

# Vernier

## Inspiratie-sessie



**Edo Tempelman**

Adviseur & Onderwijsontwikkelaar





## BiNaSk en Technologie

- Lesmodules
- Keuzevakken
- Leermiddelen
- Trainingen
- Doorlopende leerlijnen
- STEAM Innovation Lab
- Inrichtingen
- Service & Support
- Installatie, hardware en software
- Subsidie aanvragen



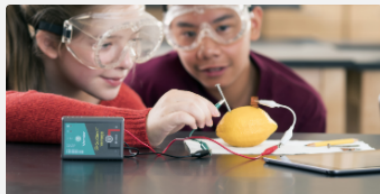
## Basisonderwijs

### Spelenderwijs ontdekken

Leerdoelen:

- Wetenschap & Techniek
- Digitale gelettertheid

[› Lees meer](#)



## Onderbouw VO

### Aanleren van kennis en vaardigheden

Leerdoelen:

- Biologie, Natuurkunde, Scheikunde, NaSk
- 21e eeuwse vaardigheden

[› Lees meer](#)



## Bovenbouw VO

### Projectmatig onderzoeken en ontwerpnd leren

Vakrichtingen:

- Biologie, Natuurkunde, Scheikunde, NaSk
- Havo computer science
- Technasium O & O
- NLT digitale technologieën

[› Lees meer](#)



## MBO en HBO

### Technologie in vakspecialisatie

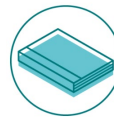
Specialisatie:

- Engineering
- Biologie
- Natuurkunde
- Fysiologie
- Renewable energy

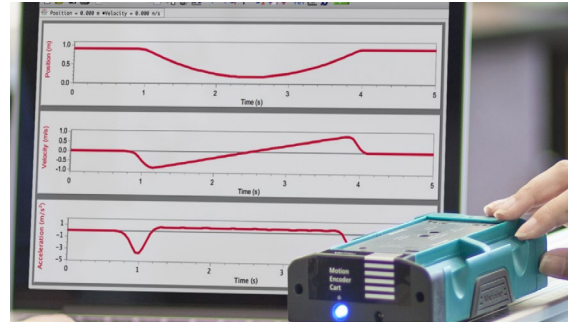
[› Lees meer](#)



# Vernier



**Draadloze bluetooth sensoren**



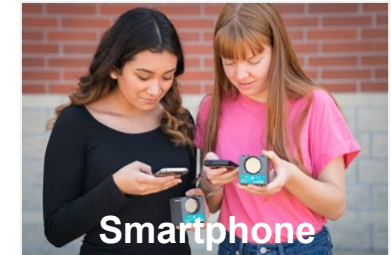
**Gratis software voor elk device**



**Moderne BiNaSk experimenten**



# Moderne technologie die aansluit bij de belevingswereld van generatie Z



[Graphical analysis gratis downloaden](#)



