



Kahoot! Certified for schools



Advanced Certification

Spacing, testing, and smart practice

Welcome to Kahoot!'s Advanced Certification course on unleashing the power of spacing and testing in your classroom, as well as maximizing benefits with Kahoot!'s smart practice feature. This content is based on research from Olav Schewe, Norwegian learning expert, public speaker, and author. Before we get started, please don't share these guides further, they are only for those getting certified! :)

Once you complete this course, you'll achieve the following learning objectives:

1. **Have an understanding** of the science behind both spacing and testing learning methods
2. **How to implement** these learning methods with Kahoot!

3. How to use the smart practice feature in the app

After you review the course material, you'll be ready to take the assignment via our app in order to receive your exclusive badge.

In order to complete the course assignment, you'll need to download the Kahoot! app to your iOS or Android device. You can find it in the [App Store](#) or on [Google Play](#).

Here's a reminder of how to open a Kahoot! challenge with the assignment:

1. After downloading the Kahoot! app to your mobile device, **log in** to your Kahoot! account – we need this info to be able to send you your diploma and badge!
2. When prompted to open the assignment challenge, **click the URL** to open the challenge in-app, or enter the PIN manually.
3. You'll then be able to **accept the challenge**, and play the assignment, which is structured as a multiple-choice kahoot quiz. You can do the assignment in short rounds taking breaks in between, or all at once.



The quest to retain knowledge

Remembering as much as we can is one of the core goals of learning. Our memory not only helps us retain knowledge, but also retrieve it in the future to be able to apply it to practical problems.

However, many common learning techniques, such as re-reading, cramming and consuming content in long, tedious sessions, aren't optimal when it comes to retaining knowledge. They do help us in the short term, but a lot of acquired knowledge fades over time. Let's explore two more optimal learning methods: spacing and testing, and how they can be used together for maximum learning impact.





What is spacing?

The spacing method isn't about working harder, but smarter. In psychology, the spacing effect means that we remember information more easily and retain it for a longer time by learning it in multiple, spread-out sessions.

Many researchers believe that spacing works so well because it's aligned with how our brain cells are wired to store and retrieve information.

When was this method discovered?

The spacing effect is one of the oldest findings in experimental psychology: it was first described in **1885 by Herman Ebbinghaus**, and a large volume of research has confirmed its efficacy since then.

Ebbinghaus spent years memorizing syllables he made up, and recording results to analyze his memory. One of the experiments he ran during his research was comparing whether he'd remember more syllables by doing **68 repetitions** one day, then **7** the next, or just **38 repetitions** spaced out over **three** days. He achieved the same results with both approaches, but it took much less time and effort when repetition was spaced out.

In practice, some examples of using spacing in class can be:

- ▶ Revisiting old topics some time after they were taught
- ▶ Mixing up tasks or problems related to different topics
- ▶ Incorporating some tasks related to old topics into future homework
- ▶ Giving frequent, low-stakes tests





What is testing?

Tests don't have a great reputation with students and teachers alike. They're often perceived as a **summative assessment tool, connected with stress, anxiety, and cramming. However, this is not the only way tests can be used in education.**

Another lesson from cognitive psychology teaches us that tests can become a powerful learning tool, when used frequently and shrewdly.

Using tests for practice after learning new knowledge helps us retain it for a longer time. In this case, a test has nothing to do with scores - it's a **practice tool to help students find out what they don't know yet and what they need to study more.**

When the pressure is low, i.e. scores are removed, and testing happens frequently, students don't even need to prepare - it becomes an expected part of the learning and review process.

When students answer test questions on a topic they learned before, they're engaging in retrieval practice. It's another memory booster that supports long-term knowledge retention. Testing without pressure, i.e., when it's not tied to any formal grading, gives students a quick snapshot on how well they remember learning content and what requires more learning focus.





What is testing?

How has testing effect been verified?

