Getting Started with Osmo Kaleidoscope

A Field Guide

bennett labs

advancing creativity and innovation

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Welcome to Osmo Kaleidoscope!

***Explore, design, discover* with Osmo Kaleidoscope. This unique app lets you bring your own objects, tangibles, and collectibles to playful Osmo learning! Kaleidoscope can be revisited often, whenever you want to explore new seasonal items from nature, or fun things of personal interest to you.**

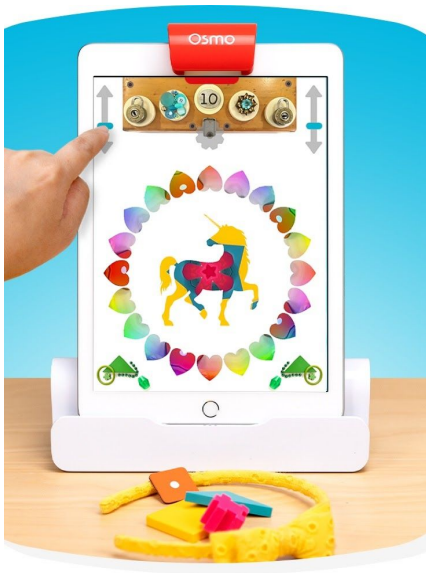
Osmo Kaleidoscope was designed by a team of innovative teachers and students at Bennett Day School who wanted a new type of digital kaleidoscope for open-ended exploration that could be hands-on, kinesthetic, and collaborative.

Learning experiences such as:

- Fostering creativity with everyday objects
- Kinesthetic engagement
- Collaborative learning
- Discover symmetry in S.T.E.M.
- 1-30 number display
- Fine-motor skills & spatial reasoning
- Alphabetized themes and shapes
- Open-ended exploration for ages 4-12(+)

This app uses your device's camera to make interesting kaleidoscope effects. To be used with an Osmo Base & Reflector and your iPad tablet to enable hands-on kinesthetic learning with your tangible objects, classroom materials, and personal playthings. Visit www.playosmo.com to learn more about Osmo.

We hope you enjoy creating with symmetry, as you discover the beauty in your world!



Children Co-Designing for Children

Osmo Kaleidoscope was designed by a team of innovative teachers and students at Bennett Day School who wanted a new type of digital kaleidoscope for open-ended exploration that could be hands-on, kinesthetic, and collaborative.

Our mission with the Osmo Kaleidoscope App project is to welcome this new generation of children into the world of STEM/STEAM exploration, digital design, and app development, and use methods that are relevant, forward-thinking, and helpful to the broader community outside of our school walls.

PreK-4th grade children at Bennett Day School worked together to design a new app for Osmo explorations. Co-designed with their Tinkering and Engineering Sciences (TES) Lab teacher, this collaboration resulted in the creation of Osmo Kaleidoscope for hands-on creativity and learning. Now available for download on the App Store, this new app empowers all Osmo users to design and create beautiful kaleidoscope images with everyday objects, toys, art materials, or seasonal items from nature.

At Bennett Day School, we're dedicated to creating new tools that encourage learning through play. In our school's Reggio Emilia-inspired learning spaces, it is not uncommon to find students involved in tangible investigations with mirrors and reflective surfaces as they explore the mathematical and scientific underpinnings of symmetry.

This type of exploration inspired the Osmo Kaleidoscope App project that began in the Fall of 2018, when each Bennett Day School classroom was given a set of old-fashioned kaleidoscopes to explore.

Kaleidoscope Set-Up

To get started, grab your Osmo Base & Reflector, plus 5-10 small items to explore!

1. Set up your tablet device in your Osmo Base. Make sure you have the Osmo Kaleidoscope app installed and ready to play.

2. Arrange your real-world items a few inches in front of the Osmo base and begin seeing beautiful visual transformations using the power of symmetry in design.

3. Experiment by making slight movements of each object to fine-tune your designs. Each movement will bring objects closer or farther away from Kaleidoscope's lines of symmetry, and this will impact your design.

4. These lines of symmetry create segments in your design. See the number of segments in use on the dashboard display (1-30). Use either slider-bar to change the number of segments.