# Lesmodules en online videoplatform



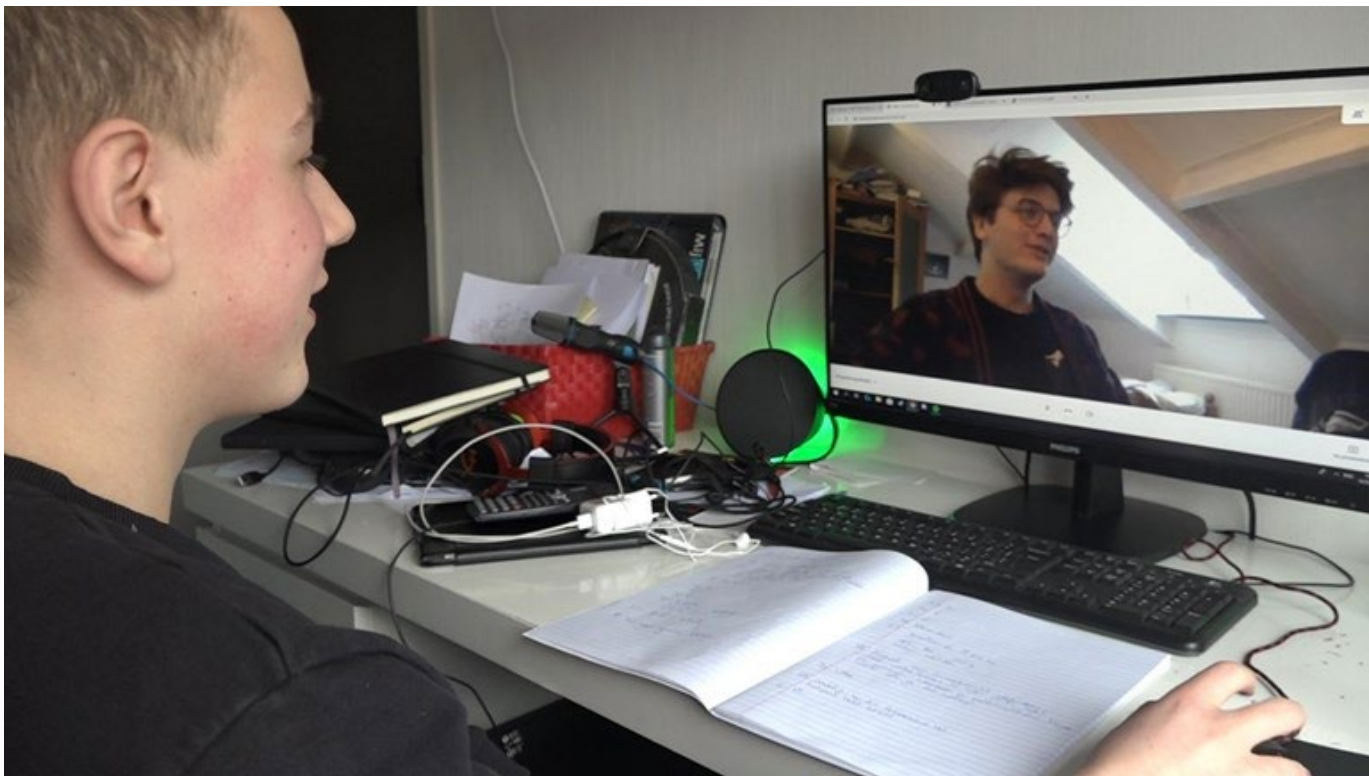
- Lesboeken
- Experimenten



- Online video's
- How To video's
- E-learning



# Covid-19 thuisonderwijs

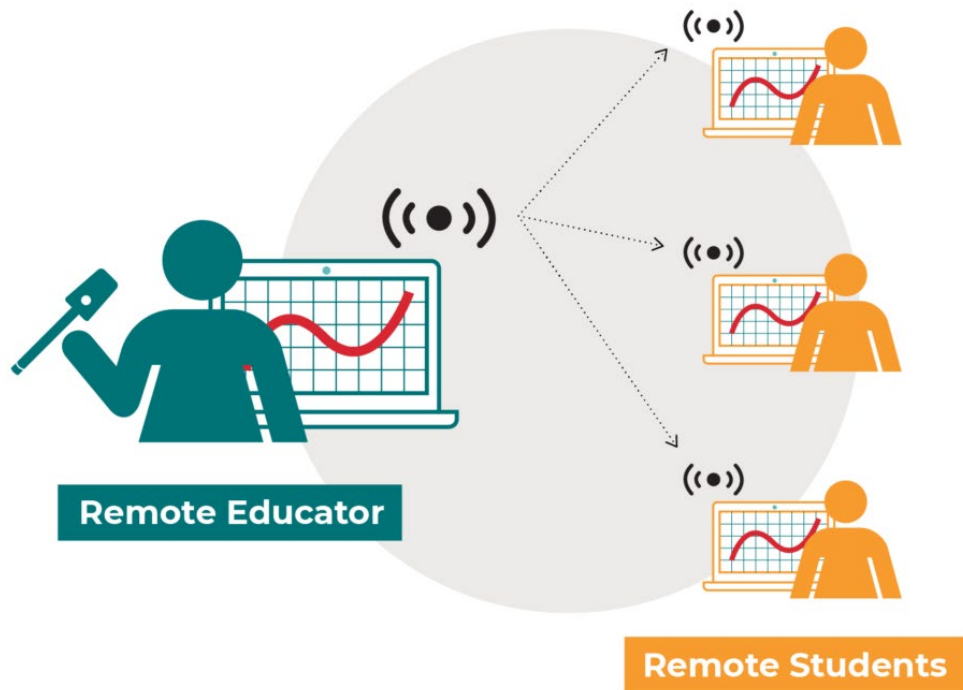


# Betekenisvol experimenteren niet mogelijk zonder materiaal en sensoren?





# Toch wel met Graphical analysis PRO

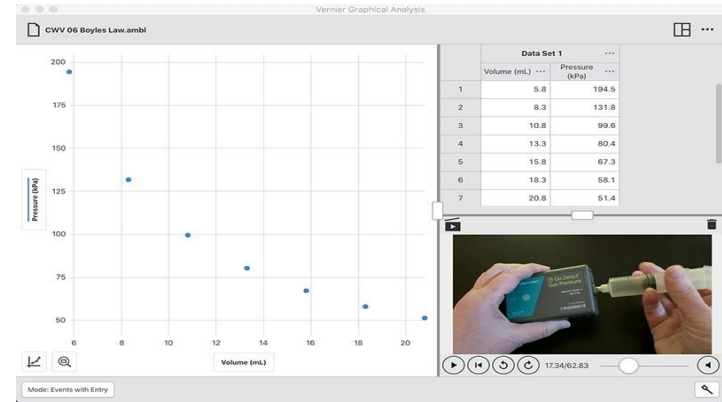


Cloud oplossing voor thuisonderwijs

# Oplossingen voor thuisonderwijs



[Graphical Analysis](#)



