



120 Schools Join The NN Team This Term!

We are delighted to share that over 120 schools worldwide have joined Numeracy Ninjas through a subscription this term. Thank you for all your positive feedback which is helping us refine the programme and also develop improvements and additions for next year.

Do my students need Numeracy Ninjas?

Would my learners benefit from the Numeracy Ninjas programme? What is their current level of numeracy fluency?

In order to help Ninja Teachers answer these questions we have a **completely free** Diagnostic Numeracy Assessment package which can be used in your own classroom.

The assessment features 3 tests which will help you evaluate your learners' numeracy proficiency in different areas and to diagnose their strengths and areas for development.

[Find out more.](#)

Skill Focus Worksheets Under Development

Last newsletter we shared that we are rebuilding our Ninja Skill Focus Worksheets so they include questions from the new and improved Question Engine. These worksheets will provide students with intensive practice of individual Ninja Skills. The new worksheets will be part of the paid subscription for the 2023/24 academic year. In the meantime, if you are a paid subscriber and would like access to the old Ninja Skill Focus worksheets, just email Emma (admin@numeracyninjas.org) and she will be happy to share them with you.

Top Tips For Maximising Student Gains From Numeracy Ninjas

For your students to become highly fluent in the Numeracy Ninjas Target Skills it is important to run the Ninja Skill Check sessions effectively. Our own experience and feedback from our Ninja Teachers to maximise student gains are summarised in these top tips:

1. Act on learner's scores to identify their Target Skills

Our research shows that students complete Ninja Skill Checks at the start of each of their maths lessons that their Ninjas Scores can start to plateau from around weeks 10 - 15 onwards. In order to prevent a plateau to a score below the maximum of 30 it is important that teachers are aware of which Target Skills students remain to have issues with. This awareness can be gained in a number of ways, including: reviewing students' Ninja Skill Books once a week after class, circulating around the classroom observing which questions students leave blank or spend a long time on, or getting students using the Target Skills grids in the Ninja Skill Books to record ticks against a number of skills they struggled on.

2. Regularly model solutions to Target Skills and encourage students to act on this feedback

Once an awareness of which Target Skills students need supporting with, spend a few minutes after each Ninja Skill Check session modelling solutions to those skills specifically. Get students to record this feedback in their Ninja Skill Book and they can then use the model solutions to refer to the next time they approach the same Target Skill in an Ninja Skill Check session.

3. Support explanations with visual models

Fluency without conceptual understanding can lead to learners struggling to transfer their learning to new contexts. When modelling solutions to specific Target Skills try to complement the fluency-building procedure with a visual model which develops conceptual understanding too. Liaise with your school's feeder schools to be aware of which visual models students have been taught previously for specific Target Skills.

4. Keep the atmosphere low-stakes and developmentally-focused

By completing Ninja Skill Checks at the start of every maths lesson the activity should become routine and low-stakes which allows the atmosphere to focus on celebrating progress and improving skills.

5. Your only competition is yourself yesterday

"It doesn't matter if you didn't achieve a top score today- there's always next lesson to have another go. Let's see which Target Skills you need to work on to improve your score tomorrow".

6. Reduce session frequency after three successive weeks of Black Belt scores

The Target Skills appear on average every 3 weeks and thus if students are achieving Black Belt Ninja Scores in 3 successive weeks it is likely they have mastered all the skills and the frequency of the Ninja Skill Check sessions can be reduced.

7. Work on Target Skills first

It is quite common for students to reach a point where they are getting the Mental Strategies and Timestables Sections correct but then running out of time to attempt all the Key Skills questions. In this situation encourage students to occasionally attempt the Key Skills section first. The Ninja Scores will temporarily drop, but are boosted in the long term.

Ninjas- Under the Hood

In the last newsletter we looked at the rationale behind how the specific 72 Target Skills were chosen based on a prior-learning dependency analysis. This time we will take a behind-the-scenes look at the sequencing of the questions within the Ninjas Skill Books.

Numeracy Ninjas was built to incorporate research findings from a field of Cognitive Science called **The Science of Learning**.

Firstly, the questions in Numeracy Ninjas are sequenced to take advantage of **The Spacing Effect**. Cognitive Scientists discovered that if learners space their practice out over multiple sessions across different days instead of doing the same total amount practice in a single session that the learners retain their learning for longer. What is the optimum spacing interval between sessions? There is no fixed value for all types of learning, but ‘a few weeks’ is better than ‘a few days’ is a general rule which research has often found to be beneficial if the aim is to achieve long-term, enduring learning. All the Target Skills in the Mental Strategies and Key Skills sections of Numeracy Ninjas are scheduled to appear with 3 week spacing intervals. So for example, a skill that appears in week 1, will appear again in weeks 4, 7, 10 etc.

For more information on the Spacing Effect and how the Ninjas creator, William Emeny has demonstrated its impact in mathematics classrooms see his recently published research paper [here](#).

Next newsletter we will look at the next Science of Learning finding incorporated into Numeracy Ninjas- **The Interleaving Effect**.



Ninjas in the Community

Numeracy Ninjas is proud to announce we are sponsors for Wyvern FC U9 Athletic team for the 2022/23 season. We are delighted to support the team and to raise the awareness of the importance of numeracy as a life skill from a young age.

Autumn Prize Draw

We are delighted to announce that the winning 10 schools in the Autumn Prize Draw are:

1. Thomas Clarkson Academy
2. North Durham Academy
3. Elizabeth Woodville School
4. Brackensdale Spencer Academy
5. Blessed Hugh Faringdon Catholic School
6. Hodge Hill Girls School
7. The Thomas Aveling School
8. Clacton Coastal Academy
9. Henry Hinde Junior School
10. Lea Valley Academy

You will each receive 20 Numeracy Ninjas Postcards to use to praise your own Grand Masters. These will be posted to you in early Jan 2023.

Congratulations and thank you for your support!

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