Fun activities for family workshops!
What Is Picture Dots?

Picture Dots invites children and adults to document and have conversations about what they notice in the world around them. They can take pictures and use interactive dots to layer on color, sound and text, and use the dots to classify, count, label and notice patterns. These are core skills for preparing children for science, mathematics and literacy learning in the early grades.

Picture Dots engages diverse learners and supports both English- and Spanish-language speakers from ages 4 – 8.

Adding Value Through Technology

Picture Dots provides a novel way to interact with and talk about real-life objects. It is most powerful and interesting when it is used as a tool to remember and reflect on a hands-on creation or activity. By generating a lasting digital record, the app gives children the opportunity to continuously experiment with their real-life handiwork and document each step in the process.

Early-Childhood Educators

This guide offers ideas and activity suggestions for how to integrate Picture Dots into family workshops. Connections to early learning skills are listed within each sample activity.

Remember that these are just ideas of ways to use Picture Dots — keep the fun going by creating new ways to use it!
How Picture Dots Works

The app invites children to take a photo of something they notice or are doing in their daily life, or they can add pictures into the app from the camera roll.

Children start by dragging dots onto the photo to decorate or identify what they notice.

For each dot color, children can:

• Assign a musical note or silly sound.
• Record a noise.
• Type words (in English or Spanish).

Children then press the ▶ button to hear their creation. The dots play in order from top to bottom and then from left to right.

The app silently counts the dots placed on the photo, providing a running tally of how many dots of each color are used, as well as the total number of dots used.

Children can easily edit their creation by deleting dots, moving dots, or changing sounds as they notice new things in the photo.

Creations made in the app can be saved or emailed to others to share or memorialize the children’s creations.

If you get stuck, more information can be found in the App Guide section.
Ways to Integrate Picture Dots

Picture Dots can be used in a workshop to:

• **Introduce** a topic in such a way to pique a child’s interest.
• **Document** a child’s creation, production or performance.
• **Understand** a child’s knowledge or learning, either as a baseline or as a way to gauge whether the activity is addressing the underlying concept.
• **Remember** an event such as a trip to the museum or a special occasion in an informal setting.

Four of our favorite types of activities in which to integrate Picture Dots:

• **Interact With Books.** Writing in or interacting with books is often discouraged, but Picture Dots allows children to take a photo of a page of a book and connect to it in new ways. Children can find an image in the book then mark that they’ve found it, comment on what they think is important about a page in a book, or retell the story by typing a sentence for each dot then arranging the dots in the order they want the story to play (top to bottom, left to right).

• **Document Predictions.** Picture Dots provides an easy way of documenting children’s predictions when experimenting with materials. Before an experiment, children can record both what they think will happen and why they think it will happen, then use Picture Dots as a visual reference point for comparison after they see what actually happens.

• **Notice Patterns.** Making patterns out of hands-on materials is always a fun activity! Picture Dots allows children to identify patterns they have made with hands-on materials, layer on new visual patterns with color, and translate the visual pattern they have identified to an auditory pattern by assigning music and sounds to the dots.

• **Memorialize Creations.** Children often make things that are temporary or can’t be taken home with them (such as a wooden-block building or a sand castle), yet they are excited to explain what their artwork is about or share the story behind something they’ve made. Picture Dots lets children capture a picture of their creation and use the dots to remember, reflect on, or tell a story about what was personally meaningful to them about their creation.

The following pages provide sample activities that demonstrate in more detail how to integrate Picture Dots into the four types of activities listed above.
Interact With Books: Making Stories Come to Life

Activity

Continue story time beyond a group activity by inviting families to photograph and annotate storybook pages with Picture Dots. Children can drag dots onto the photo to comment on or share what they think, notice and see on the page.

