



# 2022 STEAM Buying Guide



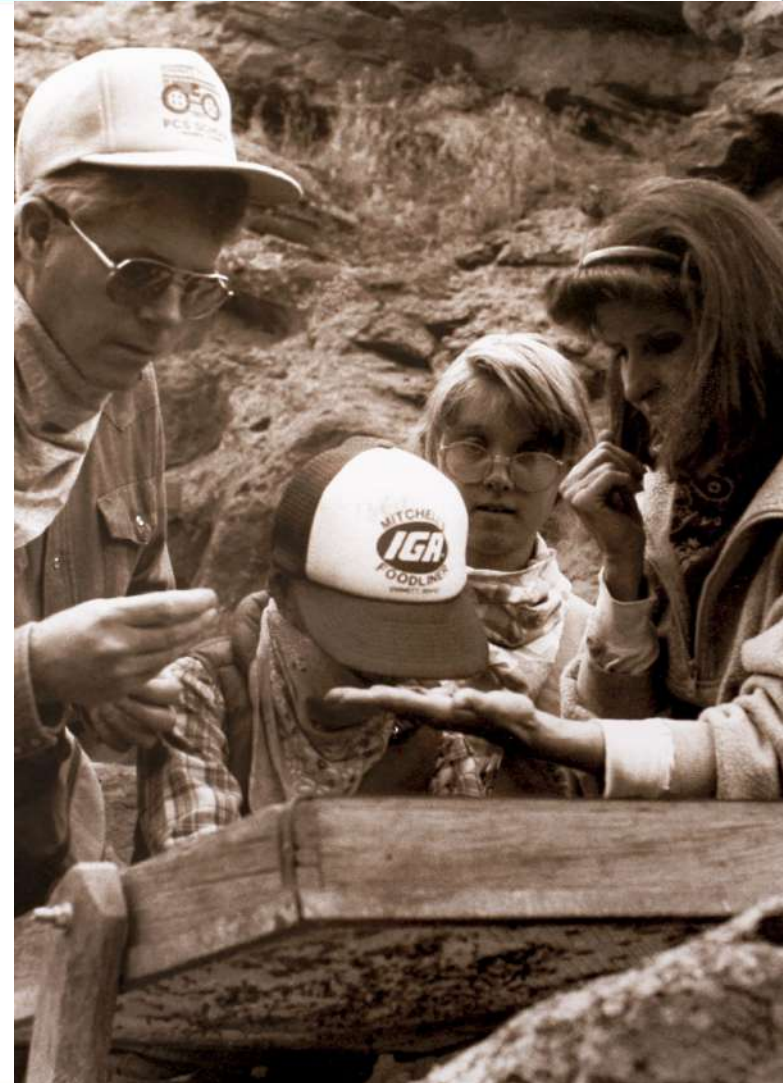
## Webinar Sponsor: PCS Edventures

Started as Pat's Computer School in 1988

Grew to network of experiential *learning centers* in Idaho, Washington and California

PCS Edventures learning solutions are in more than 7000 sites in all 50 states and over 17 other countries

Philosophy of hands-on projects that fuel a passion for learning and a lifelong love of STEM



# 2022 STEAM Buying Guide

## Who We Serve

- K-12 classroom educators
- After-school and summer programs
- Libraries and makerspaces
- Clubs and youth groups such as FFA, Boys & Girls Club, 4H, etc.



# 2022 STEAM Buying Guide



## Today's Hosts



Michelle Victor

Director of STEM  
Development

PCS Edventures



Erika Liebel

Curriculum Designer &  
STEM Specialist

PCS Edventures

# 2022 STEAM Buying Guide

## Agenda

- Why STEM and STEAM?
- New Programs for 2022
- Recommended Favorites
- Giveaway



# Giveaway Entries



You're automatically entered for a chance to win your favorite program just by registering!

# 2022 STEAM Buying Guide



## **Why STEM and STEAM?**



# New for 2022



# Dirt Camp Gr 1-3



# New for 2022



# Podcasting Gr 4-8



### Choose Your Own Podcast Adventure

"Everyone's history is kind of extraordinary. Only you can share your experiences how you see them." — Laura Amy

Think about what you're interested in and what you're good at to match your interests to different podcast formats.

**START here**

Do you like to tell true stories about yourself or your family and friends or even about famous events or news stories?

**Yes**

Try a **nonfiction storytelling podcast**.  
Nonfiction podcasts can be personal memories, mysteries, news-worthy events.