[Graphical Analysis PRO](#)

1. Ruim 300 gratis experimenten en opdrachten (Engelstalig)
2. Download data van experiment en opdracht
3. Experiment openen in GA
4. Leerlingen analyseren de data en grafiek en maken zo hun opdrachten
5. Leerlingen ontwikkelen hiermee belangrijke wetenschappelijke concepten en kritisch denkvermogen

1. Docent bereidt experiment voor op school
2. Verzamelt data van het experiment
3. Maakt video van het experiment of voert live experiment uit
4. Start online les met leerlingen via TEAMS
5. Deelt data en grafiek via de cloud
6. Speelt de video af en geeft uitleg
7. Leerlingen gaan onafhankelijk van elkaar aan de slag met de data en opdracht in hun eigen software



# Voorbeeld gratis experimenten

**Download Instructions for Using the Library Here**

Index of Biological Sciences	Software Used for Data Analysis	Related videos (where available)
<p>Follow the links below to access the experiments. You may download all the biology, human physiology, and agricultural science experiments, a specific lab book, or individual experiments. Each individual experiment folder will contain the experiment instructions as a Word doc and one or more sample data files.</p> <p>Use the software indicated here to view and analyze the experiment's sample data. Some files are free, others require licenses. If your school or department doesn't own a license, a free demo is available.</p> <p>Note that while the science and the experimental setup shown in these videos match the written instructions, the Vernier equipment and software may be older and may not match. Students should follow the written instructions provided whenever possible.</p>		
<b>ALL BIOLOGICAL SCIENCES</b>		
<b>Advanced Biology with Vernier (IBO-A)</b>		
BIO-A.10 Membrane Diffusion	Logger Pro 3	
BIO-A.12 Enzyme (CO <sub>2</sub> )	Logger Pro 3	<a href="https://youtu.be/2Fw4AB1pDQ0">https://youtu.be/2Fw4AB1pDQ0</a>
BIO-A.12 Enzyme (Phaswek)	Logger Pro 3	<a href="https://youtu.be/1FAkOwANU">https://youtu.be/1FAkOwANU</a>
BIO-A.14B Photosynthesis	Logger Pro 3	
BIO-A.15 Cell Respiration (CO <sub>2</sub> )	Logger Pro 3	<a href="https://youtu.be/3QMEYZUCi0E">https://youtu.be/3QMEYZUCi0E</a>
BIO-A.16B DNA Fingerprinting	Logger Pro 3	
BIO-A.19 Transpiration	Logger Pro 3	<a href="https://youtu.be/0w4AMH5wU">https://youtu.be/0w4AMH5wU</a>
BIO-A.19A Blood Pressure	Logger Pro 3	<a href="https://youtu.be/0b4k8EnUJm0">https://youtu.be/0b4k8EnUJm0</a>
BIO-A.19B Heart Rate & Fitness	Logger Pro 3	<a href="https://youtu.be/77_R0_wUP3k">https://youtu.be/77_R0_wUP3k</a>
BIO-A.12B Dissolved Oxygen	Logger Pro 3	<a href="https://youtu.be/19RmgW4Tdq">https://youtu.be/19RmgW4Tdq</a>
BIO-A.12B Primary Productivity	Logger Pro 3	
BIO-A.13 Visible Spectra of Plant Pigments	Logger Pro 3	<a href="https://youtu.be/1x20C0k8">https://youtu.be/1x20C0k8</a>
BIO-A.14 Determination of Chlorophyll in Olive Oil	Logger Pro 3	
BIO-A.15 Enzyme Analysis using Tyrosinase	Logger Pro 3	
BIO-A.16 Inhibition of Neurotransmitters using AChE	Logger Pro 3	
BIO-A.17 Macromolecules Experiments with Protein	Logger Pro 3	
<b>Biology with Vernier (IBVO)</b>		
IBVO.1 Energy in Food	Graphical Analysis 4	
IBVO.2 Lysis in Cell Size	Graphical Analysis 4	
IBVO.3 Acids and Bases	Graphical Analysis 4	
IBVO.4 Diffusion Through Membranes	Graphical Analysis 4	
IBVO.5 Enzyme Action (CO <sub>2</sub> )	Graphical Analysis 4	
IBVO.5B Enzyme Action (Phaswek)	Graphical Analysis 4	<a href="https://youtu.be/2Fw4AB1pDQ0">https://youtu.be/2Fw4AB1pDQ0</a>
IBVO.7 Photosynthesis	Graphical Analysis 4	
IBVO.8 Effect of Alcohol on Membranes	Graphical Analysis 4	



