Let them get organized and set the timer.
* Go over the correct answer and ask if there are any questions.

*Answer:* The best sum combination is **2,533** since it is the one that amounts to the greatest number of GLTs.  This is the sum of 1,303 + 499 + 731 areas. The resulting connected area encompasses the federally protected Poço das Antas Biological Reserve, and two other fragments divided among forested areas of several private farms.

* Have a discussion with the group about green corridors. Share the example of the new corridor being built across the interstate highway BR 101. Picture 1 shows how the federally protected Biological Reserve Poço das Antas is being connected to forest remnants across the highway. A forest corridor has been planted by AMLD’s Restoration Program and a forested wildlife overpass is being constructed across the highway. Picture 2 shows the final drawing of the forested wildlife overpass currently being built over the highway. Once completed this passage will allow tamarin groups and other fauna and flora from both sides to intermingle and interact. Share with the group how they can help in these efforts by helping AMLD plant more trees in this region (<https://www.savetheliontamarin.org/replant-glt-habitat> ). For more news about this work read News Article 1 and News Article 2, link available in the Resources section.

Assessment:

* Ask participants what are the ways scientists can connect the tamarin habitat in order to maintain the tamarin population healthy and thriving (*Possible Answers:* planting trees to create green corridors, creating man-made corridors)
* Ask them of some ways they can help tamarins and protect nature.
  + Planting, protecting local trees, and/or helping organizations plant trees to restore habitat for wildlife.(Ex: <http://savetheliontamarin.org/replant-glt-habitat/>; <https://www.arborday.org/trees/climatechange/plantatree.cfm>; <https://www.nationalforests.org/>)
  + Supporting local farms and going “meat free” for one day each week or replacing red meat with a more diverse diet (such as turkey, fish, tofu or vegetables) that is healthier for us and the environment. By supporting local farms, we rely less on fossil fuels for transportation of farm products (veggies, fruits, etc.). By going ‘meat free’ for one or more days each week allows us to rely less on maintaining and creating new pastures for cattle. In turn, this also helps protect forest cover that traps carbon dioxide from our atmosphere helping to mitigate climate change.
  + Purchasing sustainably harvested goods and items made from recycled or repurposed materials.
  + Supporting conservation initiatives dedicated to the protection of endangered species with donations of time, goods, or money.

Resources:

Save the Golden Lion Tamarin (SGLT) [www.savetheliontamarin.org](http://www.savetheliontamarin.org/)

Associação Mico Leão Dourado (AMLD) [www.micoleao.org.br](http://www.micoleao.org.br/) (in Portuguese)

News Article 1: Construction of a Forested Overpass to Begin in November

<https://www.savetheliontamarin.org/news/2018/11/9/construction-of-a-forested-overpass-to-begin-in-november.html>

News Article 2: Land Purchase Gives GLTs a Chance to Survive <https://savetheliontamarin.org/news/2018/4/20/land-purchase-gives-glts-a-chance-to-survive.html>