

# **Digital assessment Utrecht University**

## **Quick Guide Numworx**

**Teacher**  
**(online application)**

## 1. Getting started with Numworx as a teacher

Numworx allows for digital formative and summative assessment with a MCS (Math, Calculus, Statistics) characteristic. It also allows you to give students access to digital assignments and practice materials.

This 'quick guide' is meant to help you and your students get started quickly, by following a few steps. This manual will describe the use of the Numworx online application that can be accessed through an internet browser. The online application can be accessed through: <https://numworx.uu.nl/>.

*Attention: use Numworx Author for editing modules and creating exams.*

If you and your students want to get started with Numworx, a few preparatory steps are required:

1. You need to be linked, as a teacher, to a course at the UU. Usually this information is imported from Osiris, so no further actions are needed from you.
2. You link one or more exams or practice modules to a course group (class).
3. You choose a time period in which the exam or practice module becomes available to the course group.
4. You set the exam up as formative or summative (in case of a summative exam, the exam will be made on a secured Chromebook at the UU).

Students will be able to work on the digital assignments after these steps are completed. Teachers can easily keep track of students' work and results, which will also be described in this manual.

5. You view your students' results.

We will describe the abovementioned steps in detail below.

### 1.1 Logging in

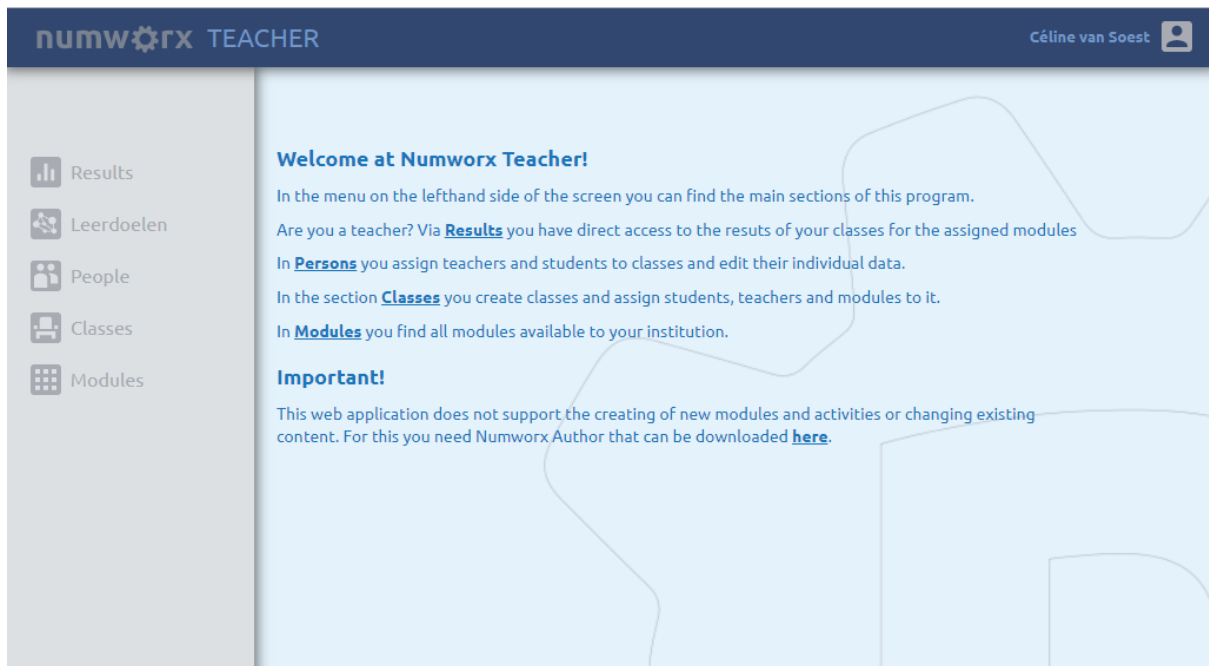
Open an internet browser and go to the Numworx webapp (<https://numworx.uu.nl/>)

You will find yourself on the following page:



- Click on the second link to log into the English environment with your Solis-ID.

You will find yourself on this page:

