

The Primary Stage of Grades (4-5)  
School Year 2022- 2023

Name: \_\_\_\_\_

Subject: Science

Unit 7: Effects of Forces

Worksheet 4: Friction

Date: / /

Class: Grade 5 CP (All sections)

Objective/s:

- Know that friction is a force that acts in the opposite direction of movement.
- Identify situations and decide whether friction is useful or a problem.
- Relate the amount of the force of friction to the roughness of surfaces.
- Represent results in a bar chart.

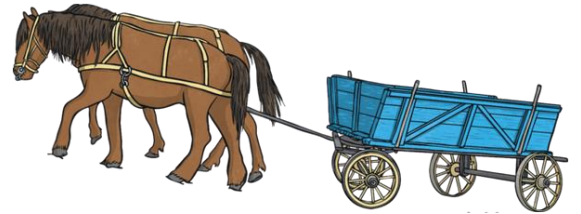
Question 1:

Draw an arrow to show the direction of the force of friction on each of the following pictures:

1.



3.



Question 2:

Determine whether friction is useful or a problem in each of the following situation:

Situation	Friction is useful	Friction is a problem
Stopping the tires of a car		
Sliding on a playground slide		
Goalkeeper's gloves		
Tying your shoe lace		
When you open a drawer		
You are Ice skating		
You are Climbing rope		

Question 3:



(a) Use the words below to complete the sentence.

colour

direction

speed

weight

When the footballer kicks a football, the force of the kick can change the

..... and the ..... of the ball. [2]

(b) The footballer must make sure his feet do not slip when he kicks the ball.

Name the force that gives him a good grip so he does not slip.

..... [1]

**Investigating friction in different surfaces:**

Question 4:

Pedro and Arturo measured how far their toy car moved on different surfaces. These are their results.

Surface	Distance car moved in cm			
	Test 1	Test 2	Test 3	Average
grass	11	10	9	
wet tar	19	21	20	
sand	12	14	13	
cement	15	18	18	

1 Why did Pedro and Arturo repeat their measurements?

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2 Calculate the average distance the car moved on each surface and write it in the table.

Average= the sum of all the readings on one surface ÷ the number of tests

3- Name the **independent variable** in this investigation?

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4- Name the **dependent variable** in this investigation?

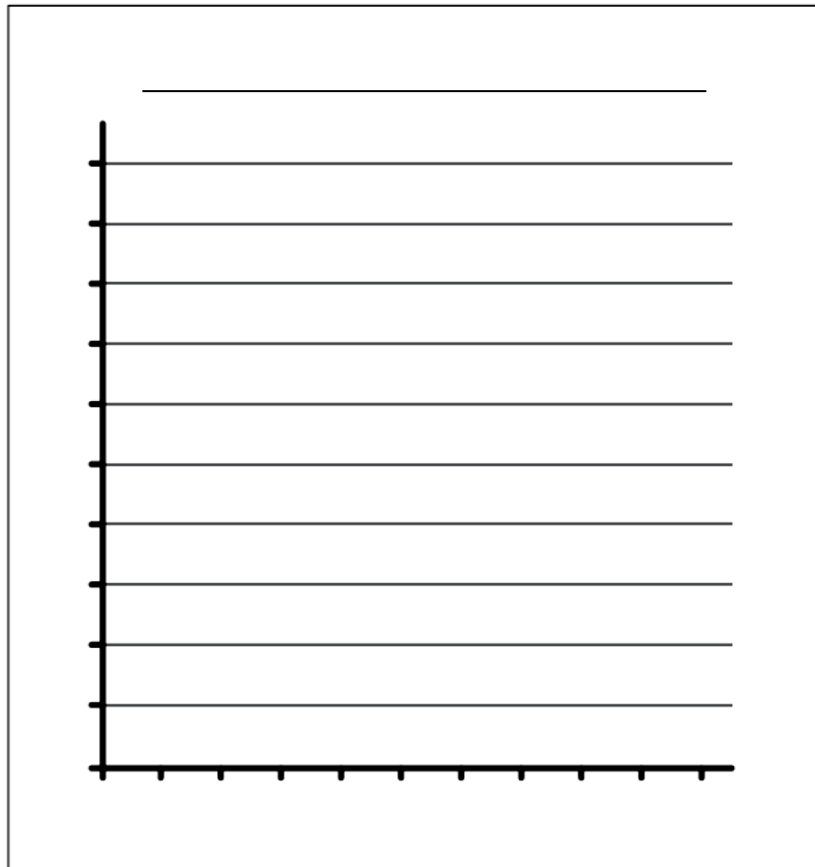
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5- Name two **controlled variables** in this investigation (must stay the same)?

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6-

a Draw a bar chart of the results.



b On which surface did the car move furthest? Suggest a reason for this.

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c Suggest a reason why the car did not move far on the grass.

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7 Predict how the results would be affected if the tar surface was dry. Explain why.

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