

Swinging Back and Forth

Did You Know? A pendulum is a weight that hangs from a point and can swing back and forth. The time it takes for a pendulum to swing back and forth depends on the length and weight of the pendulum and also the force of the push.

A tire swing is one example of a pendulum.



- 1 Josie pushes Max on a tire swing. Max swings for 9 seconds with each push. Complete the chart to show the amount of time Max swings with 1, 2, 3, 4, and 5 pushes.

Push	Swing Time
1	9 seconds
2	18 seconds
3	27 seconds
4	36 seconds
5	45 seconds

- 2 How many pushes are needed for Max to swing at least 60 seconds? Explain.

7 or more pushes; Sample answer: 7 pushes last 63 seconds because $7 \times 9 = 63$. So, 7 or more pushes are needed for Max to swing at least 60 seconds.

- 3 **Extension** How long will Max swing if Josie pushes him 10 times on the swing?

90 seconds