# Física no celular

Dr. Daniel Girardi
d.girardi@ufsc.br

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# Existem alguns apps bons

## Sensor Kinetics

**INNOVENTIONS, Inc.**   **Ferramentas**

★★★★☆ 6.434

Este app é compatível com todos os seus dispositivos.

Instalado

Alguma vez você já se perguntou se o seu smartphone Android ou tablet tem um sensor de giroscópio? Você está curioso para saber o quão rápido acelerômetro do telefone está ou se o seu novo telefone tem um barômetro? E sobre os outros sensores? Este é o aplicativo para você.

Ver, gravar e monitorar o acelerômetro, giroscópio, e todos os outros sensores do dispositivo Android.
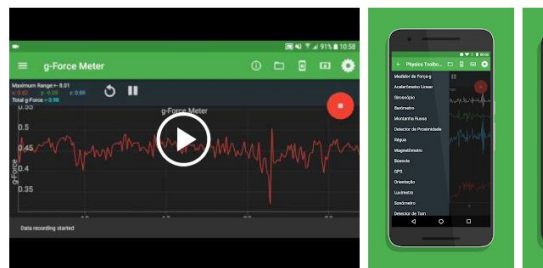
## Physics Toolbox Sensor Suite

**Vieyra Software**   **Ferramentas**

★★★★★ 7.146

Este app é compatível com todos os seus dispositivos.

Instalado

Úteis para a educação STEM, academia e indústria, este aplicativo usa entradas de sensores de dispositivos de recolha, registo e os dados de exportação em formato de valores separados por vírgulas (CSV) através de um arquivo .csv compartilhável. Os dados podem ser plotados contra o tempo decorrido em um gráfico ou exibido digitalmente. Os usuários podem exportar os dados para posterior análise em uma ferramenta de planilha ou plotagem. Este aplicativo também gera tons, cores e um estroboscópio. Veja www.vieyrasoftware.net para uma variedade de idéias de uso para a

**LER MAIS**

## Science Journal

**Google LLC**   **Educação**

★★★★☆ 3.361

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Instalado
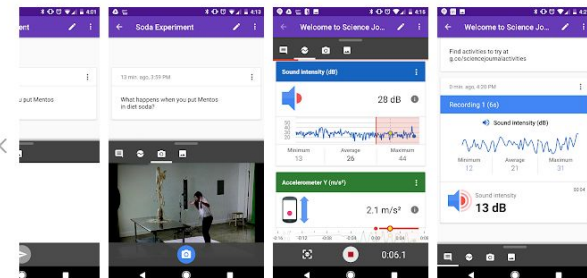
O Science Journal é um caderno de ciências digital gratuito, criado pelo Google.

Não importa se você é um professor de ciências ou um curioso sobre o assunto, aqui você pode guardar suas anotações, fotos e observações em um só lugar. Use os sensores no seu smartphone para mensurar e criar gráficos sobre fenômenos, como luz, som e movimento. Você também pode conectar o smartphone a sensores externos por meio do Bluetooth e, assim, conduzir experimentos

# Existe o bom e existe o melhor!



phyphox
physical phone experiments

http://www.phyphox.org

**phyphox**

physical phone experiments

# Por que o melhor?

1. Desenvolvido por físicos para professores de física;
2. É 100% gratuito e multiplataforma;
3. Tem suporte no Brasil;
4. Tem um bom número de experimentos pré-concebidos;
5. Exporta os dados para outros programas;
6. Permite a análise dos dados no próprio dispositivo;
7. Permite que um experimento possa ser acompanhado por vários dispositivos ao mesmo tempo;
8. Permite que você mesmo desenvolva o seu experimento e customize a análise de dados.

# Advanced tools for smartphone-based experiments: phyphox

**S Staacks, S Hütz, H Heinke and C Stampfer**

Institute of Physics I and II, RWTH Aachen University, 52062 Aachen, Germany

E-mail: staacks@physik.rwth-aachen.de

CrossMark

## Abstract

The sensors in modern smartphones are a promising and cost-effective tool for experimentation in physics education, but many experiments face practical problems. Often the phone is inaccessible during the experiment and the data usually needs to be analyzed subsequently on a computer. We address both problems by introducing a new app, called 'phyphox', which is specifically designed for utilizing experiments in physics teaching. The app is free and designed to offer the same set of features on Android and iOS.

