NUMBAS

Newcastle University

Numbas is an easy way to create online tests

Numbas is an online assessment system designed for mathematical subjects.

Developed by mathematicians at Newcastle University, Numbas is free to use and open-source.
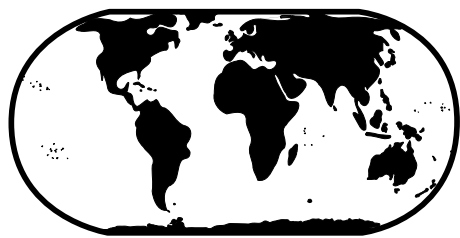
numbas.org.uk

Used all over the world

Numbas is used in over 1,000 educational institutions around the world, to support subjects from algebra to zoology.

In use for over a decade, Numbas is well-tested and stable, so you can be confident that tests will go off without a hitch.

Students consistently rate Numbas as easy to use and a helpful tool for learning.

LTI Integration

The Numbas LTI tool makes it easy to add Numbas assessments to virtual learning environments such as Blackboard, Canvas, Moodle and Brightspace.

You can view each student's attempt exactly as they saw it, see class-wide statistics, and automatically re-mark if you make a mistake.

If you can't install the LTI tool, Numbas works with any SCORM 2004 player or standalone.

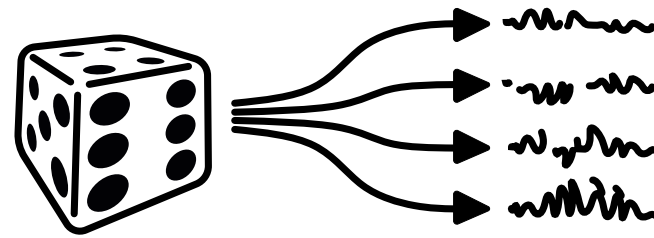**D2L | Brightspace** · **CANVAS** · **LTI** · **Blackboard** · **moodle**

Randomised questions

Randomisation makes a different question each time.

In high-stakes exams, giving each student a different version of a question prevents them copying each other's work.

For formative learning, students can use randomised questions as an inexhaustible supply of examples to try.
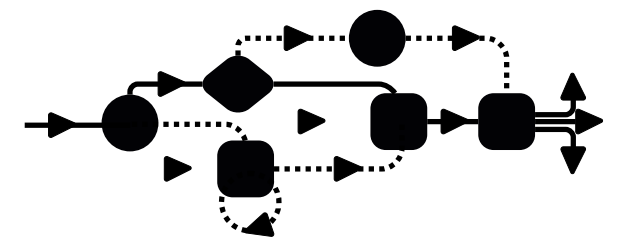
Dynamic assessment

Explore mode questions allow the student to choose their own path through an activity.

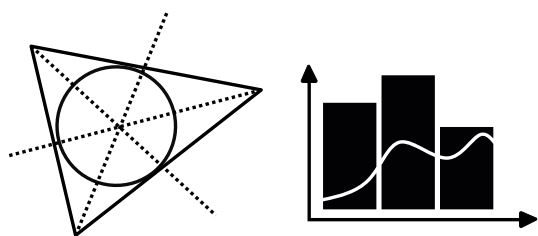**Diagnostic mode** exams react to the student's performance to choose appropriate questions.

Adaptive marking and **alternative answers** help you to give specific feedback to students, and award partial credit when they're almost right.

Rich interaction

It's easy to include graphics, videos and interactive diagrams in Numbas questions.
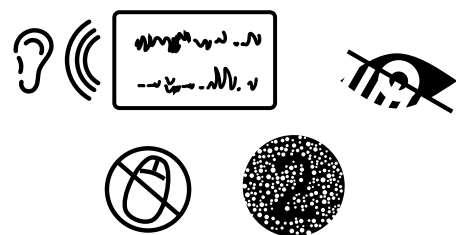
Integrations with GeoGebra and JSXGraph allow you to display randomised interactive diagrams and link them to marking.

Accessible

Nobody should be excluded from online learning because of who they are.

