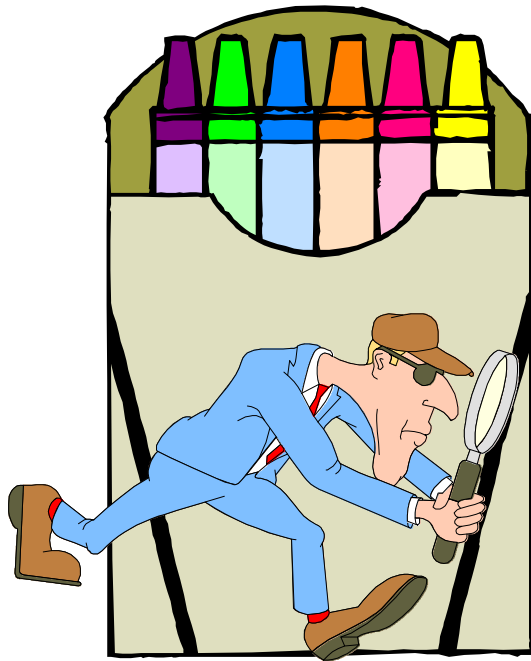


WHERE DOES IT COME FROM?



CFE 3324V

OPEN CAPTIONED
NATIONAL GEOGRAPHIC
SOCIETY

1993

Grade Levels: 3-5

20 minutes

DESCRIPTION

Where do things come from? Detectives Backhoe and Trowel find the answers when a client asks about paper and blue jeans. Shows how paper is made from trees and how blue jeans are manufactured from cotton fibers. Demonstrates how pizza is created from other foods. After solving these mysteries, the young detectives go home.

INSTRUCTIONAL GOALS

- To suggest that forming a good question aids information searches.
- To observe the sequence of events involved in producing paper and denim.
- To depict the steps for creating a pizza from a combination of other foods.

BEFORE SHOWING

1. Read the CAPTION SCRIPT to determine unfamiliar vocabulary and language concepts.
2. Provide posters, charts, and nonfiction texts to explore how everyday items are made or where they come from.
3. Select an object such as a wristwatch or a telephone.
 - a. Try to describe how the object works.
 - b. Name the raw materials used to make it.
4. Introduce the video title “Where Does It Come From?” and predict what the video may be about.
5. Write Backhoe’s comment on the board: “If you don’t know something, ask a good question.” Explain also that the characters pretend to be detectives, and discuss the role of this type of investigator.
6. Explain that the characters will answer three questions:
 - a. Where does paper come from?
 - b. Where do blue jeans come from?
 - c. Where does pizza come from?

AFTER SHOWING

Discussion Items and Questions

1. What is the role of a private investigator or detective? Why is forming a good question important?
2. Review the segments showing the entire processes for making paper, jeans, and pizza. Model using transition words such as *first*, *then*, *next*, *after that*, *also*, and *finally* to discuss these sequences.
3. Highlight the sequence of events as a tree becomes a piece of paper.
4. Why do lumberjacks pick the older trees to cut? How is the planting of new trees related?
5. Predict how much an average elephant weighs. Note that the machine lifting the paper roll weighs the same amount.
6. Describe the process of making denim. Discuss why denim costs so much in some countries. Determine why denim is a great product to use for blue jeans.
7. Where is wheat grown? What is the difference between white bread and whole-wheat bread or white dough and whole-wheat dough? Are both made from wheat?
8. Do all pizza parlors grate their own cheese? What is an alternative?
9. Describe the clothing of the cheese factory employee. Explain why his uniform is different from the clothing worn by the factory workers making blue jeans.
10. How is making a pizza like making pants or paper? How is the process different?

Applications and Activities

1. Research ancient materials used as paper, such as rocks and animal hides. Investigate the evolution of paper. Use adding machine tape to record a time line summary.