One of the most known studies of testing effect was run by psychologists [Henry Roediger and Jeffrey Karpicke](#). They ran experiments with groups of high school students who studied content through re-reading and compared them to groups who studied with repeated testing.

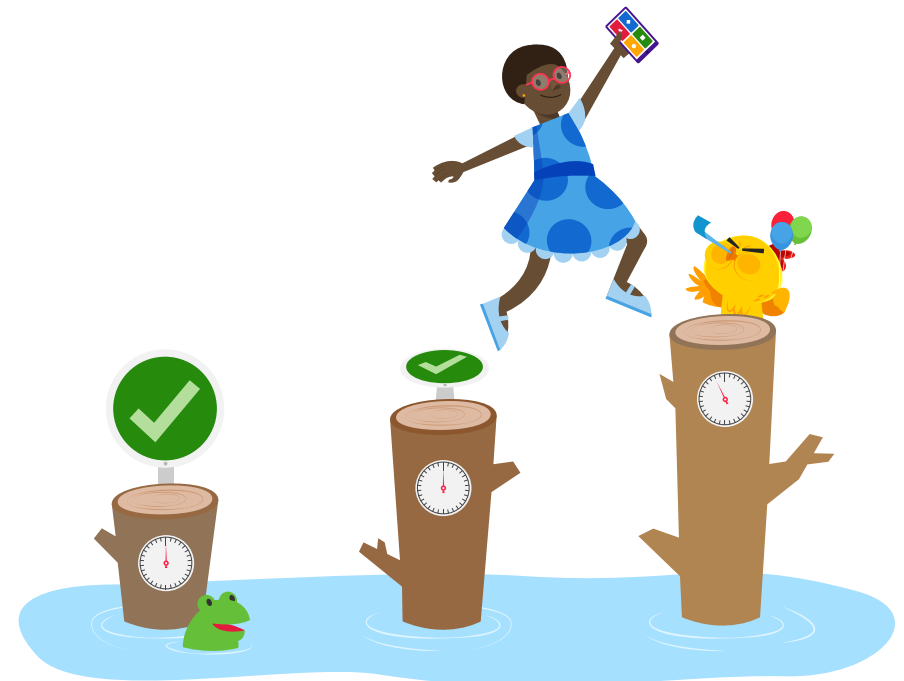
The study revealed that students who took tests recalled much more after a week than students in a repeated-study condition (61% vs. 40%), even though students in the former condition read the text 3 times vs 14 times in the other group.

The advantages of the testing effect for teachers and students:

- ▶ It helps students identify what topics need more work
- ▶ It makes studying more efficient
- ▶ It improves long-term knowledge retention
- ▶ It removes the stress out of testing when it becomes a frequent exercise
- ▶ For teachers, it provides actionable feedback, revealing topics that need reinforcement.

Kahoot! is a great tool for combining spacing and testing - where a test would come in the form of an interactive, stress-free and engaging quiz, to give students instant feedback on how well they remember learning content.

Next, let's learn how to put spacing and testing into practice with Kahoot!





Using Kahoot! for spacing and testing


Replay previous quizzes some time later

The simplest way to use Kahoot! for spacing and testing is to replay the same live quiz in class some time after the topic was initially taught. There are different opinions on how many days each spacing interval should be, so experiment over a period of time and discover a schedule that works best for you depending on your subject. The general rule is to leave enough time to keep the knowledge fresh, but not too close to the original introduction.

Use data from game reports to identify topics that need attention

Stats in Kahoot! reports will give you an indication of how well the knowledge from the kahoot was retained. If you replay the same kahoot with your students, you can compare results and track how performance changed over time. Reports also give you actionable feedback on topics or questions that need additional attention or even reteaching. This is especially helpful during review and test prep season!