## Experimenten bibliotheek



# Voorbeeld Graphical Analysis PRO

Online les via TEAMS of Skype

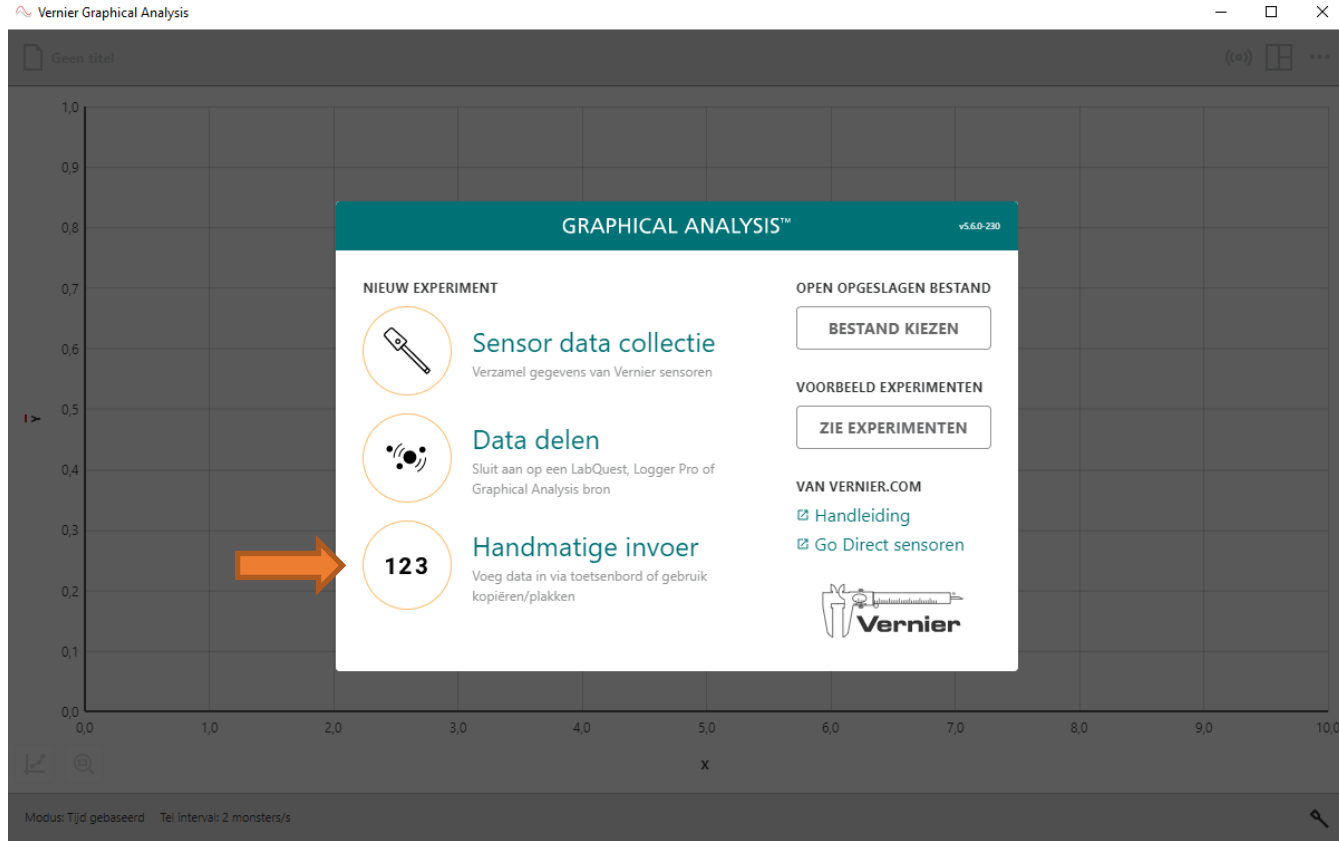
The screenshot displays a Teams meeting interface. At the top, the meeting title is "Vernier Graphical Analysis" and the time is "01:01:23". A circular video feed of the teacher is in the top right. The main content area is split into two views of the Vernier Graphical Analysis software. The left view, labeled "Docent scherm", shows a graph with a data series and a central menu with options: "Nieuw Experiment" (Sensor data collectie, Data delen, Handmatige invoer), "Open Opgeslagen Bestand" (Bestand kiezen), and "Voorbeeld Experimenten" (Zie experimenten). The right view, labeled "Leerling scherm", shows the same graph and menu, but with a different layout for the options. The bottom of the meeting window shows the Windows taskbar with the search bar, taskbar icons, and system tray.

