



## Pendulums - Why do some clocks have pendulums on them?

### Fact

- Every clock needs some form of energy to keep it going and the hands turning. Some clocks have batteries, some have weights, and some have pendulums.
- A pendulum swings back and forth inside the clock turning the gears inside the clock, which make the hands turn.
- A pendulum swings back and forth the same distance and same speed each time so it keeps the time accurate as it turns the gears, which turn the hands at the same speed all the time.

### Do you know

- Pendulum clocks were invented about 400 years ago.
- The scientist Galileo discovered how pendulums work when he watched a light swing back and forth in a church and timed it with the beat of his heart. He found that it took the same amount of time for every swing and started investigating with the pendulums he made.

### Experiments you can do

Become a human pendulum

What you need: A swing & a marker using a piece of wood or a stone

What you do:

Put your left foot on the ground under the swing, and then put your right foot behind the heel of your left foot so your toe of your right foot touches the heel of your left foot. Put your marker at the heel of your right foot. Hop on the swing and move it backwards until your feet are behind your marker then tuck your feet up and begin to swing. Count one Mississippi, two Mississippi... until the swing swings back the other way and count again. Each swing should take the same amount of time.

Try it again to make sure.

### Other Investigations

Test the swing pendulum

What you need: The same swing, The marker in the same place

The help of a friend - maybe someone bigger or smaller than you

What you do:

Get them to swing on the swing starting at the same point you did behind the marker. Count one Mississippi, two Mississippi... and see if they take the same amount of time to make a swing from one side to the other.