

GAME ON: COLLABORATION AND COMMUNICATION

AGES

Tweens 9–12

Teens 13–18

PROGRAM DESCRIPTION

We have all heard the saying “Teamwork makes dreams work,” but how can we effectively illustrate this concept for tweens or teens? With games! This program challenges teens and teens to work together, build on each other’s strengths, and communicate effectively to win *Survivor*-style challenges. Run the games below, or come up with your own. Registration is helpful for knowing how many materials to have on hand. Suggested runtime: 45 minutes.

MATERIALS AND PREPARATION

Helium Stick

Materials:

- PVC pipe (one per team)

To play: Teams must lower a PVC pipe to the ground using only their fingers. The pipe must lie on top of the players’ fingers and remain touching the entire time. Teams must start over if any player’s finger is not touching the pipe. The first team to lower the pipe wins.

Tennis Ball Transfer

Materials:

- Tennis balls (one per team)
- Cups big enough to fit a tennis ball (one per team)
- Washers (one per team)
- String (one piece tied to the washer for each team member)

To play: Teams race to the location of the tennis balls and washers. Once all team members arrive, they transport their tennis ball on top of the washer using the strings attached to the washer. If the ball drops, they must start over. The first team to transport the tennis ball into the cup wins.

TIP:

Not everyone needs to participate in each game; as long as everyone gets to play at least one, teams can swap out players based on their skill sets.

TIP:

Divide teams by having them draw colors.

TIP:

For a similar activity that can be run as an icebreaker, see the Team Machine program on page 97.

TIP:

More about the helium stick game on *Teampedia*: <https://bit.ly/3QdTcx2>

Blindfolded Puzzle

Materials:

- Blindfolds (one per team)
- Colored bags
- Puzzle pieces for a whole puzzle (one per team)

To play: One player from each team is blindfolded and another directs the blindfolded player to gather the correct colored pages. Once all bags have been collected, the whole team opens the bags, pulls out the pieces, and solves the puzzle. The first team to solve the puzzle wins.

Tower of Balloons

Materials:

- A bag of balloons
- Masking tape
- Measuring tape

To play: Teams have 15 minutes to build the tallest tower of balloons. The balloons can be taped to one another but not to the ground. The team with the tallest tower wins.

Listen Well

Materials:

- White board and dry-erase markers
- Picture books, nursery rhymes, or short stories

To play: Players listen to a story. Afterwards, they answer multiple choice questions about that story. The team with the most correct answers wins.

UNIQUE SPACE AND/OR PERSONNEL NEEDS

Solo-librarian friendly. Large space required. An additional staff member or volunteer for set-up or judging would be helpful.

TIP:

Buy latex-free balloons, or be sure to provide a latex allergy warning.

TIP:

For friendship fiction, see the Friendship Fiction Book List on page 44.



Image source: Shutterstock

THE SCIENCE OF COLLABORATION

AGES

Children 5–8

PROGRAM DESCRIPTION

Demonstrate the amazing science of collaboration! Set up three stations and let children observe each one. Station #1 is bouncing magnets: Discuss how magnets repel each other and attract opposites. Station #2 is animal friendships: Show examples of mutualistic relationships that animals have with each other. This station includes mutualism worksheets in both Spanish and English. Station #3 is chemistry: Discuss how acids and bases react to create new and exciting things. Optionally, give older children an observation journal to write down what they learn. Suggested runtime: 30–60 minutes.

MATERIALS AND PREPARATION

For Station #1: Bouncing Magnets

Materials:

- Ceramic disc magnets
- One wood dowel 10–12-inches long
- One 6 x 6-inch wood block
- Wood glue
- Washers
- Three colors of spray paint

Preparation: In the wood block, drill a hole that is slightly larger than the diameter of the doweling. Put wood glue into the hole and stick the dowel inside. Wipe away any excess glue. Paint the magnets a different color on each side to help children differentiate between the positive and negative sides. You can also paint the washers a third color to distinguish them from the magnets.

During the program: Ask children to thread the magnets onto the dowel with a washer in between (this prevents pinched fingers). The magnet sides of the same color will bounce, and the magnet sides of different colors will stick. Talk about how magnets attract opposites and relate it to friendship. Ask them about something they like to do that is different from what their friends like to do.

ADAPTATION:

This program can be run virtually, or you can turn the activities into take-and-make kits

TIP:

Ceramic disc magnets greater than 1 ¼-inches are safest for all ages.



Image source: Shutterstock

For Station #2: Mutualism in Nature

Materials:

- Mutualism Facts (see Printables)
- Mutualism Game (see Printables)
- Glue
- Scissors

During the program, watch a video on mutualism (optional, see Resources). Talk about how these relationships are mutually beneficial, and ask children why it is important for people to help each other. Provide mutualism facts and game for children to take home (see Printables).

Station #3: Fizzing Friendship Chemical Reactions

Materials:

- Citric acid
- Baking soda
- Teaspoon measurer
- Small mixing bowl.

Preparation: Prepare a station where you can demonstrate an acid–base reaction in a mixing bowl.

During the program: Mix 1 tsp of baking soda and 1 tsp of citric acid in a bowl. If there is insufficient fizz, you may need to add more baking soda or citric acid.

Explain what is happening: When you combine an acid (citric acid) and an alkaline (baking soda), they mix together to create a gas that takes the form of a ton of tiny bubbles. This is called an acid–base reaction, and it creates carbon dioxide bubbles, the same bubbles you feel on your tongue when you drink a fizzy drink! Ask children about a time they worked with a friend to make something really cool and fun.

For another example of an acid–base reaction, see Self-Care Bath Bombs and Sugar Scrub on page 180.

UNIQUE SPACE AND/OR PERSONNEL NEEDS

If you run the stations concurrently, you will need one extra staff member or volunteer for each station.

RESOURCES

Web

Bouncing magnet experiment from *Babble Dabble Do*: <https://bit.ly/3QfvmBb>
 Mutualism video [6 min] from *SciShow Kids* on YouTube: <https://bit.ly/39rZoBa>
 “Mutualism” from *Brittanica*: <https://bit.ly/3aPFhgm>
 Teaching acids and bases from *Science Explorers*: <https://bit.ly/3NVPnLi>

Mutualism Picture Books

Anemone Is Not the Enemy (2021) by Anna McGregor (F)
Friends Stick Together (2018) by Hannah E. Harrison (F)
Just You and Me: Remarkable Relationships in the Wild (2021) by Jennifer Ward (NF)

TWEENS

VIRTUAL | GAME/ACTIVITY

Printables

Mutualism Facts (in English and Spanish)

Mutualism Game (in English and Spanish)

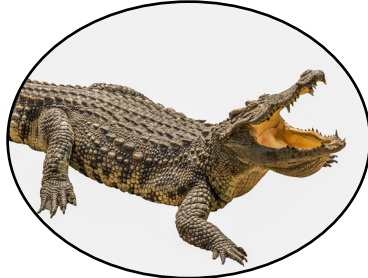
All mutualism printables developed by Kim Poma of Garden City Library in Garden City, MI.

MUTUALISM FACTS

Symbiosis is a close relationship between two different species. Mutualism is a type of symbiosis where both living things in the relationship benefit from the relationship. Here are some examples of mutualism:



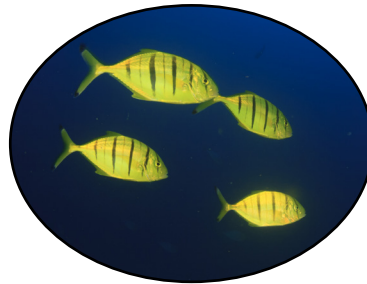
Egyptian plover



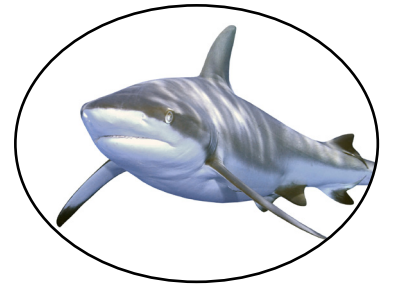
Nile crocodile

The Egyptian plover flies into the Nile crocodile's mouth and pecks at its teeth, eating the decomposing meat that gets stuck there. In return, the Nile crocodile gets its teeth cleaned.

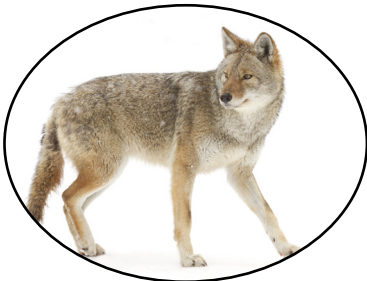
Pilot fish help sharks get rid of parasites, and they pick food out of their teeth. In return, sharks keep the pilot fish safe from other predators.



pilot fish



sharks



coyotes



badgers

Badgers look for food by digging into the burrows of other animals. Coyotes sometimes wait and catch animals that escape the burrowing badger. On the other hand, sometimes animals sense the coyote is waiting and remain in their burrows, allowing the badger to catch them.

