



# Viking Science: Sticky Situations

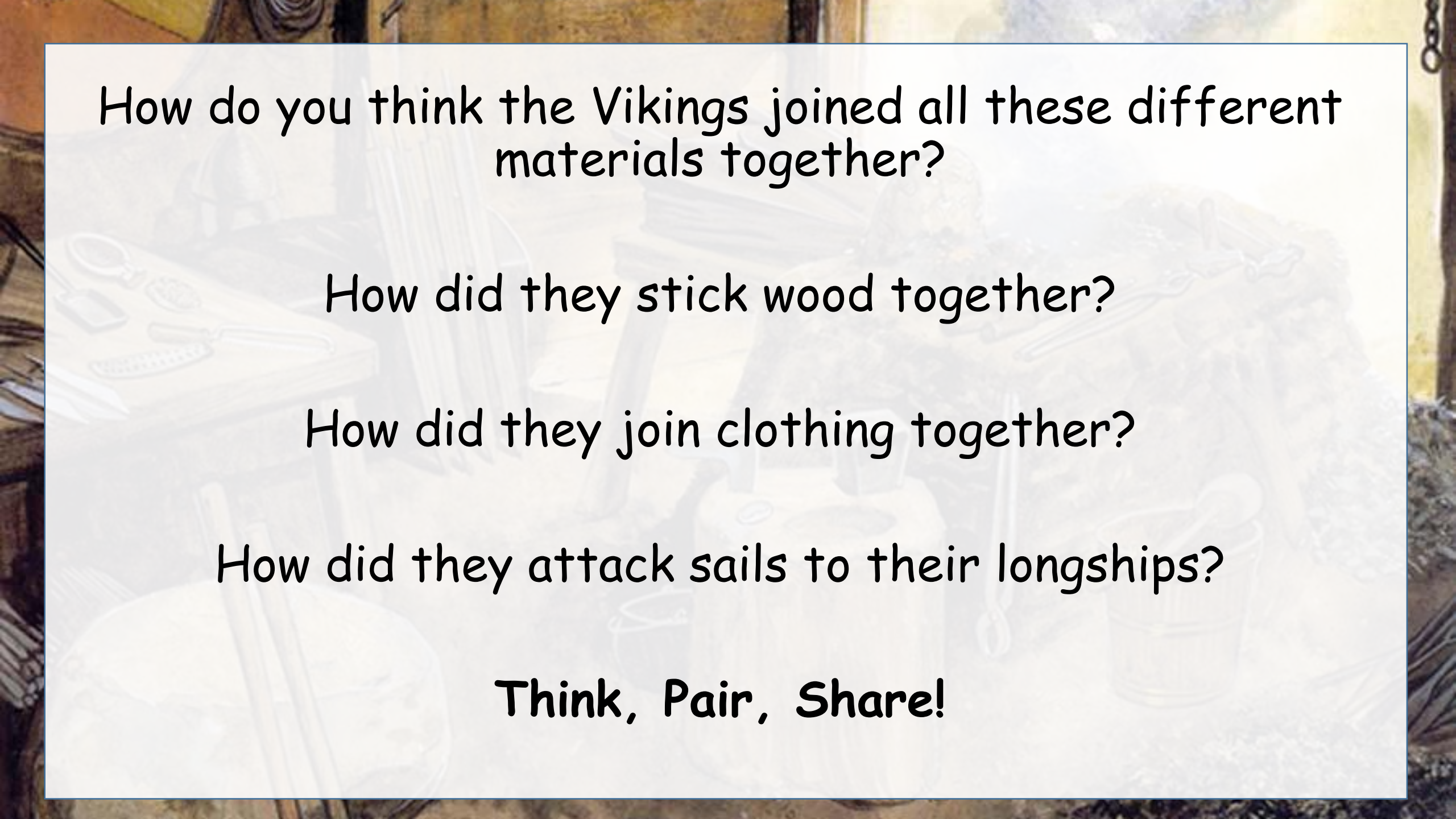
W.A.L.T.:

Understand how to Vikings used science to join materials together.

