STEMTaught

# Summer Camp
## Exploring Africa Day 2

TK- 3RD GRADE

### WELCOME

(5 min)

**Instructions:** Welcome your students to camp. Be friendly, ask a question. Say: "Today we are going to construct our very own solar ovens, similar to what many of the indigenous people of Africa use to cook their food!"

Remind students they have the opportunity to earn sand dollars when they complete a task, help another student, help set up or clean up, write in their journal, read a book, etc. Tally the amount of sand dollars that each student earned from helping and record it on the weekly pay role sheet.

### GAME TIME

(25 min)

Materials:

- Open area or grassy playing field

### PLAY "WHAT TIME IS IT, MR. LION?"

**Objective:** This game is a variation of tag in which students will run away from Mr. Lion to avoid being tagged.

**Instructions:** Have all the players line up at one end of the play area, such as on one end of a basketball court. Choose one person to be Mr./Miss Lion. Have this player go to the opposite end of the play area with their back facing the other players. The players will begin by yelling out, “What time is it, Mr. Lion?” Mr. Lion will then shout out a time, such as, “It’s 2 O’clock!” Then everyone will then take that many steps forward. They will continue to play in this pattern. When the players are close to reaching Mr. Lion, they will say, “What time is it, Mr. Lion” and Mr. Lion will say, “It’s lunch-time!” Then everyone will turn around and race back to the start as they try to make it back without getting tagged. The player who gets tagged becomes Mr. Lion.

### STORY TIME

(10 min)

**Instructions:** Read Lonwabos Recipes. Talk about your favorite family recipes with your class. Have students share some of their stories!

### STEM TIME

(120 min)

### BUILD A SOLAR OVEN AND COOK S'MORES

**Instructions:** Say: "We have made it to Africa! Today we will be constructing solar ovens! Solar ovens capture the energy generated by the sun to cook food." Watch the solar oven movies. Say: "Today we will put together our own solar ovens, and test our designs to see if we can make s'mores using the ovens we have created!" Each week the students may be allowed some time to either improve their solar ovens, or use them as they are to bake.

Solar Oven Materials:

- Boxes
- Foil
- Clear plastic wrap
- Glue stick
- Scissors
- Tape
- Ruler
- Pencil or marker

1. Have the students choose their own solar oven group, or they can make their own. Gather the needed supplies.
2. Have the students mark the top of the box with a one inch border along three edges, then have them cut along the lines. This will become a flap. If you use a clamshell box no cutting is required as you already have a flap!
3. Open the box and line the inside with a layer of glue on the bottom and sides, as well as the flap. Then place foil all along the inside and flap and glue down as smoothly as possible.

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## STEM TIME

(120 min)

### S'mores Materials:

- Graham crackers
- Chocolate
- Marshmallows

## ART TIME

(30 min)

### Materials:

- Camp journals
- Coloring utensils

## READING /JOURNAL TIME

## ROBOTICS

(60 min)

### Materials:

- Robots
- Measuring tapes
- Chromebooks
- Building bricks
- Robotics Sumo mat

## BUILD A SOLAR OVEN AND COOK S'MORES

4. Once the foil has been glued down, tape plastic wrap across the top of the box, under the flap of the lid.
5. If you have enough time and the sun is out then you can cook! If it is a rainy or a cloudy day then save your oven for another day when it will be good to use the sun's energy to cook your food.
6. Make s'mores! Place the s'mores into the solar oven, close the lid, wait for them to melt, and enjoy!
7. While you are waiting for your s'mores to melt you can draw your solar oven in your camp journal.

## DRAW YOUR SOLAR OVEN

**Instructions:** Say: "We got to build some great things today. You all did a good job and now we need to draw what we created."
1. Draw a picture of your solar oven in your camp journal.
2. Help students focus on the basic shapes of the objects they are drawing.
3. Add color and fun.
4. Students label the parts of their drawing.

**Instructions:** Read some fun books with your class, or prompt your students to write in their journals about what they did that day. Remember to talk about the stories and get to know each other better through your own stories. Students can also take this time to read books on their own. A tent or a hammock can make reading fun. Also decide on the amount of reading money that you can reward your students with for each book they read during camp.

## TURN YOUR ROBOT INTO A PLANE

**Instructions:** Students take time building with building bricks to turn their robot into a plane. Teachers can label a starting point on the ground with tape and then 8-10 feet away they can label "Africa" on another point on the ground with an x. Students have to “fly“ their plane from one point to the next.

Robot challenge with a laptop: Students get to learn how to program their robot to drive a certain distance, and try again until they get it programmed to drive the whole distance. Have the measuring tapes ready if the students ask for them ,but allow them to figure out that they can use them. Robotics is more fun when it is trial and error. When the students figure something out themselves it is really gratifying. There is a space in the code blocks to input a measurement for the robots to go. In EdScratch they can choose to input a specific metric like inches or centimeters. Link to programming resources: https://www.stemexpandedlearning.com/robotics

Alternatively students can scan the barcodes on the back of the Sumo mat to help their plane move while following a line (Robot Mat with a line can be their airport) or code it with claps or to follow a remote. For clap coding, students may go two at a time and race to see who can fly their plane to Africa first!

Optional for TK: Students may focus on building their airplane and building an airport. They can fly their airplanes around the airport. Students are welcome to try to clap code the robots, and have races!