Hermit crabs encourage sea anemones to stick to their shells. While the sea anemone gets a free ride, they act as a bodyguard for the hermit crab with their barbed tentacles keeping other creatures at bay.



hermit crabs



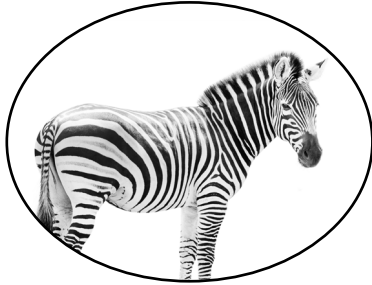
sea anemones

MUTUALISM FACTS

Symbiosis is a close relationship between two different species. Mutualism is a type of symbiosis where both living things in the relationship benefit from the relationship. Here are some examples of mutualism:



oxpecker



zebra

An oxpecker lives on a zebra and eats the bugs and parasites on the zebra's body. Oxpeckers keep zebras safe by flying high and making noise whenever a predator is nearby.

Drongos act as lookouts for meercats while they hunt, setting off warning cries that give them enough time to hide from predators. However, sometimes drongos give false cries and swoop down to steal the prey that meercats were hunting!



drongo



meercat



flowers



bee

Bees get the nectar they need by traveling from flower to flower. When bits of pollen from one flower fall into another, it results in pollination.

The Colombian lesserblack tarantula lets the dotted humming frog share its burrow. The frog is protected from other predators, and it feasts on carnivorous ants that would attack the tarantula's eggs.



dotted humming frog



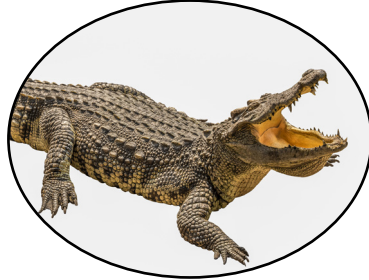
Colombian lesserblack tarantula

HECHOS DE MUTUALISMOS

La simbiosis es una relación estrecha entre dos especies diferentes. El mutualismo es un tipo de simbiosis en donde los dos seres vivos en la relación se benefician de la relación. Aquí hay algunos ejemplos de mutualismo:



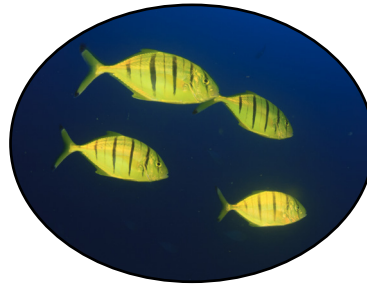
chorlito Egipcio



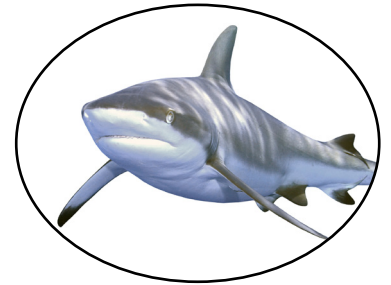
cocodrilo del Nilo

El chorlito egipcio vuela dentro de la boca del cocodrilo del Nilo y picotea sus dientes, comiéndose la carne en descomposición que queda atrapada ahí. A cambio, el cocodrilo del Nilo obtiene una limpieza de dientes.

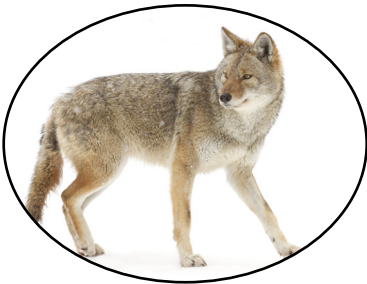
Los peces piloto ayudan a los tiburones a deshacerse de los parásitos y ellos picotean la comida de sus dientes. A cambio, los tiburones mantienen a los peces piloto a salvo de otros depredadores.



pez piloto



tiburones



coyotes



tejones

Los tejones buscan comida excavando las madrigueras de otros animales. Los coyotes a veces esperan y atrapan animales que escapan del tejón excavador. Por otro lado, algunos animales sienten que el coyote los está esperando y permanecen en sus madrigueras, permitiendo que el tejón los atrape.

Los cangrejos ermitaños alientan a las anémonas de mar a adherirse a sus conchas marinas. Mientras las anémonas de mar obtienen un viaje gratuito, ellas actúan como un guardaespaldas para el cangrejo ermitaño manteniendo a otras criaturas a raya con sus tentáculos de púas.



cangrejos ermitaños



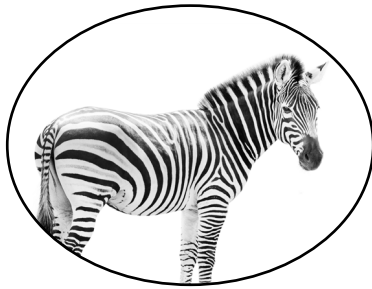
anémonas de mar

HECHOS DE MUTUALISMOS

La simbiosis es una relación estrecha entre dos especies diferentes. El mutualismo es un tipo de simbiosis en donde los dos seres vivos en la relación se benefician de la relación. Aquí hay algunos ejemplos de mutualismo:



picabuey



cebra

Un picabuey vive en una cebra y se come los insectos y parásitos en el cuerpo de la cebra. Los picabueyes mantienen a las cebras a salvo al volar alto y hacer ruido cada vez que un depredador está cerca.

Los drongos actúan como vigías para las suricatas mientras cazan, dando gritos de advertencia que les dan suficiente tiempo para ocultarse de los depredadores. Sin embargo, a veces los drongos dan gritos falsos y bajan a robarse la presa que las suricatas estaban cazando.



drongo



suricata



flores



abejas

Las abejas obtienen el néctar que necesitan al viajar de flor en flor. Cuando los pedacitos de polen de una flor caen en otra, resultan en la polinización.

La tarántula negra colombiana deja que la rana de hojarasca del río Pastaza compartan su madriguera. La rana es protegida de otros depredadores y se da un banquete con las hormigas carnívoras que atacarían los huevos de la tarántula.



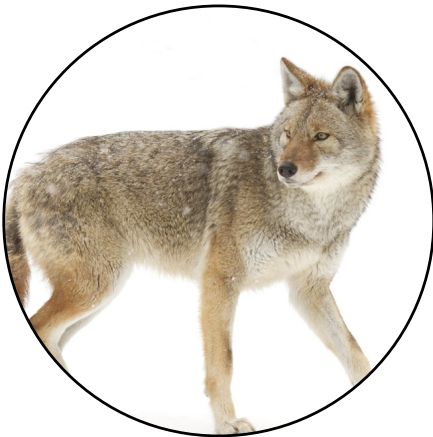
**rana de hojarasca del río
pastaza**



**tarántula negra
Colombiana**

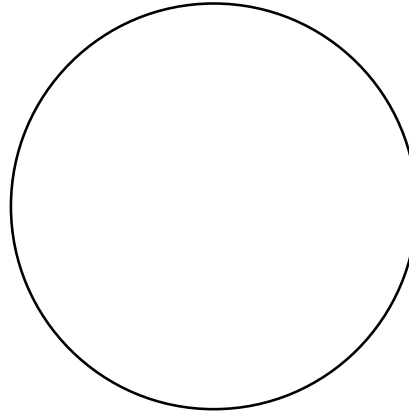
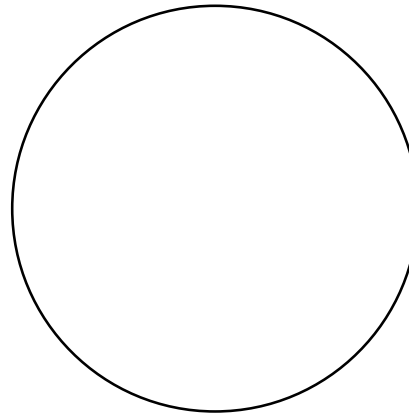
MUTUALISM GAME

Cut out the pictures and match the creatures with their symbiotic partners.





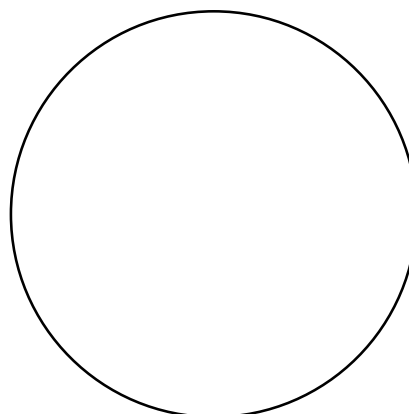
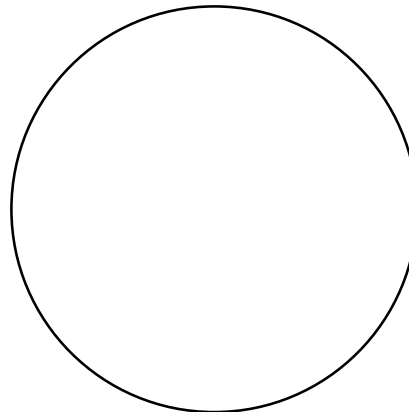
What creature
picks the teeth of
the Nile Crocodile?