Docent scherm

Leerling scherm

# Live demo Graphical Analysis PRO

1



The screenshot shows the Vernier Graphical Analysis software interface. A central menu overlay is displayed over a grid background. The menu has a teal header with the text "GRAPHICAL ANALYSIS™" and "v5.6.0-230". The menu is divided into three columns:

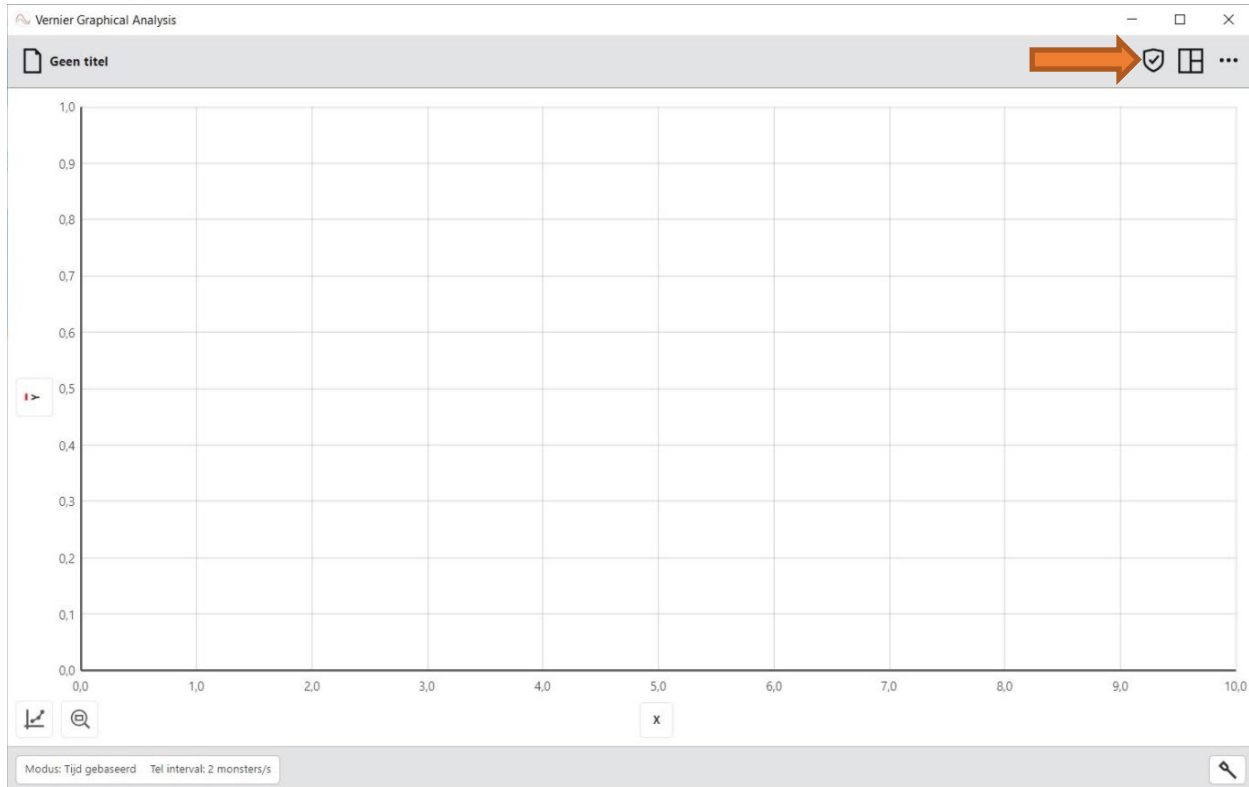
- NIEUW EXPERIMENT**
  - Sensor data collectie**: Verzamel gegevens van Vernier sensoren (Icon: pipette)
  - Data delen**: Sluit aan op een LabQuest, Logger Pro of Graphical Analysis bron (Icon: signal waves)
  - 123 Handmatige invoer**: Voeg data in via toetsenbord of gebruik kopiëren/plakken (Icon: number 123). An orange arrow points to this option.
- OPEN OPGESLAGEN BESTAND**
  - BESTAND KIEZEN**
- VOORBEELD EXPERIMENTEN**
  - ZIE EXPERIMENTEN**

Below the menu, there are links for **VAN VERNIER.COM**: [Handleiding](#) and [Go Direct sensoren](#). The Vernier logo is at the bottom right of the menu. The background shows a graph with axes labeled 'y' and 'x', and a status bar at the bottom indicating "Modus: Tijd gebaseerd" and "Tel. interval: 2 monsters/s".

