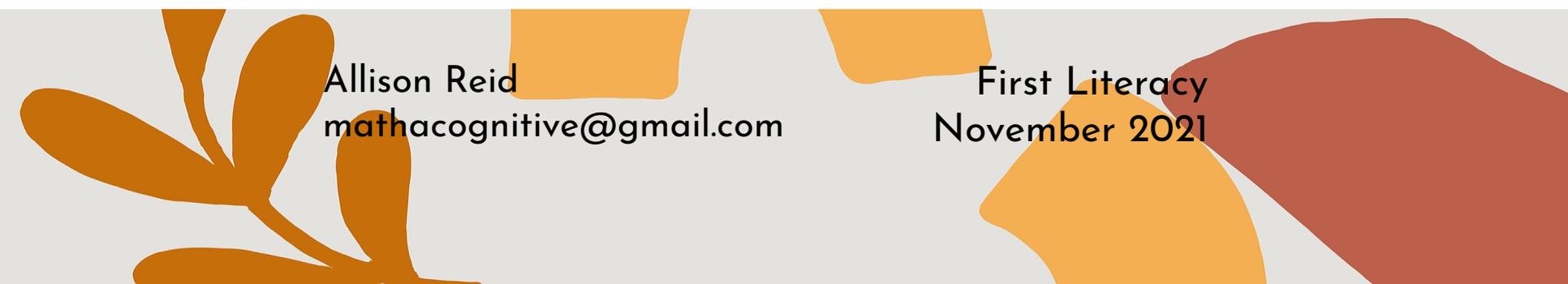




# Teaching & Learning

## Key Ideas for New Teachers

Session **1**



Allison Reid  
mathacognitive@gmail.com

First Literacy  
November 2021

# Overview

**Session 1: Learning** (How it really happens, barriers, experiences etc.)

**Session 2: Teaching** (Elements of a lesson, student engagement, assessment etc.)

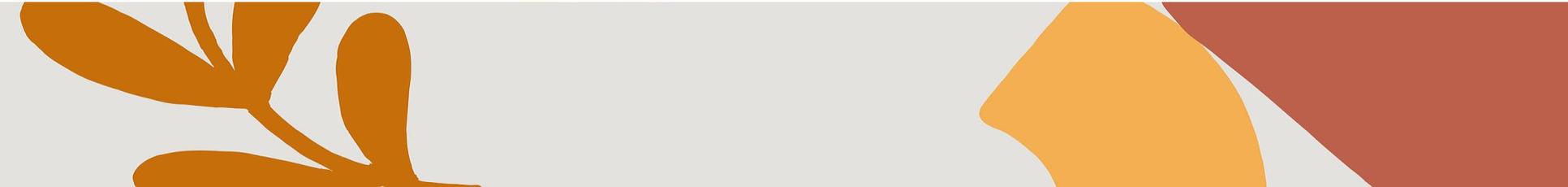
**Session 3: Implementing** (Check in + Practical tips + TBD based on group needs)



# Session 1 Agenda



- Learning Experiences Reflection
- Adults as Learners
- Brains, Memory & Learning Process
- Mindsets and Filters
- Persistence & Attendance
- Oral Histories of Adult Learners



## About Me:

Adult basic education math teacher; writer-trainer-consultant; brain-geek and life-long learner; new mom, gardener and novice forager.