What creature
keeps Pilot Fish
safe from other
predators?



What creature
hunts the animals
that run away
from a
burrowing
badger?

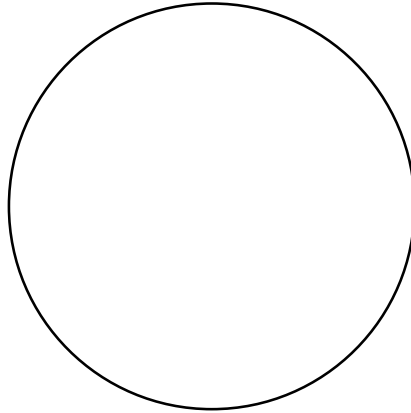
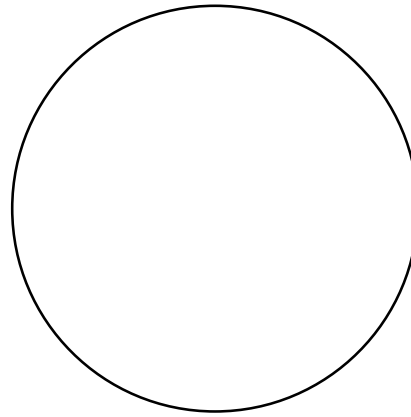


What creature
pollinates flowers
while collecting
nectar?





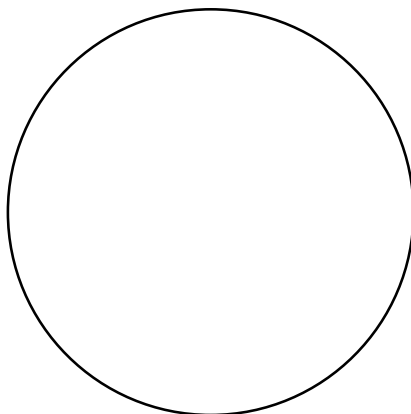
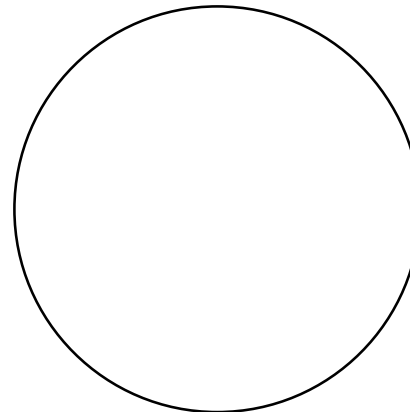
What creature
gives a sea
anemone a
free ride?



What creature
keeps zebras safe
from predators?



What creature
does the drongo
sometimes trick
with false cries of
alarm?



What creature
helps the Colombian
lesserblack
tarantula by eating
the ants that attack
its eggs?



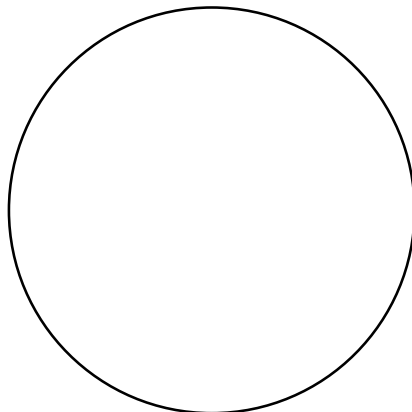
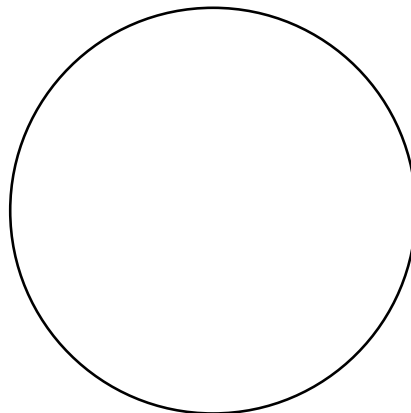
JUEGO DE MUTUALISMO

Corta las fotos y coloca las criaturas junto con sus compañeros simbióticos.





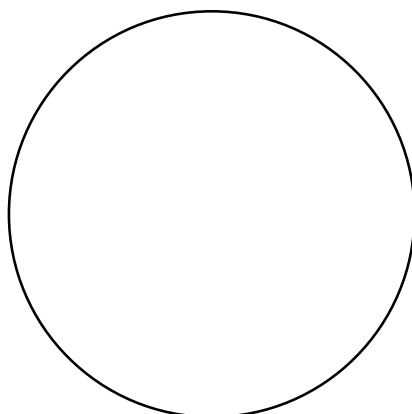
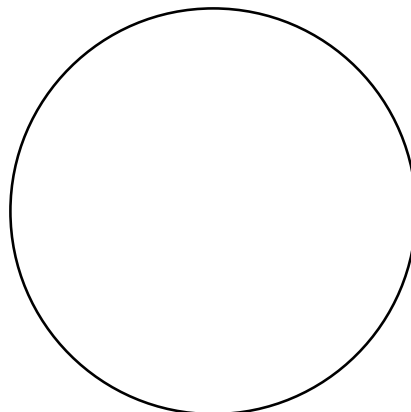
¿Qué criatura le
pica los dientes al
cocodrilo del Nilo?



¿Qué criatura man-
tiene al pez piloto
a salvo de otros
depredadores?



¿Qué criatura caza
los animales que
huyen de un tejón
que excava mad-
rigueras?

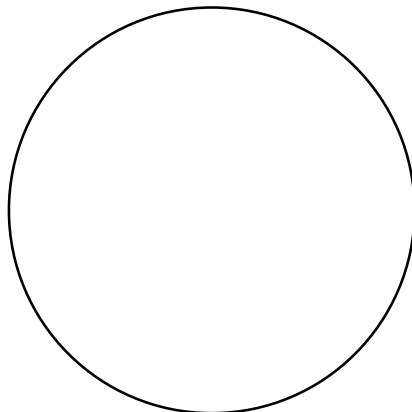
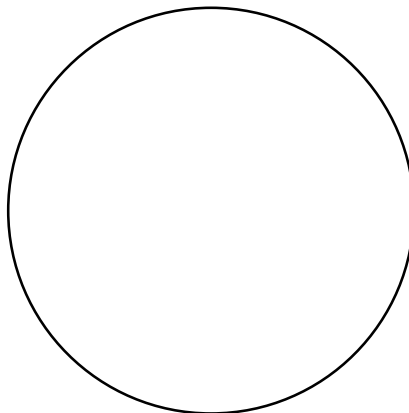


¿Qué criatura
poliniza las flores
mientras recol-
lectan el néctar?





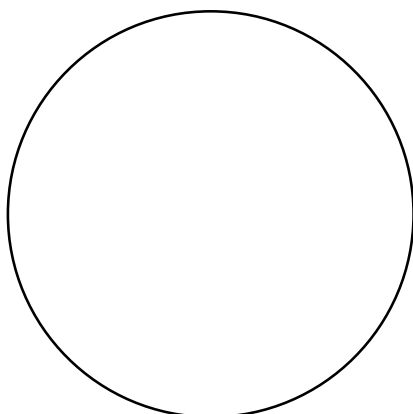
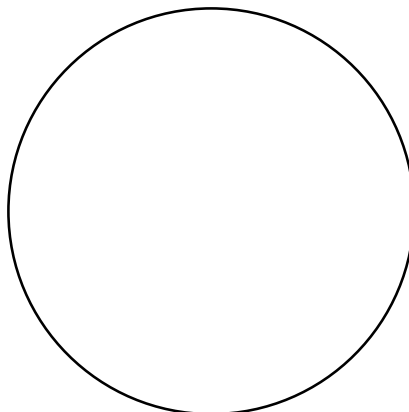
¿Qué criatura les da a las anémonas de mar un viaje gratuito?



¿Qué criatura mantiene a salvo a las cebras de los depredadores?



¿A qué criatura a veces engaña el drongo con falsos gritos de alarma?



¿Qué criatura ayuda a la tarántula negra colombiana al comerse a las hormigas que atacan sus huevos?



PLIX & CSLP: SCRATCH+MICRO:BIT

AGES

Children 8+

PROGRAM DESCRIPTION

Welcome to Plix Scratch+micro:bit! This program offers a playful approach to electronics for learners of all backgrounds. It combines storytelling, electronics, and coding to bridge the gap between the physical and digital worlds, and you can explore almost any topic. The activity works well as either a structured workshop in groups of two or three children, or as a drop-in activity. Estimated prep time: 60–90 minutes. Suggested runtime: 90 minutes.



