

Sensory receptors allow information to reach our brains, where it is only **retained for a brief period of time**

01 ATTENTION

02 ENCODING

Information is perceived and either forms an instantaneous memory (lasting a short while) or a working memory (lasting 10-20 minutes if utilized)

03 Storage



CHALKTALK Learning Engineering

Helping students commit knowledge from short-term to long-term memory

We built research-backed software to enhance learning & storage

3.a. Repetition and feedback

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Question 3 / 5

A study is conducted to establish the percentage of the Baltimore population that enjoys camping during the holidays. A random sample is taken throughout the city, then interviewed. Which of the following is the best description of the research design implemented for this study?

- ☒ A Sample survey
- ☐ B Observational study
- ☐ C Controlled experiment
- ☐ D None of these

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Answer Explanation

Choice A is the best answer because the study involves selecting a sample from the larger target population. The results from the sample are subsequently used to estimate a conclusion for the rest of the population.

Choices B is not the best answer because sampling is conducted, not simply observation.

Choice C is not the best answer because although sample sizes and interview data was collected, variables were not actually controlled and manipulated to create research conclusions.

Choice D is not the best answer because the survey that was conducted was indeed a sample survey.

Students solving practice problems until they do them correctly is an example of repetition-based recall practice. ChalkTalk's practice engine is also adaptive so every student receives different questions to their level along with instantaneous feedback and answer explanations

3.b. Elaboration entails relating newly learned knowledge to previously learned information and forming connections between them



Walk-Through Example (1.1 & 1.2)



Perform the given operations:

a. $\frac{2}{3} + \frac{5}{6}$

a. $-\frac{4}{7} - \frac{3}{8}$

a. $\frac{2}{3} \left(\frac{1}{12} \right)$

$\frac{4}{9} \div \frac{2}{7}$

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ChalkTalk's whole group teaching materials include things like openers and scaffolded walkthrough examples, which help teachers engage students with elaboration

3.c. Organizational Schemas. Many students struggle on state tests not because they don't know the content, but rather because they don't have a good system for categorizing all the content they've ever learned in their minds



Back to Subjects

Curriculum

2. Heart of Algebra

3. Problem Solving

3.1 Percents 1

Lesson Practice Practice

3.2 Percents 2

ChalkTalk's scope & sequence organizes topics into a knowledge graph of Units > Lessons > Topics > Sub-Topics & Skills

3.d. Multiple Modes. Students who use visual, auditory, and even kinesthetic senses when studying form stronger memories

Definition of a Function

Functions

Function: A function relates one "input" value to an "output" value.

For example, "f" is a function of "x":



Q Try this one!

In the fruits department, 180 pounds of fruit combos are divided into packages, each of which weighed $\frac{3}{6}$ pound.

How many packages are there?