The Vikings were excellent at crafting things! From longships to tunics, they were masters at making things.

As you know, when you are crafting things you often need to find ways of joining them together.





How do you think the Vikings joined all these different materials together?

How did they stick wood together?

How did they join clothing together?

How did they attach sails to their longships?

**Think, Pair, Share!**

The Vikings used glue just like we do!

Glue is used to join lots of different materials together in the modern world.

Can you think of 5 different things we use glue for?



# Glue is everywhere!



Glue sticks are used to stick pieces of paper together or into our copies.



Fabric glue is used to stick different clothing materials together!



Wood glue is used to join different pieces of wood together like nails!

# Glue is everywhere!



Super glue is used to join all sorts of materials together in a more permanent way!



Eyelash glue is used to stick eyelashes safely onto your face!



Hot glue guns are used to join cardboard and other craft materials together!

The Vikings needed to use glue for lots of different purposes. Can you think of 3 different things they would have needed to join with glue?

Think, Pair, Share





## Clothing

-Joining leather together

-Joining leather to other materials like metal or wood

## Shields

-Joining the wood planks together

-Covering the front of the shield in leather





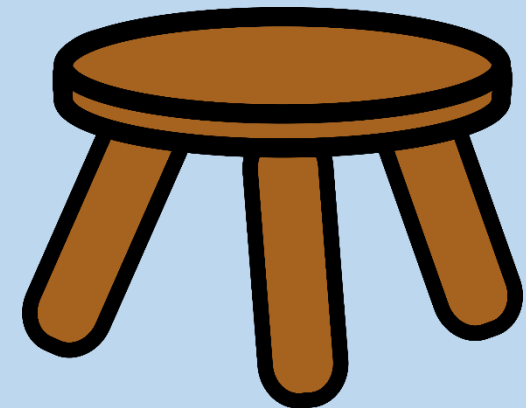


## Ships

- Repairing sails and ropes
- Joining the wooden planks together

## Furniture and Tools

- Attaching legs and handles.
- Fixing broken pieces on tools and furniture.

