

Whiteboard-ization of Paper

Group 4



Portable Whiteboard

For
introducing
your ideas

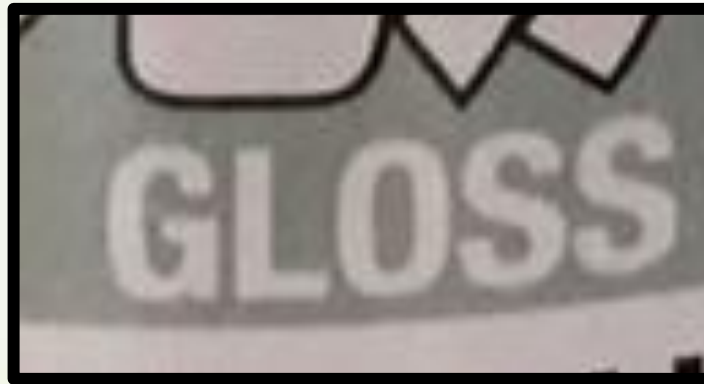
As a
calculation
sheet

Whiteboard made from paper

- ▶ Everyone has used paper
→ Everyone can use it easily
- ▶ Easy to deal with
→ A lot of stationery



Topcoat



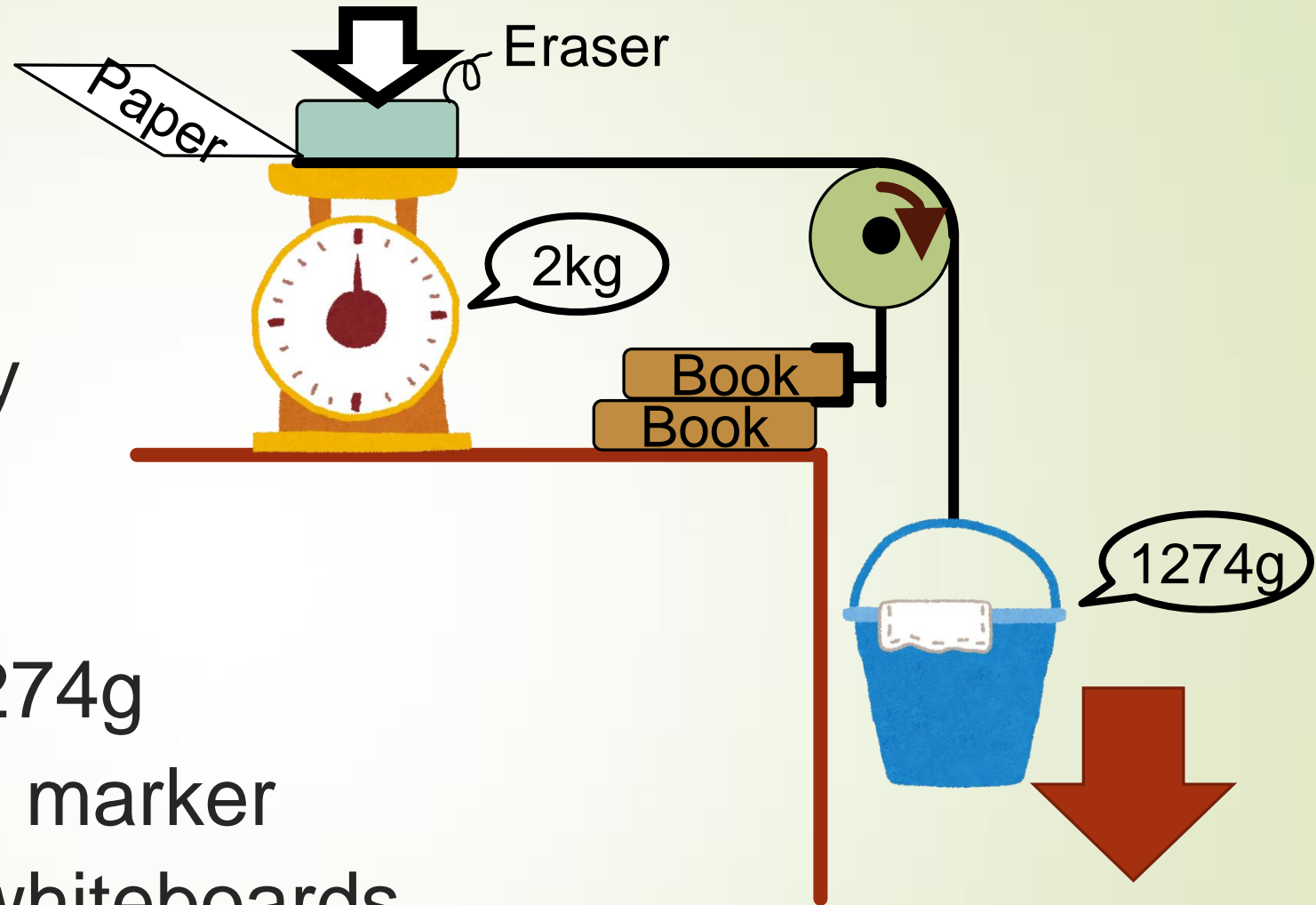
Makes surfaces glossier



Device

- Scale
- Fixed pulley
- Kite string
- Bucket
- Weight 1274g
- Whiteboard marker
- Eraser for whiteboards

➡ We pushed an eraser down until the scale read 2kg.

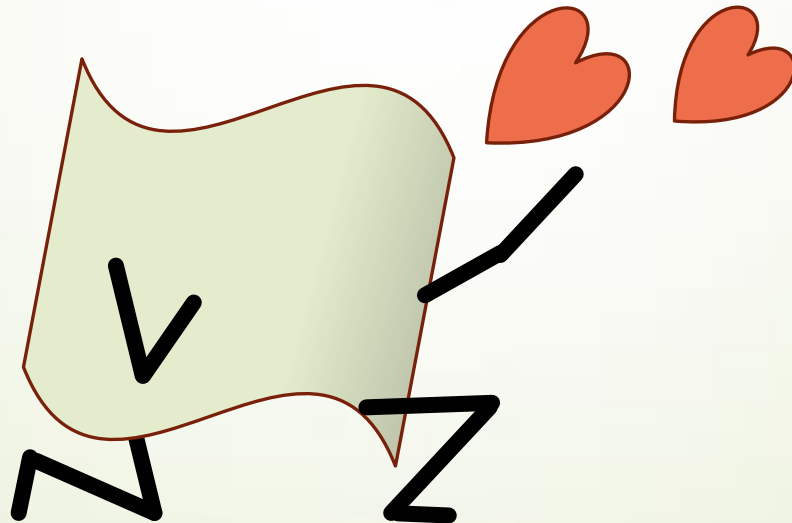


Experiment 1

Which paper to use?