5. Kaleidoscope offers collaborative experiences, with dual controls on either side of your screen, so invite a friend to join in the fun!

6. Continue placing new and different objects on the tabletop playspace near your Osmo base. The Osmo Reflector will enable your device's camera to see these objects

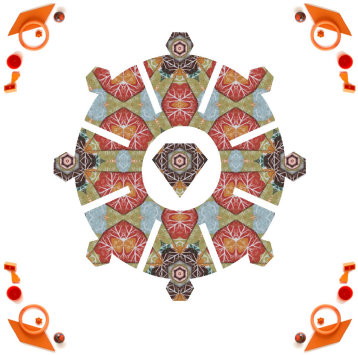
Setting up a Rotating View

Use the dashboard Gear to rotate the app's view. This makes beautiful changes in your onscreen designs. As the view moves, your tabletop objects will come in & out of view. The more objects you include, the fewer empty spaces will be seen. Tap the same Gear to halt rotation.

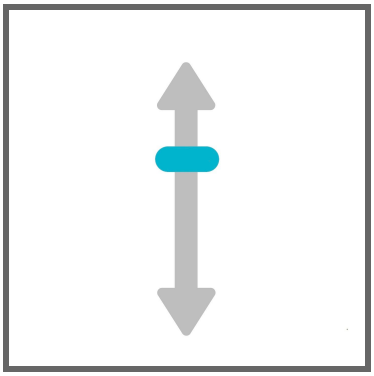
On-Screen Design Tools

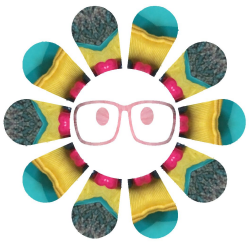
When creating with Kaleidoscope, just bring your favorite real-world items to explore, then enhance your images with these three on-screen design tools:

Alphabetized Stencil Shapes



Colorful Background Items



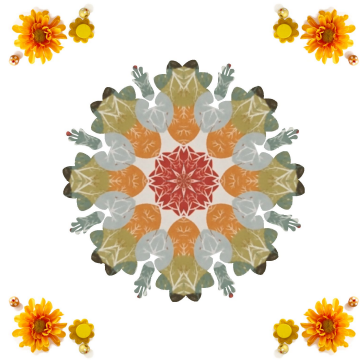


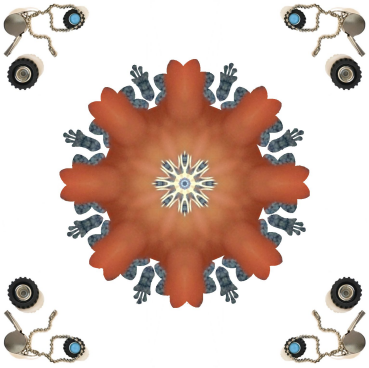
Sliders Vary Complexity

Which Items To Explore?

Here are a few suggested items to bring to Osmo Kaleidoscope.

Try colorful buttons, leaves, rock collections, pencils, seashells, small toys, book illustrations, marker caps, game pieces, blocks, playing cards, yarn, fabric scraps, drawing supplies, and your favorite collectibles.





Tips for Navigation

Accessing your myOsmo Account

Tap 

in the upper right corner to view the myOsmo account screen. From this screen, you can Add an Account, Switch Accounts or Switch Profile.

Start Playing

Tap 

to start exploring Osmo Kaleidoscope. Each time you play, bring a new group of 5-10 objects to explore. You'll be surprised at the beauty of symmetry as you use everyday items with this app!

Review Saved Images

Tap 

(Gallery) to explore and manage your saved images.

Adjusting your design's complexity

Try moving one of the blue slider-bars to change the number of symmetrical segments in your design. Move it up for more segments, or down for fewer. This is similar to changing how many *slices a pie*!

Resetting the circle shape

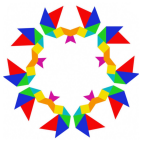
Tap this home icon in the stencil menu to return to round kaleidoscopes.

Resetting the plain background

Tap this icon to return to plain backgrounds, without items in the corners.

