

STEAMWORKS



ACTIVITY GUIDE

STEAMWORKS is a series of fiction children's books that focuses on science, technology, engineering, arts, and math. The series features children of all backgrounds and abilities using scientific and mathematical thinking to solve everyday problems and answer questions that matter to them.

These child-led stories provide educators, librarians, and parents with a fun, engaging way to introduce STEAM topics to young children. Playful storylines and extension activities will ignite excitement for STEAM and empower children as thinkers, problem solvers, and innovators!

PLAN A STEAMWORKS FAIR AT YOUR SCHOOL, LIBRARY, OR BOOKSTORE!

Choose a date

STEAM fun can happen all year long, but you may want to coordinate your Fair with a science holiday. Here are a few to consider:

- February 11 – National Inventors' Day and Thomas Edison's Birthday
- March 14 – Pi Day
- April 22 – Earth Day
- October 4-10 – World Space Week
- November 8 – National STEM Day (Note: Marie Curie's birthday is the day before)

Go full STEAM ahead on planning

Questions for schools to consider:

- Will students in all grades attend the Fair, or do you want to limit the event to certain grades? Will students in older grades run the activities, participate in the activities, or attend the event as both leaders and participants?
- Will you run your Fair during the school day or as an evening event with parents and guardians included?

Questions for libraries to consider:

- Is there an opportunity to tease the event by reading the STEAMWORKS books to children in existing storytime sessions?
- How can you partner with your local school(s) to garner the biggest audience possible?

Questions for bookstores to consider:

- Is there an opportunity to coordinate your event with the on-sale date of one of the STEAMWORKS books?

Questions for all to consider:

- Are there parents, guardians, or community members who work in a STEAM-related field you'd like to invite to kick off the Fair with a talk about their work?
- Where can you prominently display STEAMWORKS books in advance of the Fair to garner excitement for STEAM and the upcoming event?

Spread the word

- Once you decide on your audience, send invitations and/or hang signs in your school, library, or bookstore. There is a template on page 2 of this guide that you can use.
- Keep the momentum going with reminders via your e-newsletters and social media.

Finalize your STEAMWORKS stations

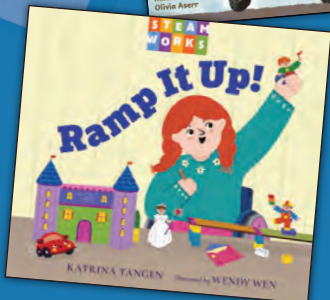
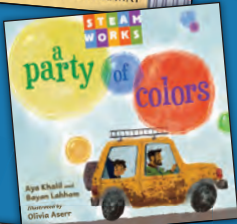
This guide has four station ideas that correlate to STEAMWORKS books.

- Review the list of supplies, figure out quantities needed based on estimated attendance, and place your orders well in advance of the event to allow for shipping time.
- Print out copies of the directions for the event hosts and print out copies of activity cards for attendees.
- Make a floor plan with a table setup for each activity station you plan to have plus a place to display STEAMWORKS books.
- Make sure you have staff and/or volunteers designated for each station.
- Print out the STEAMWORKS bookmark sheets and STEAMWORKS superhero badges for attendees to pick up on their way out of the event.

YOU'RE INVITED TO A

STEAM WORKS

FAIR!



DATE:

TIME:

PLACE:

**STEAM IS FUN!
STEAM IS EVERYWHERE!
STEAM IS FOR EVERYONE!**



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W O R K S**

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Water Xylophone

Inspired by *Sounds of Trash* by Tina Athaide, art by Neha Rawat.

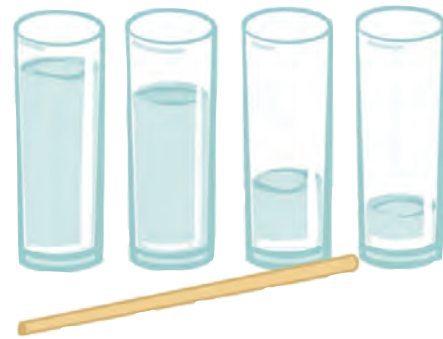
Goal: Explore sounds with a homemade water xylophone.