2. Simulate papermaking in the classroom.
Research the process for making recycled paper by hand which uses screens and used newsprint.
3. Review the industrial sewing segments in the video.
 - a. Research sewing vocabulary and safety procedures for machines used at home.
 - b. Invite guests to demonstrate skills and products they have sewn.
 - c. Sew simple denim items such as drawstring purses, pillows for the classroom, dolls for a nearby hospital, or cooking and woodshop aprons.
4. Host a “What’s Hot, What’s Not” fashion show.
Model the latest in jeans, denim wear, and accessories.
Write descriptions to accompany the garments and the models and to create a related fashion brochure.
5. Design a bulletin board display to compare blue jean prices.
 - a. Cut out advertisements from catalogs, newspaper advertisements, and inserts.
 - b. Visit local establishments to obtain style and price information.
 - c. Conduct phone interviews to determine local style preferences.
 - d. Compare department stores, boutiques, mail-order, and used clothes shop prices.
6. Partake of a Make-Your-Own Pizza. Before the party, learn the names and signs for a variety of pizza toppings and crust choices. Bake and enjoy.
7. Research yeast and its use in other products.
Make yeast rolls or pizza dough from scratch to observe the dough over time as it rises. Write in observation journals.
8. Plan a trip to the nearest grocery. Compare fresh pizza ingredients such as tomatoes, mushrooms, and onions to their frozen and canned alternatives.
9. Arrange a behind-the-scenes tour of a pizza parlor.
 - a. Write letters of inquiry in advance.

- b. Use a video camera to capture the sequence of pizza preparation from start to finish.
 - c. Review the segment and write an accompanying narrative.
10. Take a trip to a local fabric store.
- a. Compare cottons, wools, synthetics, and other materials used for garments.
 - b. Obtain swatches of each material to create a classroom display.
 - c. Read a variety of garment tags to learn about washing instructions. Compare the care of 100% cotton with that of synthetics.
11. Use an atlas and the appropriate products maps.
- a. Locate major producers of cotton clothing, synthetics, and a variety of paper products.
 - b. Investigate information about importing and exporting.
 - c. Relate pricing information to supply and demand.
12. Prepare How-to speeches. Demonstrate the preparation of a favorite recipe. Later, engage in wrap-around storytelling to review the sequence of steps. Switch speakers with each transition word.
13. Recall the scene which shows Terry using the encyclopedia to locate information about paper.
- a. Find the encyclopedia in the classroom or library. Locate the word *paper*. Also find the cross references at the end of this encyclopedia entry.
 - b. Use a CD-ROM electronic encyclopedia to find the same information.
 - c. Conduct a search on the World Wide Web (WWW). Demonstrate how to narrow or limit the WWW search to match the video use of the word *paper*.

COMMUNICATION SKILLS

1. Practice new vocabulary using all appropriate modes of communication.

2. Review Terry's comment "Yes, Barney, my amigo-type friend."
 - a. Note the humorous tone. Find other uses in the CAPTION SCRIPT such as *good buddy*, *old chum*, *old acquaintance*, *my companion*, and *old neighbor-type ally*.
 - b. Learn the word *friend* from several other languages, such as *ami* in French, *freund* in German, *amico* in Italian, *tomodachi* in Japanese, and *druk* in Russian.
 - c. Discuss the meaning of environmentally friendly methods with regard to the way paper, cotton, and other products are made.
3. Explore the meaning of the adage "Do you think money grows on trees?" that is used in the video's opening.
4. Discuss Tony's idiomatic use of "There's more to pizza than meets the eye."
5. Discuss the use of hyphens in Nicky Noble's dialogue. Explain the urgency implied by his telegraphed speech. Relate how broken sentences influence speechreading.
6. Teach the use of *de-*, for the *debarker*, to denote motion down, away from, or off. Compare *decompose*, *degenerate*, *decay*, and *dehydrate*.
7. Investigate the humorous use of the names Backhoe and Trowel. List other funny names for detectives who must be prepared to do some digging.

WEBSITES

Explore the Internet to discover sites related to this topic. Check the CFV website for related information (<http://www.cfv.org>).

CAPTION SCRIPT

Following are the captions as they appear on the video. Teachers are encouraged to read the script prior to viewing the video for pertinent vocabulary, to discover language patterns within the captions, or to determine content for introduction or review. Enlarged copies may be given to students as a language exercise.

[mysterious music playing]

(boy)

*It might have been
a dark and gloomy night,*

*and I might
have been working late*

*with my assistant,
Terry Trowel,*

*except I'm not allowed out
after dark.*

[glass shatters]

*But let's say
I was working late*

at the office.

*My assistant,
Terry Trowel--*

*somebody almost as smart
as I am--*

*and I were putting
the finishing touches*

on another solved mystery.

So you're telling me

that I, Barney Backhoe,

a very sharp
and clever detective,

was wrong again?

You mean,
Terry, old pal,

money does not
grow on trees?

No, Barney.

It never did.

The government
prints paper money

and makes coins
at the mint.

Amazing.

Well, it just goes to show:

if you don't know something,
ask a good question.

Those answers
are amazing.

Yes, Barney...

my amigo-type friend.

[telephone rings]
bbrrring

Backhoe and Trowel,
private eyes--

*experts at finding
where things come from.*

Yes.