Returning to the Main Menu

Tap this icon in the stencil menu to return to the main menu.

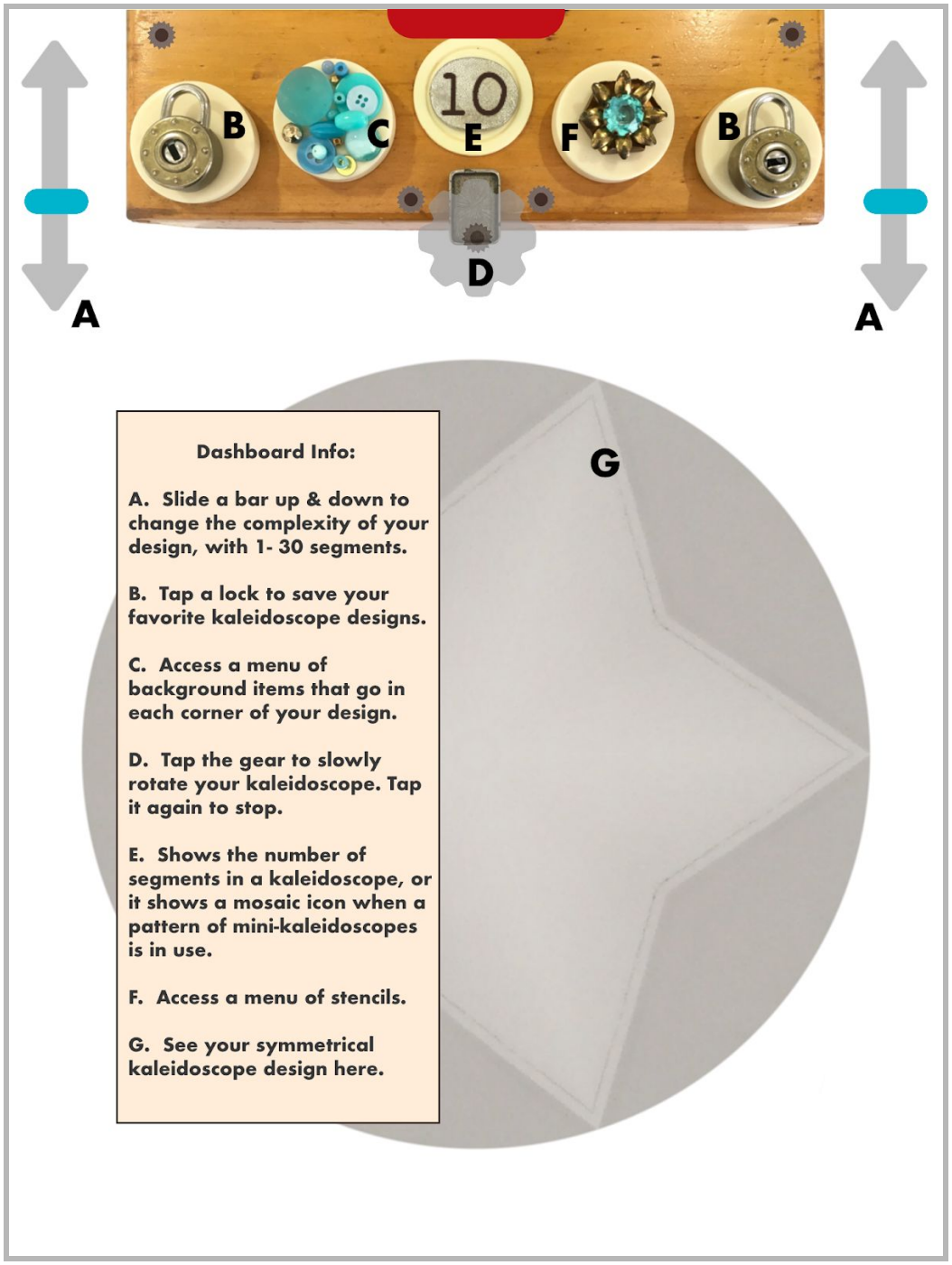


Accessing Osmo World

If you see this icon on the top/left corner of Kaleidoscope's main menu, then your device also has the Osmo World app. Double-click it when you're ready to navigate between various Osmo apps!