You will need:

- Water
- Four or more identical clear glass jars or glasses, 8 ounces or larger
- A measuring cup or cups
- A chopstick or spoon

What to do:

- Pour water into the jars.
 - Jar 1: 1 cup
 - Jar 2: 3/4 cup
 - Jar 3: 1/2 cup
 - Jar 4: 1/4 cup
- Tap each jar gently with a chopstick or spoon. Compare the sounds you hear.
- Arrange the jars in order from highest to lowest sound.
- Create a sound pattern or song by tapping the jars.

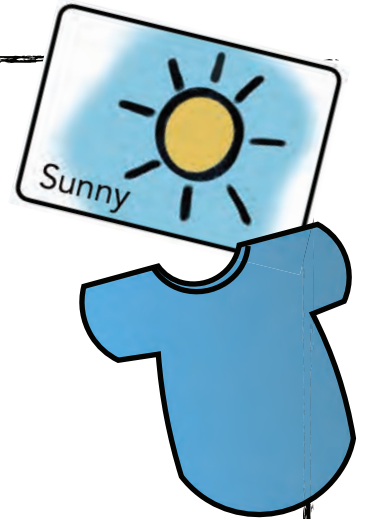


Other things to try:

- Add more jars to your water xylophone that are filled with different amounts of water.
- Fill a tall, narrow jar and a short, wide jar with the same amount of water, tap them, and compare the sounds you hear.
- Play a familiar song by tapping the jars.
- Find out why the jars make different sounds when tapped.



Weather Match



Inspired by *Manny Matches the Weather* by Jenny Lacika, art by Antonieta Muñoz Estrada.

Goal: Select clothing that matches a weather forecast.

You will need:

- A set of weather cards
- Clothing and accessories for different types of weather, which might include: boots, coats, sandals, umbrellas, sunglasses, shorts, swimsuits, T-shirts, sweaters, rain jackets, pants, snow pants, scarves, gloves, and hats (or a set of clothing cards or a mix of clothes and cards)

How to play:

- Place the stack of weather cards face down in a pile.
- The oldest player selects a card and describes what type of weather is in the forecast. For example, if a card with snow is selected, the forecaster might say, “We’re expecting cold weather today and tomorrow. Six inches of snow are expected to fall. Bundle up, everyone.”
 - The cards indicate a type of weather, and some indicate the temperature. Blue thermometers indicate cooler temperatures, while red thermometers indicate warmer temperatures.
- The other players look through the clothing and accessories and pull out clothing that matches the weather forecast.
- Alternate turns so everyone has a chance to be the weather forecaster.

Other ways to play:

- Select a weather card. Dress in clothing that matches it.
- Draw a picture of clothing that matches one of the weather cards