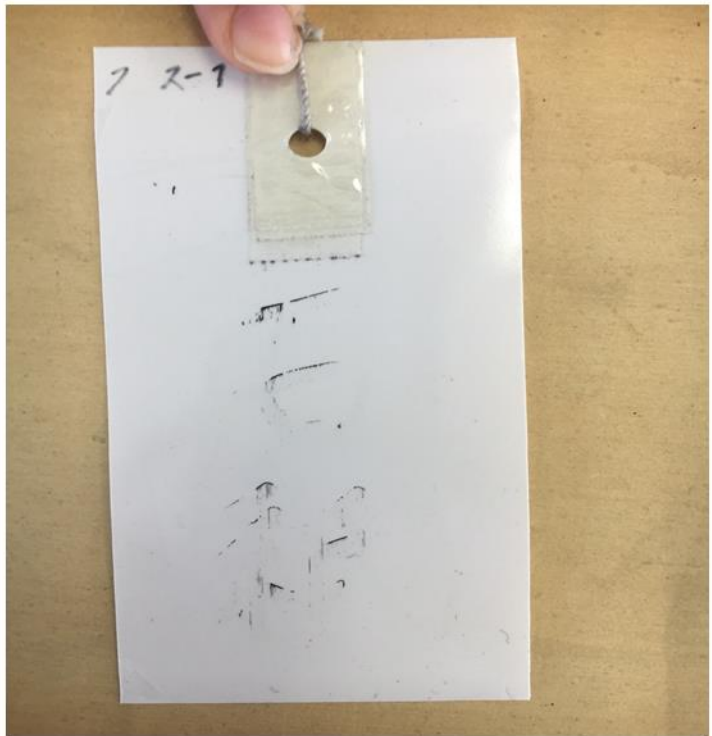
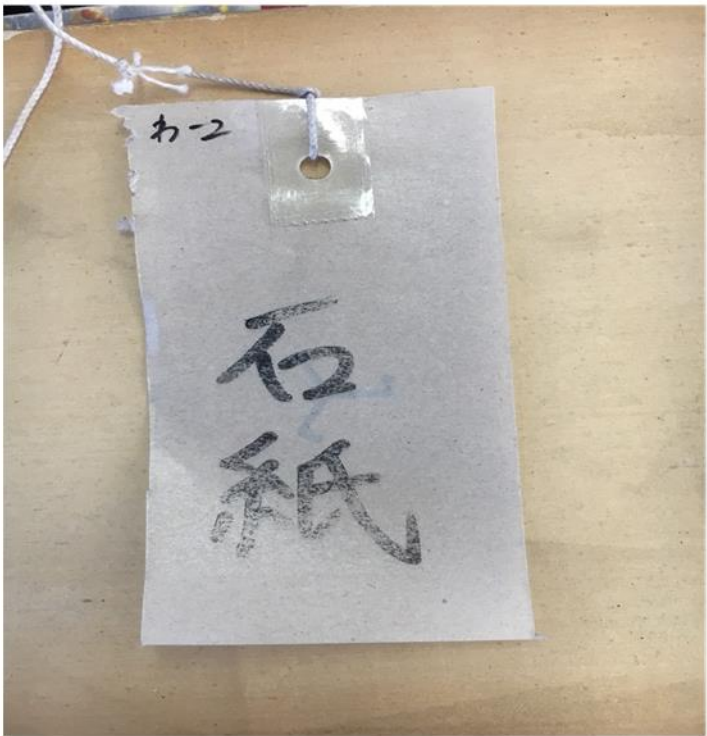
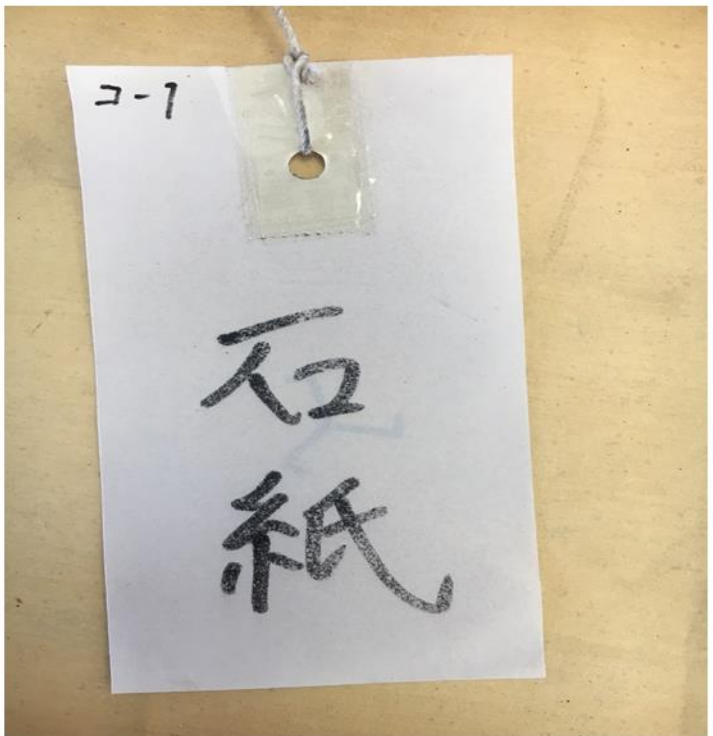
〈Purpose〉

To find the paper which is most suitable for this research



The Result

1. Stone paper
2. Normal copy paper
3. Copy paper of lower quality

1.	2.	3.
		