List fun memories or lessons you learned from family, friends or trips. What can other kids relate to in your stories?

What do you want to change about the world? List some causes you believe in.

List moments that interest you about famous people or cities.

© 2011

**4 PODCASTING**

### Podcast Focus Statement

Write or draw your ideas.

Our podcast is about \_\_\_\_\_ and on it you'll hear \_\_\_\_\_

Draw a picture of what your podcast is about.

You should listen if you are \_\_\_\_\_

Imagine your ideal audience member or "avatar." Draw a picture of this person.

How old are they? What do they like or need? How does your podcast meet that like or need?

# Grab and Go



# Reusable & Expandable



# BrickLAB Core Gr 1, 2, 3, 4, 5, 6



**S** Build a Shadow Box

**T** Build an Aqueduct

**E** Build a Dam

**A** Build a Snowman

**M** Model Regrouping



# Grab and Go





# Famous Architecture Gr 4-6

## Day 1: Architecture Boot Camp

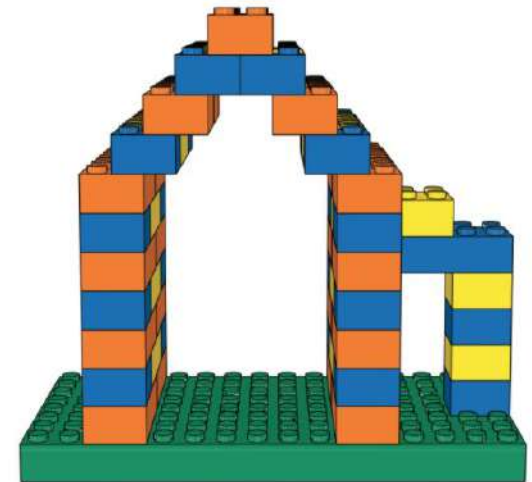
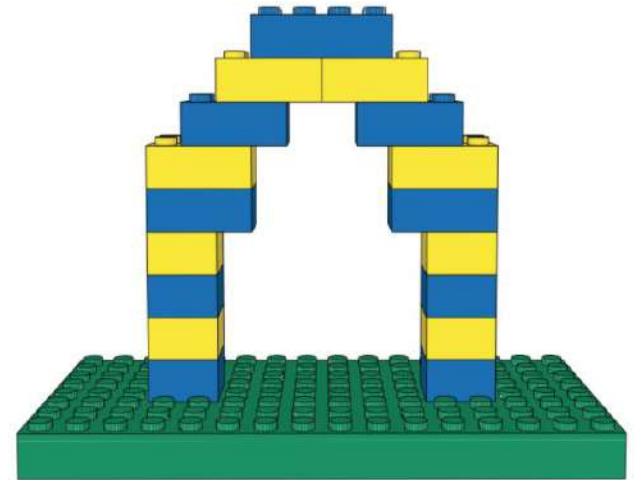
**S** Structure and Function

**T** Walls, Buttresses, Arches

**E** Testing Multiple Solutions

**A** Architectural Acrostic Poems

**M** Height:Width Ratios



# Grab and Go



# Simple Machines Gr 4-6

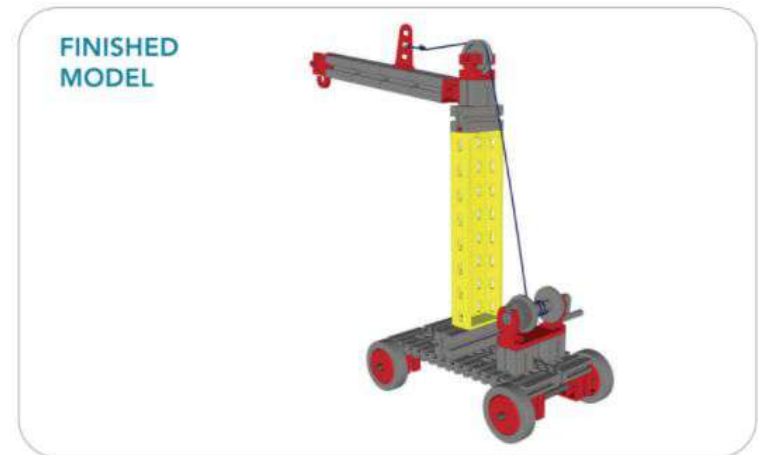
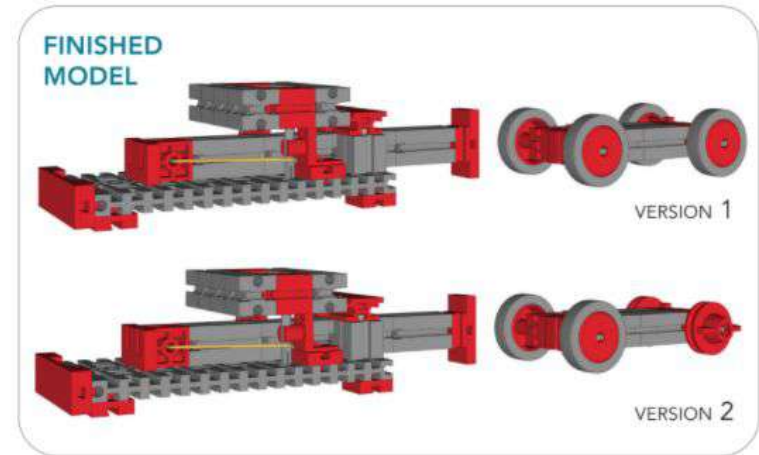
## Day 3: Second Class Levers

