

Appendix 3: Experiment Worksheets (CASE 1)

Name: _____ (P.6)

Date: _____ Result: _____

Experiment:

Materials and tools:

clipboard, white paper, sandpaper, corrugated cardboard, pen, ruler, toy car

Steps:

1. Clip the white paper to the clipboard, place the toy car on the white paper, control the clipboard to slowly rise along the ruler, and observe the height at which the highlighter begins to slide.
2. Clip different materials on the clipboard and repeat the above steps to test.

A. Estimate the result: On what kind of material has the roughest surface and greatest friction?

(Please provide the answer.)

- white paper sandpaper corrugated cardboard

B. My record:

		white paper	sandpaper	corrugated cardboard
How far is the distance of the toy car when drop down on the clipboard (cm)	First time result			
	Second time result			
	Medium:			

Which is the smoothest surface, and which is the roughest surface?

Explain how you worked out the answers to the question above.

Group work table:

Student name					
Role and duty					

Appendix 3: Experiment Worksheets (CASE 2)

Name: _____ (P.6)
Date: _____ Result: _____

Reminder (refer to your mind map)

Read the questions and answer them.

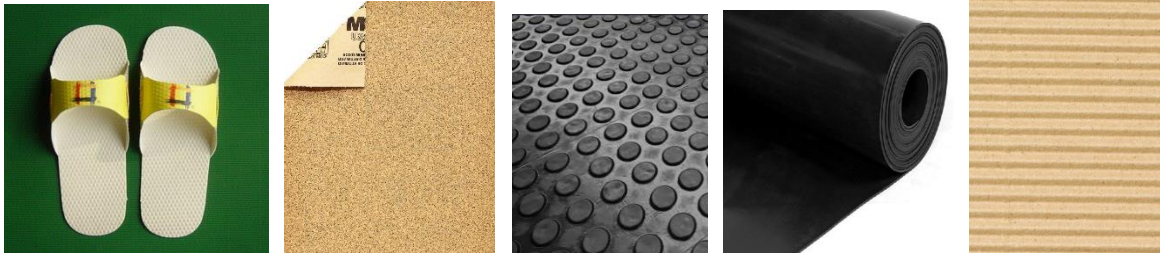
Miss Yu bought a pair of slippers; However, this pair of slippers is so slippery. She barely slipped when she wears it in the bathroom.

Use the friction concept to explain the reason and modified the slipper by the materials that provided.

Use materials to make the slipper safer.

Materials:

file folder, non-slip rubber grid, heat resistant rubber grid, sandpaper, corrugated cardboard, toilet floor blocks, ruler



Hint: First check which material has the strongest friction.

Design how much friction the slipper needed.

Think deeper!

Can you separate the part of the slipper?

You can use different materials in different section of the slipper.

Start making your groups' slipper.

Estimate the material:

1. Which materials will have the greatest friction?
2. Which materials have the least friction?

Experiment:

How to estimate the roughness of different materials?



Mark the result:

	Non-slip rubber grid	Heat resistant rubber grid	Folder	Wood
First time result				
Second time result				
Medium:				

- Make the slipper (DIY time)
- How will you design the slipper?
- The materials, should you add tread on the surfaces? Why?

Group Work Table:

Student name					
Role and duty					