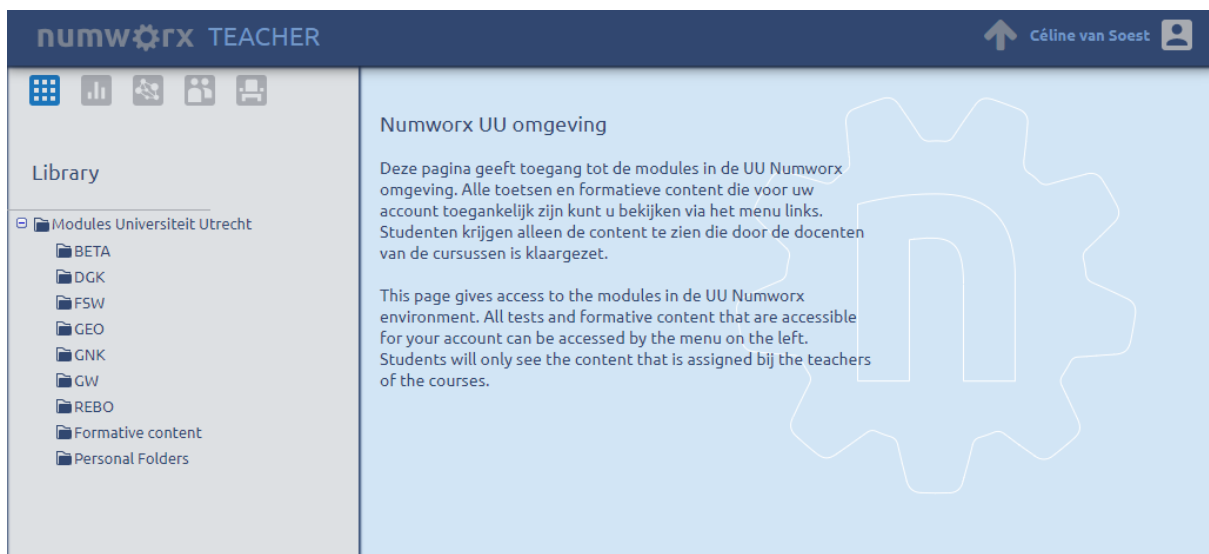


The available options for teachers are shown on the left:

- **Results:** to view the students' work and results
- **People:** to view students' personal information
- **Classes:** to assign students, teacher and modules to classes
- **Modules:** to view available (practice) exams

## 1.2 Viewing exams and available class-/practice modules

- Go to modules to view available content.



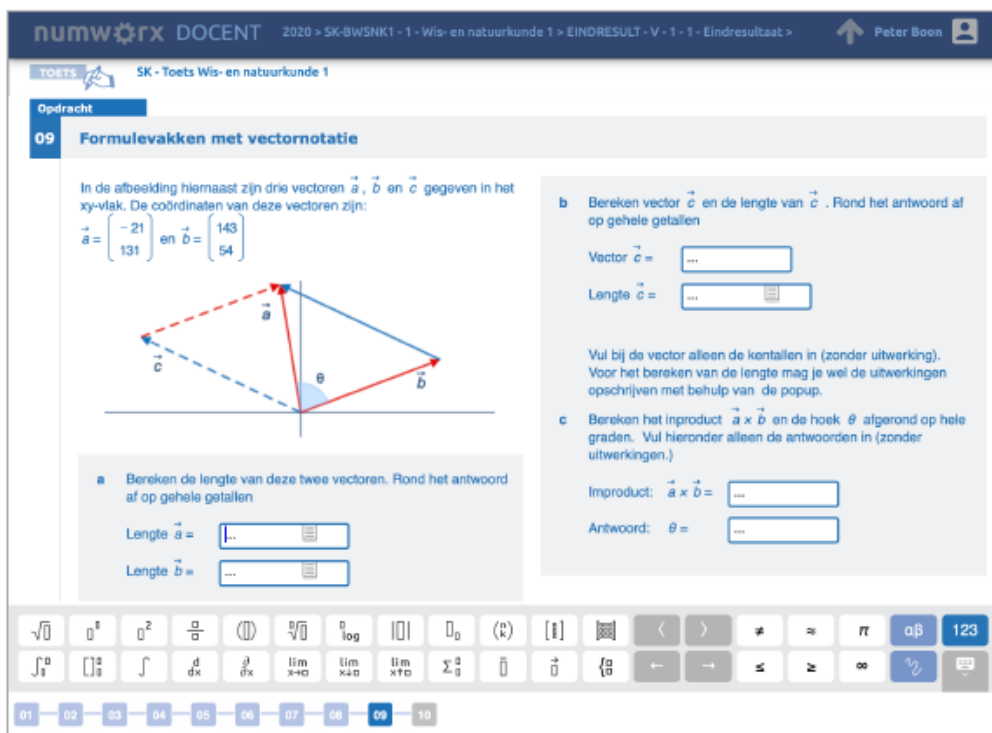
On the left you will see a map structure with the name 'Modules Universiteit Utrecht'. This map contains maps for each of the seven faculties, and each map contains the exams for all courses that are available within that faculty.

You will only be able to access those exams that are for a course that you are a teacher of. For example, you are the responsible teacher for the 2020 course *Wis- en natuurkunde 1* within the bachelor's degree of science.



You will navigate to the exam through the map structure:

BETA > 2020 > SK-BWSNK1... > EINDRESULT... > SK – Toets Wis- en Natuurkunde.



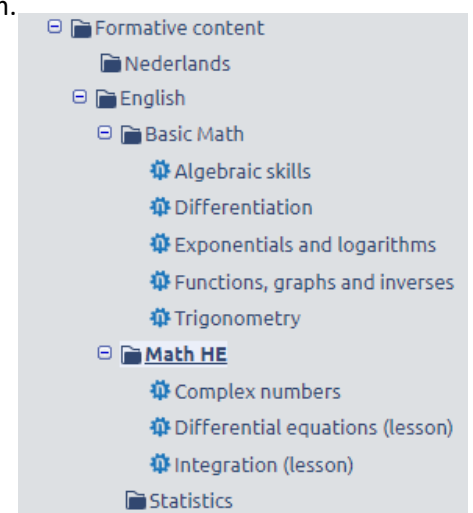
The navigation bar at the bottom will allow you to scroll through the exam.