Erased	Not erased	Not erased

Analysis of Experiment 1

Stone paper is the most suitable for this research!





Experiment 2

Amount of Topcoat

Purpose

- Examine how much topcoat we have to use

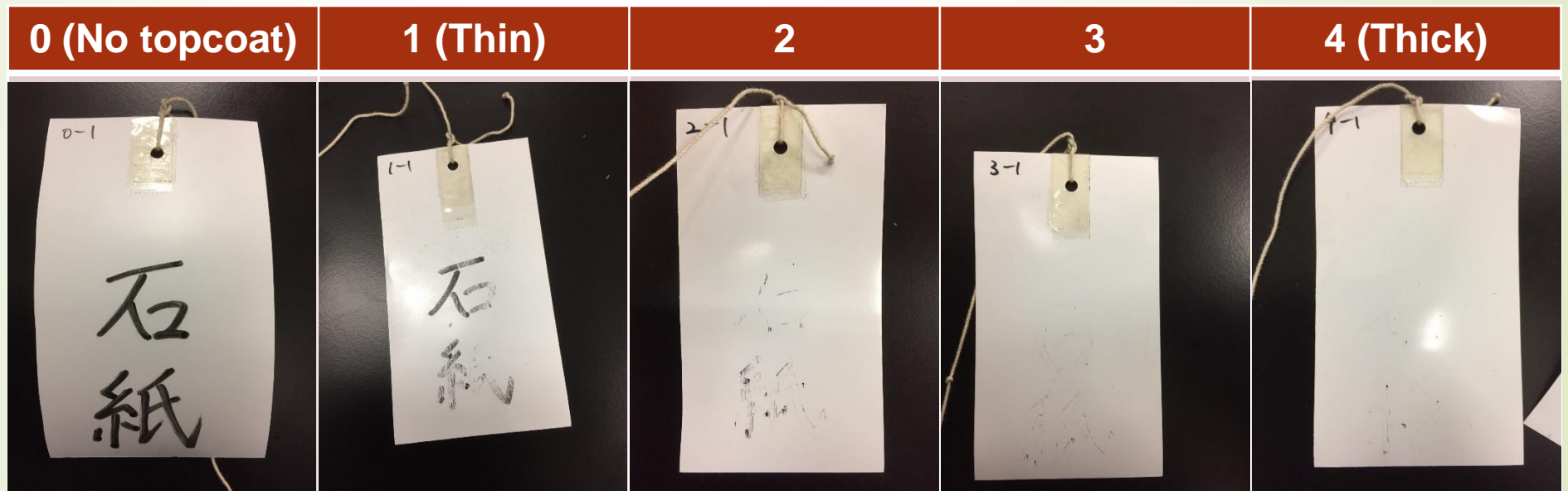


Method

- Cut out five pieces of stone paper and numbered them from 0 to 4.
- Sprayed topcoat on number 1 to number 4.
- Sprayed more topcoat on larger numbered pieces.
- Measured how much topcoat stuck to the paper by measuring their masses.

Result

- Wrote words on the five pieces of stone paper and tried to erase words as in experiment 1.





Analysis of Experiment 2

- With more topcoat it is easier to erase words.
- Only words on pieces 3 and 4 could be erased.
- 1g of stone paper needs 0.02g of topcoat.



Result

- Stone paper was the best.
- Topcoat : Stone paper
= 0.02g : 1.0g



Future Tasks

- How long will our product last?
- How much will it cost?
- Why was stone paper the best?
- Shorten the time to dry the topcoat



References

- Kamatani shigyo Co, Ltd. “Stone paper | Kamatani shigyo Co, Ltd.”. Kamatani shigyo Co, Ltd. (In Japanese)
http://www.kamatani.jp/stone_paper/, (2018-01-17).
- Japan writing instruments manufacturers association. “Page of whiteboard”. Japan writing instruments manufacturers association.
http://www.jwima.org/markingspen/05markingspen_%20wb/05-1markingspen.html, (2018-01-15).