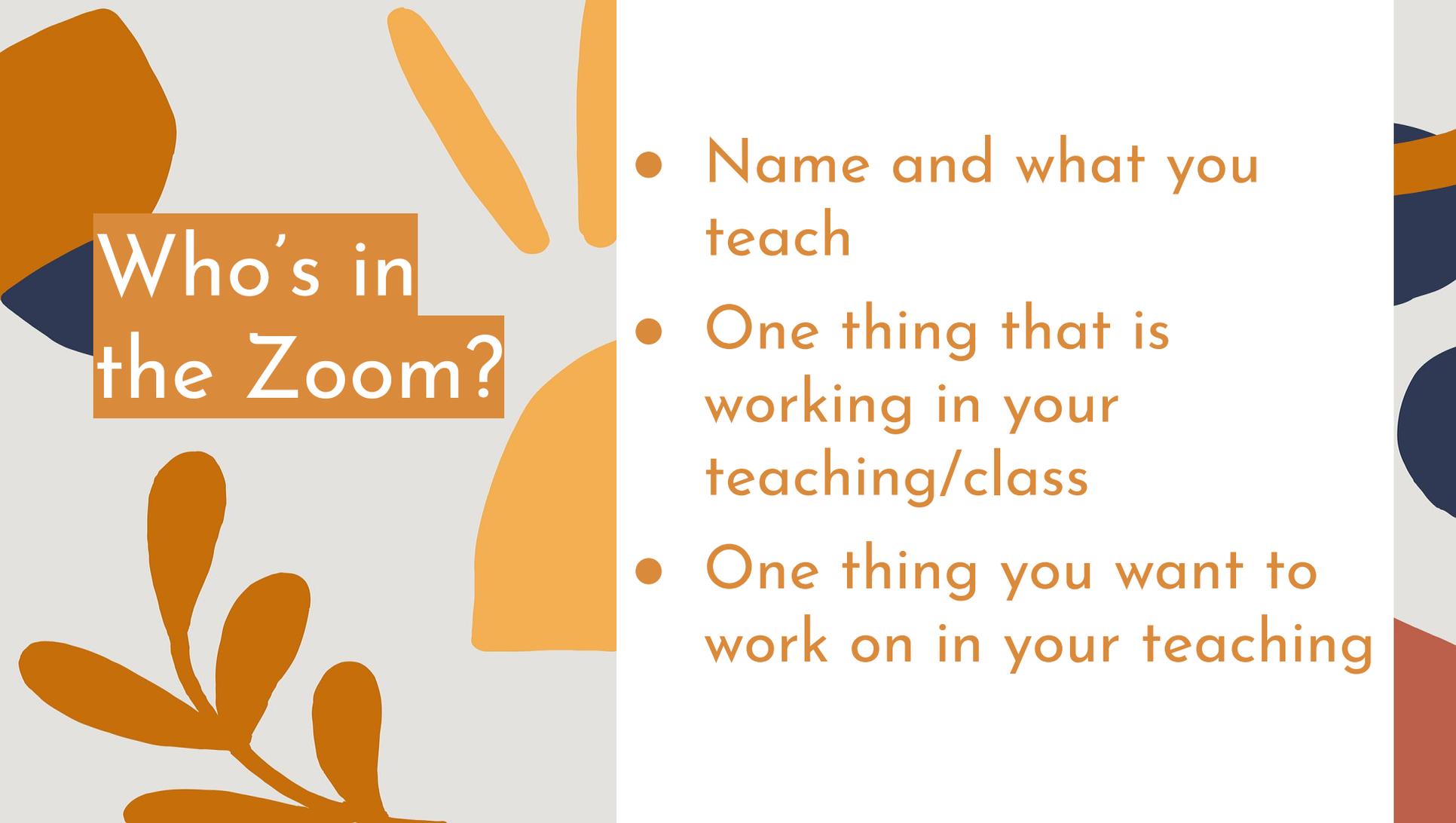
I believe in reflective practice, my students, and color-coded spreadsheets.

**Allison J. Reid**

Mathacognitive.com

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## Who's in the Zoom?

- Name and what you teach
- One thing that is working in your teaching/class
- One thing you want to work on in your teaching



# **Learning Experiences Reflection**



In breakout rooms, tell a **one minute** story from your life about each prompt.

When you are sharing, share. When you are listening listen.

We will repeat with a **new group and a new prompt.**



# Tell a story about a time when learning felt easy

Your story might be from yesterday, or when you were a kid; about learning in a classroom, from a book, video or person; to solve an equation or to cook a recipe, dance, paint or change a tire.



# Tell a story about a time when learning felt hard

Your story might be from yesterday, or when you were a kid; about learning in a classroom, from a book, video or person; to solve an equation or to cook a recipe, dance, paint or change a tire.



# Tell a story about someone who helped you learn

Your story might be from yesterday, or when you were a kid; this person might be a formal teacher, a coach, mentor, friend, colleague or anyone else.



Tell a story about  
something someone  
did that helped you  
learn

Your story might be from yesterday, or when you were a kid; this person might be a formal teacher, a coach, mentor, friend, colleague or anyone else.



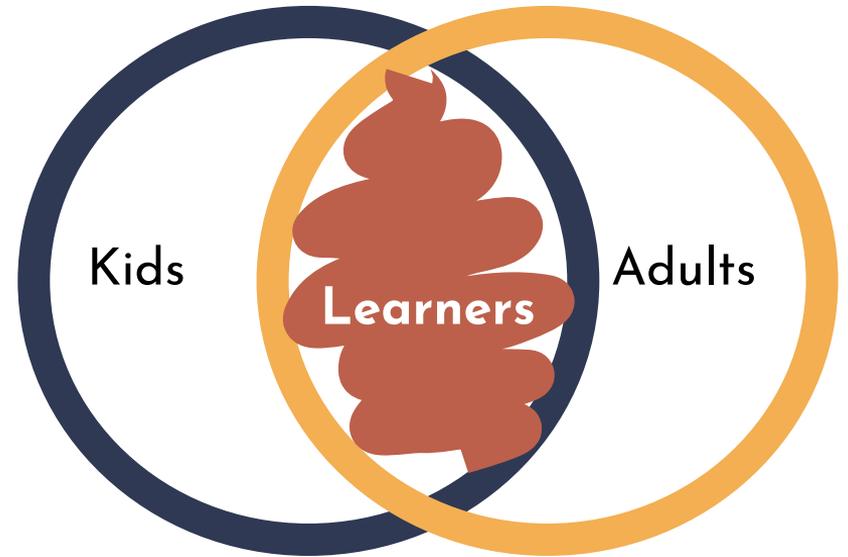
Without  
revealing the  
details of  
another  
person's story ...

