Let’s Learn About
PAPER

Quick View

What Is Paper Made From and How Do We Use Paper in Everyday Items?

It’s all around us, a basic building block of our world. We write on it. We read from it. We play with it. We use it every day. Let’s explore how strong it is, how to build with it and even how to take flight with it.

Materials

Writing paper, tissue paper, wrapping paper, paper towel, paper bag, newspaper, road map, construction paper, blueprints, greeting cards, food/cereal boxes, cardboard boxes large enough for students to sit on, wood blocks, cardboard, cardboard tubes, cardstock, glue, scissors, crayons, colored pencils, paper doll and clothes templates, hole punch, tape or ribbon.

A more detailed list can be found on Page 2.

Standards

NCECDTL, ELOF: Goal IT-ALT 3, 4, 5, 6, 7, 8, 9; Goal P-ATL 6, 7, 8, 9, 10, 11, 12, 13; Goal P-LC 1, 2, 3, 4, 5, 6, 7; Goal P-LIT 4, 5; Goal IT-C 1, 2, 3, 4, 5, 6, 7, 9, 10, 12; Goal P-MATH 7, 8, 10; Goal P-SCI 1, 2, 4, 5, 6; Goal IT-PMP 1, 2, 3, 4, 5, 6, 7, 8; Goal P-PMP 2, 3; MI Standards SS 1, 3.

Model i Innovation Learning Framework

Throughout this lesson, there will be opportunities to bring in Model i’s Habits of an Innovator and Actions of Innovation.

More information on Model i can be found at: thf.org/education/teaching-innovation/modeli

Lesson Overview

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<td>Explore</td>
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<tr>
<td>Explain how paper is made from wood pulp.</td>
<td>Discover which paper airplane shapes fly best.</td>
<td>Make a pop-up card.</td>
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<td>Test paper strength dry and wet with wood blocks.</td>
<td>Build a paper house with cardboard tubes and geometric shapes.</td>
<td>Make paper dolls using templates.</td>
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<tr>
<td>Explore what everyday items are made with paper, such as newspapers, magazines, etc., to show versatility.</td>
<td>Show images of cardboard chair from The Henry Ford.</td>
<td>Make a construction paper fan.</td>
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<td>Read stories related to the learning: Lola at the Library by Anna McQuinn and The Paper Bag Princess by Robert Munsch.</td>
<td>Show students the engraved copy of the Declaration of Independence. Discuss how certain papers have great impact. Options: School House Rock segment. Invite special guest, such as reporter, writer, etc.</td>
<td>Ask students specific and open-ended questions. Family Connection worksheet to send home. Coloring sheet to send home or work on in class.</td>
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Stay Curious, Collaborate, Uncover, Learn from Failure

Collaborate, Design, Be Empathetic

Stay Curious, Design, Be Empathetic

Stay Curious, Collaborate
Let’s Learn About

**PAPER**

**Materials**

**Explore**

**Activity — Touch Exploration**
- Writing paper
- Paper towel
- Construction paper
- Cardstock
- Tissue paper
- Wrapping paper
- Cardboard
- Teachers can provide as many examples of paper as possible for touch exploration.

**Discover**

**Activity — How Tall Can You Build a Paper House?**
- Paper tubes of various sizes: wrapping paper tubes, paper towel tubes, toilet paper tubes
- Geometric shapes cut out of paper or cardboard: squares, rectangles, triangles, circles

**Activity — Paper on the Fly**
- 8½ x 11-inch sheet of paper
- Double-stick tape (optional)

**Create**

**Project One — Pop-Up Cards**
- Cardstock or other heavyweight paper
- Colorful construction paper
- White glue
- Scissors
- Crayons/colored pencils
- Envelopes to fit finished size of card (optional)

**Project Two — Paper Dolls**
- Doll templates
- Clothing templates
- Scissors
- Crayons/colored pencils

**Project Three — Fans**
- 8 x 12-inch piece of heavyweight cardstock or thick construction paper
- Hole punch (optional)
- Tape or ribbon (optional)
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Lesson Guide

Explore

Stay Curious, Collaborate
How Is Paper Made? .......... Page 4
How Versatile Is Paper? .......... Page 4
Activity: Touch Exploration .......... Page 4
Links & Photos ....................... Pages 5-6

Discover

Stay Curious, Collaborate, Uncover,
Design, Learn from Failure
Activities: How Tall Can You
Build a Paper House?
Paper on the Fly? ....................... Page 7

