

# RESEARCH

Does the length of the rope affect the period of a swing?



Expectations

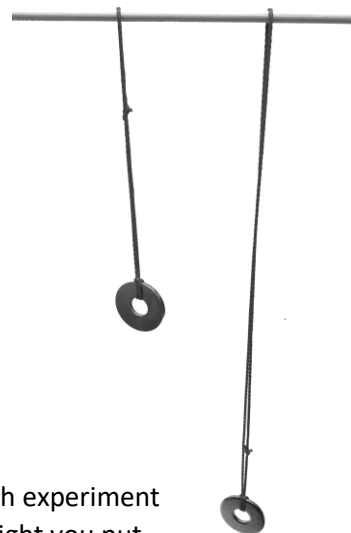
What do you think will happen to the period of a swing if you change the length of the rope?

I think .....

.....



## Experiment



Think up two experiments to check if the length of the rope affects the period. For each experiment you have to choose the length of the rope, how far you pull it aside and how much weight you put on the pendulum

### Experiment 1A

Rope length: .....

How far pulled  
aside: .....

Weigth: .....

### Experiment 1B

Rope length: .....

How far pulled  
aside: .....

Weigth: .....

Perform each of the experiments together with an assistant. Take care to measure the same thing each time: how long does it take for the pendulum to swing 5 times?

### Experiment 1A

Outcome: .....

### Experiment 1B

Outcome: .....

Do you see a difference between a short and a long rope?

**yes/no**

To be more sure, you can repeat your experiments:

Experiment 1A

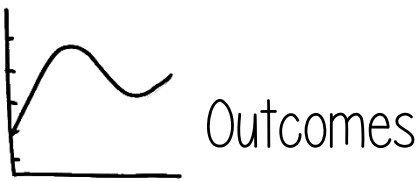
Outcome 2nd trial: .....

Outcome 3rd trial: .....

Experiment 1B

Outcome 2nd trial: .....

Outcome 3rd trial: .....



Copy all outcomes of all trials in the table below (do not forget your first trial!). That way, all outcomes are conveniently grouped together.

	Experiment 1A	Experiment 1B
1st trial	.....	.....
2nd trial	.....	.....
3rd trial	.....	.....

Do you see a difference between a short and a long rope in the table?

yes/no

How do you know?

.....



## Conclusion

You can now answer the research question:

Does the length of the rope affect the period of a swing?

My research shows .....

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