Yes.

Come right over.

Who was that?

A client.

He said
he'd be right over.

[knocking]

Who's that?

The client.

He's here.

Come in.

Thank goodness
you're here late tonight.

My name
is Nicky Noble.

Tomorrow morning,
show-and-tell,

I promised
I'd be able to tell

where paper comes from.

Ha!
That's easy.

The stationery store.

Ah, do you mean
a newspaper

or writing paper?

Any kind of paper!

Mr. Backhoe,
please!

I'm desperate!

(Barney)
As I said...

What Nicky means is...

where does it come from?

The stationery--

I need to know
how it's made.

Where does it
come from?

Aah...gotcha.

[buzzing]
bzzzz...

We have ways
of finding out.

[buzzing]
bzzzz...

We usually
look it up

or ask somebody.

I've got
to aim better.

No fly...nothing.

Just bits of paper.

I wonder where paper
comes from.

Paper, paper...

Here it is.

"Paper is thought
to have been invented

thousands
of years ago.

(Terry reading)
*"Paper is usually
made from wood,*

*"which, of course,
comes from trees.*

*"Lumberjacks
with powerful machines*

"cut down older trees

*"growing in forests
or on tree farms.*

*"Young trees
are left to grow,*

"and new trees are planted

*"to become
a future supply of wood.*

"After they are cut,

*"trees are dragged
from the forest*

"and sawed into logs.

*"The best logs
are sent to a lumbermill*

*"to be made into
building materials or furniture.*

*"Other logs are taken
to a paper mill.*

*"Logs are lifted
into the mill*

"and enter the debarker.

*"Tree bark is not needed
for making paper.*

*"It is scraped
off the logs.*

*"Logs are moved
to the chipper,*

*"where they are broken
into woodchips.*

*"Woodchips are mixed
with water and chemicals*

"and heated.

"The chemicals and heat

*"break the woodchips
into small fibers.*

*"Fibers are mixed
with more water*

*"to make a thick liquid
called wood pulp.*

"Wood pulp is sprayed out

"onto a fast-moving

wire screen.

*"Most of the water
in the pulp*

*"drains through
the wire screen,*

*"leaving behind
a thin mat of wood fibers.*

*"The mat
is wet and fragile*

*"as it is lifted
off the screen.*

*"The fibers
pass through large rollers*

*"which squeeze out
more water*

*"and press the fibers
together.*

*"Paper
is dried and smoothed*

*"as it passes over
a series of heated rollers.*

"The papermaking machinery

*"produces
a huge roll of paper*

*"that weighs as much
as an elephant.*

*"The large roll of paper
is cut into smaller rolls*

*"that are then made
into many things,*

*"like books
or birthday cards*

or stationery."

So, now you know.

*Good luck
on your show-and-tell.*

See, Nicky,

old chum?

No problem

when you know
where to look.

Thanks,
Mr. Backhoe...

old acquaintance.

*And you, too,
Miss Trowel.*

Why don't you
stick around?

We usually have
pizza delivered

right about now.

[knocking]

Whoever that is,

he's ruining
my concentration.

[buzzing]
bzzzz...

I bought
a dozen vases.

Now I'm down
to four.

[knocking]

Who's there?

Pizza!
It's Tony!

Don't let
the fly out.

You still have
a problem with flies?

Not "flies," Tony.

One fly.

Hey, Nicky!

You want to know

where something
comes from, right?

Paper,
for show-and-tell.

My sister, Linda,
is in your class.

She has to find out
where blue jeans come from.

Maybe
you'll tell me.

Everyone knows that.

Famous department stores--

(Nicky)
Or boutiques
or jean stores.

That's where you can
Buy blue jeans.

Linda needs to know
how blue jeans are made.

They must start out
as something else.

Tony's right.

They just didn't start out
as blue jeans.

They started out
as material,

like wool or cotton
or some synthetic material.

It all started
in France

a long time ago.

Blue jeans
are made from denim,

*which is made
from cotton yarns.*

(Terry)

Cotton yarn

*comes from
the cotton plant.*

*The fruit
of the cotton plant*

is called a cotton boll,

*which contains
seeds and fibers.*

*Cotton is ready to harvest
when the bolls burst open*

*and the fibers inside
become dry and fluffy.*

*Harvesting machines
move through cotton fields,*

*plucking cotton fibers
off the plants.*

After harvesting,

*cotton is taken
to be cleaned*

*and separated
from its seed.*

*Trailers of cotton
are emptied by vacuum tubes,*

*and the cotton is taken
to a cotton gin--*

*a machine
that separates cotton fibers*

from cotton seeds.