Below the faculty maps is a map called 'Free formative content'. This map doesn't contain exams, but practice materials for formative use. The content is available in both Dutch and English. It can be used as is, or the teacher can edit the material in Numworx Author.

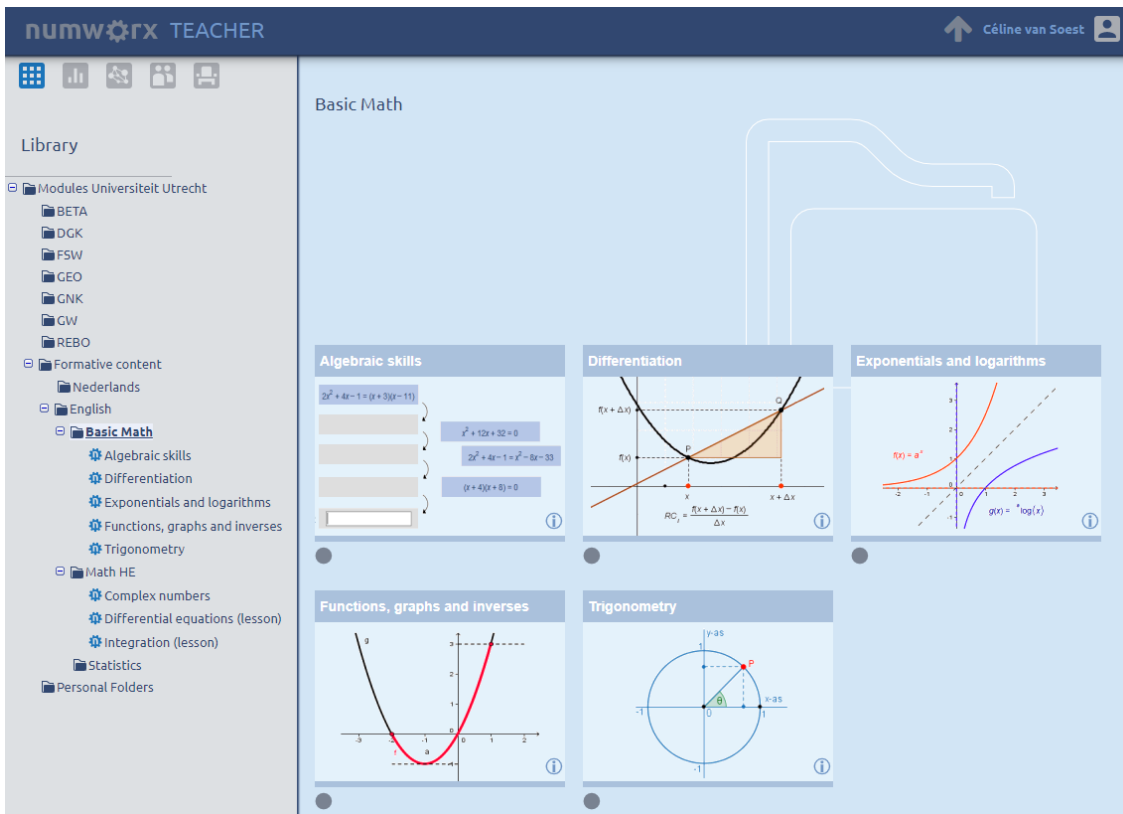
The map 'Basic math' contains entry modules for new students. It is essentially a compact brush-up of mathematics B material.

The map 'Math HO' contains modules for frequent topics in the first year of many beta educations.

