Mix It Up!

Playing With Mixtures

In this session, your family explored the properties of various types of mixtures through video, games, and hands-on activities. Use these related resources to learn more about mixtures, and use the discussion prompts to further support conversations and play.

Read Together

Mix it Up by Hervé Tullet

Read ***Mix It Up*** with your child, and use these questions to further explore the properties of mixtures together.

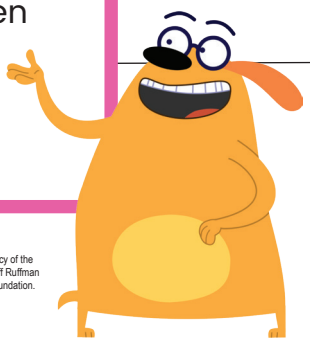
- When you put different colors together, you've created a mixture. Can you unmix any of the mixtures created in the book?
- Did any of the color combinations surprise you? Which ones?
- What are some ways you can explore mixing and playing with color combinations at home or school?
- What is your favorite color in the book? Do you think you can make that color?
- How is mixing colors similar to mixing ingredients when you're cooking? How is it different?

Other books to check out at the library!

Pretend Soup and Other Real Recipes by Mollie Katzen

What Do You Do With an Idea? by Kobi Yamada

Pumpkin Soup by Helen Cooper



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Play Together

Reading, playing games, and doing activities together are great ways to explore and think about new ideas. Check out these recommended resources to continue exploring mixtures and kitchen chemistry!

The Ruff Ruffman Show
pbskids.org/ruff/kitchen
If you like the videos and games you played with, visit the Ruff website on a computer, tablet, or smartphone to watch and play with even more great stuff from Ruff and his friends! You'll find lots of extra content to build on the ideas discussed in the sessions.

Fetch with Ruff Ruffman: Smoothie Operator
pbskids.org/fetch/games/smoothie/game.html
In this digital game, choose ingredients to make fruit and meat mixtures!

- After the second level, Ruff uses a table to help organize the different mixtures. Was the chart helpful to see what combos you had tried?
- Have you ever tried any of the combos you made in the game? What sounds like it would be the grossest combo?
- Are any of these combos unmixable? How?

Curious George: Mix and Paint
pbskids.org/curiousgeorge/games/mix_and_paint/mix_and_paint.html
In this digital game, mix colors to create new color combinations, then paint a picture!

- Try to create Curious George's brown color. What combination of colors do you think you need to make it? How will you test it?

Fizzy's Lunch Lab Food
pbskids.org/lunchlab/food
Check out this resource of kid-friendly recipes.

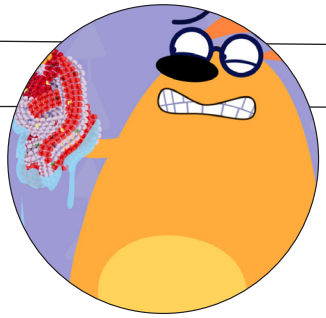
- Browse the list of recipes. Which ones look to be mixtures that can be unmixed? Which ones can't be unmixed?
- Do you see any foods you've never tried before?

Material World

Investigating Material Science

In this session, your family explored materials and different properties of materials through video, games, and hands-on activities. Use these related resources to learn more about materials, and use the discussion prompts to further support conversations and play.

Read Together



Home by Carson Ellis

Read ***Home*** with your child, and use these questions to further explore the different materials we use to make homes.

- There are lots of different types of homes. Describe your home using your senses.
- Did any of the homes in the book remind you of your own? What are the similarities?
- What home in the book is most different from yours, and why?
- The homes in the book are made from very different materials. Choose a few homes and look closely at the illustrations. Can you identify some of the materials used to construct each home? Think about where the home might be, and things like weather that might affect the home. Do you think the materials that the homes are made of will help keep the people living in them safe and comfortable?

Other books to check out at the library!

Beautiful Oops! by Barney Saltzberg

The Most Magnificent Thing by Ashley Spires

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Play Together

Reading, playing games, and doing activities together are great ways to explore and think about new ideas. Check out these recommended resources to continue exploring material science!

The Ruff Ruffman Show
pbskids.org/ruff/materials
If you like the videos and games you played with, visit the Ruff website to see and play with even more great stuff from Ruff and his friends! You'll find lots of extra content to build more on the ideas discussed in the sessions.

Design Squad: Don't Flood the Fidgits!
pbskids.org/designsquad/games/dont_flood/
In this digital strategy game, choose various building materials and build a safe, dry city for the Fidgits.

- Try testing different materials in different locations. Do some absorb the flood water better than others? Why?
- Based on what you know from this game, what kinds of properties seem to be important for materials placed close to the water? What about materials that are homes?

Sid the Science Kid: Weather Wheel
pbskids.org/sid/weatherwheel.html
In this digital game, dress Gerald in the right materials for the weather!

- How did you decide which outfits to try on Gerald?
- If you didn't quite make the right outfit for Gerald on the first try, how did you decide how to make changes to it?

Cat in the Hat: Super Cleaner Upper
pbskids.org/catinthehat/games/super-cleaner-upper
In this digital game, help clean up by collecting trash. Then sort it into the right bin by the kind of material it is - recyclable or compostable.