Dashboard Info

Getting to know Kaleidoscope's dashboard can help you add: lines of symmetry, themed stencils, background items, saving features, and rotation. Here's a key:



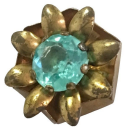
Fun with Sound

Gentle Real-world Sounds

This app encourages hands-on, sensory investigations of real-world objects. Tap these colorful trinkets in the stencil menu to hear the gentle sounds of real-world items such as a:

- small wind-up toy
- rolling dice
- wooden cap
- bouncing ping-pong ball
- xylophone
- plastic building bricks
- flexible spring toy
- cardboard tubes

Quiet investigations



Kaleidoscope offers quiet investigations without music. When you tap these trinkets, gentle recorded sounds of real-world items will be heard. To turn off the sound, or adjust the volume, use your device controls.

Types of Patterns

Each of the 26 stencil shapes comes with a preset pattern. Some patterns are formed by dividing a kaleidoscope into symmetrical segments, and other patterns repeat mini-kaleidoscopes to form a mosaic. A dashboard display shows you which of these two modes is being used in your design:

Designs with symmetrical Segments

A Number Display shows you how many symmetrical segments are in use for these stencils: Acorn, Clover, Daisy, Egg, Flower, Heart, Idea, Kids, Monkey, North, Octopus, Stars, Unicorn, Valentine, Winter, X-ray, Yarn, and Zinnia.

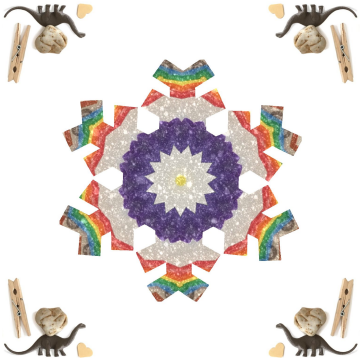
...and enjoy changing the number of segments in your design!

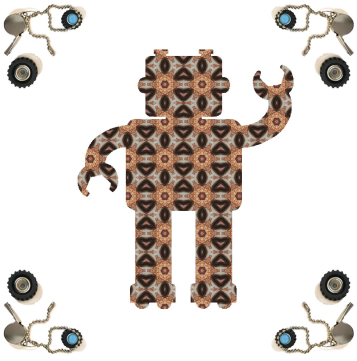
Designs with mini-kaleidoscope Mosaics

A Mosaic icon shows you that mini-kaleidoscopes are used in these stencils: Butterfly, Giraffe, Jewel, Leaf, Peace, Quilt, Robot, and Turtle.

Two Fun Examples:

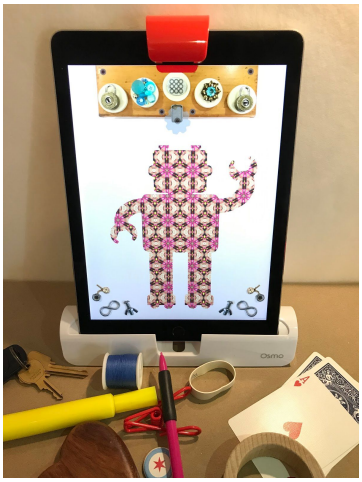
Compare the snowflake's symmetrical segments vs. the robot's mosaic.





Pop-up Saving!

Each time you tap a dashboard Saving Lock  , your screen will dim for a brief moment to give focus to a pop-up photo of your saved design. This lets you see your captured design, before continuing with your Kaleidoscope explorations.



Partnership Play & Team Profiles

Side-by-side sharing with friends

Kaleidoscope is designed for social collaboration with friends, as well as for individual play. Take a look at the dashboard to notice where dual controls are offered on the right & left sides of your screen to help with social sharing.

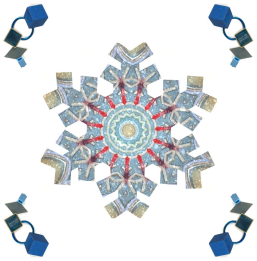
Player Profiles for Partnerships

For those who sign-in with Player Profiles when playing Osmo games, consider creating fun Team Profiles when friends are sharing Kaleidoscope. Here are examples of profiles for individuals, grade-levels, color groups, and tech-teams.