Materials:
Any storybook

Steps:

1. Read a storybook to the group using dialogic reading techniques, in which you spark a conversation about a page in the storybook by asking questions, pointing out details, and encouraging children to share comments and thoughts. More information about dialogic reading techniques can be found by searching terms such as PEER (Prompt, Evaluate, Expand, Repeat) and CROWD (Completion, Recall, Open-Ended, “Wh-” Questions, Distancing Prompts).

2. Have children use Picture Dots to take a picture of a page they think is interesting in the storybook.

3. Encourage children and adults to try out the following ways of using the dots to interact with the book:
   • Match the dots to the colors on the page of the book.
   • Use the dots to retell the story on the page or create a story about what is happening on the page.
   • Use the dots and the typing function to name the objects in the image.
   • Put one dot on each character on the page and use the typing function to recount each character’s name and role.
   • Add sound effects or record your own sound to go with or explain images in the book. For example, make a pig oink or give a car a honking noise.
   • Have children record their own name for one of the dots then place it where they want to be in the picture.
   • Use the same color dot to identify objects in the image whose names rhyme.

Early Learning Skills

Literacy: Storytelling, naming, rhyming, recognizing and making sounds

Science: Categorizing (grouping)

Extra Activity Ideas

Go back to a story that was read during a previous story time and use Picture Dots to recount the story.

Take a photo of an event, then use the dots to tell a story about what is happening in the photo. Children can type different parts of the story for each of the four dots to describe what they did, saw or liked about the event.
Children can also use the dots to retell the story or make up their own story.

- Once upon a time
- There was a girl
- Who saw a far away castle
- Through her telescope

Children can use the dots to describe what they think the characters in the book may be saying or doing.

- He he he he
- Oh no no no
- Ha ha ha ha
- Huff puff
**Document Predictions: Dissolving Candy Hearts**

**Activity**

Have children experiment with dissolving candy hearts in different liquids. Some liquids dissolve candy hearts fast and others dissolve them more slowly.

**Materials:**

Candy conversation hearts, water, oil, vinegar, club soda, four plastic cups, a marker to label the cups

**Steps:**

1. To introduce the concept of things dissolving, have children keep a candy heart in their mouths for a few minutes to experience how it melts in their mouth. Have them focus on how it feels and tastes on their tongues. Encourage them to think about why it is dissolving.

2. Introduce the different liquids they will be experimenting with and spend some time letting children share what they already know about the different liquids.

3. Have children use Picture Dots to take a photo of the cups with liquid in them before putting the candy hearts in the liquid. Use the dots to record children’s predictions about which liquid will dissolve the candy hearts fastest and slowest. Prompt children to think about and share why they made those predictions. For example, they can place the red dot on the liquid they think will dissolve the candy heart the fastest, then write their prediction. (E.g., the club soda will dissolve the heart the fastest because the bubbles will eat away at the candy.)

4. At the end of the experiment, take another photo of the hearts in the cups. Ask children to use the dots to put the liquids in order of how fast or slow they actually dissolved the hearts, or ask them to explain why they think a liquid dissolved the candy heart fast or slow.

**Early Learning Skills**

*Mathematics:* Sequencing events  

*Literacy:* Vocabulary  

*Science:* Making predictions, properties of materials

**Extra Activity Ideas**

Collect objects around the room and predict and investigate their properties. Test to see if objects sink or float, or if they are magnetic or not magnetic. Take a photo of the objects together and assign the different properties under investigation to different dot colors. For example, one dot color could be “magnetic” and another dot color could be “not magnetic.” After you have made predictions, test the items in real life and reassign the dots based on the results of their tests.
After conducting the experiment, children can revisit their predictions and modify them to show what they observed.

- Float
- Will sink after it gets wet
- Sink
- Not sure

Use the dots to record children’s predictions before starting a science experiment.

- First: Bubbles will eat away at hearts.
- Second: Vinegar will fizz and go faster.
- Third: The hearts will dissolve slowly.
- Fourth: The hearts will float on top.
Notice Patterns: Fruit Formations

Activity

Have children make a pattern with printed images of fruits and vegetables and use Picture Dots to identify the pattern they have made. Including a variety of fruits and vegetables allows children to identify different categories that they can use to create a pattern.