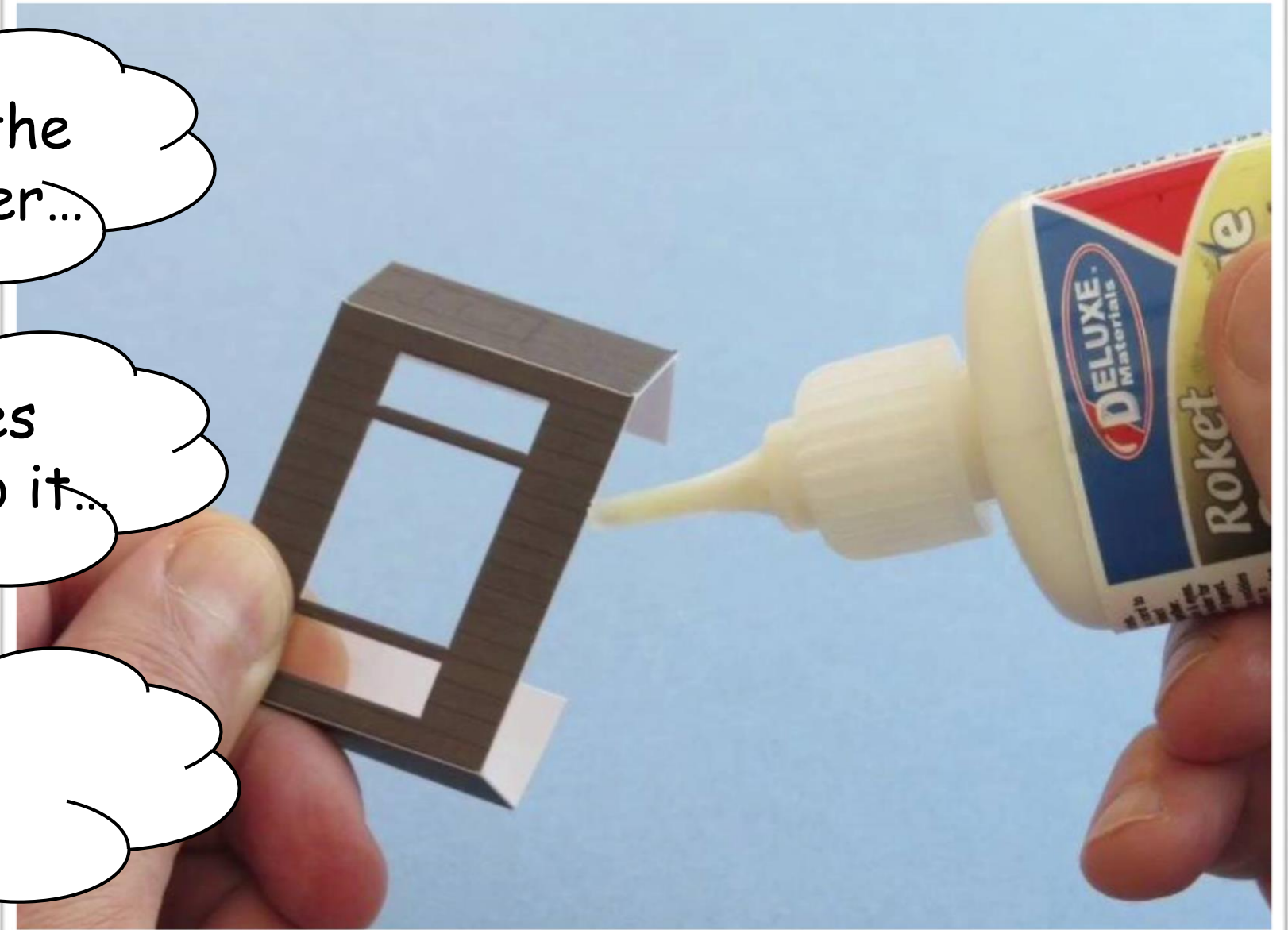


# How does glue stick things together?

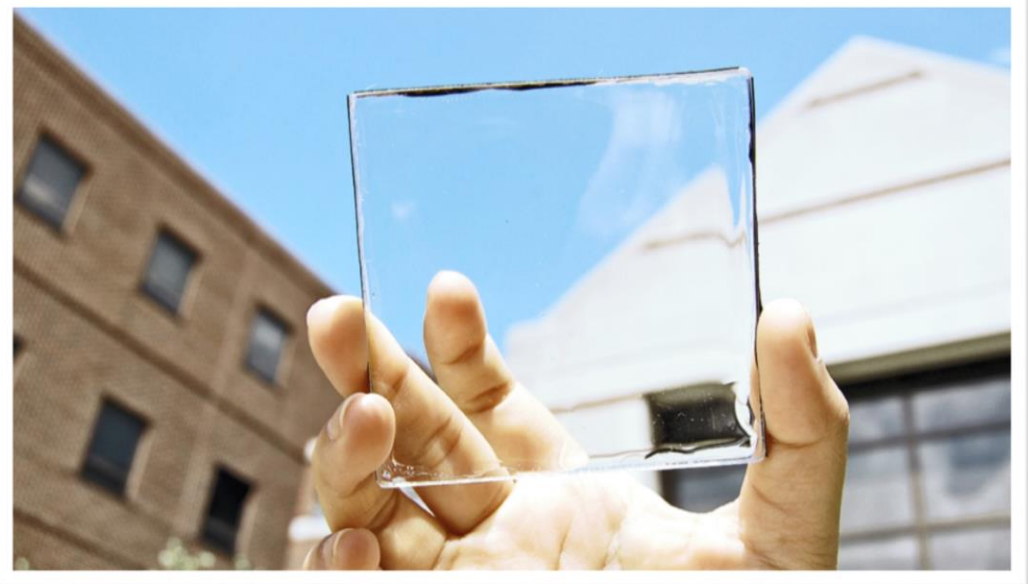
I think it melts the materials together...