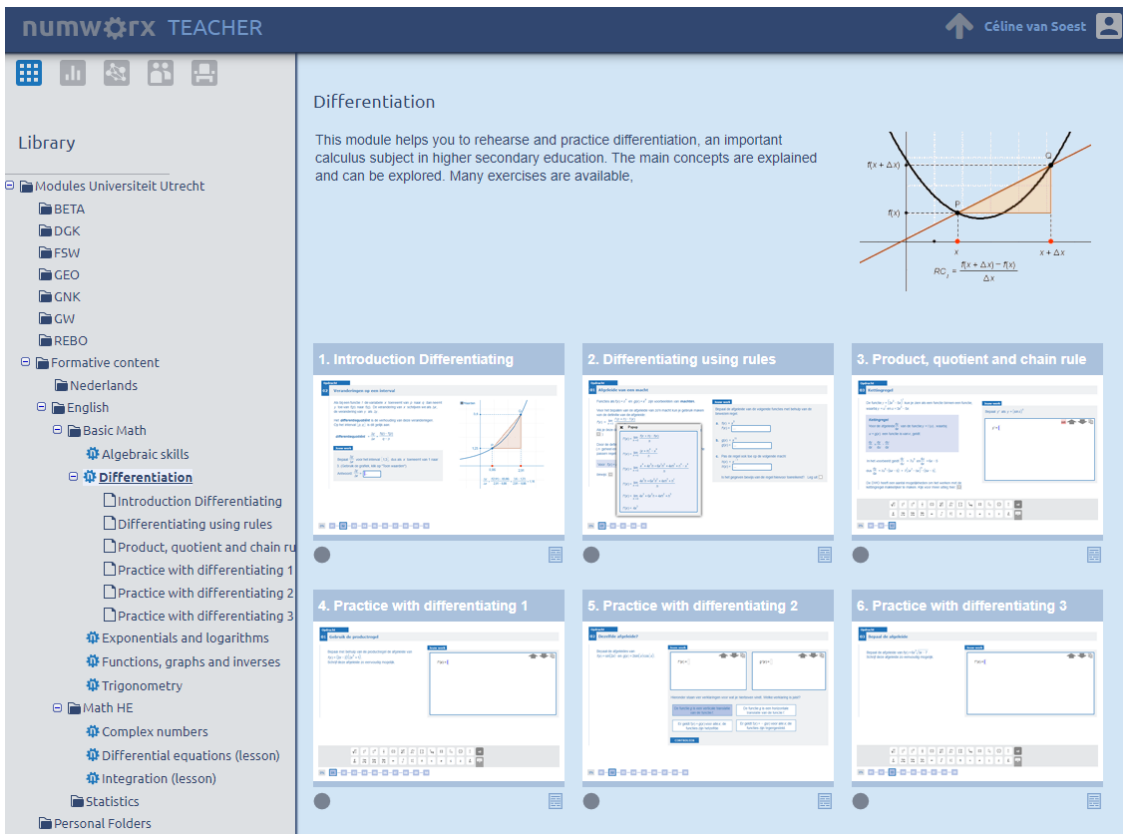
The map 'Statistics' contains a module with eight activities that form an introduction to the course statistics, which is frequently used in many courses.



- Click on the map 'Basic Math'. The five tiles on the right will give access to the modules.



- Click on the module 'Differentiation' and you will see six activities within this module.



- Click on the activity 'Introduction Differentiating' to open the activity.

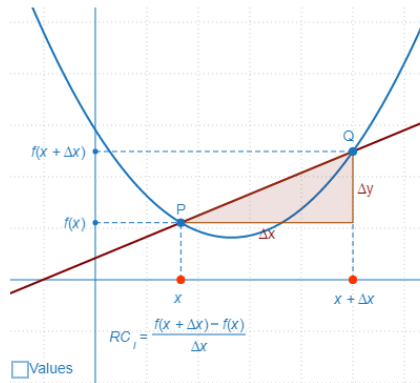
Problem

03 Variations and slope in a graph

From the previous page we conclude that the **difference quotient** is a measure of how 'fast' the function value  $y$  changes compared with a given variation in  $x$ .

On the right, a function  $f$  and an interval are shown (this time the interval is given in more general notation, from  $x$  to  $x + \Delta x$ ).

From the graph of  $f$  we see that the difference quotient is the same as the **slope** of the line through  $P$  and  $Q$ , the boundary points of the interval.



Your work

For an interval with starting point  $x = 1$  we have  $\frac{\Delta y}{\Delta x} = -0.5$ . Find  $\Delta x$  as accurate as possible by adjusting the boundaries of the interval.  
 Answer:  $\Delta x =$



- 0%
- 01
- 02
- 03
- 04
- 05
- 06
- 07
- 08
- 09
- 10

- Click on the upwards arrow in the top right corner to navigate back to the module or map.
- Click on the Numworx logo in the top left corner to go back to the homepage.

### 1.3 Classes

A group of students that have enrolled in a certain course in Numworx are called a **class**.

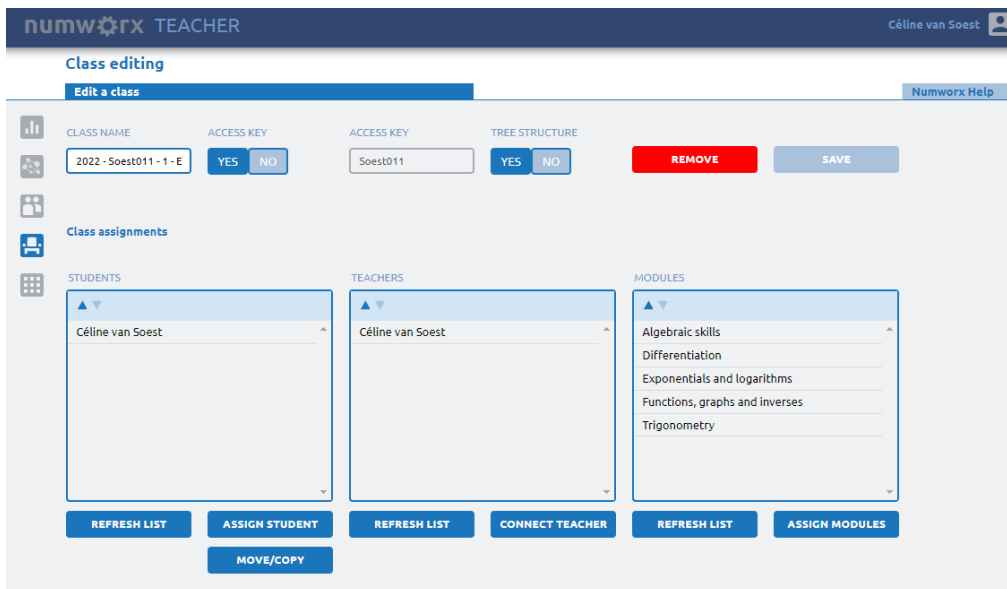
- In the menu on the left, click on **Classes**.