**S** Structure and Function

**T** Simple Machines

**E** Nutcracker Challenge

**M** Attend to Precision



# Ocean Adventures



# Easy-to-Follow Instructions



## OVERVIEW

Today, students transform into pirates! You will need to assign students to "ship groups" prior to Activity #1. This curriculum is written for 5 groups of up to 6 students. With the number of supplies provided, it's easier to change the number of students in a group than the number of groups. These groups will remain consistent throughout the camp so students have a chance to bond as a crew. Each ship group will get to know each other by coloring and solving a pirate ship puzzle before learning ship terminology and labeling the parts of their ship. At the end of the day, students work together with their raw ship groups to choose each crew member's duties and decide on a name for their ship. During the final activity, each ship group introduces their ship and their crew to the rest of the class. Each ship puzzle is then taped on the wall for all to see!

The activities in Day 1 are designed to fill only 45-50 minutes. This should provide you with enough time for introductions, setting expectations, and reviewing other first day housekeeping items.

DAY 1: BECOMING A PIRATE

## STEP-BY-STEP DIRECTIONS FOR INSTRUCTOR



Whole Group

### STORY

**Ahoy, Mateys!** You have come from far and near to sail the seven seas. Today you will embark on a twelve-day adventure that will bring you great joy and rewards, but will also require hard work, persistence, and a lot of teamwork. Throughout your adventures you will learn and experience many things, but most importantly you will form new friendships and a different way of viewing the world.

But before you can set sail, you must first transform yourselves into pirates. Aft!



Activity #1: Independent

## PIRATE NAMES

Students begin the transformation process by creating a pirate name. Each pirate name consists of three words: a descriptive word, a noun (person, place, or thing), and the student's first name.

Examples: Red Dragon Sally  
Flying Tiger Billy

If students have trouble coming up with words, provide more examples. After two minutes of brainstorming, students write their pirate name on the name tag and introduce themselves to their ship group.



## STEP-BY-STEP DIRECTIONS FOR INSTRUCTOR



Whole Group

### INTRODUCTION TO LATITUDE AND LONGITUDE

Kick off the day with something students are pretty familiar with by now: the beach ball globe.

- *Has anyone ever noticed the lines all over the globe? What do they mean?*

If no one knows, explain that the left-to-right lines are called latitude and the up-and-down lines are called longitude. Point out the equator and the Prime Meridian, as well as the tropical, temperate, and polar zones.

Estimate the latitude and longitude of your current location. Then, practice using latitude and longitude to find points on the globe together to get everyone ready for the next activity.



Small Group

Explain that latitude and longitude give us a way to be specific when we talk about different parts of the ocean, and that today we'll be acting like scientists and looking at some data showing the ocean's temperature at lots of different places. Their challenge is to try and find patterns in the data.

Divide students into their six small groups and give each group three copies of their GPS temperature handout. Each group's pages have a different set of data. Have the students work in their small groups to plot the data on their personal maps. For each data point, have them draw a dot on their personal map at the given coordinates and record the temperature.

When all the groups have finished this activity, have them go around and share their findings with the class. Have each group copy down the other groups' dots onto their maps.