Artifact of the Day

Stay Curious, Be Empathetic
Declaration of Independence ................ Page 8
Link & Photo ....................... Page 9

Create

Collaborate, Design, Learn from Failure
What Can We Make with Paper?
Project 1: Pop-Up Cards ............... Page 10
Project 2: Paper Dolls ............ Pages 11-14
Project 3: Fans ....................... Page 15

Inspiring Stories

Collaborate, Be Empathetic
Read Stories to Inspire
Your Students ....................... Page 16

Review & Extend

Stay Curious, Collaborate
Ask Students Specific and
Open-Ended Questions .......... Page 17
Family Connection .................... Page 18
Coloring Sheet ....................... Page 19
How Is Paper Made?
Teachers can explain that trees are cut, the bark is removed and the tree is cut into very small pieces. These are boiled with water and some chemicals into a mushy pulp. The pulp is spread out over a screen and squeezed between rollers until the water is rolled out. This is repeated over and over until the paper is completely dry.

How Versatile Is Paper?
Teachers can show students multiple examples of paper products: newspaper, magazine, road maps, paper bags, etc., to emphasize the versatility.

Teacher can show students the picture of the Cardboard Chair. Students can sit on sturdy cardboard boxes to test their strength.

Activity

Touch Exploration
Explore different paper materials, and test and compare how strong they are. Students can work together to test the strength of different types of paper. One student can hold a sheet by the edges, while a second student places wood blocks on the sheet to see how much each can hold. Students can repeat test with wet paper for strength.

• Writing paper
• Paper towel
• Construction paper
• Cardstock
• Tissue paper
• Wrapping paper
• Cardboard

Links and photos for this section are on Pages 5-6.

Model i Innovation Learning Framework

Stay Curious, Collaborate

• Ask questions like what, why, how.
• Talk about helping, working together.
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Cardboard Chair, 1965-69

thf.org/collections-and-research/digital-collections/artifact/372338
Let’s Learn About

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Cardboard Chair, 1965-69

thf.org/collections-and-research/digital-collections/artifact/372338
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Activities

How Tall Can You Build a Paper House?
Students can work together using tubes, cardboard triangles, circles and squares to build a paper house.

Materials
- Paper tubes of various sizes: wrapping paper tubes, paper towel tubes, toilet paper tubes
- Geometric shapes cut out of paper or cardboard: squares, rectangles, triangles, circles

Paper on the Fly
- Teachers can assist students with folding to make and test simple paper airplanes to see how paper takes flight. What shapes fly best?
- Option: Printable sheets with fold lines for paper airplanes are available online.

Materials
- 8 ½ x 11-inch sheet of paper
- Double-stick tape (optional)

Directions
1. Fold the paper in half vertically to mark the center.
2. Unfold the paper and fold each of the top corners into the center line.
3. Fold each edge on an angle from the point toward the bottom corner on each side so the edges meet at the center line.
4. Fold the plane in half at the center line, creating a right triangle, with the unfolded side of the paper facing out.
5. Fold the wings down by folding the side edges back to match the vertical fold of the center line.
6. Add double-stick tape to the inside of the body.

Model i Innovation Learning Framework

Stay Curious, Collaborate, Uncover, Design, Learn from Failure

- Ask questions like what, why, how.
- Talk about helping, working together.
- What do you see (characteristics, properties)? What problems does this material help us solve?
- Make, build and create.
- Talk about “trying again,” what’s another way to...
Let’s Learn About PAPER

Artifact of the Day

Declaration of Independence

Paper can change minds and capture dreams. Teachers can show students one of only 200 original copies of the Declaration of Independence engraved in 1823 and shared with the original signers, Congress and the states.

Students may remember July Fourth and fireworks celebrations, and teachers can develop that association with the declaration. Students can also learn more about the declaration with the School House Rock segment on the declaration, which has a catchy musical component.

youtube.com/watch?v=vrSeCYSnj5Y

Teachers can introduce students to other important documents relating to them: birth certificates, adoption papers, marriage licenses, driver licenses, diplomas, Social Security cards, etc.

Additional Presentation

Teachers can invite special guests, such as a journalist, writer, newspaper reporter or someone in a related career, to share their expertise with students.

The link and photo for this section are on Page 9.