I think it makes materials stick to it...

I think it...



All materials have different **properties**. These describe what a material is able to do or is like. Some materials are flexible. Some are see-through. Some are good at conducting heat. These are all properties.



How many other properties of materials can you think of? Remember, properties of materials describe what they are like or what they can do.

Think, Pair, Share



Did you think of some of these properties?



Hard



Waterproof



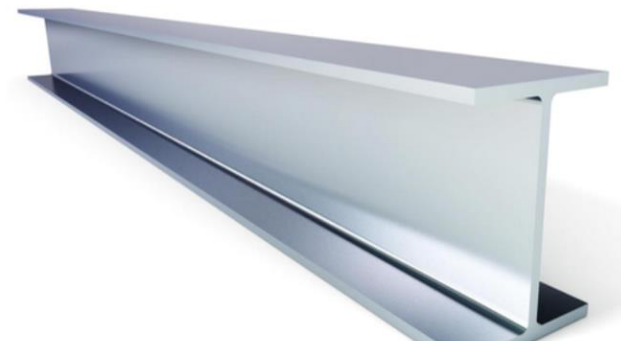
Magnetic



Squishy



Rough



Strong

Glue has some very special properties. The most obvious of all properties is that it is **sticky**. This makes it easy to join two materials together. When the glue hardens or dries, the two materials stick together. The stronger the glue, the stronger the join is!



The Vikings didn't have modern chemicals to make glue. So what natural materials do you think they used to make glue?