	A	B	C	D	E	F	G	H
1	The Physics of a Football Pass							
2	Played on			2 Oct 2017				
3	Hosted by			KahootStudio				
4	Played with			7 players				
5	Played			3 of 3 questions				
6								
7	Overall Performance							
8	Total correct answers (%)			47.62%				
9	Total incorrect answers (%)			52.38%				
10	Average score (points)			1362.29 points				
11								
12	Feedback							
13	How fun was it? (out of 5)			0.00 out of 5				
14	Did you learn something?			0.00% Yes		0.00% No		
15	Do you recommend it?			0.00% Yes		0.00% No		
16	How do you feel?			0.00% Positive		0.00% Neutral		0.00% Negative
17								
18	Switch tabs/pages to view other result breakdown							
19	Overview	Final Scores	Question Summary	Question 1	Question 2	Question 3	RawReportData	Data





	A	B	C	D	E	F	G
1	The Physics of a Football Pass						
2	Final Scores						
3	Rank	Players	Total Score (points)	Correct Answers	Incorrect Answers		
4	1	Aggie??	3055	3	0		
5	2	Nathan	1933	2	1		
6	3	Sean??	1819	2	1		
7	4	Zoe??	1801	2	1		
8	5	Riley	928	1	2		
9	6	Ethan??	0	0	3		
10	7	Connor	0	0	3		
11							
12	Switch tabs/pages to view other result breakdown						
13	Overview	Final Scores	Question Summary	Question 1	Question 2	Question 3	RawReportData



	A	B	C	D	E	F	G	H	I
1	The Physics of a Football Pass								
2	Question Summary								
3	Rank	Players	Total Score (points)	Q1	Q2	Q3	Q4	Q5	Q6
4	1	Aggie??	3055	1012	1012	1012	1012	1012	1012
5	2	Nathan	1933	1012	1012	1012	1012	1012	1012
6	3	Sean??	1819	1012	1012	1012	1012	1012	1012
7	4	Zoe??	1801	1012	1012	1012	1012	1012	1012
8	5	Riley	928	1012	1012	1012	1012	1012	1012
9	6	Ethan??	0	1012	1012	1012	1012	1012	1012
10	7	Connor	0	1012	1012	1012	1012	1012	1012
11									
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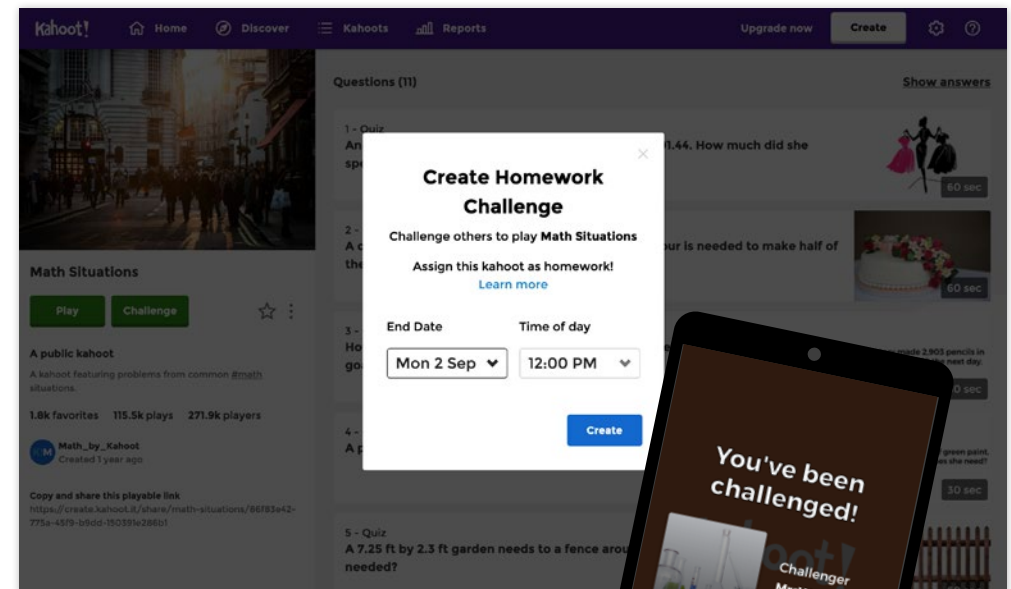
Using Kahoot! for spacing and testing