- What kind of properties make a material compostable?

Stick or Slide

Exploring Friction

In this session, your family explored friction through video, games, and hands-on activities. Use these related resources to learn more about force and friction, and use the discussion prompts to further support conversations and play.

Read Together

Ada Twist*, *Scientist by Andrea Beaty

Read ***Ada Twist*, *Scientist*** with your child, and use these questions to further explore the Science Inquiry Process with your child.

- Ada is a scientist and has lots of questions! What are some of the questions she has that you think are the most interesting?
- The book says: "Ada had all the traits of a great scientist." What do you think some of these traits are?
- Ada ends up documenting her questions and plans all over the wall. Do you have a special place, like a journal, to document your questions and plans?
- Examine the illustration of Ada's Great Thinking Hall. What kinds of ideas do you see in her sketches and notes?

Other books to check out at the library!

Oh No!: (Or How My Science Project Destroyed the World) by Mac Barnett

The Girl Who Never Made Mistakes by Mark Pett

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Play Together

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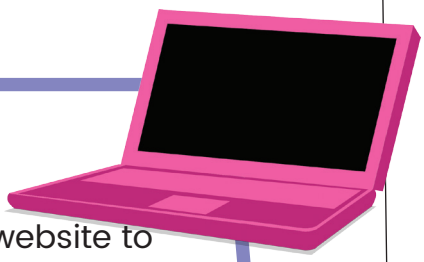


The Ruff Ruffman Show
pbskids.org/ruff/sports
If you like the videos and games you played with, visit the Ruff website to see and play with even more great stuff from Ruff and his friends! You'll find lots of extra content to build more on the ideas discussed in the sessions.

Sid the Science Kid: Fun with Friction
pbskids.org/sid/funwithfriction.html
In this digital game, experiment with a variety of surfaces to get the right amount of friction to knock the tower over.

- How do the different surfaces impact how the block moves across the floor?
- What surfaces in the game are surprising or unexpected?

Design Squad: Force and Energy Activities
pbskids.org/designsquad/parentseducators/resources/index.html?category=forceenergy
Visit a collection of dozens of activities related to Forces and Motion. These are ideal for children ages 9-12, but can be suitable for younger children with parental support.

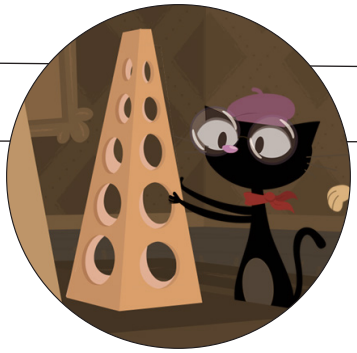
Fish Force
pbskids.org/ruff/sports/game
Try out multiple solutions with varying positions, force, and friction to help Ruff rescue his plushie toy!

- How does the amount of force used relate to the distance the object moves?
- How do the different surface types impact how the object moves?

Build It Up

Learning About Structures

In this session, your family explored structures and what makes structures stable through video, games, and hands-on activities. Use these related resources to learn more about structures, and use the discussion prompts to further support conversations and play.



Read Together

What Floats in a Moat? by Lynne Berry

Read ***What Floats in a Moat?*** with your child, and use these questions to think about structures and how they are planned, built, and tested.

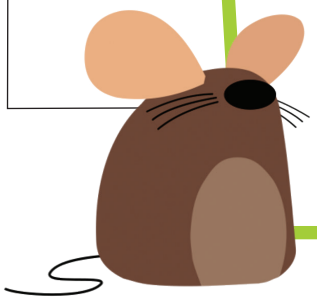
- At the beginning of the book, and after their first boat sinks, Archie took time to doodle and draw, sketch and scrawl. Why did he do this? What did he figure out each time?
- Why didn't the first two boats work?
- Was taking a boat their only option? What else could they have done to get across the moat?
- What kind of boat would you have built? What materials would you have used?

Other books to check out at the library!

The Boy Who Harnessed the Wind by William Kamkwamba and Bryan Mealer

If I Built a House by Chris Van Dusen

Iggy Peck, Architect by Andrea Beaty



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Play Together

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The Ruff Ruffman Show
pbskids.org/ruff/structures
If you like the videos and games you played with, visit the Ruff website to see and play with even more great stuff from Ruff and his friends! You'll find lots of extra content to build more on the ideas discussed in the sessions.

Fetch with Ruff Ruffman: Whoaler Coaster
pbskids.org/fetch/games/coaster/index.html
Plan, create, and test a roller coaster to give Ruff the ride of his life!

- How many hills can you add and still make a safe ride for Ruff?
- Sometimes the coaster doesn't quite work. What are some of the reasons the ride may not work? What do you have to do to fix it?

Nature Cat: Racing Rapids
pbskids.org/naturecat/game.html?racing-rapids
Choose different sails, bases and accessories to build a boat and race your friends!

- Why do different sails, bases and accessories change your speed or defense?

Bob the Builder: Stack to the Sky
pbskids.org/bobthebuilder/games/stack-to-the-sky/
In this digital game, choose from different materials to stack to see if you can make a tall tower!

- What features of the materials do you have to consider to make sure your tower stays stable?