You will now see a list of classes (student groups for the courses you teach). These classes have already been added for you from Osiris. It already carries the name of the course with the correct academic year. Generally you don't need to add classes yourself. However, knowing how to do it can be useful in case you want to let a specific group of students practice with (extra) materials.

## 1.4 Linking tests or modules to a class

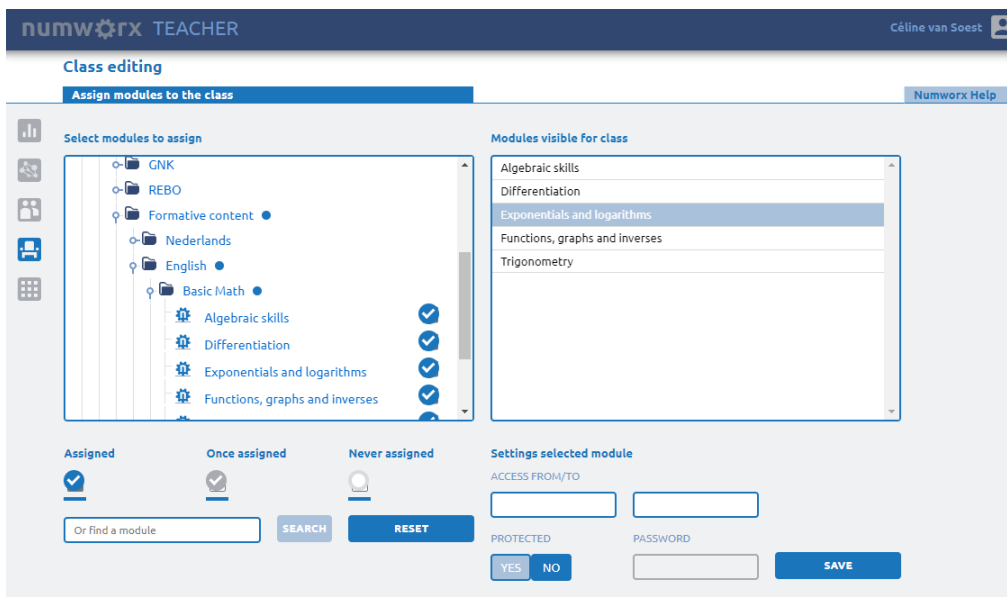
The next step is to make tests/modules accessible for students. You can do so by linking them to a class. All students from that class will be able to access the content. Stay in the same screen (Classes).

- Select a class in the list and click on Edit.



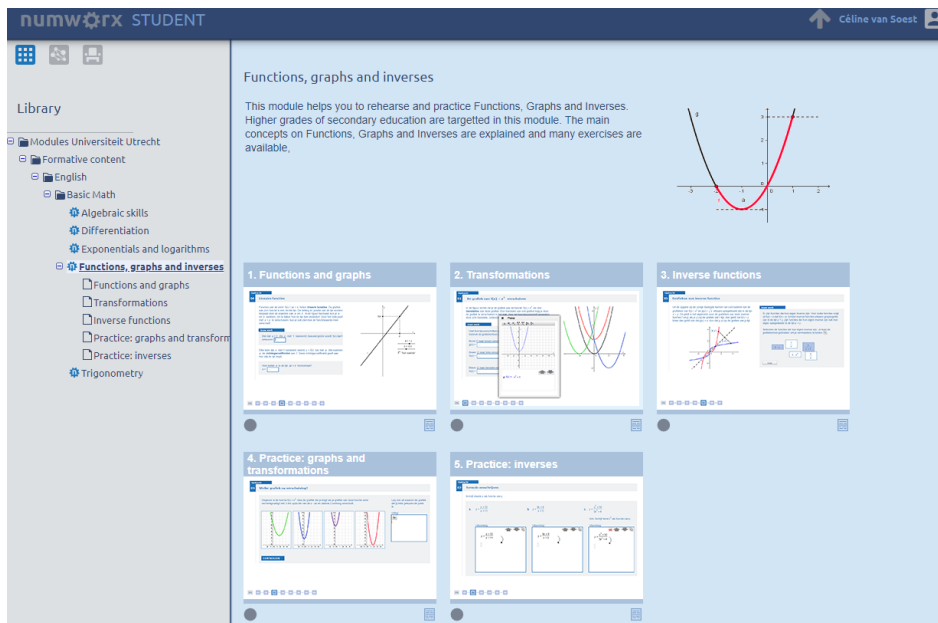
Suppose you want to make the practice module from the map 'Basic math' accessible.