License Key: mXqSuijGO

# Live demo Graphical Analysis PRO

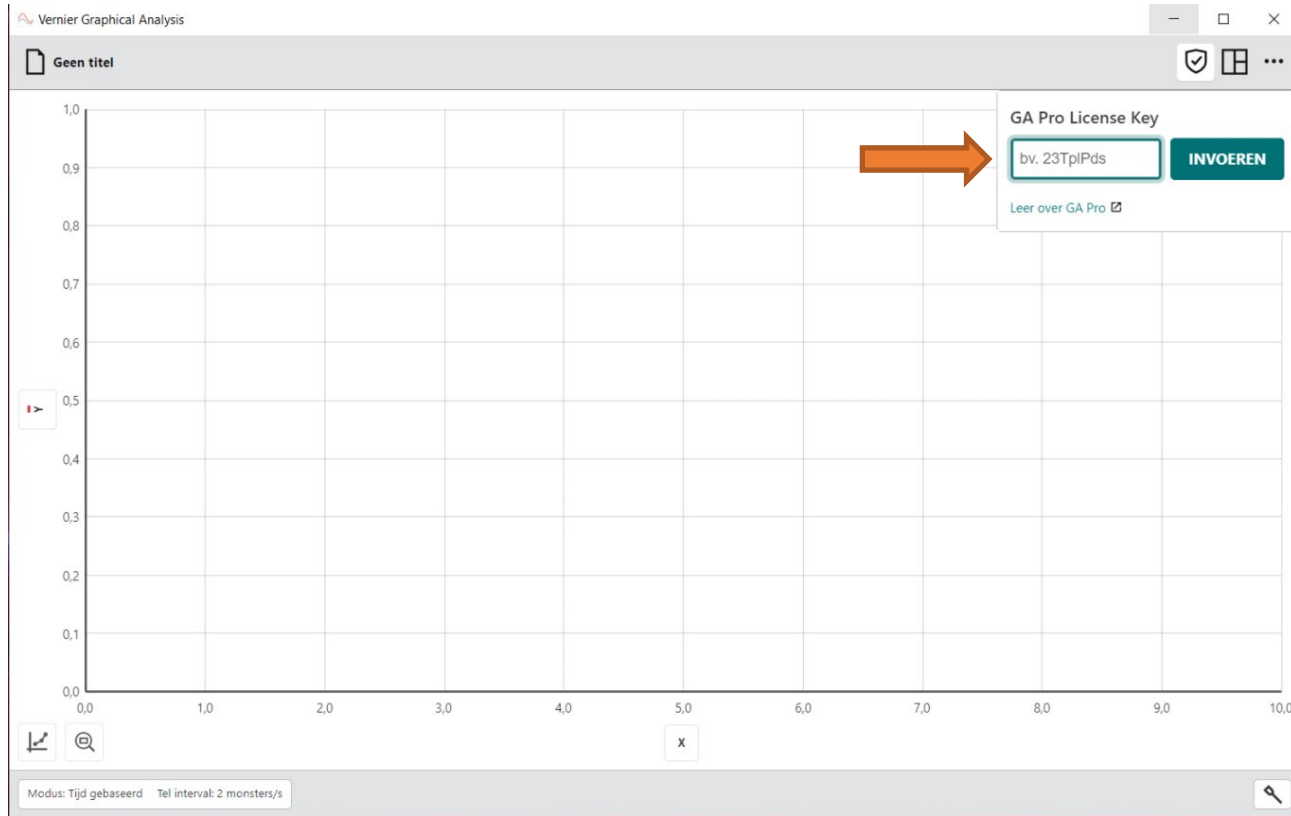
2



License Key: mXqSuijGO

# Live demo Graphical Analysis PRO

3



The screenshot shows the Vernier Graphical Analysis software interface. The main window is titled "Geen titel" and contains a large empty graph grid. The y-axis is labeled "y" and ranges from 0.0 to 1.0. The x-axis is labeled "x" and ranges from 0.0 to 10.0. A dialog box titled "GA Pro License Key" is open on the right side of the graph. It contains a text input field with the placeholder text "bv. 23TplPds" and a green button labeled "INVOEREN". An orange arrow points from the graph area towards the license key dialog. Below the input field is a link that says "Leer over GA Pro". The software's status bar at the bottom indicates "Modus: Tijd gebaseerd" and "Tel interval: 2 monsters/s".