Clothing
Cards



umbrella



blouse



shoes



swimsuit



skirt



socks



shorts



hat



mittens



gloves



boots



scarf



hat



sweater



coat



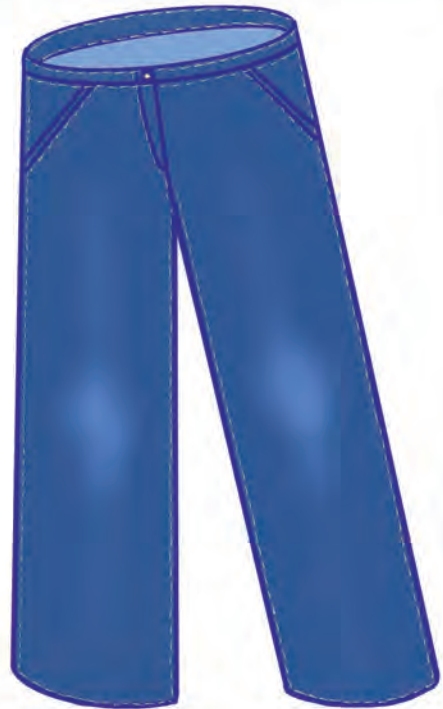
leggings



dress



shirt



jeans



T-shirt



pants



long-sleeved
shirt



tank top



flip-flops



shoes



rubber boots



shoes



swimsuit



sunglasses



jacket

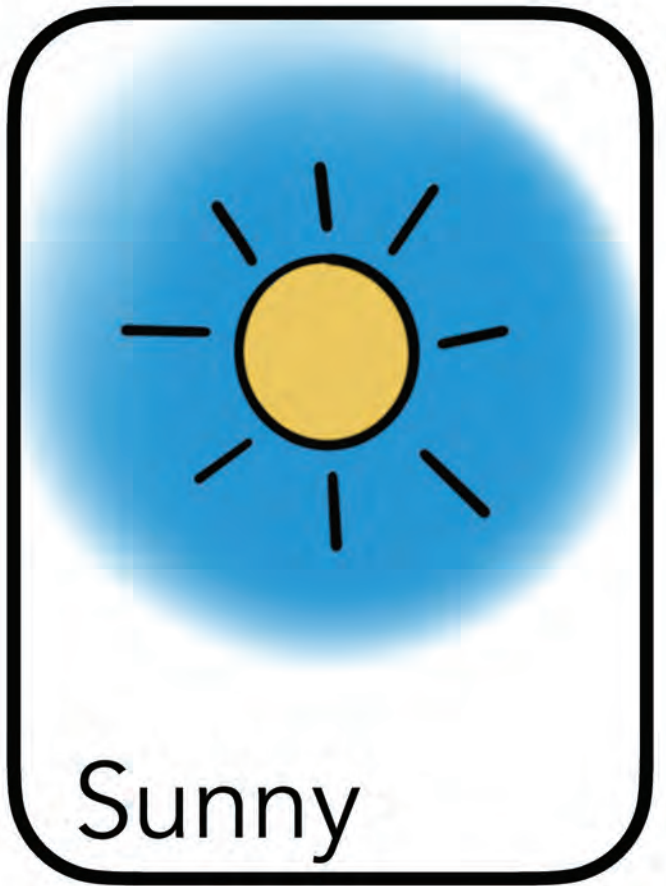


T-shirt

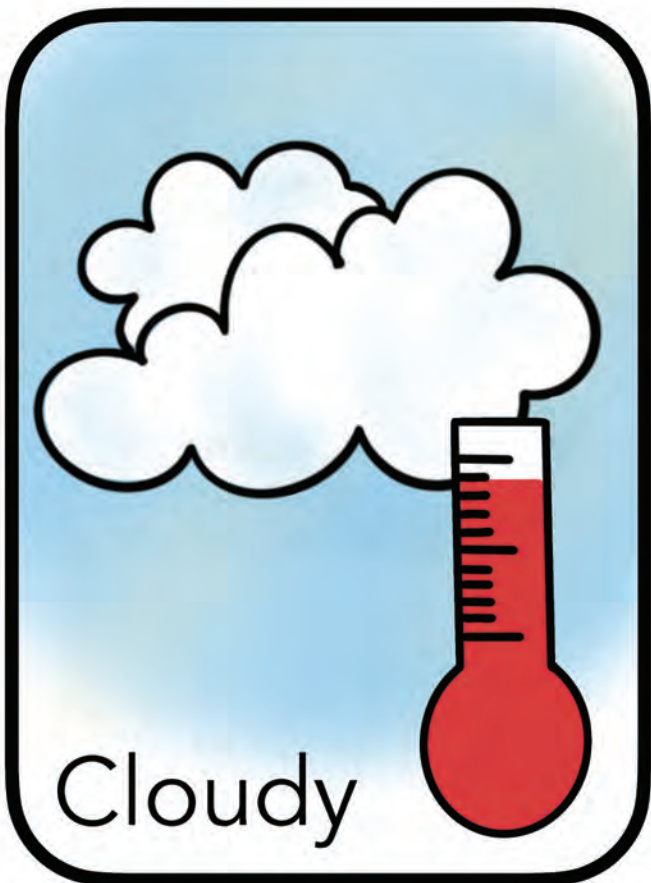




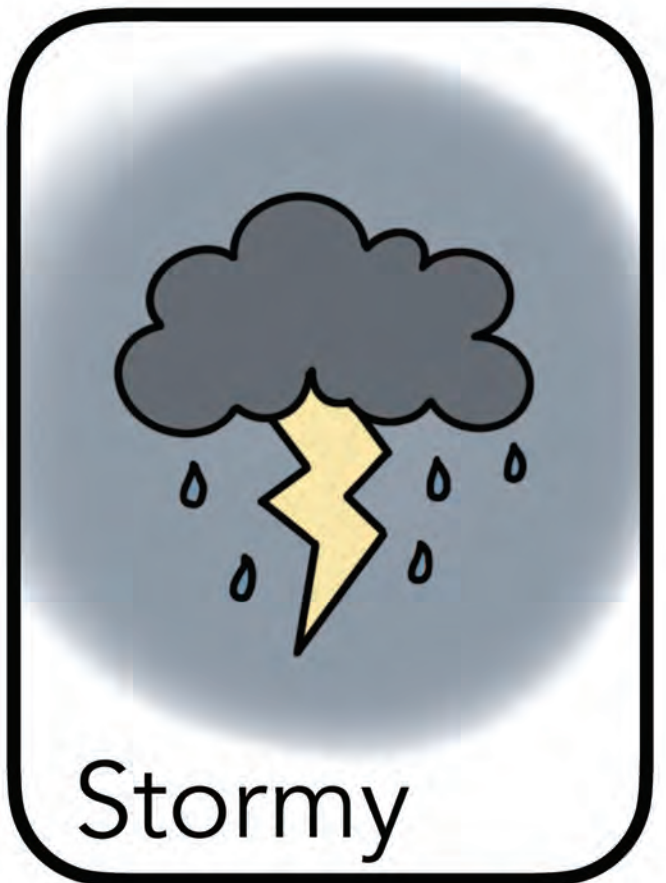
Partly Cloudy



Sunny



Cloudy



Stormy



Breezy



Foggy



Cloudy



Frosty

What Goes with Dino?

Inspired by *Sort, Wash, ROAR!* by Songju Ma Daemicke, art by Sian James.

This is a game for two to four players.

Goal: Find objects that share a common attribute.

You will need:

- Dinosaur cards or drawings/pictures of dinosaurs

What to do:

- Place the dinosaur cards face down in a pile.
- Each player draws a dinosaur card and looks carefully at the image. The player might notice:
 - The dinosaur is red.
 - The dinosaur's egg is round.
 - The dinosaur can swim.
 - The dinosaur has four legs.
- Each player hunts for a toy/real-life object nearby that shares a common characteristic with the image on the dinosaur card. The players return to the group, bringing the object they found, if possible.
- Each of the players takes turns sharing why they selected the chosen object. This might sound like:
 - "My dinosaur is red, and so is this toy car."
 - "The dinosaur's egg is round. This golf ball is round, too."
 - "This dinosaur goes in the water. My toy duck does, too."
 - "The dinosaur has four legs. This stuffed animal also has four legs."
- When all players have had a chance to share, each player draws another card, and the game starts over.