Play kahoots focused on previous topics to review

Kahoot!'s flexibility allows you to create games on any topic, with any number of questions. When you're preparing kahoots for review, you can mix up questions on different topics from your previous kahoots, and spice up the practice for your students. Or, you can always start a kahoot on a new topic with a few questions recapping on previous topics, to give your students a refresher.

Send homework challenges that incorporate questions from previous topics

Here, you can use the same kahoots that were played live, or create custom quizzes to mix up different topics for your students. Going through questions at their own pace, they'll get instant feedback on questions they answered incorrectly - no need to wait until you check their homework and provide feedback! Our personalized app reports will also show you which students you should follow up with and flag the questions and content students are struggling with most.





Smart practice in the Kahoot! app

To help students better retain knowledge they obtained in class, we added a feature to be able to restudy difficult questions, and retrieve those learnings many weeks after content was taught.

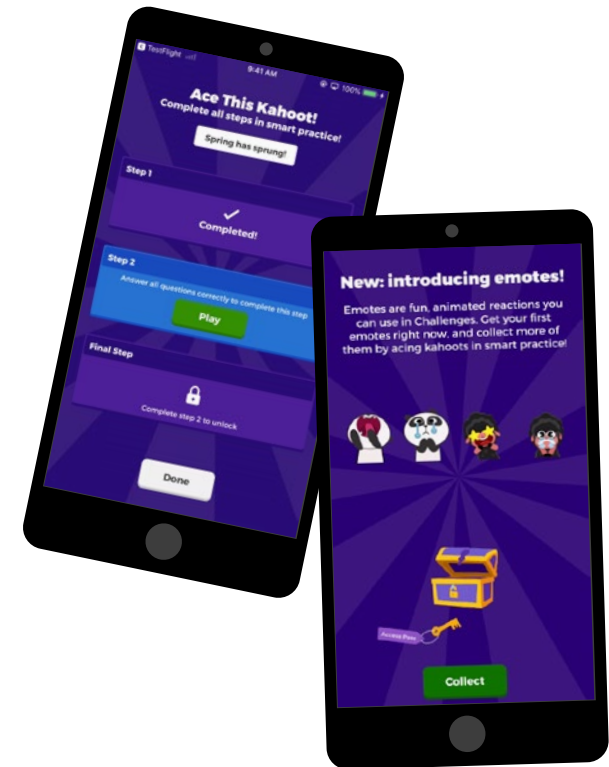
Learners can access **smart practice** after playing a live kahoot or a challenge where they answered some questions incorrectly. They will be prompted to start it when a game is completed. Completing smart practice step by step, they'll eventually ace the kahoot by remembering all correct answers.

- **Step 1** can be played any time after the initial game. The learner will be taken through questions answered incorrectly until they score 100%.
- **Step 2** will unlock 24 hours later. They will be prompted to play the original kahoot again with the answers randomized until they answer all questions correctly.
- **Step 3** will unlock 48 hours after that.

The app will remind learners once the next step is ready to play. Here, they will again replay the original kahoot until they score 100%.

By acing kahoots, learners can collect rewards – emotes! These are animated reactions with different characters that players can use to express themselves in challenges. On top of learning impact, collecting emotes adds more motivation to complete smart practice, especially for young learners.

With smart practice, replaying questions from a kahoot brings up the **testing effect**, and, with steps distributed in time, it's enhanced with the **spacing effect** to maximize knowledge retention.



That wraps up Advanced Certification: Spacing, testing, and smart practice! Once you're ready to take the assignment, you can find the challenge link on the Kahoot! Certified page, and follow the instructions.