Seasonal Themes

As seasons change throughout the year creative classrooms, libraries, and families often like to focus on seasonal themes and details. For this reason we encourage you to think of seasonal items to bring to your Kaleidoscope designs:

Fall
Try bringing colorful leaves, acorns, twigs, and pinecones to your autumn design work. Also see our acorn and leaf stencils in this app.



Winter
Enjoy bringing patterned mittens, colorful yarn, toy snowmen, holiday cards, and book illustrations to our winter snowflake stencil.

Spring
Explore various flower stencils in this app. Bring objects to your designs such as floral fabric scraps, natural spring buds, and real flower blossoms.

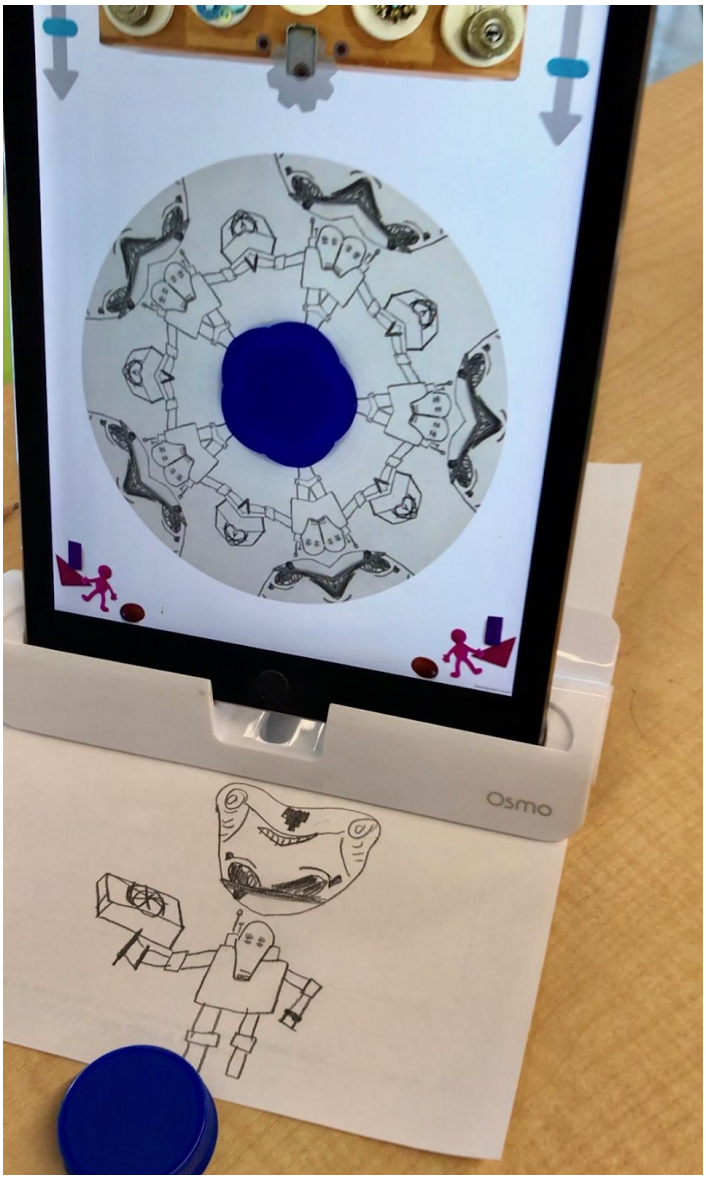
Summer
Enjoy exploring colorful seashells, summer baseball cards, used popsicle sticks, and pretty summer flowers. Also try our floral stencils and ocean octopus.

Extend your Explorations of Symmetry

Try placing Osmo Kaleidoscope in learning centers that also include old school hand-held kaleidoscope tubes, safe plexi mirrors, and interesting items with reflective surfaces.

Similar to these reflective objects, Osmo Kaleidoscope offers **Reflectional Symmetry** in which a line of symmetry divides an image into pieces which are mirror images of each other.

