

ELINOR WONDERS WHY

EWV INTERSTITIAL 115: SENOR TAPIR

Cai Lun and the invention of paper

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Follows: the "Paper Trail" in which kids learn how paper is made.

Curriculum: the kids learn about how paper was invented by Cai Lun 2000 years ago, inspired by watching how paper wasps build their nests.

ND3. (RTL Crosscutting concept 'Structure and Function'):
Understand that structures and materials in the natural world can be used or can inspire the engineering of structures with similar function in the designed world.

Background info:

Before paper, people wrote on papyrus, sticks, bone, bamboo, etc

Papyrus is different from paper (despite the word "paper" being derived from "papyrus") because papyrus is woven, while paper has been disintegrated and reformed.

Cai Lun (202 BCE-220 CE), a Chinese official working in the Imperial court during the Han Dynasty, is attributed with the invention of paper. However, earlier examples have been found, and he may have simply improved upon a known process. Legend states that he was inspired by the nests of paper wasps.

Paper wasps are vespid wasps that gather fibers from dead wood and plant stems, which they mix with saliva, and use to construct water-resistant nests made of gray or brown papery material.

Cai Lun's paper was made using mulberry and other bast fibers along with fishnets, old rags, and hemp waste. The bark of the Paper Mulberry and Sandalwood were often used and highly valued during the period. His basic process of creating felted sheets of fiber suspended in water, then draining the water and allowing the fibers to dry in a thin matted sheet is still followed today.

FIRST DRAFT: 5/29/2019

SECOND DRAFT: 6/17/2019

Ari and Elinor are sitting together working on a project we can't yet see. Sr. Tapir approaches them.

We see that they are holding some folded paper.

3 SR. TAPIR 3
Excellent! You know, this reminds
me of a story I heard about the
invention of paper.

5 SR. TAPIR 5
Yes! And you'll never guess where
they got the idea!

2. INT CHINESE HOUSE -- DAY

Ref: <https://en.wikipedia.org/wiki/Bamboo> and wooden slips

Cai Lun has trouble, his drawings and letters look choppy.

They say an inventor
named Cai Lun [spoken:TS-EYE LOON]
wanted to write
on something smooth

He tosses his work out, looks frustrated. He decides to go
for a walk.

[Chorus]
Sometimes the best ideas
can be found
When you go outside
and look around

*

While walking outside, he sees some wasps.

Lun saw some wasps
Make their nest
by chewing up plants
then making it wet

He watches them closely, gets an idea.

Ref:https://upload.wikimedia.org/wikipedia/commons/thumb/1/1a/Wasp_colony.jpg/1024px-Wasp_colony.jpg

When the nest dried
it was very smooth
Was this an idea
he could use?

He gathers pieces of plants from a mulberry bush or hemp
plants.

Ref:https://cdn.shopify.com/s/files/1/1008/4432/products/Black_Mulberry_3.jpg?v=1543343770

He chopped some plants
mixed it with water
Squeezed it, dried it
and got smooth paper!

He makes paper.

Ref: https://res.cloudinary.com/dk-find-out/image/upload/q_80,w_960,f_auto/Screen-dipping_L-3_fxbais.jpg

[Chorus]
Sometimes the best ideas
can be found
When you go for a walk
and look around

He writes happily as a wasp flies in and lands next to his paper.

3. EXT PARK -- DAY

7	ELINOR	7	*
	Wow, that's amazing! I didn't realize wasps made paper nests.		
	Ari shows his handiwork: an origami wasp.		*
8	ARI	8	
	And check this out: a paper wasp!		
9	SR. TAPIR	9	
	Haha! Bravo!		*