Image source: Shutterstock

Workshop prompts to consider:

- Finish the story: Read the beginning of a book as a group, then work in small teams to create an ending to the story with Scratch and micro:bit! Examples: Have the character tell a secret message on the micro:bit display; tell different endings depending on which way the micro:bit tilts; end *The Very Hungry Caterpillar* when the butterfly flies away.
- Name your superpower: Make something with Scratch+micro:bit that shows off your personal superpower. Examples: A wristband that grows a Scratch plant when you shake it (good at growing plants); a hat that controls a Scratch memory game (good at remembering things).
- Enchanted garden: Create an interactive garden with Scratch+micro:bit. Examples: Flowers that bloom when you press "A" or "B"; a bee that buzzes when you shake the micro:bit.
- Invent a new musical instrument: Children create new musical instruments out of various recyclables, then create unique digital sounds for them. See an example from Richmond Library Balantine: <https://bit.ly/3aXHrdQ>

MATERIALS AND PREPARATION

Materials:

- Plix zines, one per participant (see Printables)
- micro:bit Go Bundle (one per two–three participants) from www.sparkfun.com
- Alligator test leads (two–three per small group) from www.sparkfun.com
- Scratch coding cards (see Resources)
- Micro:bit coding cards (see Resources)
- Scratch accounts (shared or individual)
- Laptops with Bluetooth
- A collection of dollar store objects or random craft supplies

The Public Library Innovation Exchange (PLIX) is a project of the MIT Media Lab Digital Learning & Collaboration Studio. This program was adapted by CSLP with permission and remains under a CC BY-SA 4.0 license. Link to the original program here: <https://bit.ly/3xvVgrC>

TIP:

See STAR Net for a handout on how to be a “guide on the side” when running STEM programs: <https://bit.ly/3QI8240>

TIP:

When facilitating this activity, encourage a tinkering mindset!

- Tape, rubber bands, and/or pipe cleaners (for attaching micro:bits to objects)
- Several project examples

Facilitation tips:

- Encourage peer learning
- Encourage those new to Scratch to remix the code on your example projects
- Recognize the victories in big ideas and small troubleshooting
- If ideas are too big, find ways to make them smaller yet still satisfying
- Hands off the mouse and micro:bit!
- Keep it simple, but open the door to more

UNIQUE SPACE AND/OR PERSONNEL NEEDS

You will need one computer station for each group of two to three participants.

RESOURCES

Web

Original Scratch+micro:bit program from PLIX: <https://bit.ly/3xvVgrC>
 Bundles and alligator test leads from Spark Fun: www.sparkfun.com
 Scratch coding cards to purchase from Scratch: <https://bit.ly/3NUyCQJ>
 Scratch coding cards to print from Scratch: <https://bit.ly/3mKVuX5>
 micro:bit coding cards to print from Scratch: <https://bit.ly/3tBKuPp>
 Setting up your micro:bit from PLIX: <https://bit.ly/3tBJkDv>
 Installing the micro:bit circuit board from Scratch: <https://bit.ly/3xPZXxP>
 Making examples for Scratch+micro:bit from PLIX: <https://bit.ly/3xSeE3K>
 Ways to use Scratch coding cards in a classroom from ScratchED: <https://bit.ly/3O8tkS1>

Books About Coding

Coding Games in Scratch (2019) by Jon Woodcock (middle grade NF)
Computer Coding with Scratch 3.0 (2019) by Carol Vordeman (middle grade NF)
The Hello Ruby series (2015–18) by Linda Liukas (picture book NF)
Margaret and the Moon (2017) by Dean Robbins and Lucy Knisley (picture book NF)
Sasha Savvy Loves to Code (2017) by Sasha Ariel Alston and Vanessa Brantley-Newton (middle grade F)

Printables

Scratch and Micro:bit Zine from PLIX

COST:

\$49–\$57 for eight participants. While the materials are expensive up front, you can reuse them again and again.

TIP:

Be sure to check out additional learning resources from Scratch for use with micro:bits: <https://scratch.mit.edu/microbit>.

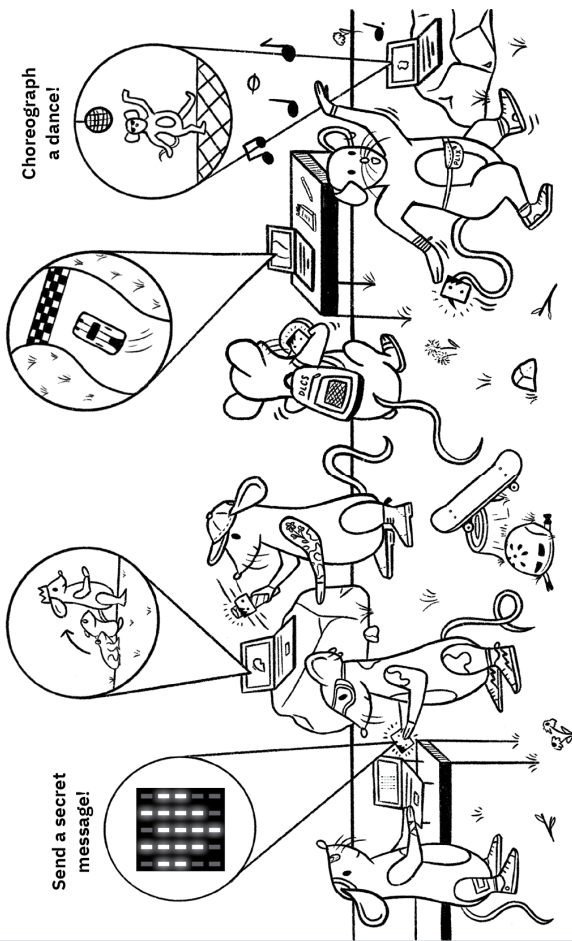
TIP:

If you print your own Scratch coding cards, PLIX recommends two cards per page in landscape.

TIP:

Go to sparkfun.com to purchase alligator test leads and/or the micro:bit Go Bundle.

The printable zine for this program is reprinted with permission from the Public Library Innovation Exchange (PLIX) at MIT: <https://bit.ly/3xvVgrC>



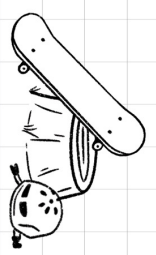
SCRATCH AND MICRO:BIT IN ACTION

What will you create?

GETTING STARTED
scratch.mit.edu/microbit

ABOUT THIS ZINE
 This zine was written and created by the MIT Media Lab Public Library Innovation Exchange (PLIX).
 Learn more at:
plx.media.mit.edu

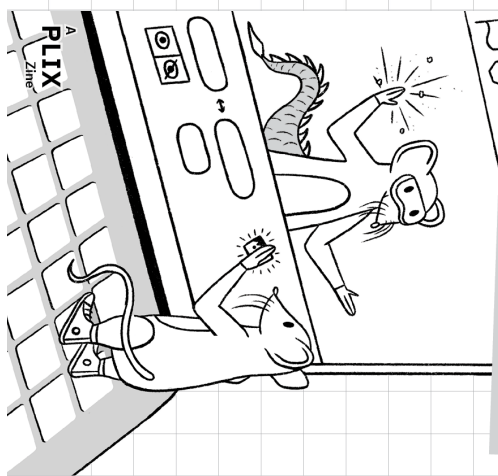
LICENSE
 CC BY-SA 4.0



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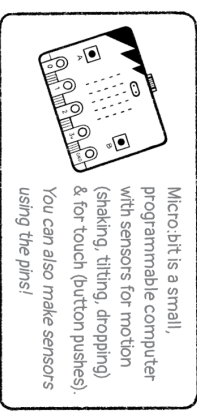
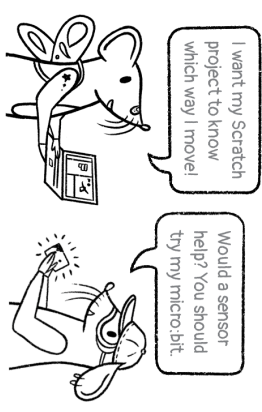
SENSING WITH