For those who love to sketch, paint, sew, write, and construct...don't forget to transform your creations with Osmo Kaleidoscope! Here's an example from a student artist in 4th grade.



7 Hands-on Explorations

Our mission with the Osmo Kaleidoscope App project is to welcome this new generation of children into the world of STEM/STEAM exploration, digital design, and app development, and use methods that are relevant, forward-thinking, and helpful to the broader community outside of our school walls. For interested classrooms or households with an Osmo setup, here are 7 STEM/STEAM-focused ideas for hands-on explorations with everyday objects.

Foodie Fun

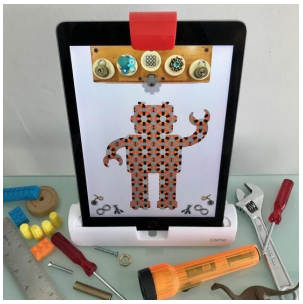
Those busy moments when kiddos are waiting for mealtimes are perfect opportunities to offer Osmo Kaleidoscope as a tool for exploring colorful linens, fresh fruits/veggies, or an array of plastic measuring spoons.

Naturally Neat

Some of the app's stencil-shapes (such as a butterfly, leaf, clover, acorn, daisy, and zinnia) are especially beloved for children who like to collect and study little items found in nature.

Tool Time

Many classrooms, STEM Labs, maker-spaces, and households have various tools, rulers, legos, or construction toys that are just right for open-ended explorations of symmetry in kaleidoscope form. Here you can see that our robot-stencil uses a mosaic of mini-kaleidoscopes.



"For learners of any age, there is true value in experiences that help us to visualize mathematics, and certainly exploring patterns, geometry, and symmetry is part of that work," says Frances Judd, the Osmo Kaleidoscope project leader. "Those of us in STEM/STEAM education often search for ways to help our students notice math/science connections to the arts. When leading the co-design team, with innovative students and faculty at Bennett Day School, it was valuable to think in terms of these types of artistic and scientific connections."

Party Play

Children's birthday parties, holiday celebrations, and family events often come with small trinkets or keepsakes that can personalize and enliven these STEM/STEAM explorations.

Letter Learning

Alphabet letters and numbers are important components of learning materials. Surprising discoveries always happen when using numerical playing cards, dice, or ABC scrabble pieces. Dual onscreen slider-bars can increase or decrease the number of segments in your design.

Crafty Creations

We find that young artists who are passionate about creative activities such as bead-stringing, sewing, or drawing really love exploring this new use for their favorite arts & crafts materials!

Space Symmetry

For those who can't find enough uses for outer-space action figures or sports toys, Osmo Kaleidoscope is a fun place to make new discoveries. If your children love to line-up neat rows of tiny race cars, motorcycles, or spaceships, we hope they also become passionate about the structure and order found in their symmetrical designs!

5 Ways to Use this App While Traveling

Children of all ages look forward to road-trips and family travels that enrich their lives and expand their horizons. Families who bring an Osmo Base on their family travels will soon discover many reasons why Osmo Kaleidoscope is a great app for enriching family trips. Here are a 5 ways to use Osmo Kaleidoscope on your next family adventure.

Fun with Natural Treasures

When kiddos discover shiny pebbles, textural seashells, or colorful leaves on their journey, it's fun to use these items to create beautiful symmetrical patterns with an app designed for open-ended exploration. Science is a valuable aspect of travel.

Souvenir Pamphlets, Books, and Maps

Traveling children often collect tourist maps, pamphlets, postcards, and colorful booklets that remind them of their trip. Children are delighted when graphical features in these items are transformed with the beauty of symmetry!

Wings, Travel Trays, and Bottle-caps

Children on airplanes often like to use their seatback tray to set-up playworlds for imagination and investigation. Osmo Kaleidoscope offers children a new view of the commonplace objects they find on a plane. A simple bottle-cap, plastic fork, giveaway wings, or airline brochure become highly engaging when viewed through this app.

Cousins, Sibs, and Collaboration

Because Osmo Kaleidoscope was specifically designed for easy sharing, two players can sit side-by-side and enjoy creating kaleidoscopic designs together. This means aunts, uncles, cousins, and kin can enjoy playing together when family travel takes you to extended family.