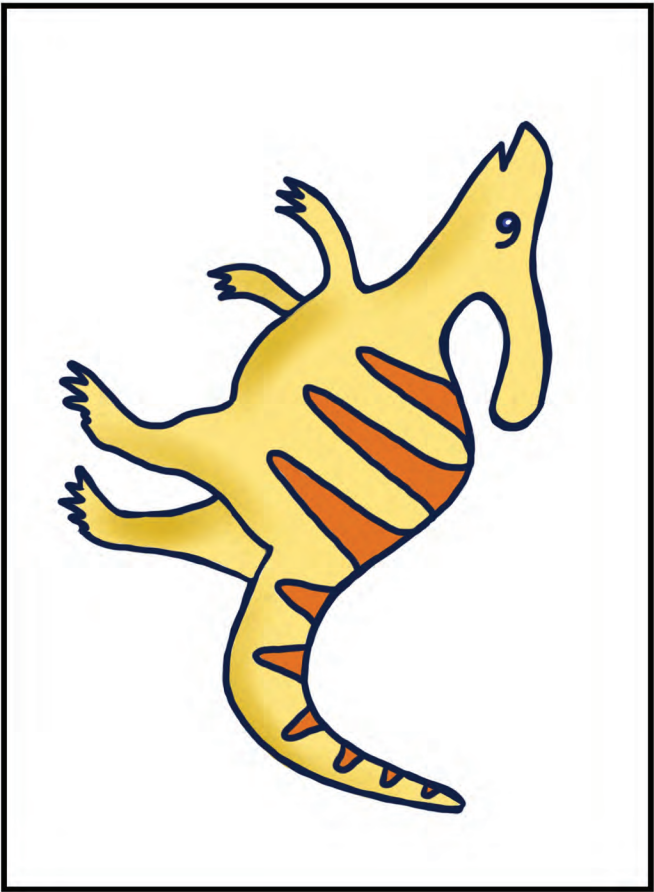
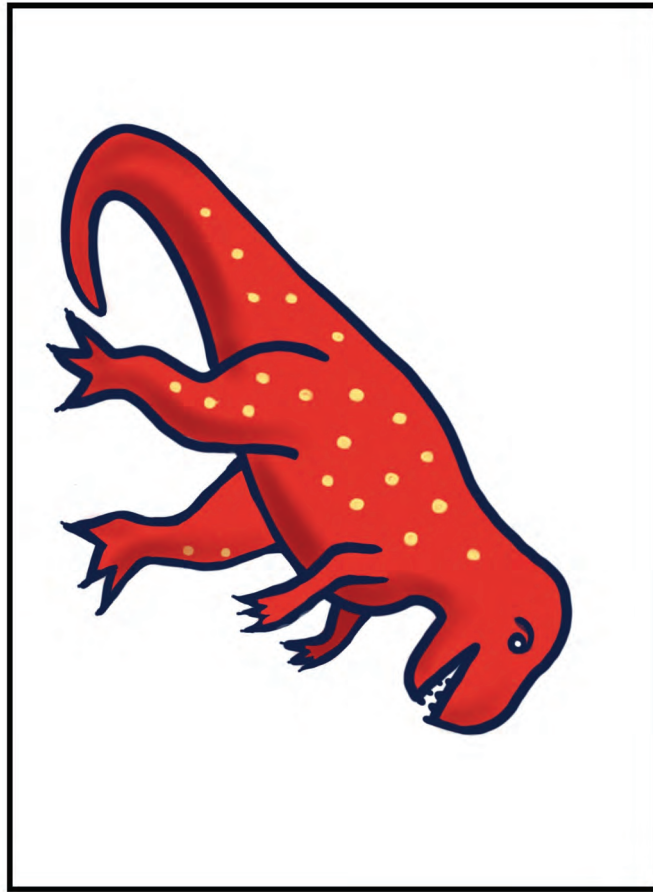
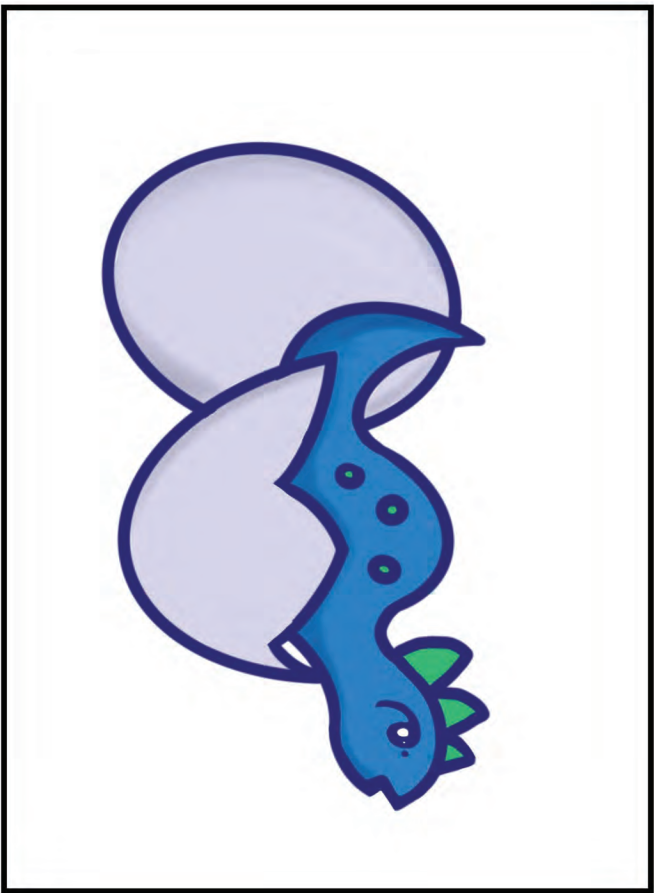
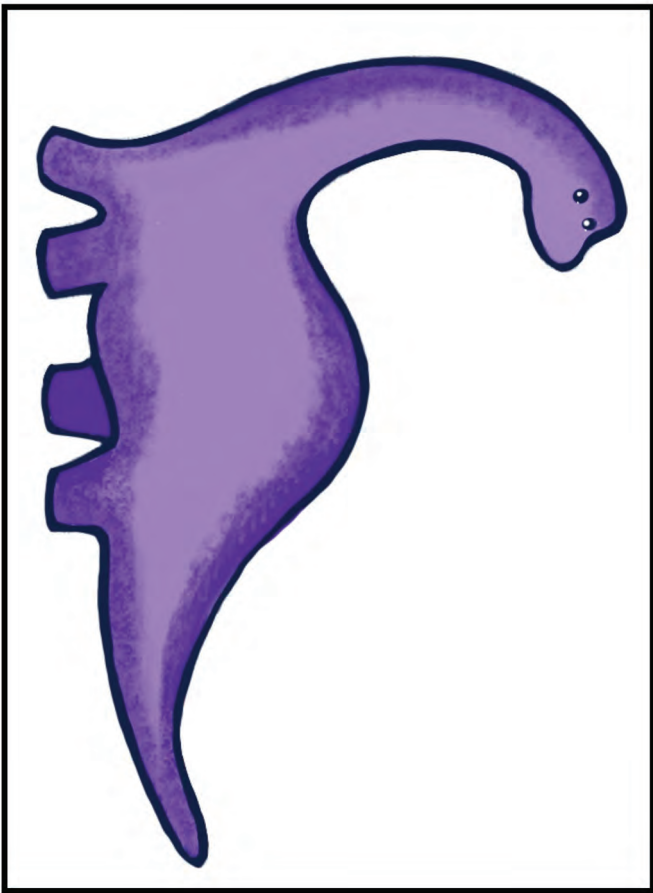
Other ways to play:

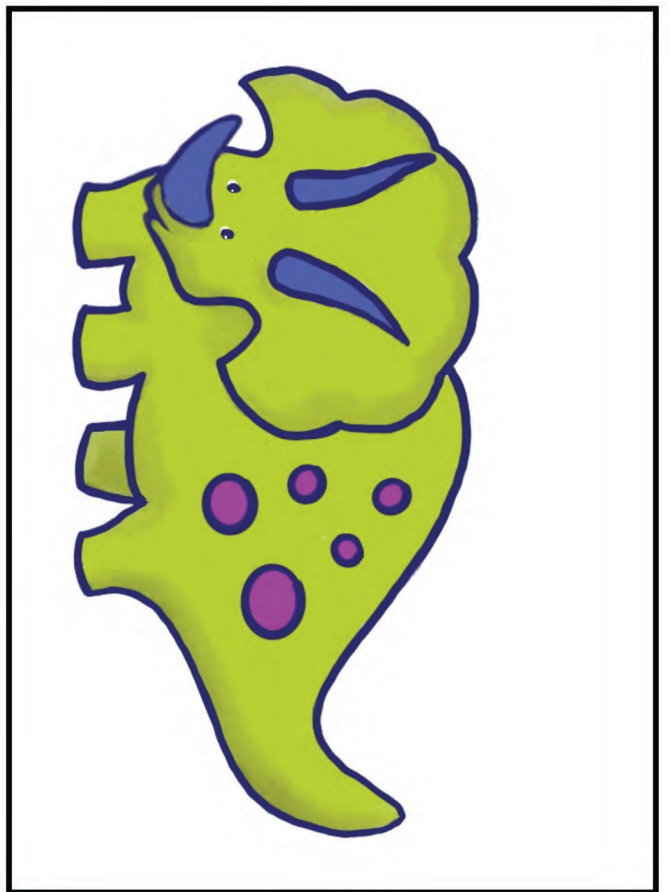
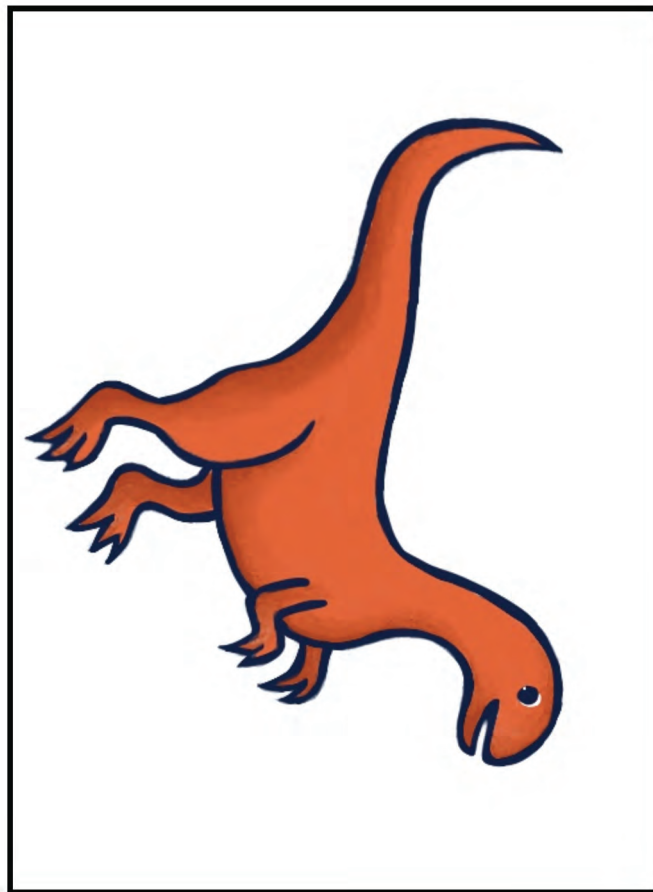
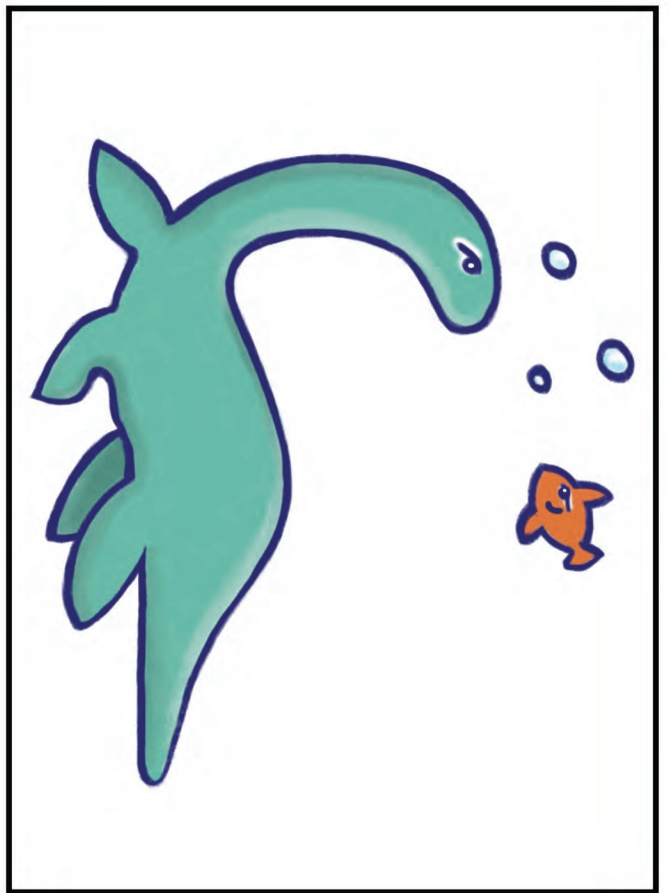
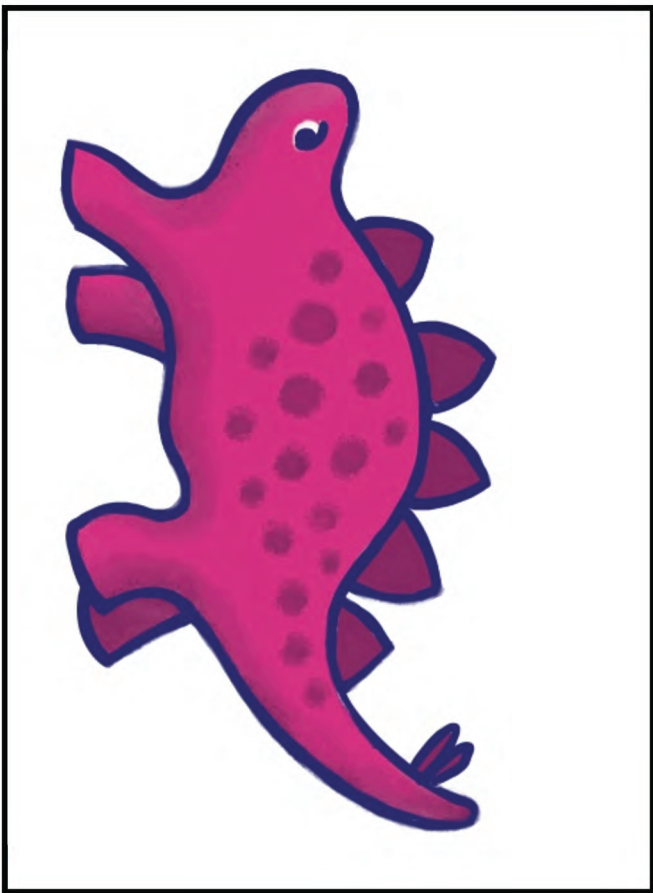
- Each player brings back an object that shares a common attribute(s) with the dinosaur card, but the player does not share what the card and object have in common. Instead, the other players identify the common attribute or attributes.