SCRATCH + MICRO:BIT

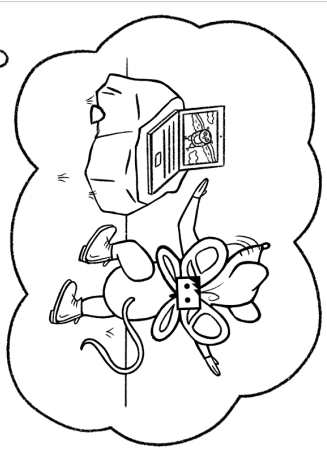
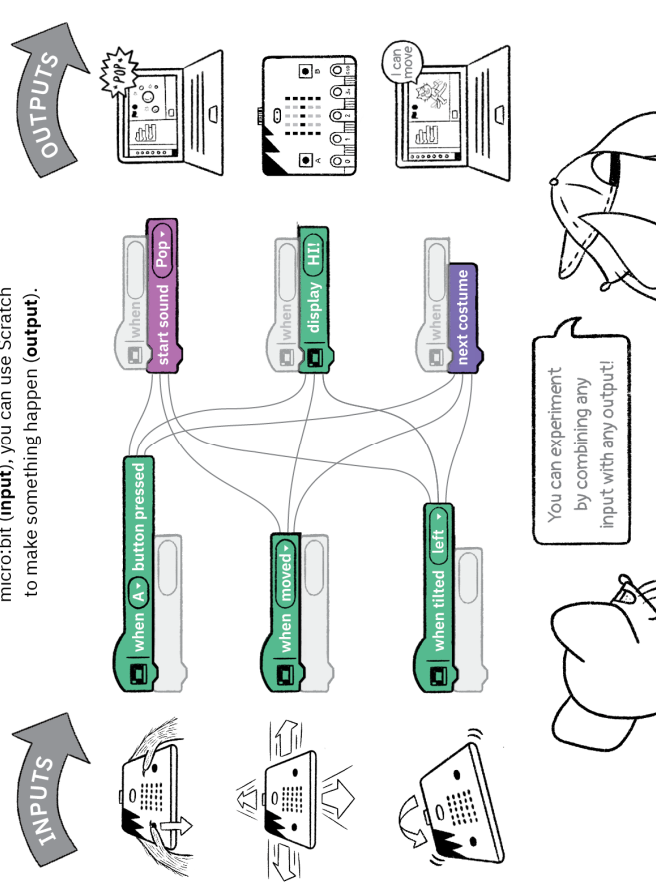


CONNECTING THE DIGITAL & PHYSICAL

Clicks on a keyboard or waves to a camera are physical ways to communicate with the digital world. But what if you want... more?



When you interact with the micro:bit (**input**), you can use Scratch to make something happen (**output**).



Using Scratch and micro:bit together, there are many ways to create interactive projects.

FLOWER POWER

AGES

Children 5–8
Multigenerational

PROGRAM DESCRIPTION

Invite a local master gardener or extension office to teach kids about plants and flowers that grow in your area and their importance to the local wildlife or environment. Alternatively, partner with a community garden. After the speaker's presentation, pass out small clay pots for participants to decorate. Provide flower seeds of native plants or those that are beneficial to pollinators for children to take home and plant. If your library has the space, you could also do the planting inside. For a take-and-make program, provide kits with seeds, dirt in a plastic bag, and a pot. Also consider including a handout from your local extension office about local flora. Suggested runtime: 60–90 minutes.



Image source: Shutterstock

MATERIALS AND PREPARATION

Materials:

- Small clay flowerpots (4-inches wide)
- Acrylic paint and paint brushes, or paint pens/sharpies
- Clear coat spray paint (optional)
- Flower seeds (milkweed or another pollinator seed mix)
- Potting soil
- Tablecloth or tarp for covering workspace

UNIQUE SPACE AND/OR PERSONNEL NEEDS

Depending on the type of art materials, this program may be best done outdoors.

RESOURCES

Web

Pots out of Play-doh containers from *Projects with Kids*: <https://bit.ly/3xR-3JHt>

"Pollinators" from *The National Wildlife Foundation*: <https://bit.ly/3mSuuok>

TIP:

Make a book display for books on gardening, habitats, flowers, insects.

ADAPTATION:

If you are creating a community garden at the library, be sure to include raised boxes for accessibility.

ADAPTATION:

You could also make a seed library for patrons to share seeds from home. Enlist teens to help organize the seeds

ADAPTATION:

Teach teens how to build their own window boxes or raised beds at home. Invite a guest speaker to demonstrate, and send teens home with printed instructions for window boxes, such as those available from *My Outdoor Plans*: <https://bit.ly/3NSAZ6G>

ADAPTATION:

If your library has a terrace, patio, or garden space, you could also do this as a small flower garden program. Children learn from a local farmer or gardener, then plant flowers; they sign up to be "gardener of the week" throughout the summer to care for the communal garden.

Books

1001 Bees (2021) by Joanna Rzezak (picture book)
The Bee Book (2018) by Charlotte Milner (picture book/early reader)
The Extraordinary Gardener (2018) by Sam Boughton (picture book)
Forest Magic: A Guidebook for Little Woodland Explorers (2021) by Sarah Grindler (picture book)
Garden Day! (Step into Reading 1) (2019) by Candice Ransom and illustrated by Erika Meza (picture book/early reader)
I Have the Right to Save My Planet (2021) by Alain Serres, illustrated by Aurélia Fronty, and translated by Shelley Tanaka (picture book)
Miguel's Community Garden (2022) by JaNay Brown-Wood and illustrated by Samara Hardy (picture book)
Tokyo Digs a Garden (2016) by Jon-Erik Lappano and illustrated by Kellen Hatanaka (picture book)
Yasmin the Gardener (2021) by Saadia Faruqi and illustrated by Hatem Aly (early reader)

TIP:

Free pollinator seeds are available from www.saveourmonarchs.org

COLLABORATIVE RUBE GOLDBERG MACHINE

AGES

Children 7+

Tweens 9–12

PROGRAM DESCRIPTION

A Rube Goldberg machine is mechanical contraption that performs a simple task in a complicated way, usually using some combination of pulleys, levers, gears, and other feats of engineering. If that sounds appealing, challenge your tweens to design a machine to “help” you around the library! For example, a machine could give book recommendations by spinning a wheel of book titles or releasing a piece of paper with a book title written on it. A machine could also drop bookmarks at the circulation desk. Consider separating participants into two (or more) groups for a friendly competition. This could be run as a series during which you provide mini lessons on different components of Rube Goldberg machines. Suggested runtime: 90 minutes.

MATERIALS AND PREPARATION

- Materials vary widely. Consider the following:
- Recycled items, especially cardboard and cardboard tubes
- Tape of all kinds, including duct tape and masking tape
- Rulers, pencils, scissors, and paper
- Dominos, funnels, string, playing cards, race cars, marbles, blocks, etc.

Preparation: Create a few examples, and choose YouTube videos to share. Keep materials that might be dangerous to young children separate (e.g., marbles, scissors, glass).

UNIQUE SPACE AND/OR PERSONNEL NEEDS

You will need a spacious room and mechanically-inclined volunteers or staff members to assist. High school students make great helpers for this program.

RESOURCES

Web

“Chain Reaction Machines” from Ok Go Sandbox: <https://bit.ly/3xqg4Rj>

“DIY Rube Goldberg Machine” [8 min] from Exploration Place on YouTube: <https://bit.ly/3tzGAqi>

“How to Build a Rube Goldberg Machine” [4 min] from Science Buddies on YouTube: <https://bit.ly/3mNhy3h>

TIP:

This program works best if you have a mechanically-inclined staff member or volunteer prepare examples and troubleshoot while children build.

TIP:

For a similar program, see “Levers at Play” from STAR Net, which explores the concept of levers in seesaw design: <https://bit.ly/3QjzG2d>

TIP:

Ask participants to bring in clean recyclables.

TIP:

If running over several sessions, keep the machines in a locked room to prevent tampering.

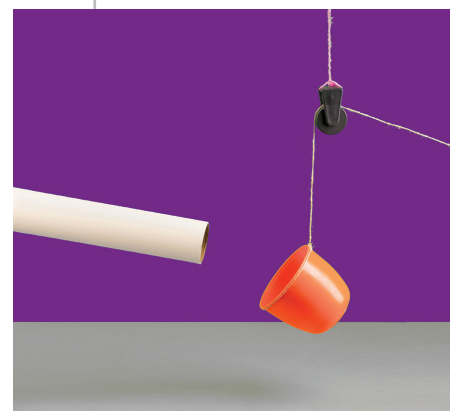


Image source: Shutterstock

STEM | GAME/ACTIVITY

“Rube Goldberg Machine for Little Inventors” from *Tinker Lab*: <https://bit.ly/3xkVC4o>

Books

Crazy Contraptions: Build Rube Goldberg Machines that Swoop, Spin, Stack, and Swivel (2019)

by Laura Perdew and illustrated by Micah Rauch (middle grade NF)

Newton and Curie: The Science Squirrels (2020) by Daniel Kirk (early reader)

TIKTOK DANCE CLASS

AGES

Tweens 9–12

Teens 13–18

PROGRAM DESCRIPTION

In this program, tweens or teens learn some of today's trendiest TikTok dances, then work together to brainstorm, create, film, and edit 60-second videos for the library's TikTok account. Perfect choreography is not the goal:

Just have fun dancing, laughing, and creating together! This is an engaging way for tweens and teens to practice and show off their video tech skills.

This is also a great program to turn into a mentorship program. Teens teach tweens dance moves to break the ice, then pair off to create TikTok videos to enter into the Teen Video Challenge on page 99. Teens/tweens could also be book buddies where teens recommend their favorite books from when they were tweens. Suggested runtime: 60–90 minutes.