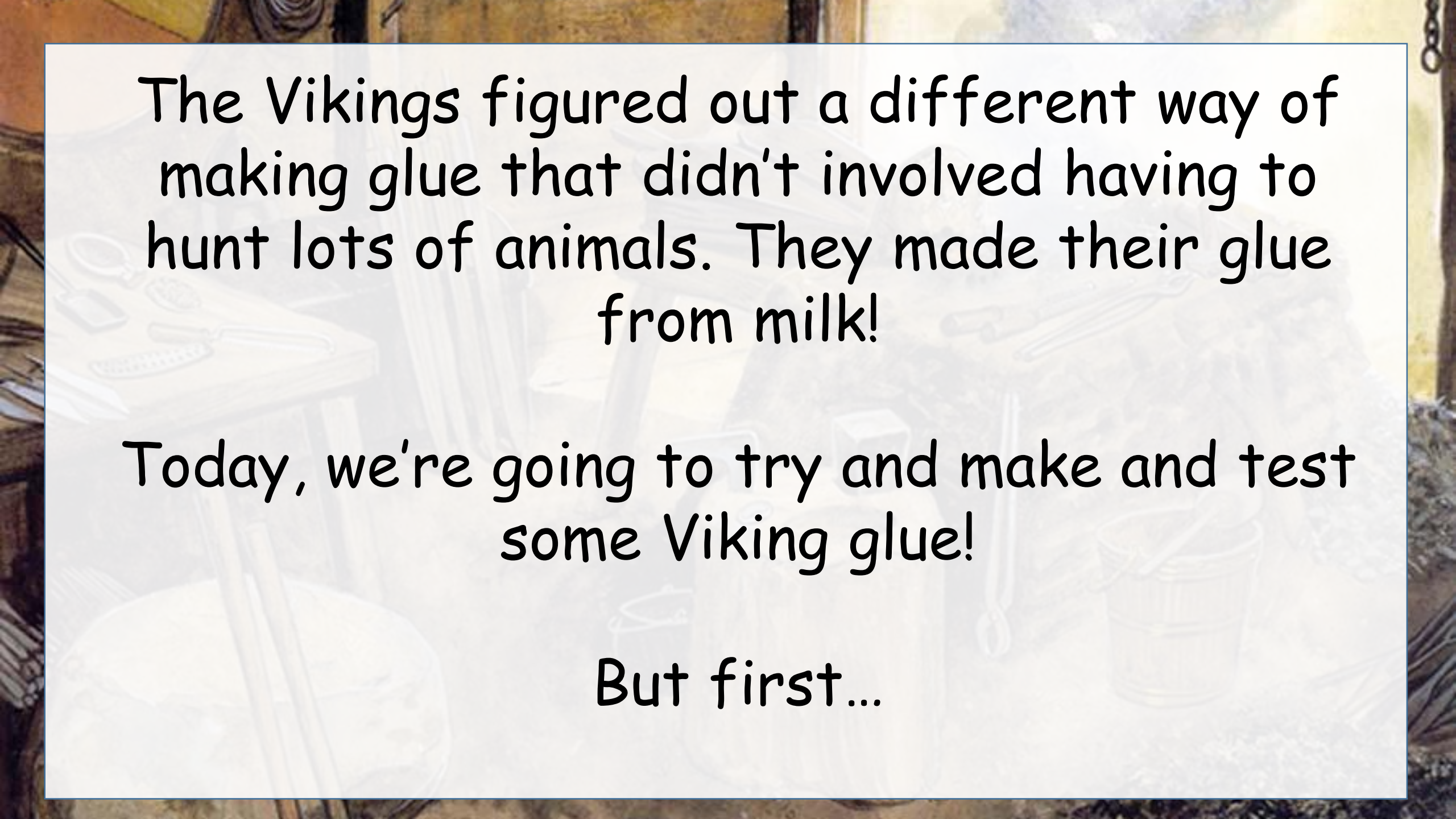
Think, Pair, Share



In the past glues used naturally sticky materials! You can see some of them below!







The Vikings figured out a different way of making glue that didn't involved having to hunt lots of animals. They made their glue from milk!

Today, we're going to try and make and test some Viking glue!

But first...

How are we going to test how effective the glue is compared to other glues?

In your groups, design an experiment that will show us how strong different glue are!

The worksheet is titled "Designing an Experiment" and is divided into several sections. At the top, there is a drawing area with the instruction "Draw what your experiment is going to look like:". Below this, the title "Designing an Experiment" is repeated. The first section asks "What are we trying to find out? (Research Question)" and provides three horizontal lines for an answer. The second section asks "How would we find out the answer to the question above?" and provides four horizontal lines. The third section asks "How would we measure the results of the test above?" and provides three horizontal lines. The final section asks "How are we going to record our results?" and provides three horizontal lines. To the right of the worksheet, there is a large empty box with the text "your experiment?" below it.

WELCOME TO  
SVEN'S  
WORKSHOP



# YOUR CHALLENGE

MAKE A STICKY VIKING GLUE  
TO FIX THE SAILS ON THE  
JOURNEY FROM IRELAND TO  
SCANDINAVIA



# STEP 1

Add 3 spoons of vinegar to the milk. Stir well and leave it for a few minutes.

What do you think will happen when we leave it?



## STEP 2

Pour the mixture through a sieve.

Why do we pour the mixture through the sieve?



## STEP 3

Scrape out the lumps onto a piece of kitchen roll. Pat them dry.



## STEP 4

Crumble the lumps into a bowl. Add 2 teaspoons of sodium bicarbonate





## STEP 5

Add one teaspoon of warm water and stir the mixture.

What changes in the properties of the material do you think will happen as you stir?



## STEP 6

Add another teaspoon of water and stir. Keep going until you have a thick paste. Do not add more than 6 teaspoons in total.



Now it's time to test our Viking glue. We're going to use the test we designed earlier to test how strong and sticky our glue is! The glue that lasts the longest is the strongest.

Designing an Experiment

Draw what your experiment is going to look like:

Designing an Experiment

What are we trying to find out? (Research Question)

\_\_\_\_\_

How would we find out the answer to the question above?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

How would we measure the results of the test above?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

How are we going to record our results?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

your experiment?