Materials:

Printed and laminated images of different fruits and vegetables

Steps:

1. Have children create a pattern using the laminated images. Encourage children to identify characteristics or categories that could be used to make patterns such as size, shape, color, fruit or vegetable, seeds or seedless, and likes or dislikes. Young children may not initially follow an obvious pattern. Support children in talking about how their pattern works and use questioning to guide them through the process.

2. Take a photo of a completed pattern and have children use the dots to identify the pattern. Here are some ways to help children use the dots to recognize and interact with the pattern they created:
   - Match the colors of dots to the fruits/vegetables in their pattern.
   - Use the dots to count the number of fruits/vegetables in the picture.
   - Place one dot color on the fruits and another on the vegetables.
   - Place a red dot on things they like to eat and a blue dot on things they don't like to eat.
   - Name or label four different fruits and vegetables with either the voice recording option or the typing tool.

3. Facilitate further exploration of patterns with prompts such as:
   - Can you find any new patterns?
   - What sounds would you like the fruits/vegetables to make?
   - Can you record your voice or use the typing tool to share something about your pattern?

Early Learning Skills

Mathematics: Sequencing, counting

Literacy: Vocabulary

Science: Pattern recognition; categorizing (grouping)

Extra Activity Ideas

Use the blank white image that is preloaded into the app to make patterns using just the dots.

Collect natural items (leaves, rocks, flowers, etc.) and use the objects to make a nature mandala. Children can then take a picture of their mandala and use Picture Dots to identify the patterns they created.
Children can turn their visual pattern into a sound pattern by assigning a different musical note or silly sound to each of the four colors of dots.

Invite children to use the dots to notice patterns they have created with real-life objects.

- **Round**
- **Has a seed**
- **Long**
- **Has no seeds**
Memorialize Creations: Locomotion Commotion

Activity

Have children explore the structure of vehicles and what makes them move using Picture Dots. After learning about the parts of a vehicle, children construct their own vehicle using recyclable materials. They then use Picture Dots to document what makes it move.

Materials:

Toilet-paper rolls, cardboard, cartons/boxes, wooden skewers, straws, buttons, soda caps with holes, brass fasteners, scissors, hole punchers, tape, paint, colored paper, stickers

Steps:

1. Introduce different types of vehicles such as trucks, buses, cars, bicycles, tractors, trains and scooters. Ask children to think about what the different types of vehicles are and how they are able to move.

2. Have children take photos of different vehicles using Picture Dots or preload vehicle images into the app. Have children identify the parts of the vehicles using different dot colors. Have children count how many of each part they identified.

3. Tell children they are going to be building their own vehicle and show them the materials they can use. Allow children time to create their vehicles.

4. After children have completed building their vehicles, have each child take a photo of their vehicle using Picture Dots and annotate their photos in one of the following ways:
   - Use the dots to tell a story about their vehicle or the making of their vehicle.
   - Use the dots to explain what was easy and what was hard when creating the vehicle.
   - Identify and label the parts of their vehicle.
   - Label the parts of the vehicle that move and the ones that do not move.
   - Use the dots to explain what they like most about their vehicle.

Early Learning Skills

Mathematics: Counting

Literacy: Telling a story, vocabulary, naming

Science: Reasoning skills, categorizing (grouping)

Extra Activity Ideas

Take a photo of the materials that are available to build the vehicle. Have children use the dots to choose four materials to include when building their vehicle and ask the children why and how they think they will use them.
Take a photo to memorialize children’s creations, and then have them use the dots to explain their making process.

- Wheels move.
- Axels move.
- Body of car does not move.
- Hood of car does not move.

Children can use the dots to identify objects in a photo and place them into categories.

- Wheel
- Window
- Door
- Light
The New York Hall of Science (NYSCI) has collaborated with a number of partners during the research and development of the Picture Dots Guides.

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