Image source: Shutterstock

MATERIALS AND PREPARATION

Materials:

- iPad(s) (ask teens to bring their own; have extras on hand)
- Ring light and tripod (optional)

Preparation: TikTok trends come and go very quickly, so keep your program description general until a few weeks before the program. As the program date approaches, browse TikTok for popular dance challenges. The best ways to find trends are to browse TikTok's "Discover" tab, follow popular hashtags, and follow other libraries. Learn a few popular dances so you can guide teens through the movements.

UNIQUE SPACE AND/OR PERSONNEL NEEDS

Teens can create TikTok videos anywhere: In your meeting room, the stacks, outside, or from the comfort of their own homes.

RESOURCES

Web

"What Makes These Librarians TikTok?" from *School Library Journal*: <https://bit.ly/3HrsFZ5>

TIP:

Libraries have joined the TikTok craze and are using the platform to promote programs and services, share readers' advisory, give tutorials, and connect with their patrons in fun ways. Consider going live on your library's social media with book talks, book previews, and craft tutorials.

TIP:

If any tweens do not want to be on camera, give them behind-the-scenes jobs such as choreographing, recording, or editing.

ADAPTATION:

Challenge teens to reveal their reading preferences, test their '90s music knowledge, share their best book puns, review a book, or show off their TBR piles. Remind them to tag the library! Award prizes for participants, or select a random winner for a teen takeover of the library's social media for a day.

ADAPTATION:

More and more adults are joining TikTok. Consider offering a TikTok basics class for adults or encourage them to participate in TikTok challenges.

“TikTok: 8 Ways Libraries Are Using It” from *Don’t Shush Me*: <https://bit.ly/3xOzBfB>

“TikTok Guide for Parents” from the National PTA: <https://bit.ly/3QoUbdK>

A guide to TikTok safety from Today: <https://on.today.com/3O9svaQ>

TikTok Nonfiction

Essentially Charli: The Ultimate Guide to Keeping It Real (2020) by Charli D’Amelio (young adult)

Make a TikTok Every Day (2021) by Dave Jorgenson (young adult)

TikTok Famous: The Ultimate Fan Book (2021) by Malcolm Croft (middle grade)

The Ultimate Guide to TikTok (2020) by Scholastic Inc (middle grade/young adult)

HASHTAGS TO WATCH:

#booktok
#librariantiktok
#bibliophile #dance
#dancechallenge
#tiktokdance

LIBRARIES TO CHECK OUT ON TIKTOK:

@iowacitypubliclibrary,
@vancouverpubliclibrary,
@maricopalibrary,
@teachinatardis,
@fowlervillelibrary,
@ollingwoodpubliclibrary,
@bailee.the.librarian,
@whitbylibrary,
@stoughtonpublibwi,
@gmplyouth983,
@columbuslibrary,
@ttllibraries,
@jolietpubliclibrary,
@epplibrary,
@southcountrylibrary

TIPS:

Before creating a library TikTok, investigate your library’s branding, marketing, and social media policies. Be sure to get photo release consent forms signed by parents or guardians (see forms on page 203-204).

TIPS:

For another great resource, check out the *Library Land Loves* podcast (S04:E08)

COOKING CLUB: CHOPPED AT HOME

AGES

Tweens 9–12

Teens 13–18

Multigenerational

PROGRAM DESCRIPTION

Adapt *Chopped*, the beloved Food Network show, for a passive library program! Participants pick up a mystery box, use it to create a dish, and submit photos and a recipe that will be displayed at the library. Consider partnering with a nutritionist or Master Food volunteers from your local extension office to judge submissions and choose champions. Create prize baskets with aprons, rolling pins, whisks, cookie/cake mixes, etc. This is a great way to show off your library's cooking and baking collections while inviting tweens, teens, or families to show off their cooking skills. Suggested runtime: Ongoing for 2–3 weeks

Theme ideas:

- Recipes could be family favorites or related to a theme (e.g., cakes, no-bake, InstaPot, etc.).
- Invite local farmers to help run a farm-to-table program! These are popular for all ages; it is cool to know where your food comes from.
- Run a family program in which children and adults make different versions of a similar recipe (one simple, one more complex).
- After participants submit their recipes, compile submissions into a library cookbook for patrons to take home.
- For a community component, run in tandem with a food drive.
- Provide take-home spice kits for a specific recipe or information about different spices from around the world. Tie these with information about summer cooking programs.



Image source: Shutterstock

ADAPTATION:

If running virtually, choose a date/time to run the program and ask participants to gather their own supplies the week before. Send out video conferencing links, and let participants present their dishes in real time!

TIP:

For another cooking program idea, see Recipes for a Region on page 119.

ADAPTATION:

For accessibility, be sure to provide recipes in multiple formats depending on your audience's needs: Audio, step-by-step visuals with alt text, electronic formats compatible with screen readers, large print, etc.

TIP:

To address food scarcity or affordability in your area, secure food supplies for everyone.

TIP:

Remember to make a cookbook display!

MATERIALS AND PREPARATION

Materials for mystery boxes:

- Blank recipe cards
- Instructions (with deadline)

PASSIVE | DECORATION/DISPLAY | STEM

- Boxes (or bags) big enough to hold ingredients
- Ingredients: One spice, one canned good, one boxed/dried good.
Examples: Allspice, canned pumpkin, and pretzels; turmeric, canned peaches, graham crackers.

Preparation: Decide if the mystery boxes will all have the same ingredients or different ones. Purchase or acquire donated items and assemble the mystery boxes. Be sure to ask participants if they have any food allergies or dietary restrictions. Write and print copies of the instructions (be sure to include the deadline!). Invite volunteer(s) to assist with judging.

UNIQUE SPACE AND PERSONNEL NEEDS

You will need a space to display recipes and photos.

RESOURCES

Web

“America’s Test Kitchen Kids” from America’s Test Kitchen: <https://www.americastestkitchen.com/kids>

Chopped Junior video extras from Food Network: <https://bit.ly/39mTvoU>

“Kids in the Kitchen” from the U.S. Department of Agriculture: <https://bit.ly/3zBhLOA>

“How to Play Chopped at Home” from Taste Wise Kids: <https://bit.ly/3Hq5jTz>
Program example from Tredyffrin Township Libraries: <https://bit.ly/3OgiWaa>

Cookbooks

The Complete Cookbook for Young Scientists (2021) by America’s Test Kitchen (middle grade)

Super Easy Teen Cookbook (2020) by Christina Hitchcock (YA)

The Teen Kitchen: Recipes We Love to Cook (2019) by Emily Allen and Lyla Allen (YA)

TIP:

See Canva for an editable recipe card created by Kristen Stockdale: <https://bit.ly/3Qlbuwi>

TIP:

For middle grade cookbooks, see Virtual Snack Attack: Friendship Mix on page 23.

STAR NET & CSLP: TEAM MACHINE

AGES

Tweens 9–12

Teens 13–18

PROGRAM DESCRIPTION

This idea is brought to you by STAR Net. The classic activity challenges 6–20 participants to create a simple human machine that passes a beanbag in a set pattern as quickly as possible. Participants rearrange themselves to achieve faster speeds. The social nature of this program allows participants to experience how engineers work in teams—with different people contributing in different ways—to take on a challenge. Some groups may address the challenge by creating an inclined plane with their hands, or, for even faster speeds, a screw-shaped slide. These solutions provide the opportunity for discussion about simple machines found in community parks (such as playground slides). Suggested runtime: 30 minutes.

MATERIALS AND PREPARATION

Materials:

- One beanbag (or other small, soft object)
- One stopwatch or timer
- Optional: Computer, speakers, projector/screen, internet access

Before you begin the activity, use the supporting media to show examples of engineers working in teams (optional). See Resources.

Rules:

- Keep the same order in each round.
- Each person must catch the beanbag.
- Each time you pass the beanbag, say the name of the person who will catch it.
- You may move around.
- You may stand or sit (some people may need to use a chair).
- Repeat, making adjustments to improve the design.

Step 1. Establish the pattern:

- Form a circle.
- Say your name and toss the beanbag to someone across from you (not next to you).
- Remember the name of the person who catches the beanbag.
- For an added challenge, recite names in order of those who have already passed the beanbag.

The original Team Machine activity was created by the National Center for Interactive Learning (NCIL) at the Space Science Institute (SSI) and is based upon work supported by the National Science Foundation under Grant No. DRL-1421427.

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation. With permission, this activity was adapted by CSLP for use in this manual.

TIP:

This activity makes a great icebreaker!

ADAPTATION:

Be sure to provide chairs for those who will need to sit to participate.

TIP:

See all facilitation notes from STAR Net here: <https://bit.ly/3xrdzyc>

PASSIVE | DECORATION/DISPLAY | STEM

- After each person in the circle has caught the beanbag, the pattern is set.