**phyphox**
physical phone experiments

É 100% gratuito e multiplataforma

GET IT ON
Google Play

https://goo.gl/x1ukcP

Download on the
App Store

https://goo.gl/nFLwxs

**Tem suporte no Brasil**

**Em breve, ele estará traduzido para português:**

- Gustavo Baldissera
- Paulo Ferreira
- Reginaldo Ferreira

**phyphox**
physical phone experiments

**Tem um bom número de experimentos pré-concebidos**

**https://phyphox.org/wiki**

- Experiment: Acceleration Spectrum
- Experiment: Acoustic Stopwatch
- Experiment: Audio Amplitude
- Experiment: Audio Autocorrelation
- Experiment: Audio Scope
- Experiment: Audio Spectrum
- Experiment: Centrifugal Acceleration
- Experiment: Doppler Effect
- Experiment: Elevator

- Experiment: Roll
- Experiment: Sonar
- Experiment: Spring
- Experiment: Tone Generator
- Sensor: Acceleration (without g)
- Sensor: Acceleration with g
- Sensor: Gyroscope
- Sensor: Light
- Sensor: Location (GPS)
- Sensor: Magnetic field
- Sensor: Pressure

- Experiment: Frequency History
- Experiment: Inclination
- Experiment: Inelastic Collision
- Experiment: Magnetic Ruler
- Experiment: Magnetic Spectrum
- Experiment: Motion Stopwatch
- Experiment: Optical Stopwatch
- Experiment: Pendulum
- Experiment: Proximity Stopwatch
- Experiment: Integrated acceleration
- Hysteresis curve of an iron core

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**Permite a análise dos dados no próprio dispositivo**

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**Exporta os dados para outros programas**

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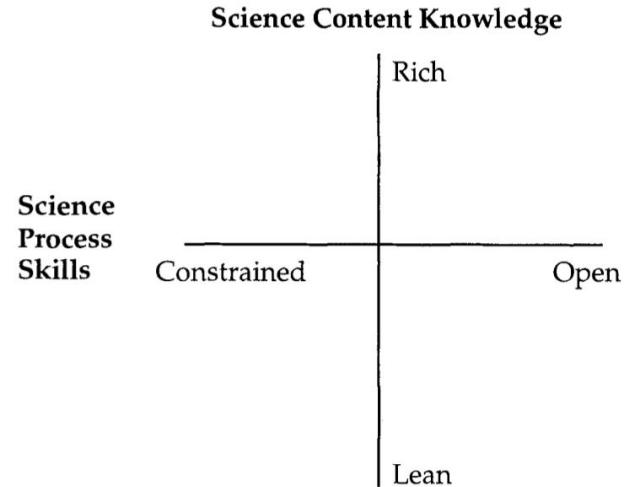- Sensor: Magnetic field
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# Investigating the Cognitive Complexity of Science Assessments

Gail P. Baxter, *Educational Testing Service*
Robert Glaser, *University of Pittsburgh*

*How can knowledge of the development of expertise in a subject area inform the development of assessments in that area? How can one examine the relationship between what is anticipated from a performance assessment and what is actually seen?*

tasks, a content-process space is introduced that depicts the relative demands of content knowledge and science process skills requisite for successful task completion. This content-process space together with the components of competence referred to above provide a framework for examining the cognitive complexity of science assessments.

Science Content Knowledge

Rich

Science Process Skills          Constrained          Open

Lean

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**Dados individuais que criam uma análise coletiva**

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phyphox — physical phone experiments

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Permite que você mesmo desenvolva o seu experimento e customize a análise de dados.

KEEP CALM
AND
AGUARDE: CENAS DOS
PRÓXIMOS
CAPÍTULOS