

Try this: A string grandfather clock

This experiment demonstrates that time can be measured by using a swinging string.

You can measure time with a string

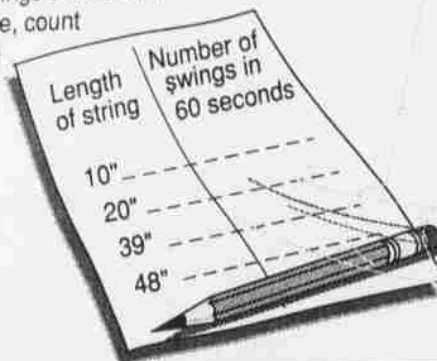
You'll need:

Lengths of string or heavy thread - a weight such as a metal washer or a coin, a clothes hanger or ceiling hook, a watch that indicates seconds, paper, pencil.

- 1 Tie a small weight to a string that is about 48 inches long and suspend it from a clothes hanger or ceiling hook.
- 2 Pull the string slightly to one side and let it swing. Count the number of swings it makes in 60 seconds. Then pull the string farther over to one side and count the number of swings in 60 seconds. Jot down your results.
- 3 Now do the same thing with strings of different lengths: and finally in each case, count the number of times the weight moves back and forth in 60 seconds, and write it down.

What happens:

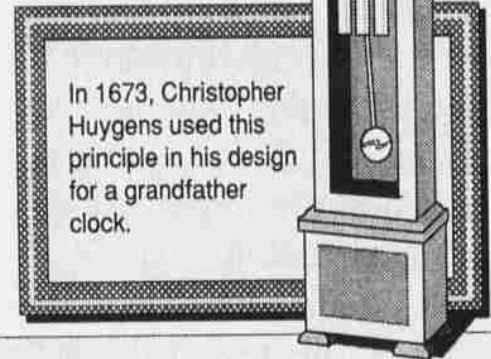
When the string is about 39" long, the weight moves back and forth 60 times in one minute.



Why did it happen?

A pendulum of a certain length takes the same amount of time to make every swing no matter how far it travels or how heavy the weight at the end of it. But the longer the pendulum, the longer the time it takes to complete its swing, and the shorter the pendulum, the more quickly it travels back and forth.

Since a length of string measuring 39" swings back and forth 60 times in one minute, you know that every complete swing it makes measures one second. You can use that length of string to measure time with great accuracy.



In 1673, Christopher Huygens used this principle in his design for a grandfather clock.

SOURCE: Simple Science Experiments with Everyday Materials, Sterling Publishing Co.

Aircraft parts cannibalizations

Air Force spare parts are in short supply. Some aircraft had to be cannibalized to make other aircraft usable for deployment to Saudi Arabia for Operation Desert Shield.

Air force base/aircraft	Number of parts cannibalized	At start of Desert Shield		As of Nov. 5, 1990	
		Missing parts	Aircraft not flyable	Missing parts	Aircraft not flyable
Langley, Va./F-15	200	100	8	9	3
Seymour-Johnson, N.C./F-15E	300	350	18	110	6
Shaw, S.C./F-16	79	80	8	16	2
Myrtle Beach, Fla./A-10	10	27	3	9	2
George, Calif./F-4G	140	47	15	1	1

SOURCE: Chicago Tribune, U.S. Air Force

Iraq's ZSU-23 anti-aircraft gun



Ammunition: Four-barrel 23mm cannon; fires up to 1,000 rounds a minute per barrel

SOURCE: Encyclopedia of World Military Weapons



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