- Click on **Assign** below the third column (Modules).



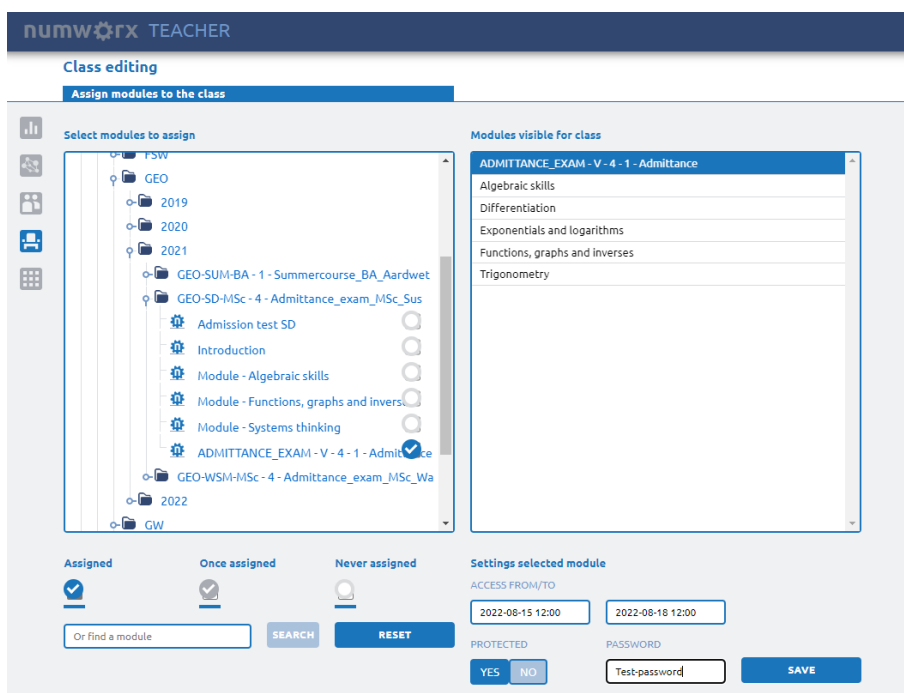
- Open the tree in the left column and select the correct modules
- Select the same module in the right column
- Enter the accessibility settings (leaving empty means always accessible)
- Click on **Save**

The five modules will be visible, in the menu on the left, for the student from a course group when they log in on <https://numworx.uu.nl>.



Suppose you want to make a summative test available for examination on Chromebooks in the exam halls at the university. That method is similar to the method described above:

- In the screen 'Edit Classes', click on **Assign** below the third column (Modules).



- Open the tree in the left column and select the correct test
- Make sure the test is selected in the column on the right
- Choose YES below 'Protected'; this makes the test only visible on UU Chromebooks
- Choose the period in which the test can be accessed (date + start and end time of the test)
- Assign a password (students will receive this password in the exam hall)
- Click on **Save**



Notice that the test is still visible in the list of linked modules. Because the test is 'protected', students will not be able to see it unless they are working on a UU Chromebook.

Students can navigate to the test on the Chromebooks, and will find themselves on the screen below.



This cover page contains a links to a short manual that explains the functioning of the different mathematical answering types. This manual can be viewed before the official start of the test. Students can start the test when they have received the access key (password). The following screen will become visible after entering the access key:



The test can be started by clicking on the tile.

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ASSESSMENT SK - Toets Wis- en natuurkunde 1

Opdracht Handleiding

**01** **Simpel vergelijkvak en simpel formulevak**

Gegeven is de functie  $f(x) = \frac{-2}{x-3}$

a Geef voor  $f(x)$  de vergelijking van de horizontale asymptoot en van de verticale asymptoot.

Horizontale asymptoot:

Verticale asymptoot:

b De functie  $g(x)$  ontstaat uit  $f(x)$  door de functie  $f(x)$  3 omhoog te verschuiven. Geef het functievoorschrift van  $g(x)$ .

$g(x) =$

c De functie  $h(x)$  ontstaat uit  $f(x)$  door de functie  $f(x)$  2 naar rechts te verschuiven. Geef het functievoorschrift van  $h(x)$ .

$h(x) =$

d De functie  $k(x)$  ontstaat uit  $f(x)$  door de functie  $f(x)$  verticaal te vermenigvuldigen met  $\frac{1}{5}$ . Geef het functievoorschrift van  $k(x)$ .

$k(x) =$

0% 01 02 03 04 05 06 07 08 09 10

During the test students are able to access the manual through the button in the top right hand corner. The last page of the test shows a button with which the test can be handed in.