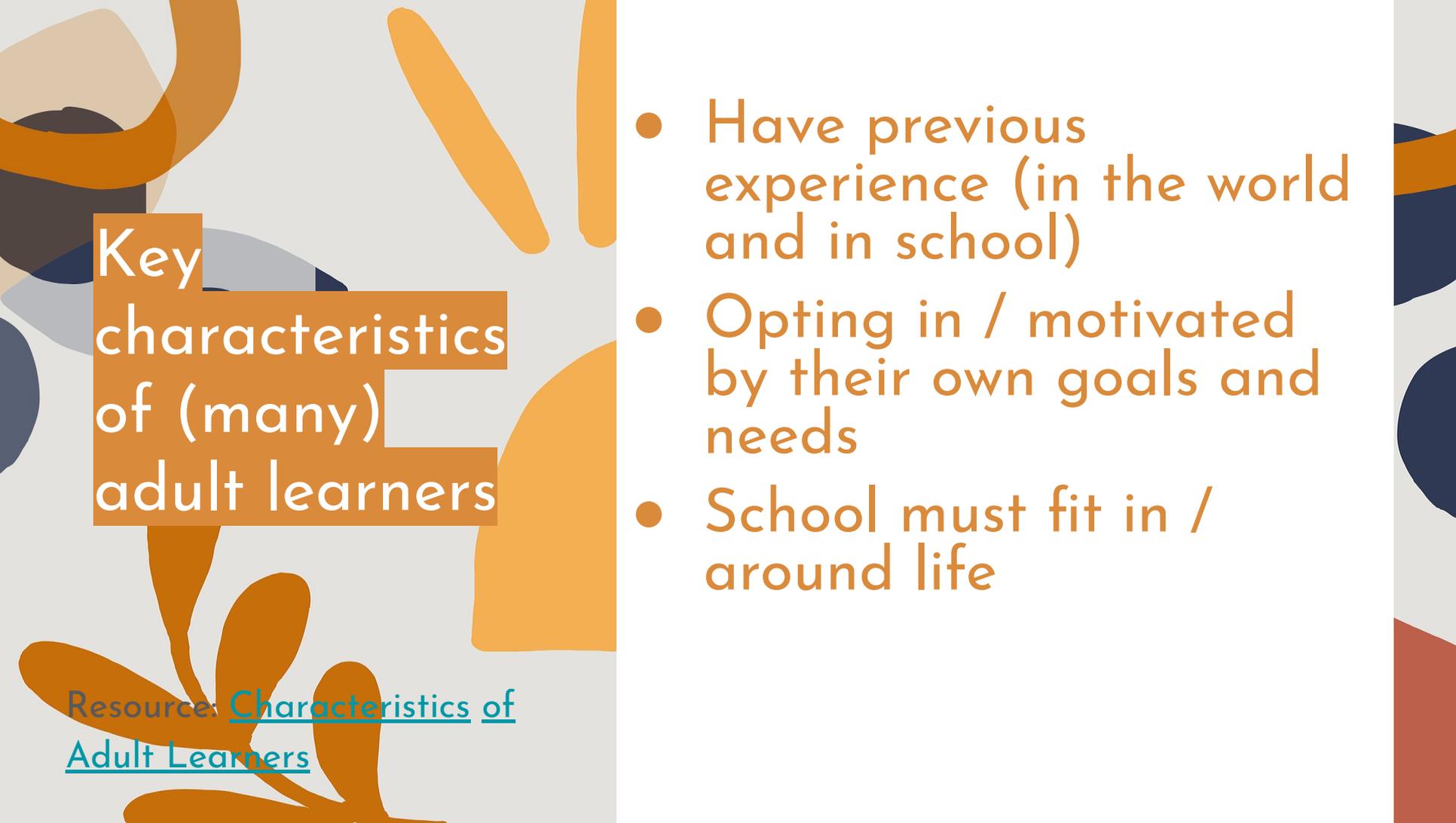
- What came up for you as you spoke and listened?
- What themes or commonalities did you hear? What differences in our experiences did you notice?
- What does this show or remind us about learning?