Step 2. Adjust for speed:

- Choose a timekeeper.
- Use an iterative engineering design process to decrease the time required to follow the pattern: Create a new method, test it out, and make adjustments.
- Time each round, and record times nearby (such as on a whiteboard).

UNIQUE SPACE AND/OR PERSONNEL NEEDS

You will need an area big enough for 6–20 people to stand or sit.

RESOURCES

Web

“Team Machine” from STAR Net: <https://bit.ly/3mObeZk>

“Hands on Engineering Activities” from STAR Net: <https://bit.ly/3NRWgNX>

“14 Grand Challenges for Engineering in the 21st Century” from the National Academy of Engineering: <https://bit.ly/3MScBRt>

“Simple Machines” [29 min] from PBS: <https://to.pbs.org/39tBbua>

Books

Engineering for Teens: A Beginner's Book for Aspiring Engineers (2021) by Dr. Pamela McCauley (YA NF)

Folding Tech: Using Origami and Nature to Revolutionize Technology (2020) by Karen Latchana Kenney (YA NF)

LEGO Technic Non-Electric Models: Simple Machines (2021) by Yoshihito Isogawa (middle grade NF)

TIP:

Encourage persistence! Successful engineering involves a process of thinking, building, testing, and repeating.

TIP:

See STAR Net on YouTube for an example video: <https://bit.ly/3xpXRn3>

CAPTURING KINDNESS: TEEN VIDEO CHALLENGE

AGES

Teens 13–18

PROGRAM DESCRIPTION

Teens love making short-form videos, so why not harness their passion and creativity by challenging them to a video contest on the theme of friendship and kindness? Teens can make videos during an in-person program or on their own time. The more comedic and innovative their entries, the better. Judge the entries, or ask the library's social media followers to vote on the best ones. Provide cash prizes or other teen-motivating awards. Screen videos at an end-of-summer event, and post winning videos on your library's social media accounts. Suggested runtime: 90–120 minutes for an in-person program.

Challenge ideas:

- Make videos about helping others or catching kindness in action.
- Work together to create videos related to any theme.
- Create and record a skit, or record yourself doing something kind to edit later.
- Make a Zoomie in the library (a film created using Zoom footage).
- Add categories for animation or stop-motion.
- For large groups, divide teens into teams that include screenwriters, actors, editors, and marketers.
- Combine with a TikTok Dance Challenge on page 93.

MATERIALS AND PREPARATION

For a virtual program

- Zoom or Discord for a virtual meeting
- Free screenwriting and video-editing software (or teens can use the editing software built in to their social media platforms).
- Google Drive, Dropbox, or flash drives for transferring videos
- Examples skits and videos

For a screening event

- Projector/screen and speakers
- Audience chairs
- Incentives for winners



Image source: CSLP

NOTE:

CSLP's Teen Video Challenge will no longer be coordinated nationally, but you can still run the program at your local library!

ADAPTATION:

Start a film club for teens to share their process and learn from each other. Invite local filmmakers to share tips, or invite a coder to help teens apply basic Javascript. Club members submit their videos to the challenge at the end of the summer!

TIP:

Be sure to include captions for the videos. While some platforms auto-generate captions, be sure to read through them beforehand to ensure accuracy.

TIP:

Set up a recording studio for teens who need a quiet place to do voice-overs.



Image source: Shutterstock

PASSIVE | STEM

Preparation:

- Make sure to account for teens who do not have devices. Let them use library devices or have groups of teens work together (with at least one device per group).
- Confirm your institution's social media policy and photo release policy. Do you need permission to post photos or videos of teens? Does your library "own" the content once posted?
- Decide how you will check to ensure that teens make appropriate content.
- Decide how long the program or contest will last. Will it be a two-hour program in which teens hang out, share ideas, and make quick videos to share with each other? Or a longer contest that allows for more polished content that can be used to promote your library and programming?
- Make a funny, cringey video, and challenge them to do better!

Suggested rules. Videos must

- Be no longer than 60 seconds.
- Promote public libraries and reading.
- Be appropriate for viewing by audiences of all ages (rated G)
- Adhere to copyright laws.
- Interpret the theme of friendship and kindness, and include the slogan "All Together Now! ¡¡Todos juntos ahora!"

Free video-editing apps to consider

- Splice (for iPhone and iPad)
- Stop Motion Studio (for animations)
- iMovie (free software in the Mac suite)
- Windows 10 Photo App (basic software for PC users)
- OpenShot (free and open source)
- VidCode (teaches Javascript for modifying videos [advanced])

UNIQUE SPACE AND PERSONNEL NEEDS

Solo-librarian friendly. For an in-person program, extra staff or volunteers are helpful to assist with tech troubleshooting and ensure that the video content is appropriate.

RESOURCES**Web**

Previous CSLP Teen Video Challenge winners: <https://bit.ly/3zrz7dB>
 Writer Duet (software) for budding screenwriters: <https://www.writerduet.com/>

Fiction About YouTubers/Social Media

Fame, Fate, and the First Kiss (2019) by Kasie West

TIP:

Encourage teens to make use of current trends and memes. Ask them to make what they would want to see on the home pages of their favorite apps.

TIP:

Require participants to submit model release forms for each person who appears in their video (see Resources).

TIP:

Judging metrics to consider: Most creative, best cinematography, clearest message, most inspirational, funniest, best overall impact, best dialogue, etc.

TIP:

To stay on top of current trends, search for "YA booktubers" to find creators on YouTube and "YA booktok" for creators on TikTok before the program. Francina Simone is one a popular longstanding YA booktuber: <https://bit.ly/39wVZRn>.

TIP:

See also TikTok Dance Class on page 93.

PASSIVE | STEM

From Twinkle, with Love (2018) by Sandhya Menon
The Gravity of Us (2020) by Phil Stamper
Going Off Script (2019) by Jen Wilde
Nothing More to Tell (2022) by K.M. McManus
Now a Major Motion Picture (2018) by Cori McCarthy
One of the Good Ones (2021) by Maika Moulite and Maritza Molulite

Filmmaking Nonfiction

Gofers: On the Front Lines of Film and Television (2020) by Daniel Scarpatti (adult NF)
My Life as a YouTuber (2020) by Janet Tashjian and Jake Tashjian (middle grade NF)
TikTok for Dummies (2021) by Jesse Stay (YA NF)

Printables

Teen Video Challenge Model Release Form

MODEL RELEASE FORM FOR PUBLICATION AND VIDEO PURPOSES FOR THE TEEN VIDEO CHALLENGE

Each person who submits a video or appears in a video must sign a release.

This release is between the undersigned _____ and binds both parties' heirs, successors, representatives and assigns.

Subject of Release. "Material" refers to all video, images, photographs, mixed media, music, text and other forms of copyrighted material that I supply to _____.

License. I grant _____ a perpetual, royalty-free license to use, reproduce, edit, distribute, publish, prepare derivative works, display, and perform the Material in any media form to fulfill the library's mission.

Name and Likeness. I grant _____ a perpetual, royalty-free license to use my name and likeness, image, voice in the Material as well as my biographical information for advertising, publicity, trade or any other lawful purpose related to fulfilling the library's mission.

No 3rd Party Copyrighted Material. I agree that the Material I submit does not include any copyrighted material belonging to someone else unless it is in the public domain.

No Obligation to Use and No Right to Review. I understand that _____ is under no obligation to use the Material. I understand that I do not have a right to inspect and approve the finished product or such written or spoken copy used in connection with the finished product.

Consideration. I understand and agree that the sole consideration offered by _____ is the evaluation of the Material for its potential use, and acknowledge the receipt and adequacy of this consideration.

I understand and agree:

Your Name (printed or typed) _____

Your Address _____

Your Email _____ Your Age _____

Your Signature _____ Date _____

Your Telephone No. _____

Parent or Guardian's Consent is also required, if the person appearing in the Material is under eighteen (18) years of age. I am the parent or legal guardian of the minor named above. I, on behalf of the minor, agree to all provisions of the Release.

Signed _____ Date _____

Name (printed or typed) _____

Telephone No. _____ E-mail _____

PLIX & CLSP: BEAUTIFUL SYMMETRY

AGES

Multigenerational

PROGRAM DESCRIPTION

Welcome to PLIX Beautiful Symmetry! Explore a branch of mathematics that is profound yet accessible to creative learners. This program adopts symmetry as a foundation around which to create works of art, and it works in both physical and digital formats. For inspiration, show examples of symmetry in nature or in art and religious iconography from around the world. This works as a structured workshop or a passive activity. Choose from the list of prompts, or come up with your own! Suggested runtime: 60–90 minutes.



Image source: Shutterstock

Prompts:

- Design a textile, gift wrap, or wallpaper pattern using customized stamps.
- Model the infinite by making patterns with algorithms (in Scratch, in a spreadsheet, or on paper) or printing continuous patterns with cylindrical roller stamps.
- Explore the built and natural worlds to capture imagery of the way symmetry provides form and function.
- Build a sculpture or tapestry using symmetrical elements found in the environment.
- Combine patterns into a community quilt or art display.