To think about:

- Is there more than one attribute that the cards and objects have in common?







Mixing Colors

Inspired by *A Party of Colors* by Aya Khalil and Bayan Lahham, art by Olivia Aserr

Goal: Mix primary colors to make different colors.

You will need:

- Sidewalk chalk or paint
- A place to draw or paint (sidewalk or paper)

What to do:

- Select two primary colors (red, yellow, or blue) from your chalk or paint.
- Draw or paint with the first primary color. Next, draw or paint directly on top of the first primary color with the second primary color. Then mix the colors together.
- Do you see a different color? What happened to the first and second colors?
- Explore making a new color. What steps did you take to create the new color? What did you do first? What did you do second?
- Try to mix the color black into another color. What happens to the color? What happens if you mix the color white with another color?

To think about:

- What happens when you mix two primary colors together and use more of one color than the other?
- Think about the colors you created by mixing primary colors together. What items in the world can you think of that are those colors?



READ THEM ALL!

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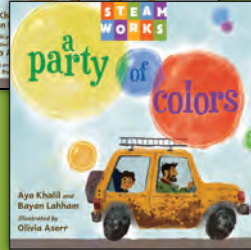
Board Books



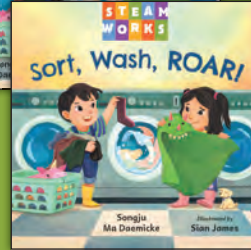
Lunar phases
Shapes



Temperature
Weather



Sequencing
Color mixing



Sorting
Classification

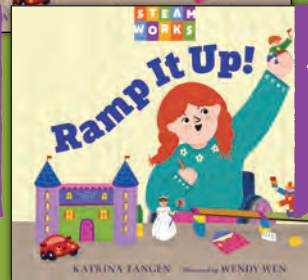
Picture Books



Engineering
Sound



Time
Estimation



Simple machines
Angles



Engineering
Solar energy

www.steamworksbooks.com



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Created in partnership with Count Play Explore, an initiative led by the Office of Fresno County Superintendent of Schools, Early Care and Education Department.



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