Much of what is true about kids as learners, is also true about adults.

**AND**

Adult learners / students are often different in significant ways





Key  
characteristics  
of (many)  
adult learners

- Have previous experience (in the world and in school)
- Opting in / motivated by their own goals and needs
- School must fit in / around life

Resource: [Characteristics of Adult Learners](#)

The image features a central white horizontal band containing the title text. Above and below this band are abstract, stylized shapes in shades of orange, yellow, and blue. The top section includes a large orange shape on the left, a fan-like arrangement of five orange shapes in the center, and a blue shape on the right. The bottom section includes a blue shape on the left, several orange and yellow shapes in the center, and a large orange shape on the right.

# **Brains, memory & the learning process**

# Working & Long Term Memory

Working: Can hold 4 - 7 things  
simultaneously

Long Term: Nearly unlimited capacity BUT  
not everything makes it there

Resources: [Made to Stick Model](#)

[How your "working memory" makes sense of the world](#)

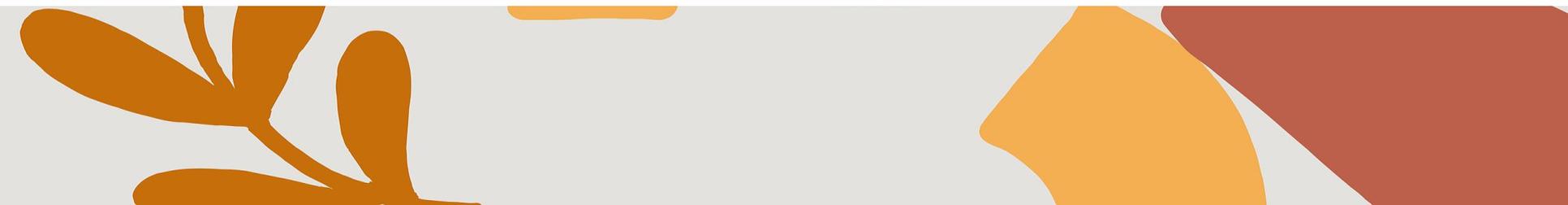


# Input & Retrieval

Input: Information IN

Retrieval: Information OUT

Resource: [What is Retrieval Practice](#)

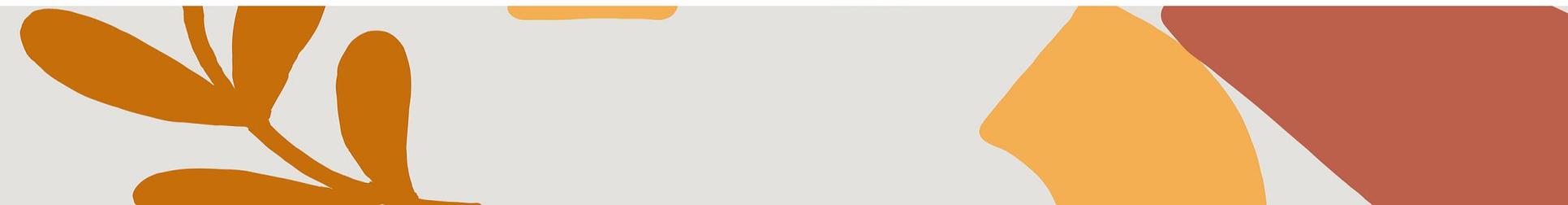




# Recognition & Recall

Recognition (Receptive): I know it when I see it

Recall (Productive): I can generate it myself





# Mindset, beliefs & the affective filter

# The Affective Filter Hypothesis

- Motivation (low)
- Self-confidence (low)
- Anxiety (high)

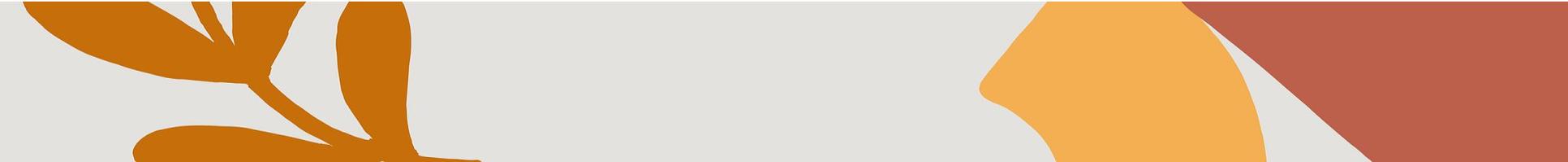
When the filter is 'up', learning is impeded

Resource: [Principles and Practice in Second Language Acquisition](#)