Gratitude

We appreciate Mr. Kamatani giving us materials and advice.



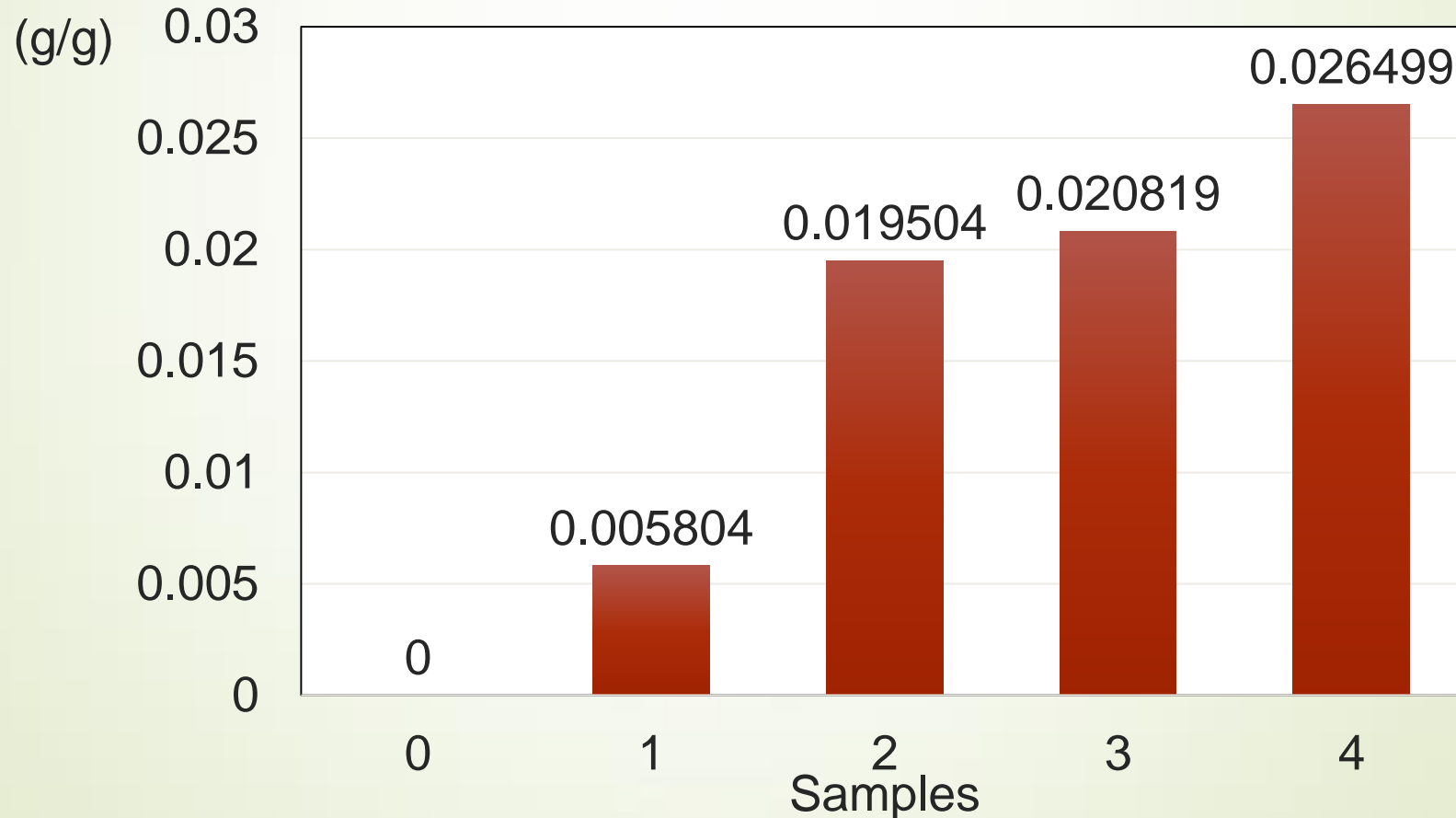
Thank you for your
time and attention.