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ASSESSMENT SK - Toets Wis- en natuurkunde 1

**Einde** Handleiding

Je bent aan het eind van de toets gekomen. Als je niet meer wilt nakijken of verbeteren, kun je de toets inleveren door op onderstaande knop te klikken.

**Toets inleveren**

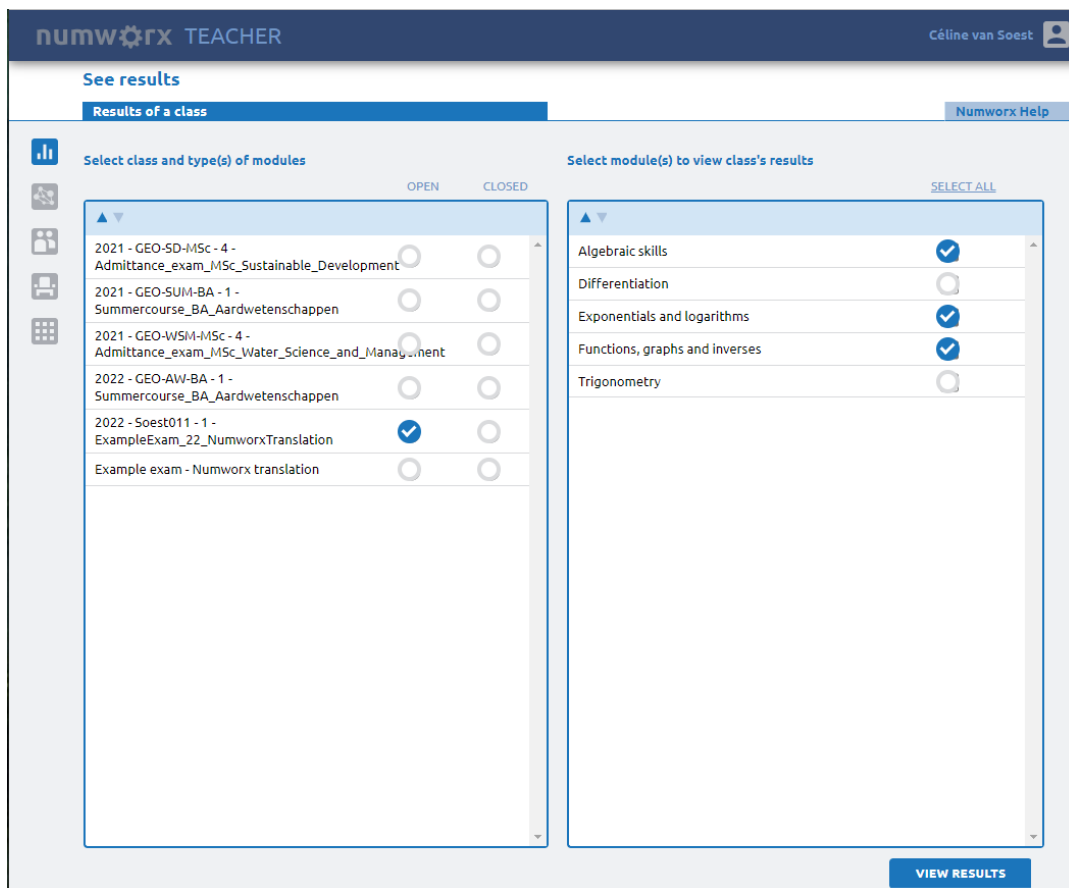
0% 01 02 03 04 05 06 07 08 09 10

## 1.5 Linking tests or modules to a class

You will be able to view the work and results of students after they have finished the assigned modules.

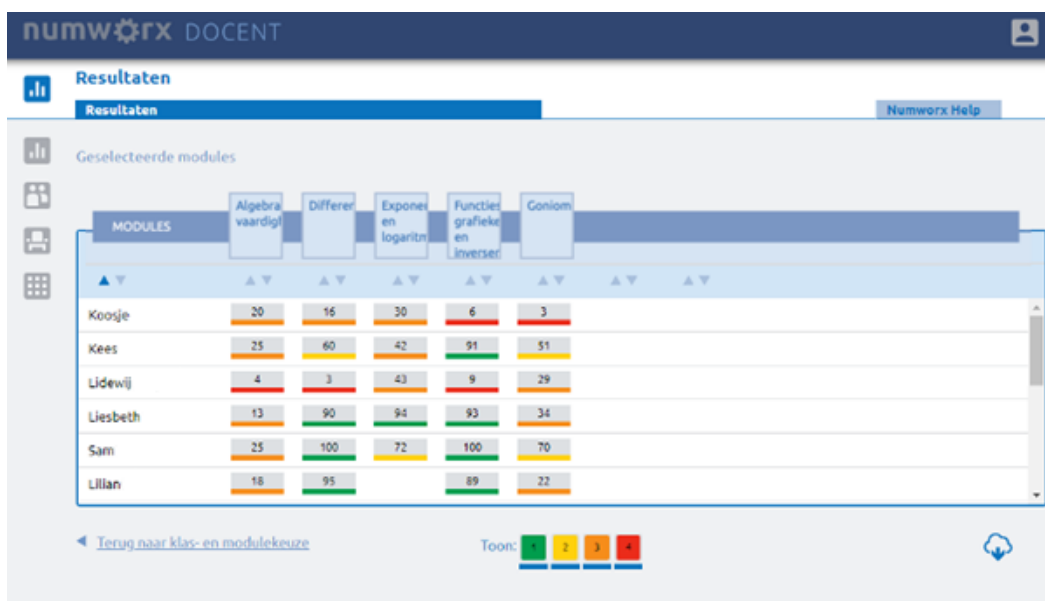
- Click on **Results** in the home screen or on the results button that is present in every screen.



