



Hidden Messages

5 - 12 yrs | 15 min | Stage 1-3



Hidden Notebook Found...

Could you send a secret message nobody else can see?

? Wonder & Predict







I PREDICT THAT.....

- The message will appear when heated.
- The message will stay invisible.
- The paper will change colour.
- Something else: _____

There are no wrong predictions.

WHY DO YOU THINK THAT?

What you will need

-  • Lemon juice
-  • White paper
-  • Cotton bud
-  • Lamp or adult-supervised heat source.
-  • Small bowl
-  • Paper towel

Investigate

Follow the steps carefully while observing.

- 1 Squeeze and collect lemon juice**
Pour a small amount of lemon juice into a bowl.

- 2 Dip a cotton bud into the lemon juice.**
Write a word, symbol or simple message on white paper.

- 3 Allow the paper to dry completely. What happened to your writing?**
 Still visible Hard to see Completely disappeared

- 4 Predict what will happen when the hidden message is heated.**
 Message will appear Nothing will happen Paper will burn

- 5 With adult help, gently warm the paper.**
Observe carefully.

- 6 Did your secret message appear?**
 Yes No

Observe & Record

- What did you notice?
- Writing disappeared when dry
 - Writing turned brown
 - Message appeared slowly
 - Some parts appeared first
 - Different liquids behaved differently
 - Something surprised me

What did you observe?

Write or draw what happened to your secret message.





What happened?

Fill in the sentences using words from the box.

heat | lemon juice | invisible | brown | chemical | message | paper | acids

When the lemon juice dries, the writing becomes _____.

When the paper is warmed, the hidden _____ begins to appear.

The lemon juice contains natural _____ that react when heated.

This reaction causes the writing to turn _____.

The change is a _____ reaction.



The science behind it

Why did the message disappear?

Lemon juice dries clear on paper. The liquid is still there, but it becomes difficult to see.

Why does heating reveal the message?

When heated, natural compounds in the lemon juice react and darken faster than the surrounding paper.

That's why the hidden writing appears.

Why do other liquids work?

Some liquids contain natural compounds that react to heat in a similar way.

Scientists can test different liquids and compare the results.



Take it further - Mystery Challenge

Secret Ink Challenge.

What happens if you test a different invisible ink?

Milk Apple juice

My prediction:

What happened?

Mackey Maybel —
Clue Detective



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MYSTERY VIDEOS



Could spiders grow as big as a car?

Watch a short science video and explore the facts behind this amazing question.



MYSTERY MISSION



Can we learn more about liquids by using cabbage?

Follow the mission, complete fun challenges and make awesome discoveries.



TEACHER RESOURCES



Ready-to-teach lessons and resources.

Printable worksheets, discussion questions and curriculum links to save you time.



BONUS INVESTIGATIONS



Take your investigation further!

Extra experiments, cool projects and new ideas to explore.



Mackey Maybel
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Teacher Resources

Great investigations start with real-world questions.