DAY 5: SURFACE TEMPERATURE & FLANKTON



## STEP-BY-STEP DIRECTIONS FOR INSTRUCTORS



Whole Group

DAY 1: Welcome to Survivor Camp

### SURVIVOR MAIL & TRIBE INTRODUCTIONS

Welcome students to Survivor Camp! It's time to get everyone excited about learning survival skills as they tackle Survivor Challenges as a tribe. As you progress through today's activities, share detail from the Background Information with survivors. Now, read the first Survivor Mail with the group:



### SURVIVOR MAIL

**Hello, Castaways!** Welcome to Survivor Camp!

You have been dropped in a remote area somewhere in the United States. There are no buildings, cars, roads, cell phones, computers or other people. It is just you, the other castaways and Mother Nature! Look closely and you might even see the vultures soaring in circles high above you, catching the thermals as the hot air rises from the valley.

You're going to form tribes, and over the next twelve days you'll call this area home. At Survivor Camp, your intellectual toughness and ability to collaborate as a team will be put to the test as you learn new skills to survive in the wild. Now, do you have what it takes to be a Survivor?



Small Groups

Break castaways into tribes, letting them know that each tribe will stay the same throughout camp.

- Hand out the sets of cards so each group has a different suit.
- Have each tribe come up with a name that plays off their suit, such as The Black Clovers for the clubs tribe. As they work to come up with a tribe name, campers should also introduce themselves.
- As an icebreaker, have survivors think of one attribute they bring to Survivor Camp that might help their tribe over the next 12 days.