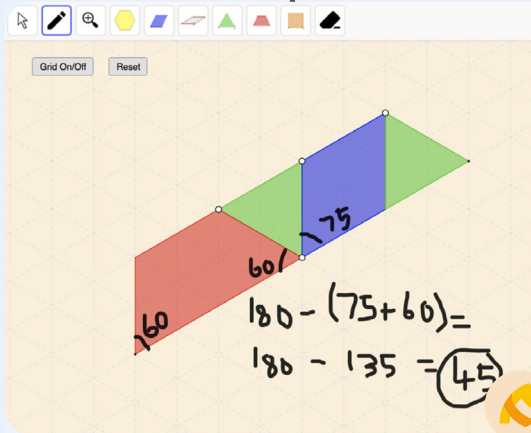
A. 125

C. 150

B. 180

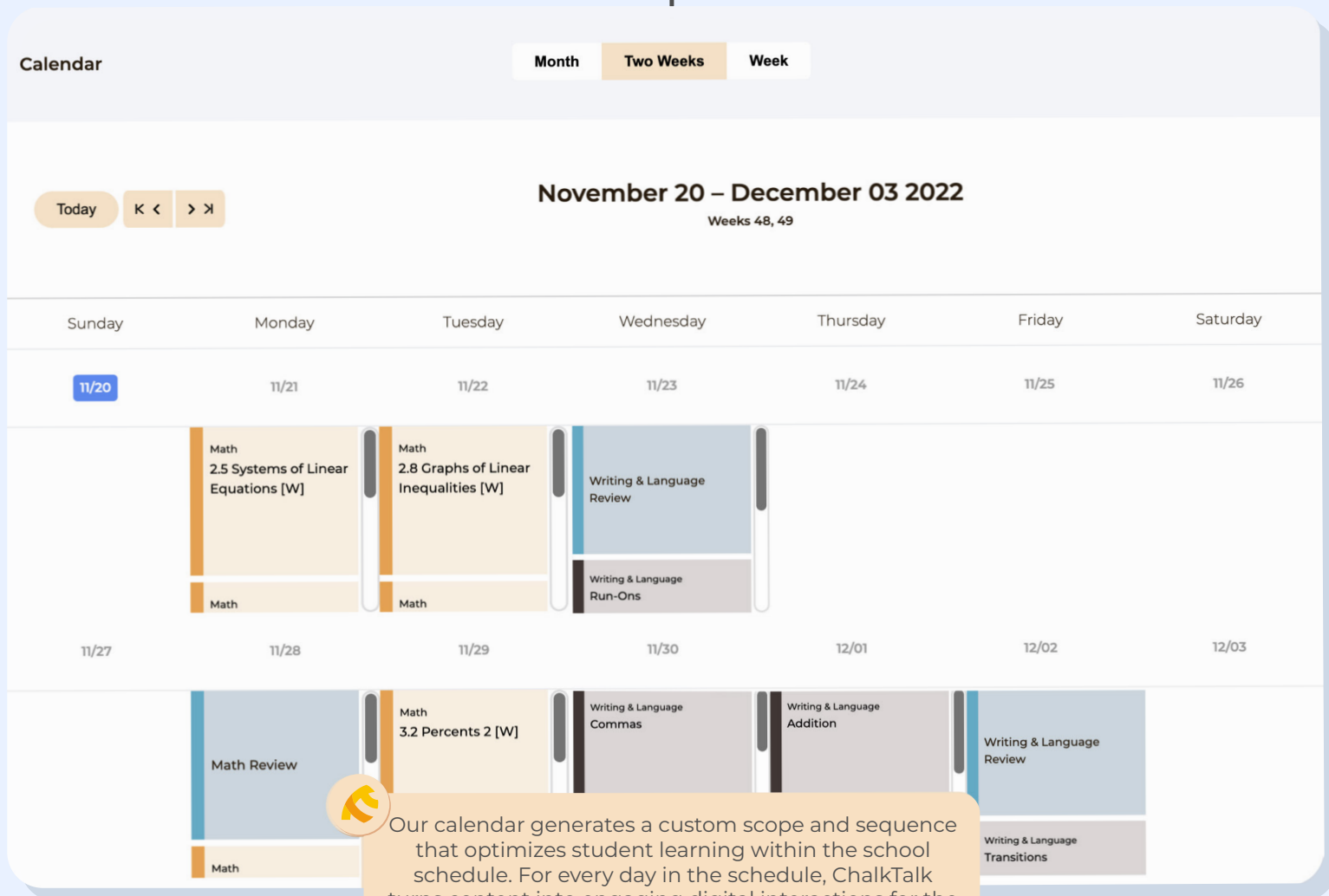
D. 360

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ChalkTalk's Study Hall feature that offers students a set of multi-sensory resources such as narrated videos. Math lessons also include "virtual manipulatives" which simulate kinesthetic interactions with real-world objects

3.e. Pacing & Breaks. Optimal learning happens when time spent studying is spread out over several sessions on various days, with breaks in between. This increases learner concentration and attention, both of which are crucial for encoding and storage



3.f. Peer-to-peer explanations. When students explain what they've learned to peers, waning memories are reactivated, strengthened, and consolidated. This approach promotes active learning while also improving retention (Sekeres et al., 2016).



Question 1 / 3

If $10 + 3x$ is 7 less than 32, what is the value of $6x$?