Model i Innovation Learning Framework

Stay Curious, Be Empathetic

- Ask questions like what, why, how.
- How did the characters in the stories feel? How might the stories make others feel?
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Artifact of the Day — Links

Declaration of Independence, Engraved Copy, Printed 1823

thf.org/collections-and-research/digital-collections/artifact/63407
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Create — What Can We Make with Paper?

Project 1: Pop-Up Cards
Make a card that springs to life (a pop-up) or other design, using cardstock or construction paper.

Materials
• Cardstock or other heavyweight paper
• Colorful construction paper
• White glue
• Scissors
• Crayons/colored pencils
• Envelopes to fit finished size of card (optional)

Instructions
1. Cut cardstock to desired size for finished cards.
2. Fold the cardstock in half.
3. Cut two parallel slits about 1 inch long in the folded side, about 1 inch apart.
4. Fold up the tab created by these slits and crease it (see photo).
5. Open up the card and pop the tab through to the inside.
6. Cut a piece of construction paper the same size or slightly larger than the cardstock.
7. Glue the construction paper to the outside of the card, being careful not to glue the pop-up tab.
8. Give students crayons or colored pencils and allow them to decorate their card.

Model of Innovation Learning Framework
Collaborate, Design, Learn from Failure
• Talk about helping, working together.
• Make, build and create.
• Talk about “trying again,” what’s another way to...

Create — What Can We Make with Paper?
Let’s Learn About

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Create — What Can We Make with Paper?

Project 2: Paper Dolls

Students can create paper dolls. These can be colored, or templates for clothes can be cut out (with teacher assistance) and colored. Teachers can show the picture of the Shirley Temple Paper Doll on Page 14.

Materials

• Doll templates
• Clothing templates
• Scissors
• Crayons/colored pencils

Instructions

1. Cut out doll templates and clothes.
2. Give students a doll template and clothing templates.
3. Give students crayons/colored pencils and allow them to design their doll face and color clothes.

Templates for this section are on Pages 12-13.

Model i Innovation Learning Framework

Collaborate, Design, Learn from Failure

• Talk about helping, working together.
• Make, build and create.
• Talk about “trying again,” what’s another way to...
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Create — Doll Template
Let’s Learn About PAPER

Create — Clothing Template
Let’s Learn About

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Create — Links

Shirley Temple Paper Doll, 1937

thf.org/collections-and-research/digital-collections/artifact/289653
Project 3: Fans

Materials
- 8 x 12-inch piece of heavyweight cardstock or thick construction paper
- Hole punch (optional)
- Tape or ribbon (optional)

Instructions
1. Fold accordion-style, back and forth, along 12-inch side of paper.
2. Gather at the bottom edge, punch a hole through all folds (optional).
3. Tape together or tie a decorative ribbon to complete fan.

Model i Innovation Learning Framework

Collaborate, Design, Learn from Failure
- Talk about helping, working together.
- Make, build and create.
- Talk about “trying again,” what’s another way to...
Let’s Learn About

PAPER

Inspiring Stories

Read Stories to Inspire Your Students

Lola at the Library
by Anna McQuinn

The Paper Bag Princess
by Robert Munsch

Model i Innovation Learning Framework

Collaborate, Be Empathetic

- Talk about helping, working together.
- How did the characters in the stories feel? How might the stories make others feel?
Let’s Learn About PAPER

Review & Extend

Ask Students Specific and Open-Ended Questions

• What was your favorite activity?
• What else could you make with paper?
• What was the best paper thing?
• What was your favorite thing we did with paper?
• What was your favorite part of the stories?
• Can you tell me what happened in the stories?

Model i Innovation Learning Framework

Stay Curious, Collaborate

• Ask questions like what, why, how.
• Talk about helping, working together.

Family Connection

Send the worksheet on Page 18 home with students to be completed at the end of the lesson.

Coloring Sheet

Have students color the picture on Page 19 as a part of the lesson, or send it home to be colored.
Let’s Learn About PAPER

Take the Learning Home

We are learning about paper and the way it is used in many items we use every day.

Please take your student on a scavenger hunt through your home to see what items or structures are made with paper.

What are some of these things? Have them draw what they find.

These are some of the stories related to our learning. You might enjoy reading them with your student.

Kite Day: A Bear and Mole Story by Will Hillenbrand

Tree of Cranes by Allen Say

Follow That Map! A First Book of Mapping Skills by Scot Ritchie

A more challenging level: Ralph Tells a Story by Abby Hanlon
The Paper Crane by Molly Bang
Cardboard Chair, 1965-69