## Study # 1:

Students read short biographies of famous scientists, that either focused on achievements, perseverance or overcoming personal challenges, researchers compared later science grades

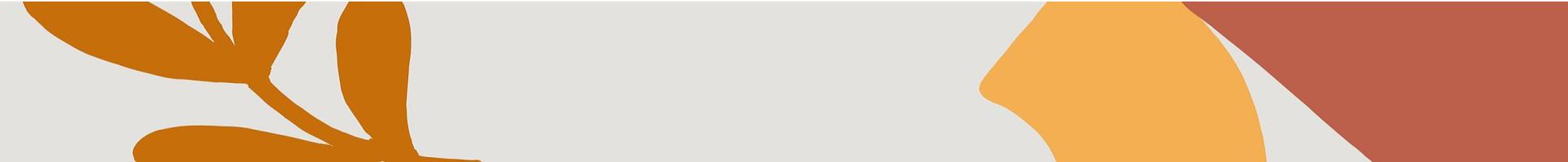




# Scientists who Struggle

“...the students who had read about scientists’ struggles—whether intellectual or personal—now had higher grades than students who had read about achievements.”

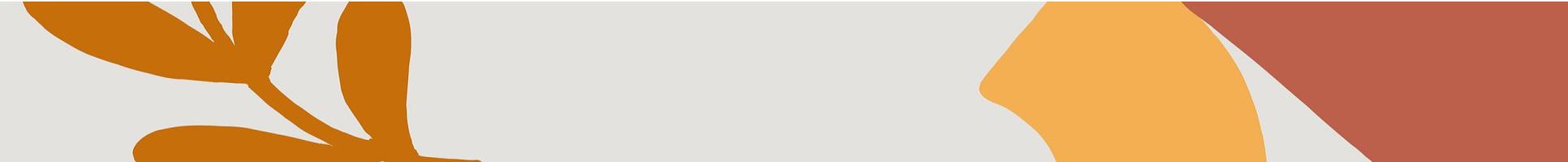
Resource: [“A simple story can improve students’ grades in science”](#)





## Study # 2:

Students were given an IQ test; teachers were told that it showed that certain (random) students were about to experience high levels of growth. Students were tested again to see actual growth.



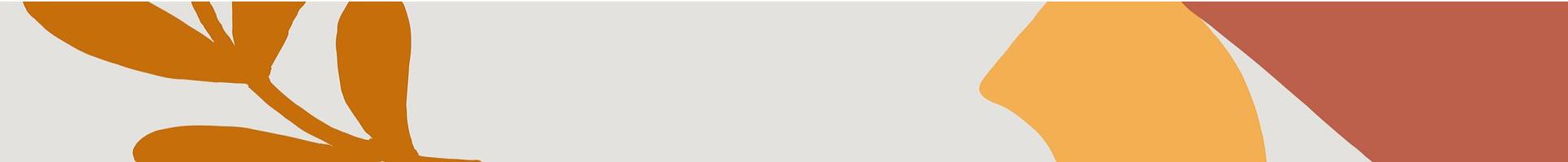


# Teachers with Expectations

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"If teachers had been led to expect greater gains in IQ, then increasingly, those kids gained more IQ,"

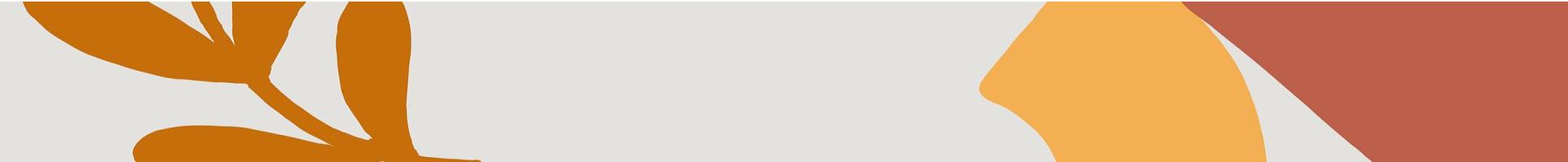
Resource: ["Teachers' Expectations Can Influence How Students Perform"](#)





