Welcome

**Before we begin, please make sure:**

Your microphone is muted.

Your Display Name is your first and last name. You can change this by hovering on your image block and clicking on the ... symbol at the top right corner of your picture and selecting Display Name.

**We will be recording this session.**

**Chat protocol:**

Please send questions during the session via private chat to Todd Primm.

The setting to send a chat to everyone will be available so presenters can utilize it during their session for engagement. Please do not post questions to everyone unless otherwise prompted.
A HANDS ON WORKSHOP FOR RETRIEVAL PRACTICE
Try it!

- https://forms.gle/zuvkAfSrZgp51LZP8
Recall: Water Cycle

Evaporation is when water vapor is absorbed by the air and becomes part of the water cycle. Condensation is when water vapor brought up by roots underground is collected together and forms clouds as the temperature changes in temperature. Precipitation is caused when the cloud is heavy enough for water to fall down by gravity like rain, snow, or hail. Water is caused by gravity. Water underground...
Reminder: Effects on Learning

**Retrieval Practice** → **Learning**

- **Direct Effect**
- **Indirect Effects**
“Examples of Retrieval Practice that I currently do in my teaching.”
Think-Pair-Share = Retrieval Practice
What about younger students?
(Karpicke, Blunt, Smith & Karpicke, 2014, Exp 3)

**The Desert**

A desert has a dry climate. Less than 10 inches of rain falls in the desert, rainfall is not steady. Several centimeters of rain may fall within a few days, months there could be no rain at all.

Temperatures in most deserts change a lot from night to day. During the day, the Sun warms the land and air. After the Sun sets, the temperature drops.

Few plants can survive in the desert because the soil is mostly sand. Plants that do survive rely on deep roots, allowing the roots to reach water. The rainwater goes deeper than most plant roots can reach.
What about younger students?
(Karpicke, Blunt, Smith & Karpicke, 2014, Exp 3)

Not much retrieved during practice...
The Desert

A desert has a dry climate. Less than 10 inches of rain fall in rainfall is not steady. Several centimeters of rain may fall within months there could be no rain at all.

Temperatures in most deserts change a lot from night to day. Sun warms the land and air. After the Sun sets, the temperature drops quickly.

Few plants can survive in the desert because the soil is most dense. The winds carry seeds, and they may grow. Viruses and insects spread diseases.

Scaffolding ideas (Karpicke et al., 2014)

Recall in maps

- Cumulus clouds are seen during what type of weather?
- Describe stratus clouds (shape and color)
- Describe Cumulus clouds (shape and color)
- What type of weather do stratus clouds bring?
- Fog is made of what type of cloud?
Guided retrieval can help younger students
How to get students started

The Desert

A desert has a dry climate. Less than 10 inches of rain fall per year, and rainfall is not steady. Several centimeters of rain may fall in a day, but there could be no rain at all.

Temperatures in most deserts change a lot from night to day. The Sun warms the land and air. After the Sun sets, the temperature drops down through the night. The temperature may drop even more if the air is blowing from above the desert. Few plants can survive in the desert because the soil is made up of sand. Water is needed to grow plants, but the sand does not hold water. Sand changes places in the desert, so the water has to move down through the sand. The water has to move slowly so that the plants can drink it.
The Desert

A desert has a dry climate. Less than 10 inches of rain falls in the desert, and rainfall is not steady. Several centimeters of rain may fall within a few months; there could be no rain at all.

Temperatures in most deserts change a lot from night to day. During the day, the Sun warms the land and air. After the Sun sets, the temperature drops quickly.

Few plants can survive in the desert because the soil is mostly sand.
The Desert

A desert has a dry climate. Less than 10 inches of rain falls in the desert. Rainfall is not steady. Several centimeters of rain may fall within a few months; there could be no rain at all.

Temperatures in most deserts change a lot from night to day. During the day, the Sun warms the land and air. After the Sun sets, the temperature drops drastically.

Few plants can survive in the desert because the soil is mostly sand.
Remember: This is difficult!
1. Come up with 1-2 new and concrete teaching activities to implement retrieval practice.
2. What would you need to change in your teaching?
3. What kind of support or resources would you need?
4. How can you get your students to use retrieval practice themselves?
Combining Spaced and Retrieval Practice


<table>
<thead>
<tr>
<th>RETRIEVAL PRACTICE CHALLENGE GRID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
</tr>
<tr>
<td>Q5</td>
</tr>
<tr>
<td>Q9</td>
</tr>
<tr>
<td>Last lesson (1)</td>
</tr>
</tbody>
</table>
Retrieval can increase or decrease anxiety

Factors to consider:
• Timing
• Grading
• Learning
• Social comparison

Agarwal et al., 2012; Cooper et al., 2018
Other Retrieval Technology

- Plickers
- Socrative
- Quizlet
- Kahoot