The Numbas interface works well with assistive technology by default, and has been carefully designed to accommodate a wide range of accessibility requirements.

Works online and offline

Numbas works without an internet connection.

Tests run entirely in the student's browser, so if their network connection breaks there's no problem: they can continue answering questions, and the data will be saved as soon as the connection is restored.
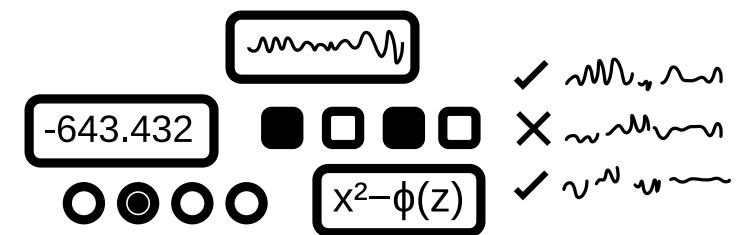
Plenty of answer types

Numbas automatically marks answers, immediately.

Answer types include numbers, mathematical expressions, and a variety of multiple choice types.

You can customise the marking for individual question parts, or make up a whole new answer type.

-643.432 · $x^2 - \phi(z)$
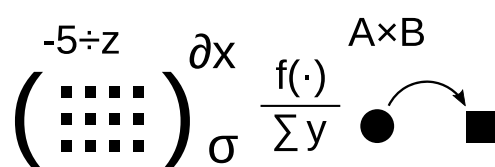
In your language

Numbas has been translated into 19 languages and counting, from the labels on the interface down to the notation for decimal numbers.
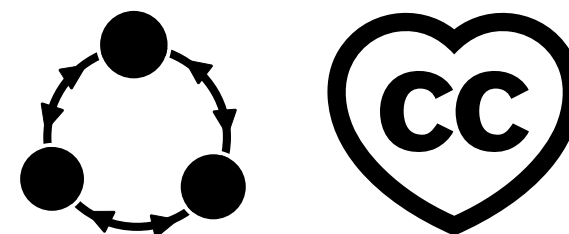
Loads of maths features

Numbas was created to assess mathematics, so it's got loads of maths features.

A computer algebra system and sophisticated pattern-matcher make it easy to generate and manipulate randomised mathematical expressions.

$$-5 \div z \quad \frac{\partial x}{\sigma} \quad \frac{f(\cdot)}{\sum y} \quad A \times B$$
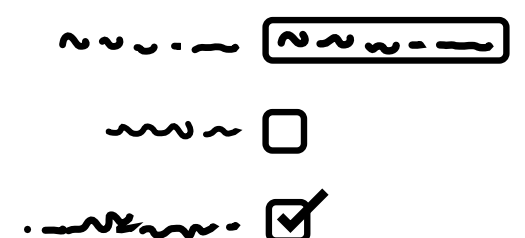
Open resources

Reuse the thousands of tests and individual questions shared under Creative Commons licences in the public database.

No code

Create questions using the graphical editor with no code.

It's really easy to get started.

"I chose Numbas because of the very positive feedback from our testing with our very critical master students in teaching. For me Numbas is easily accessible, easy to create tasks, convenient and it is easy for students to use."

Dr Morten Brekke, Agder University, Norway

"Fellow classmates and myself discussed how maths was more enjoyable through Numbas and how we were able to retain the material for our final exam."

Student, Cork Institute of Technology, Ireland

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Claire Irving, ASK student support project coordinator, Newcastle University

"As a lecturer, I find Numbas to be user-friendly, even for someone like me, with no programming background. Since we have started to implement Numbas as an assessment tool, the administrative burden of continuously assessing approximately 1800 students every week has almost entirely disappeared."

Ione Loots, Engineering lecturer, University of Pretoria, South Africa

"We choose to use Numbas for our project because it has a strong reputation, is user friendly and is compatible with the Virtual Learning Environments used at both of our campuses. Numbas is an open source tool with a large community of users and an extensive bank of resources."

Deirdre Casey, Cork Institute of Technology, Ireland