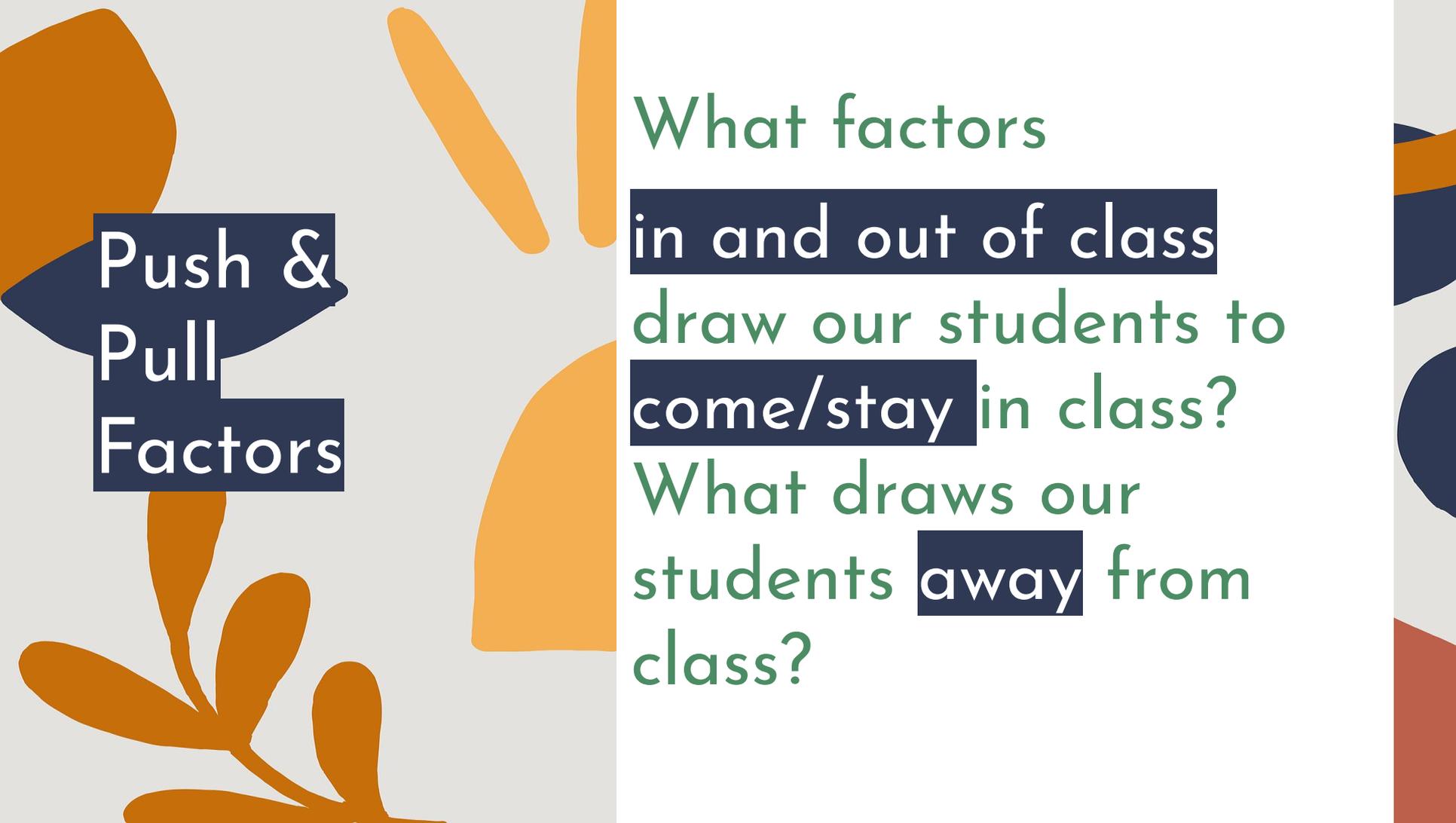
Teachers w/  
Expectations  
Give  
Students ...

---

- More time to answer
  - More specific feedback
  - More (non-verbal) signals of approval
- 