# Pirate Camp Gr 1-3

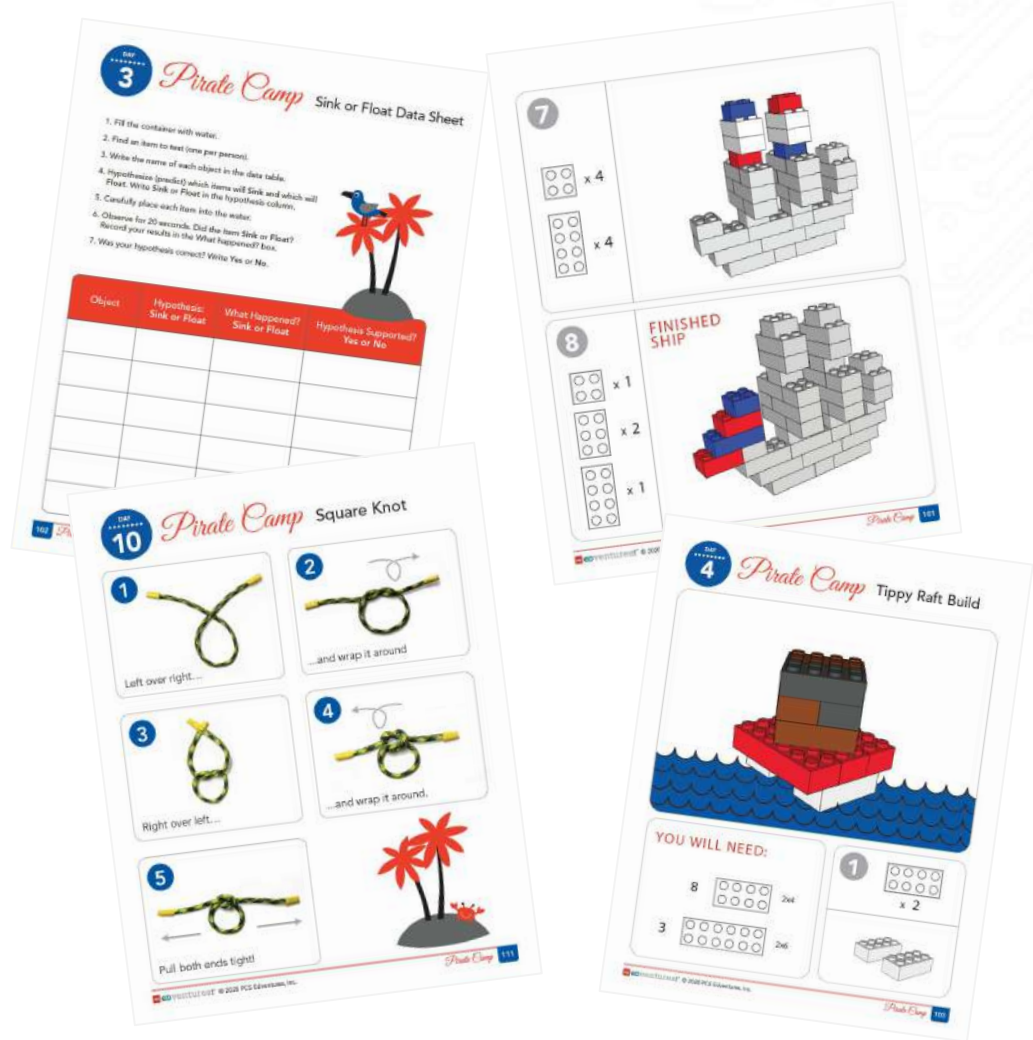
**S** Testing Hypotheses

**T** Knot Tying

**E** Design Floating Rafts

**A** Write Sea Shanties

**M** Build Pirate Ships



**3 Pirate Camp Sink or Float Data Sheet**

1. Fill the container with water.  
2. Find an item to test (one per person).  
3. Write the name of each object in the data table.  
4. Hypothesize (predict) which items will Sink and which will Float. Write Sink or Float in the hypothesis column.  
5. Carefully place each item into the water.  
6. Observe for 20 seconds. Did the item Sink or Float? Record your results in the What Happened? column.  
7. Was your hypothesis correct? Write Yes or No.

Object	Hypothesis: Sink or Float	What Happened? Sink or Float	Hypothesis Supported? Yes or No

**10 Pirate Camp Square Knot**

1. Left over right...  
2. ...and wrap it around.  
3. Right over left...  
4. ...and wrap it around.  
5. Pull both ends tight!