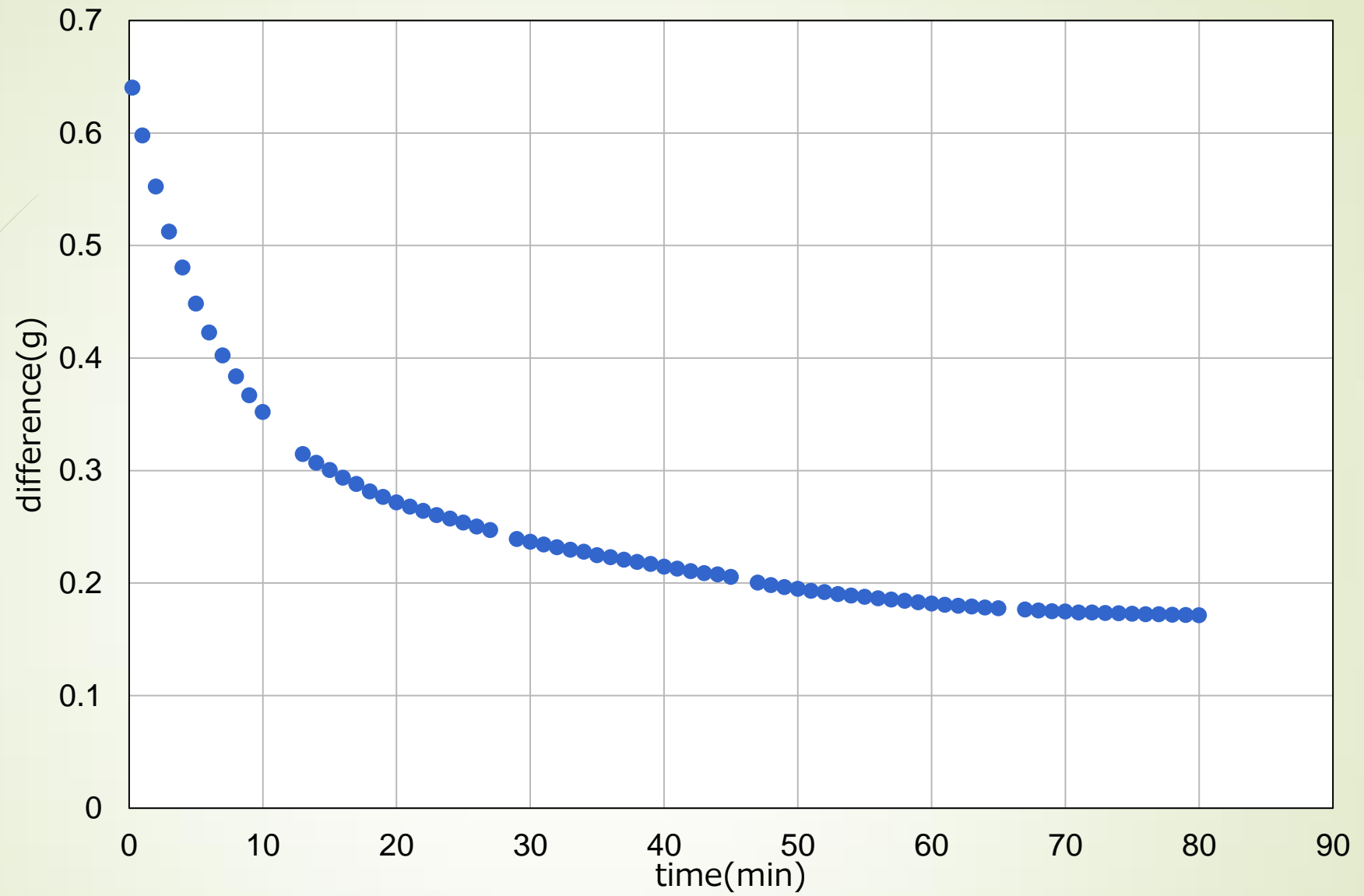


Below: For Q&A

Result of Measurement

- This graph shows the measurement of masses of five pieces of stone paper.





Time required to dry