# Attendance & Persistence



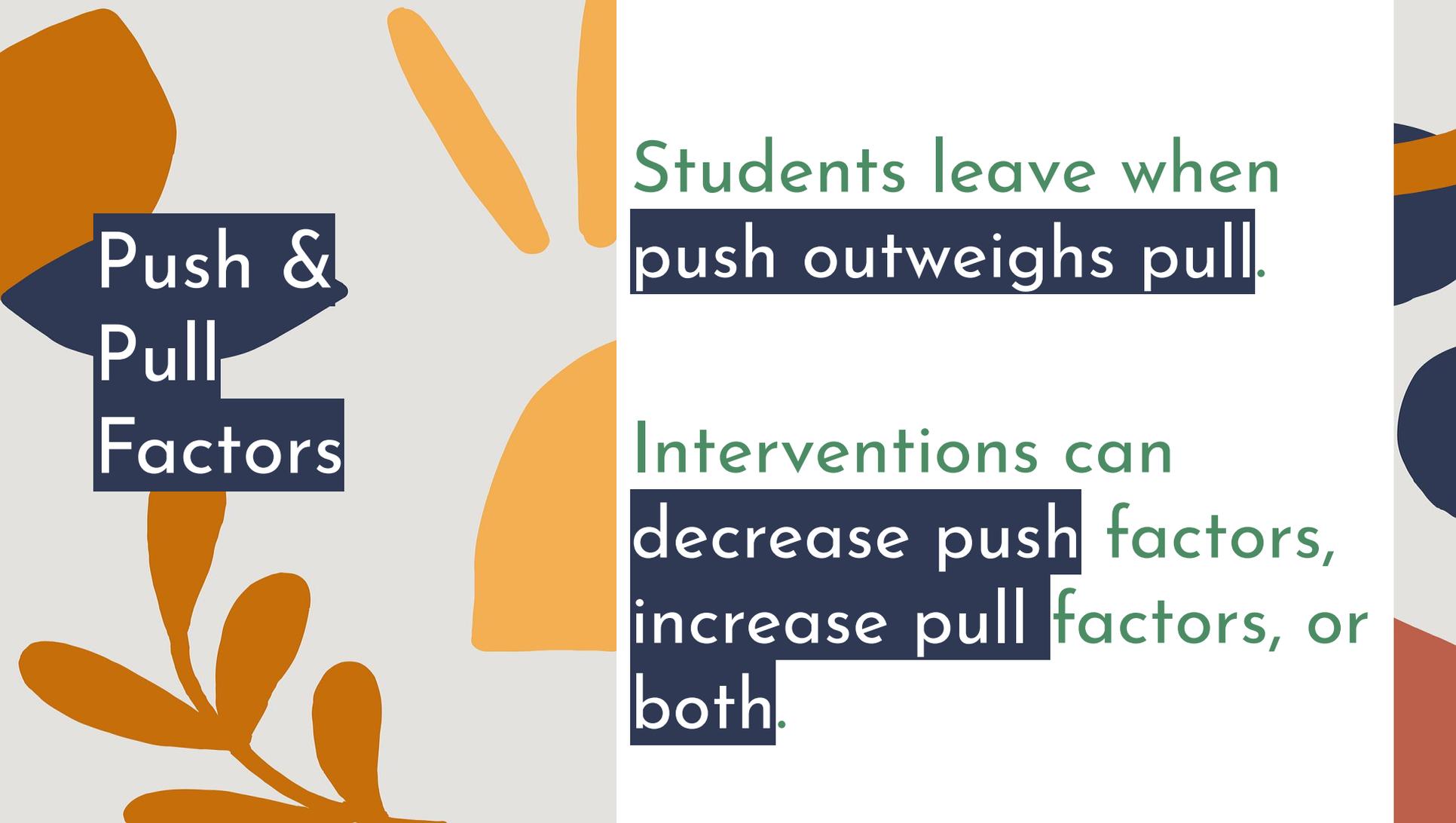
# Push & Pull Factors

What factors

in and out of class

draw our students to  
come/stay in class?

What draws our  
students away from  
class?



## Push & Pull Factors

Students leave when  
push outweighs pull.

Interventions can  
decrease push factors,  
increase pull factors, or  
both.



# Drivers of Persistence

“What keeps students coming *despite* all the obstacles...”

Resource: [Drivers of Persistence](#)



# Drivers of Persistence

- ★ Sense of belonging and community
- ★ Clarity of purpose
- ★ Agency (choices, power, a sense of control)
- ★ Competence
- ★ Relevance
- ★ Stability

Resource: [Drivers of Persistence](#)



# Oral Histories of Adult Learners

In breakout groups:

... Read the first excerpts of oral histories of one adult learner. **Your group name will tell you which one.** Imagine this student is in your class.

... Discuss:

What **challenges** do you imagine they would have? What **strengths**?

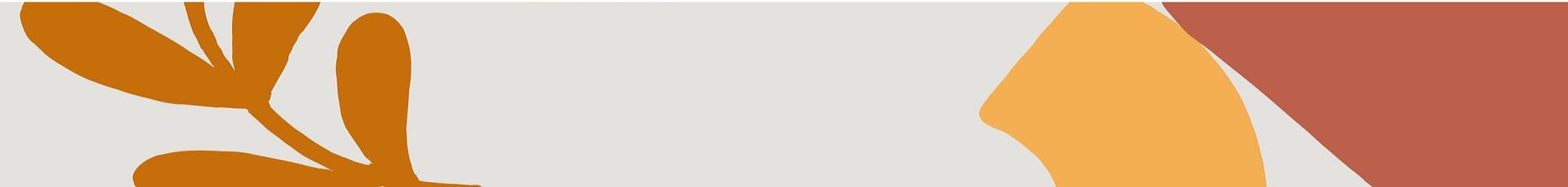
How would you **approach** this student to help them succeed?