License Key: mXqSuijGO

# Live demo Graphical Analysis PRO

4



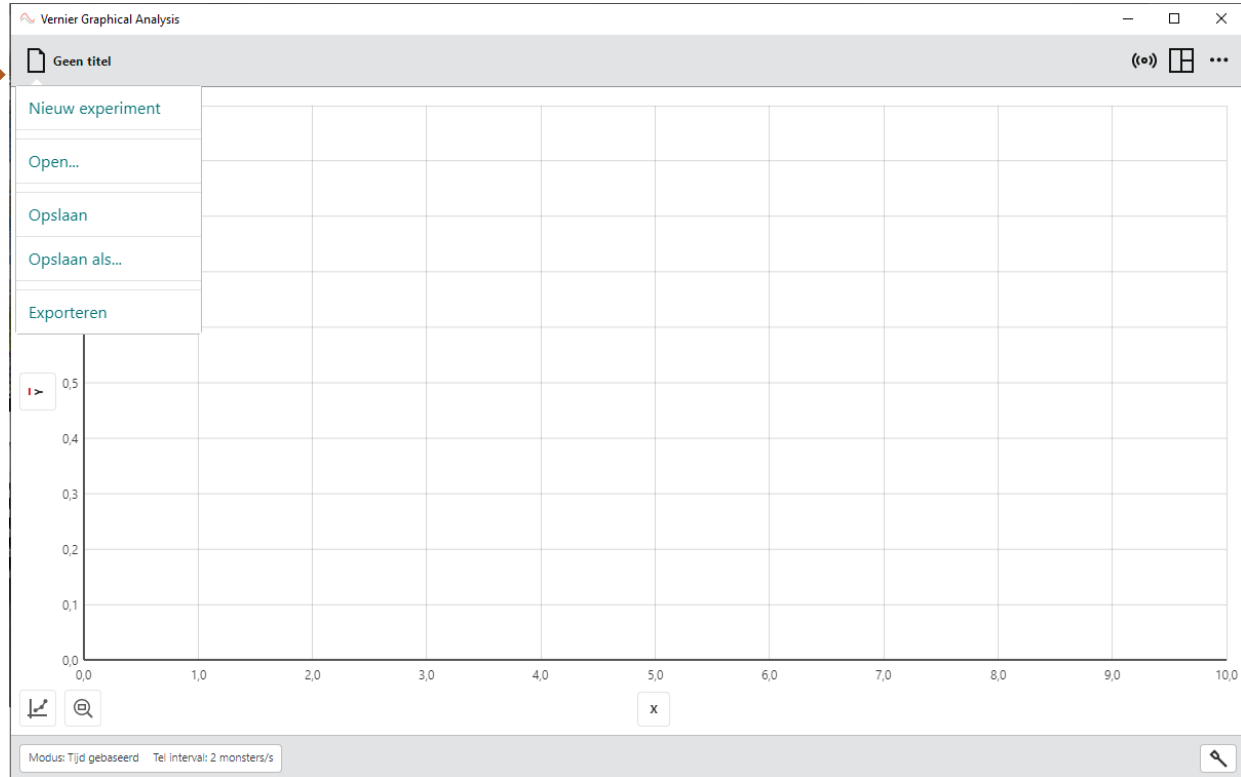
The screenshot shows the Vernier Graphical Analysis software interface. A dialog box titled "GA Pro License Key" is open, displaying the license key "mXqSuijGO" in a text input field. An orange arrow points to this field. To the right of the input field is a green button labeled "INVOEREN". Below the input field is a link that says "Leer over GA Pro". The background shows a blank graph with a grid and axes ranging from 0.0 to 1.0 on the y-axis and 0.0 to 10.0 on the x-axis. The status bar at the bottom indicates "Modus: Tijd gebaseerd" and "Tel interval: 2 monsters/s".

License Key: mXqSuijGO



# Live demo Graphical Analysis PRO

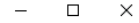
5






# Live demo Graphical Analysis PRO

6

Vernier Graphical Analysis



The screenshot shows the Vernier Graphical Analysis software interface. A dark grey window titled "Geen titel" contains a graph with a grid. The y-axis is labeled "V" and ranges from 0.0 to 1.0. The x-axis is labeled "x" and ranges from 0.0 to 10.0. An orange arrow points to the "Data delen" option in a white menu overlay. The menu has a teal header "GRAPHICAL ANALYSIS™" with "v5.6.0-230" on the right. The menu is divided into three columns:

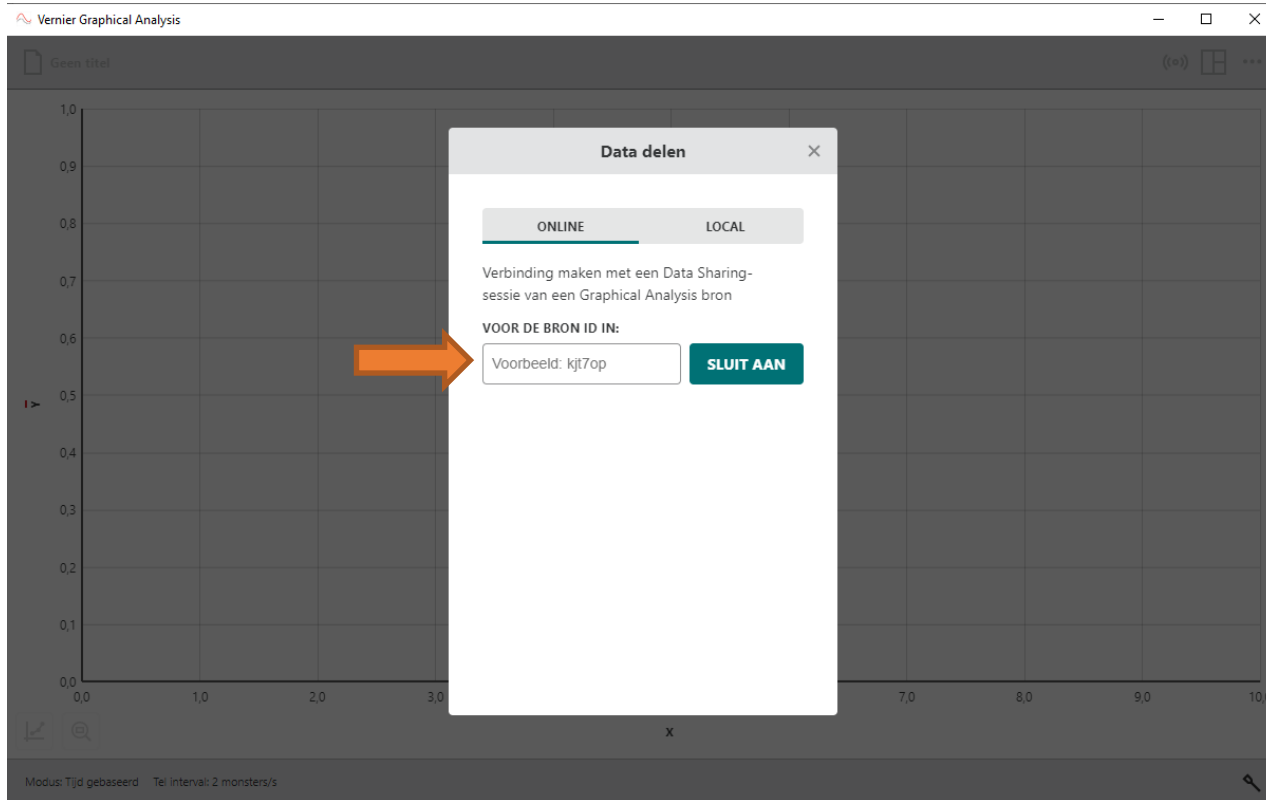
- NIEUW EXPERIMENT**
  -  **Sensor data collectie**  
Verzamel gegevens van Vernier sensoren
  -  **Data delen**  
Sluit aan op een LabQuest, Logger Pro of Graphical Analysis bron
  -  **Handmatige invoer**  
Voeg data in via toetsenbord of gebruik kopiëren/plakken
- OPEN OPGESLAGEN BESTAND**
  - BESTAND KIEZEN**
- VOORBEELD EXPERIMENTEN**
  - ZIE EXPERIMENTEN**
- VAN VERNIER.COM**
  - [Handleiding](#)
  - [Go Direct sensoren](#)