*The cotton fiber is cleaned
and packed in bales.*

*Cotton bales are then taken
to the textile mill.*

*At the textile mill,
the bales are opened.*

*Not all cotton fiber
is the same.*

Machines mix together

different kinds of cotton

*to make denim cloth
for blue jeans.*

*The cotton is cleaned again
and fluffed*

*and moved
to the next machine.*

*Big rollers
with wire teeth*

comb cotton fibers

*so they lie
in the same direction.*

The combed fibers

*leave the machine
as a web,*

*which is pulled
through a funnel*

*and shaped into a rope
called sliver,*

*which is then fed
into spinning machines.*

Spinning machines

*twist cotton fibers
into cotton yarn,*

which is wound on spools.

Next,

*about 400 spools
of cotton yarn*

are combined

*and wound
onto large rolls.*

*The rolls of yarn
are taken to be colored.*

*The yarn passes
through vats of dye,*

called indigo,

*which gives denim
its blue color.*

*Dyed yarn goes
to the weaving room.*

*The weaving room
contains hundreds of looms--*

*machines
which weave yarns together
into denim cloth.*

*The finished denim
is inspected.*

Finally,

*denim is rolled up
for shipment*

to jeans manufacturers.

*Here, blue jeans
of all shapes and sizes*

*are made
with a carefully planned system.*

*The denim is rolled out
on a cutting table.*

A pattern guides workers

*as they cut
through cloth*

*to produce
the different pieces*

that will be sewn together.

*The pieces are
labeled and organized*

*near workstations of people
who know what to do.*

Pockets are sewn on.

Legs are sewn together.

*Waistbands and belt loops
are attached.*

Buttonholes are stitched

and cut open.

*Rivets are added
to give jeans extra strength.*

*Finished blue jeans
are inspected, boxed,*

*and sent to stores
all over the world.*

*We can either go
to the store*

*or wait
for some hand-me-downs.*

*That was
really neat.*

*My companion,
we did it again.*

[crash]

*[buzzing]
bzzzz...*

*Now I'm hungry
for that pizza.*

*I'll need the energy
to assault the fly.*

*You'll need
your energy*

*to clean
this place up.*

By the way,

*where does pizza
come from?*

*I know it was
originally invented in Italy.*

*I guess we should
ask someone who knows.*

Well, Tony,

old neighbor-type ally,

you're the expert.

There's more to pizza
than meets the eye.

The ingredients
have to come from somewhere.

(Tony)
Pizza dough
is usually made from wheat.

Wheat is harvested
by machines called combines.

They cut the wheat
and separate the grain,

which is shipped
to a flour mill.

Wheat grain is ground up

and turned
into powdery white flour.

At the pizza parlor,

we mix flour
with water and yeast

to make pizza dough.

After rising,

the dough is made
into pizza crust.

It's tricky
and takes practice

to stretch out the dough
to the right size.

Next, we add tomato sauce,

which starts out
as tomatoes.

The tomatoes are crushed
and cooked with spices

to become tomato sauce.

Next comes cheese.

Cheese starts out
as milk.

Milk is heated and treated

to make it thicken.

The watery whey is drained,

leaving cheese curds.

Mozzarella cheese
is stretched

and then cut to length.

We shred mozzarella cheese
back at the pizza parlor.

Some people like mushrooms
on their pizza.

Mushrooms grow so fast

that they can
double in size overnight.

We slice them

before we put them
on the pizza.

The ingredients
are baked in an oven.

Pizza ingredients

come from
many different places.

When they are
put together correctly,

it's pizza.

So...

There's more to pizza
than you see.

There's more to everything
than you see.

I'll come with you, Tony.

Thanks for the help.

(Barney)
Any time we can
be of service.

Something's missing.

[door closes]

*They let
the fly out.*

*And you get
to clean up.*

*(Barney)
So, the fly got away again,*

*but we solved
a few mysteries.*

*We decided
to call it a night.*

*Besides, my mom called
to say it was bedtime.*

*It's all in a night's work
for two detectives*

*who know that the only way
to find out something*

is to ask.

*Everything comes
from somewhere*

*Every part
has a place to start*

*That's the rule
for every molecule*

*And for every little
single cell as well*

*And if everything
comes from somewhere*

I'd like to know

*How some things
were made of other things*

Was it a long time ago?

*Everything comes
from somewhere*

That's the only rule

*Nothing just appears
and says, "Here I am!"*

*There's always a source,
always a source...*

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