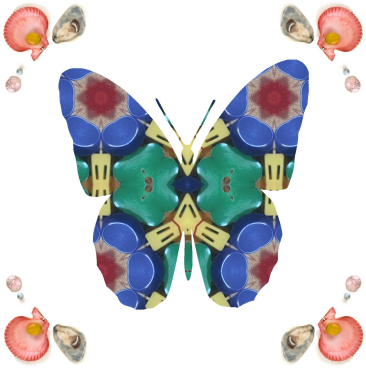
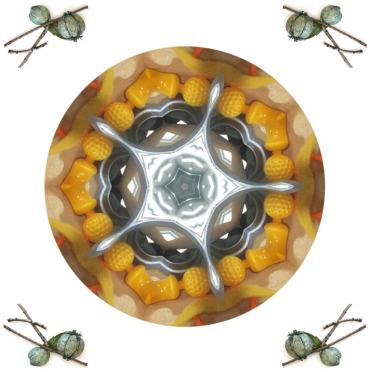
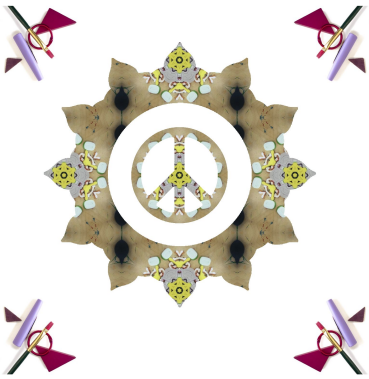
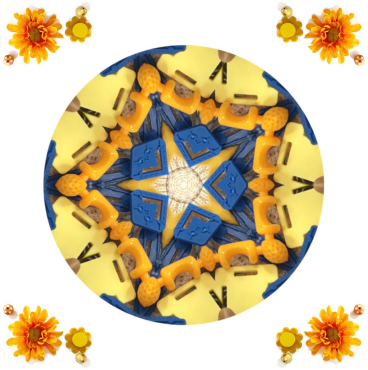
Creativity, Resourcefulness, and Control

Flight delays, weather complications, or traffic jams can make a long trip feel even longer for younger passengers. Help kiddos feel in control of their own playspace when using Osmo Kaleidoscope where they make interesting design decisions and complex creations without needing outside help.

Show us YOUR Creative Designs!

Although there are no sharing links from Kaleidoscope, we would love to see your inventive Kaleidoscope designs! For those who love posting designs on Instagram, we hope you'll include us by tagging #OsmoKaleidoscope and @BennettLabs on Instagram

Here are some fun designs from students at Chicago's Bennett Day School where this Kaleidoscope app was created.


Bennett Labs is a learning innovation lab embedded in the life of the school. We are committed to advancing creativity and innovation in adult and educator learning experiences.

Through a progressive approach our mission is to uncover and advance creativity, innovation and entrepreneurship in adult and educator learning experiences. We are committed to fostering a growth, entrepreneurial and design mindset, connecting learning innovators and educational entrepreneurs and to foster the development of learning innovations within our school and educational communities.

In collaboration with learning, design and technology partners, we are committed to all adult learners as co-designers in the learning experience, to creativity and innovation occurring naturally and collaboratively between people, and to the sharing of learning innovations throughout our community.

To learn more visit: https://bennettday.org/bennett-labs/

At Bennett Day School, our mission is to provide a collaborative culture that nurtures our innate sense of inquiry and curiosity. We are committed to advancing creativity, innovation, and the development of lifelong learners and leaders.

Bennett Day School is a progressive school that provides unparalleled experiences – in our program offering, instructional approaches, and nurturing environment – that shape our community for a fulfilling, successful, and impactful life. Compelled by curiosity, immersed in complex questions about the world around them, and supported by a diverse faculty and peer population, the Bennett Day School community asks and seeks the answers to those questions that derive from creativity and innovation.

Individual and collaborative learning are central to the work of our school day; students and teachers are held to the highest standards, not simply in terms of final outcomes, but in the planning and realization of their own learning.

To learn more visit: http://bennettday.org