The Vernier logo is at the bottom of the menu. At the bottom of the window, it says "Modus: Tijd gebaseerd" and "Tij Interval: 2 monsters/s".



# Live demo Graphical Analysis PRO

7



The screenshot shows the Vernier Graphical Analysis software interface. A dialog box titled "Data delen" is open, allowing users to share data. The dialog has two tabs: "ONLINE" (selected) and "LOCAL". Below the tabs, there is a message: "Verbinding maken met een Data Sharing-sessie van een Graphical Analysis bron". Underneath, it says "VOOR DE BRON ID IN:" followed by a text input field containing "Voorbeeld: kji7op" and a green "SLUIT AAN" button. An orange arrow points to the input field. The background shows a graph with a y-axis from 0.0 to 1.0 and an x-axis from 0.0 to 10.0. The status bar at the bottom indicates "Modus: Tijd gebaseerd" and "Tel interval: 2 monsters/s".

Vernier Graphical Analysis

Geen titel

1.0  
0.9  
0.8  
0.7  
0.6  
0.5  
0.4  
0.3  
0.2  
0.1  
0.0

0.0 1.0 2.0 3.0 7.0 8.0 9.0 10.0

x

Modus: Tijd gebaseerd Tel interval: 2 monsters/s

**Data delen**

ONLINE LOCAL

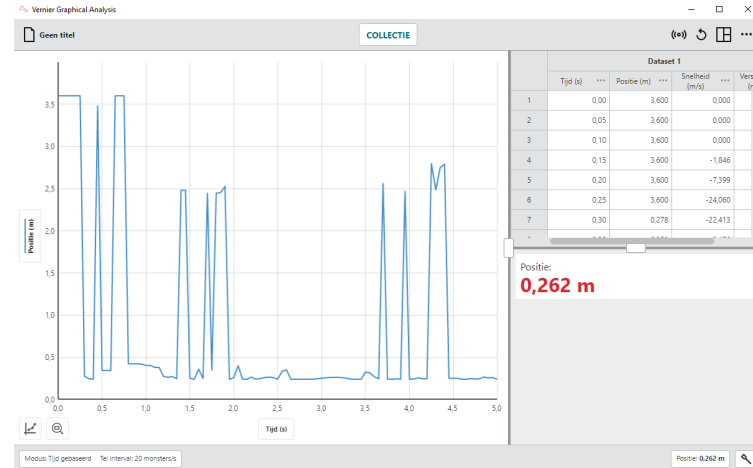
Verbinding maken met een Data Sharing-sessie van een Graphical Analysis bron

VOOR DE BRON ID IN:

Voorbeeld: kji7op

SLUIT AAN

# Live Demo met Go Direct motion sensor



# Aanbieding scholingsbudget

## Scholing digitaal lesgeven thuisonderwijs



- Leren werken met hardware en software
- Live online experimenten opzetten
- Tijdsduur 1 dagdeel ons innovatie-lab
- 1x Licentie GA Pro (€ 99,-)
- 1x Go direct Tempratuur sensor (€ 130,-)
- Kennis maken met nieuwe technologieën

Kosten € 249,-



[Meld je nu aan](#)