**7**

x 4  
x 4

**8**

x 1  
x 2  
x 1

**FINISHED SHIP**

**4 Pirate Camp Tippy Raft Build**

**YOU WILL NEED:**

8 2x4  
3 2x6

1 x 2

# Ocean Adventures



# Oceanic Exploration Gr 4-6

**S** Ecosystem Interdependence

**T** GPS Tracking

**E** Buoyancy Adaptations

**A** Illustrated Personal Maps

**M** Latitude and Longitude





# Ocean Adventures



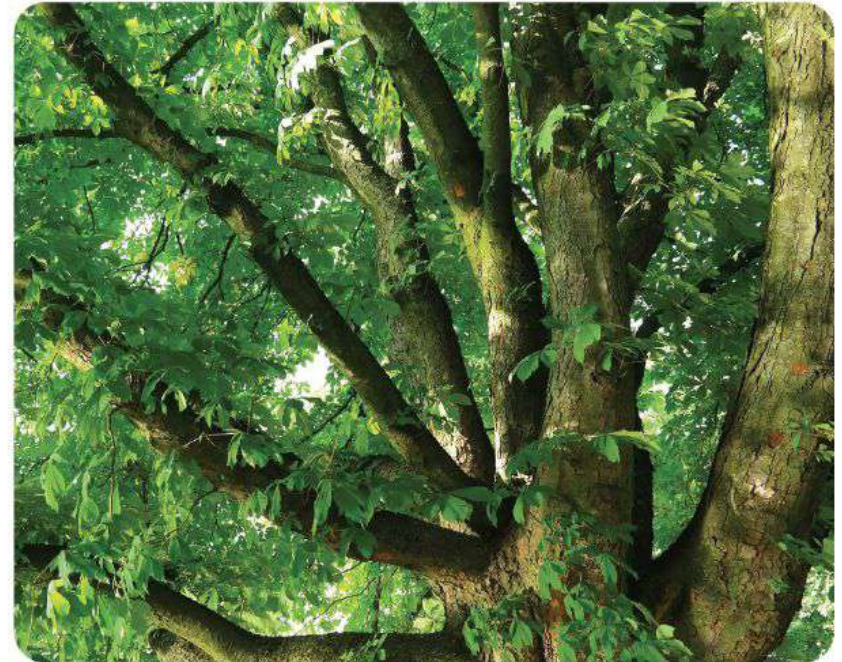
# Survivor Camp Gr 6-8

**S** Tree Stills

**T** Compass Navigation

**E** Water Purification

**M** Ranger Beads



# Unleash the Artists



# Refill Kits



# Unleash Your Wild Side Gr 1-3

## Day 11: Tempera Tunnels

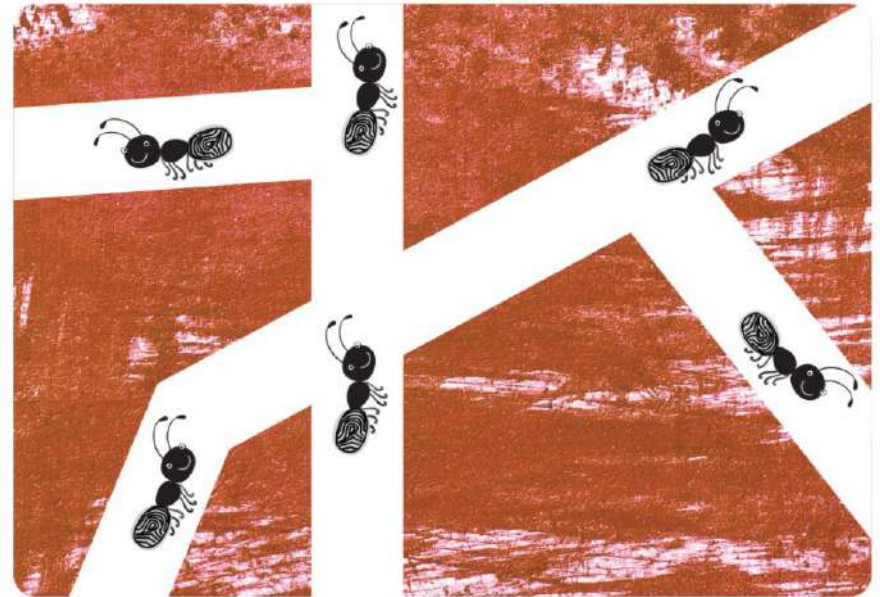
**S** Biodiversity

**T** Creative Communication

**E** Structure and Function

**A** Habitat Poems

**M** Counting



# Unleash the Artists



# Traveling Artist Gr 4-6

## Day 3: Peruvian Blankets

**S** Alpaca Adaptations

**T** Textile Technology

**E** Textile Technology

**A** Journal Entry

**M** Mega Blanket



# Unleash the Artists





# Claymation Gr 4-8

- S** Extensions
- T** Stop Motion Animation
- E** Criteria and Constraints
- A** Movie Making
- M** Post-Production



# Unleash the Artists



# Hidden Gems



# Food Collection Gr K-1, 2-3

- S** Berry Color Chemistry
- T** Smart Farms
- E** Cacao Tree Build
- A** Glass Gem Corn Craft
- M** Farmer's Market Math



# Hidden Gems



## Day 6: Tsunamis

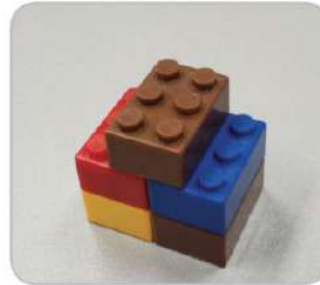
**S** Tsunami Science

**T** Materials Science

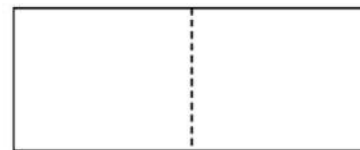
**E** Stilted Structures

**A** Construction

**M** Geometry



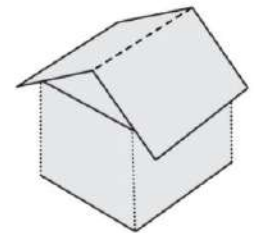
Model House Template



← roof



← walls



# Hidden Gems



# Summer Camp Classics Gr 6-8

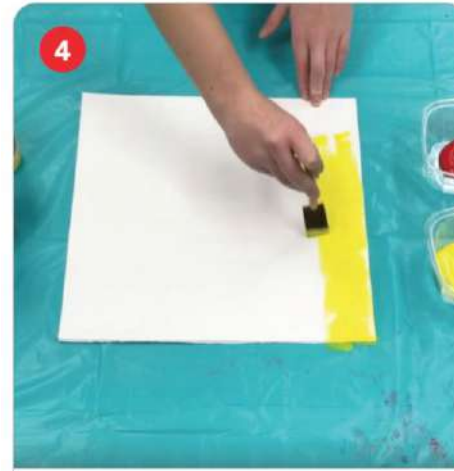
**S** Thermal Energy

**T** Solar Cooker Technology

**E** Splatter Paint Catapults

**A** Seed Art

**M** Solar Cooker Construction





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**PCS STEMBassador**

For customized  
solutions tailored for  
your learning  
environment

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