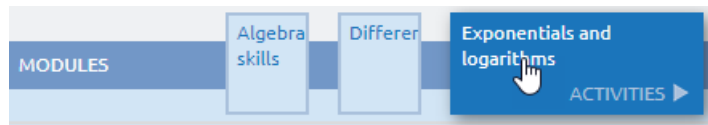


Your classes can be found in the column on the left. You are able to view modules for each class, both the modules that are assigned to the class (column: OPEN) and the modules with results that are not linked to the class anymore.

- Choose the class for which you want to view the modules in the left column.
- Choose the modules you want to view in the right column, or click on SELECT ALL to view all modules.
- Click on VIEW RESULTS.



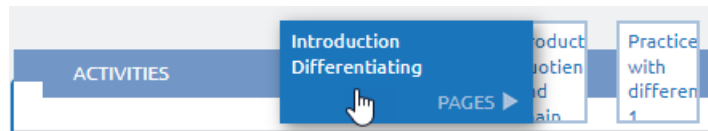
It is also possible to view the scores of every activity in a module.



- Click on the header of a particular module

ACTIVITEITEN	FUNCTIES en grafieken	TRANSFORMATIES	INVERSE functies	OEFENINGEN en transformaties
Koosje	24 in 10m			
Kees	95 in 2h	6 in 7m	81 in 9h	0 in 5m
Lidewij	57 in 14:28	0 in 7m	76 in 6h	13 in 1h
Liesbeth	30 in 2h	38 in 1h	27 in 33m	19 in 47m
Sam	95 in 4h	44 in 57m	100 in 2h	0 in 11:00
Lilian	43 in 49m		43 in 2h	0 in 8s

For each activity it is also possible to view the scores for the pages (items).



PAGINA'S	1	2	3	4	5	6	7	8	9	10
Peter	3+1/6	0/10	0/10	0/20	0/10	0/30	0/3	0/20	0/15	0/0
Koosje	0/10	0/10	0/10	0/20	0/10	0/30	0/3	0/20	0/15	0/0
Kees	0/10	0/10	0/10	0/20	0/10	0/30	0/3	0/20	0/15	0/0
Lidewij	0/10	0/10	0/10	0/20	0/10	0/30	0/3	0/20	0/15	0/0
Liesbeth	0/10	0/10	0/10	0/20	0/10	0/30	0/3	0/20	0/15	0/0
Sam	0/10	0/10	0/10	0/20	0/10	0/30	0/3	0/20	0/15	0/0
Lilian	0/10	0/10	0/10	0/20	0/10	0/30	0/3	0/20	0/15	0/0

Finally, you are able to view the work of a student in detail by clicking on a cell in the table.

The screenshot shows the 'numw@rx DOCENT' interface for a teacher named Peter Boon. The main window displays a task titled '01 Simpel vergelijkvak en simpel formulevak'. The task involves a function  $f(x) = \frac{-2}{x-3}$ . Part (a) asks for the horizontal and vertical asymptotes, with input fields for  $y=0$  and  $x=3$ . Part (b) asks for the function  $g(x)$  obtained by shifting  $f(x)$  vertically upwards by 2 units. The student's answer for  $g(x)$  is  $\frac{-2}{x-3} + 3$ , which is marked as correct with a green checkmark. A 'Correctie door de docent' dialog box is open, showing a score of 0 out of 2, a 'Toevoeging' of 1, and a comment: 'Je was bij de verschuiving uitgegaan van de functie  $g(x) = \frac{-2}{x-3} + 2$ . Gevraagd werd om uit te gaan van de functie  $f(x)$ . Toch de helft van de score toegekend'. The dialog has 'OK' and 'ANNULEER' buttons. At the bottom left, there is a 'Verzegelen voor deze student?' section with 'JA' and 'NEE' buttons. A progress bar at the bottom shows 10 questions, with question 01 selected. The interface also shows 'Toets verzegeld' and 'Attempts: 2'.

The button in the bottom left corners allows you to seal the work of a student. A triangular button will appear in all answering boxes/interactions after sealing. You can click on these to make corrections to automatically generated scores. Here you can also leave comments for the student.

It is possible to make the test available to students for reviewing after having sealed the tests. The student will receive both the score and the comments from the teacher and are unable to make any changes.

It is also possible to seal a test for the entire group, by going to the score overview for an activity.