MATERIALS AND PREPARATION

Potential materials:

- Rolls of butcher paper (for wrapping paper)
- Stamps (potatoes, erasers, or sponges to carve) and stamp pads
- Toilet paper rolls and rubber bands (for roller stamps)
- Stencils or cookie cutters
- Rulers or protractors
- Various art supplies
- Graph paper or PLIX pattern grids (see Resources)
- PLIX Beautiful Symmetry Zine (see Printables)



Image source: Shutterstock

The Public Library Innovation Exchange (PLIX) is a project of the MIT Media Lab Digital Learning and Collaboration Studio. This program was adapted by CSLP with permission and remains under a CC BY-SA 4.0 license. Link to original program here: <https://bit.ly/3mLuMxl>

ADAPTATION:

Have participants make symmetrical art out of found natural materials. See artist Andy Goldsworthy for more inspiration.

RESOURCES

Web

Printable pattern grids from PLIX: <https://bit.ly/3QoV0TS>

Books

Anywhere Artist (2018) by Nikki Slade Robinson (picture book F)

Sacred Geometry for Artists, Dreamers, and Philosophy (2018) by John Oscar Lieben (adult NF)

The Complete Pattern Directory: 1500 Designs from All Ages and Cultures (2018) by Elizabeth Wilhide (adult NF)

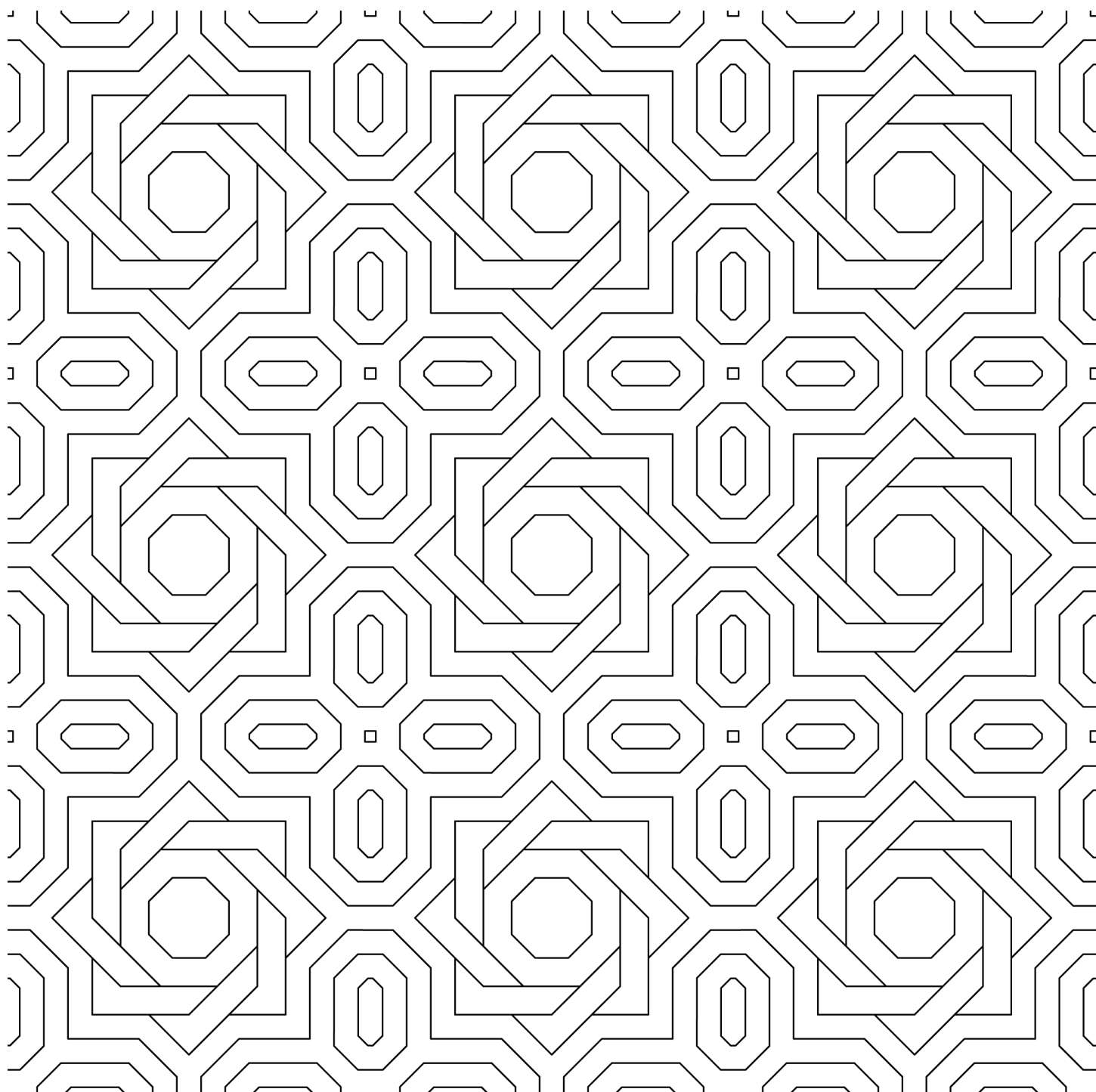
Architecture of the Islamic West (2020) by Jonathan M. Bloom (adult NF)

Printables

PLIX Beautiful Symmetry Zine

Geometric Coloring Sheet

The printable zine for this program is reprinted with permission from the Public Library Innovation Exchange (PLIX) at MIT.



STAR NET & CSLP: RECIPES FOR A REGION

AGES

Tweens 9–12

PROGRAM DESCRIPTION

Whether stuffing empanadas, rolling sushi, or topping pizza, run a cookbook program that focuses on exploring regional recipes! Children pick a particular region of the United States (or the world) and identify a special food that is grown and consumed in that region. They learn about the region's climate and landscape, or anything else special about that part of the world. Divide participants into groups and give each group a card about a region with a few ingredients listed. Children look through cookbooks to pick a recipe (or maybe make one up!). Afterwards, the groups share their regions and recipes. Suggested runtime: 45 minutes (more if you plan to prepare and eat a regional snack.)

MATERIALS AND PREPARATION

Materials:

- Printed STAR Net guides (see Resources)
- Cardstock for printing recipe cards
- Regional ingredients
- A selection of children's cookbooks

UNIQUE SPACE AND/OR PERSONNEL NEEDS

You will need at least two staff members or volunteers to help research facts about each region.

RESOURCES

Web

"Recipes for a Region" activity guide from STAR Net: <https://bit.ly/3ApxfFm>
 Chop Chop Family magazine and blog: www.chocpchopfamily.org.
 Cooking resources from Cooking with Kids: www.cookingwithkids.org/resources

Books

Cookbooks

Cooking Class Global Feast: 44 Recipes that Celebrate the Worlds Cultures
 by Deanna Cook (middle grade)

East: 120 vegan and vegetarian recipes from Bangalore to Beijing (2020) by

The original Recipes for a Region activity was developed by the Lunar and Planetary Institute/Universities Space Research Association as a product of STAR Net. This material is based upon work supported by the National Science Foundation under Grant No. DRL-1421427. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation. With permission, the activity was adapted by CSLP for use in this manual.

TIP:

If providing a snack, be sure to ask about food allergies in advance.

ADAPTATION:

Run a passive program that focuses on cooks in your community; tweens ask their family cooking expert to share a family recipe and where it comes from. Share photos of the food that tweens helped to cook at home.

STEM | GAME/ACTIVITY

Meera Sodha (adult)

Let's Eat: Mealtime Around the World (2019) by Lynne Marie and illustrated by Parwinder Singh (picture book)

Middle Grade Cooking Fiction

Alice Fleck's Recipe for Disaster (2021) by Rachelle Delaney

Chef Yasmina and the Potato Panic (2021) by Wauter Mannaert (graphic novel)

From the Desk of Zoe Washington (2020) by Janae Marks

The Last Super Chef (2021) by Chris Negron

Measuring Up (2020) by Lily LaMotte and illustrated by Ann Xu (graphic novel)

Midsummer's Mayhem (2019) by Rajani LaRocca

Pie in the Sky (2019) by Remy Lai

Recipe for Disaster (2021) by Aimee Lucido

Roll with It (2019) by Jamie Summer

Ways to Make Sunshine (2020) by Renée Watson and illustrated by Nina Mata

ADAPTATION:

If your library has a kitchen, run an Iron Chef-style competition. Put utensils, ingredients, and mystery ingredients in paper bags on tables. Make the mystery ingredients ones that come from the region you are learning about. Participants work in groups of two to four to prepare something with their mystery ingredient.

ADAPTATION:

For a virtual program, preselect special ingredients and supply the rest of the ingredients for people to make a regional recipe at home.