☐ A 18

Student 1 ☒ B 30

☐ C 36

Student 2 ☐ D 42

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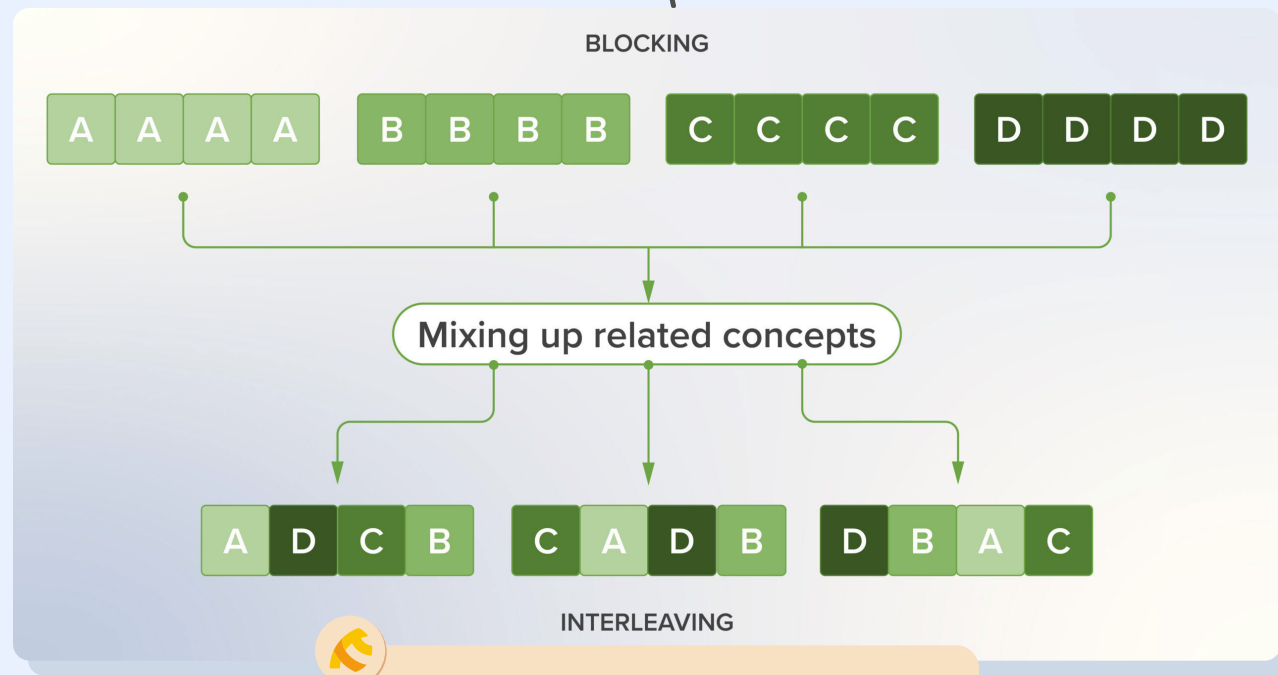


ChalkTalk built a native small group activities experience that facilitates active learning

Ohhh that makes sense, I'll change my answer now!



3.g. Interleave concepts. When similar problems are grouped together, it promotes learning new topics. But if that's the only experience, students may start auto-applying the same narrow strategies repeatedly without thinking. Interleaving different problems together protects against this, and encodes learning more deeply (Rohrer, 2012; Rohrer, Dedrick, & Stershic, 2015)

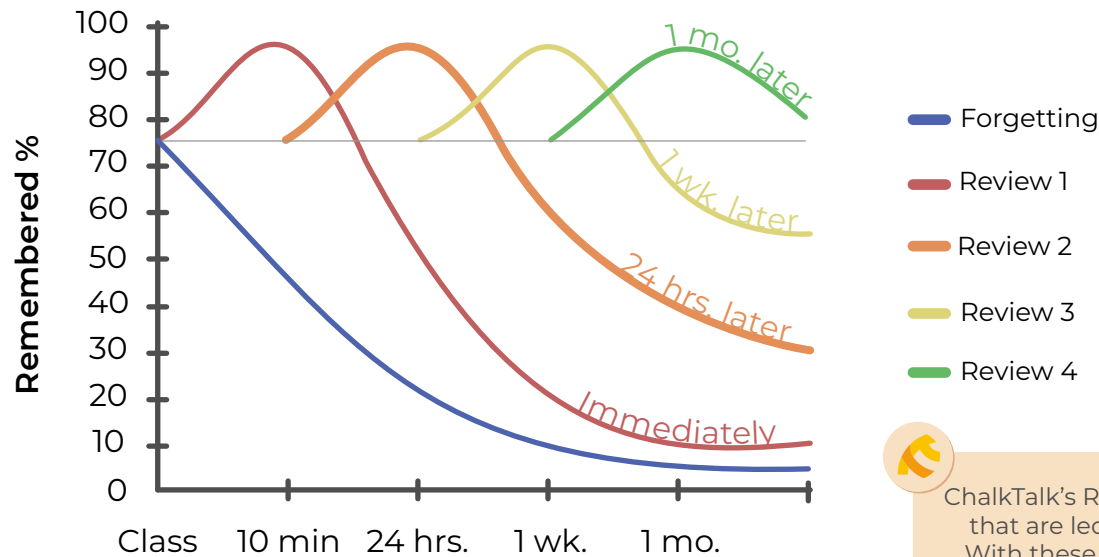


ChalkTalk's K-12 Math program leverages the concept of interleaving in its standards practice. It's high school ELA & Math programs apply interleaving as part of Review Classes

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Retrieval

Retrieving and reviewing information frequently helps commit it from short-term to long-term memory. We forget about half of the knowledge we acquire in a lecture within the first 10 minutes (Ebbinghaus), but even something as simple as reading through one's notes after class can drastically increase retention



ChalkTalk's Review Classes are a special type of classes that are led by our software vs teacher instruction. With these classes, every student receives different practice questions & study notes on their top 3 individual weaknesses from content that was already covered. Teachers are then provided with insights from student data.