

**teachers guide**

**Matter and relativity 4:**

**Measuring time**

# Components

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|  | NAME | DESCRIPTION | AUDIENCE |
|  | *Measuring time*  teachers guide | This guide suggests how to use the video, *Measuring time*. | teachers |
|  | *Measuring time*  video | Professor Andre Luiten explains motivations for his research to create accurate clocks. | students |
|  | *The physics behind ‘Measuring time’*  background sheet | This background sheet contains explanatory notes on physics concepts referenced in the video, *Measuring time*. | teachers |

Purpose

To show how a physicist proposes to test laws of physics.

# Activity summary

Outcomes

Students:

* explain how accurate measurement of time is used to test Einstein’s theories.

|  |  |
| --- | --- |
| ACTIVITY POSSIBLE STRATEGY | |
| Teachers review the background sheet, *The physics behind ‘Measuring time’*, to familiarise themselves with physics concepts introduced in the video. |  |
| Students view the video, *Measuring time*. | whole class |
| Teacher discusses issues raised by the video. | teacher-led discussion |

Using the video, *Measuring time*

In the video, Professor Andre Luiten touches on a wide range of topics in ‘new physics’. Many of these are expanded further in the background sheet, *The physics behind ‘Measuring time’*. Discussions with students can explore any of these ideas to a depth appropriate for the class.

# Technical requirements

The video, *Measuring time*, requires QuickTime version 7 or later. This is a free download from www.apple. com/quicktime. The guide and background sheet require Adobe Reader (version 5 or later), which is a free download from adobe.com.

# Acknowledgements

Image credits:

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