... Then, finish the oral history (one additional slide)

Resource: [Oral Histories](#)



See you Friday 11/12  
Session 2



# Thanks & Stay in Touch

Allison J. Reid

Email: [mathacognitive@gmail.com](mailto:mathacognitive@gmail.com) | Website: [mathacognitive.com](http://mathacognitive.com)

Twitter, Pinterest @mathacognitive | Facebook: [facebook.com/mathacognitive](https://www.facebook.com/mathacognitive)

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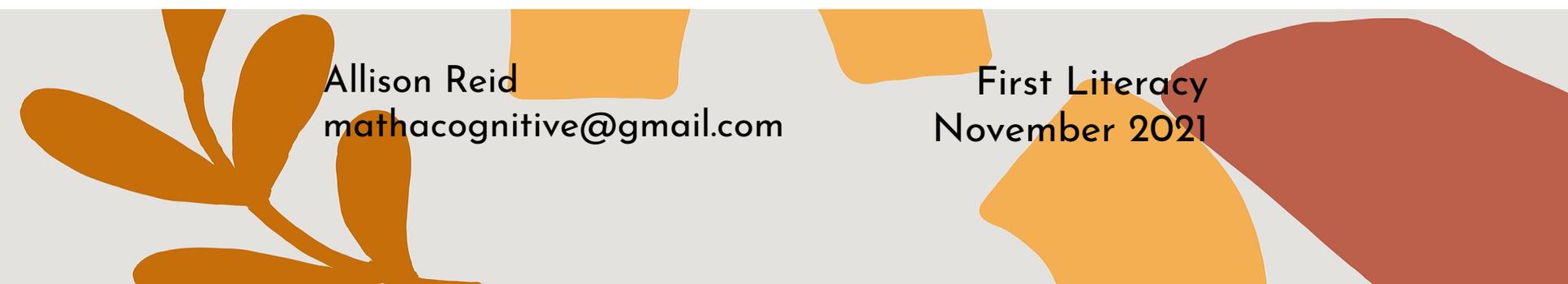
Newsletter: <http://eepurl.com/gQ9l45>



# Teaching & Learning

## Key Ideas for New Teachers

2  
Session



Allison Reid  
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First Literacy  
November 2021

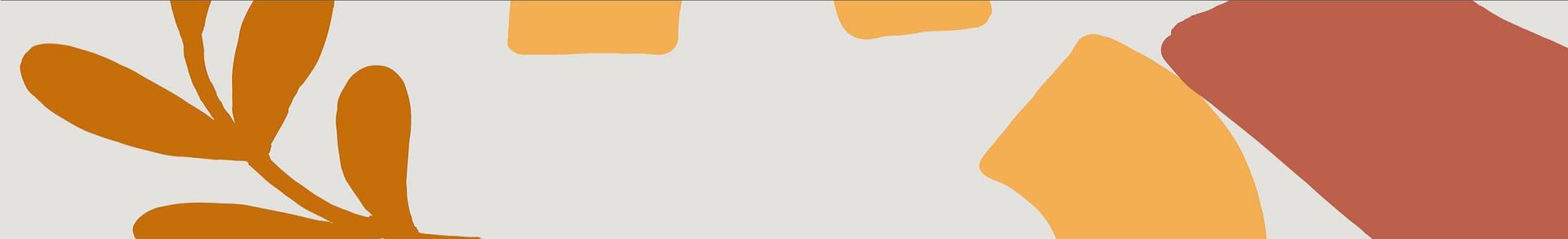


# Welcome Back

Please go to :

[PollEv.com/mathacognitive618](https://PollEv.com/mathacognitive618)

for a quick check in





# Agenda

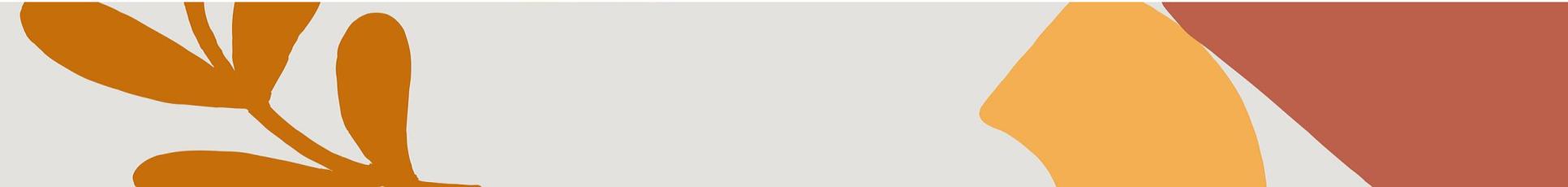
Lesson planning

Objectives

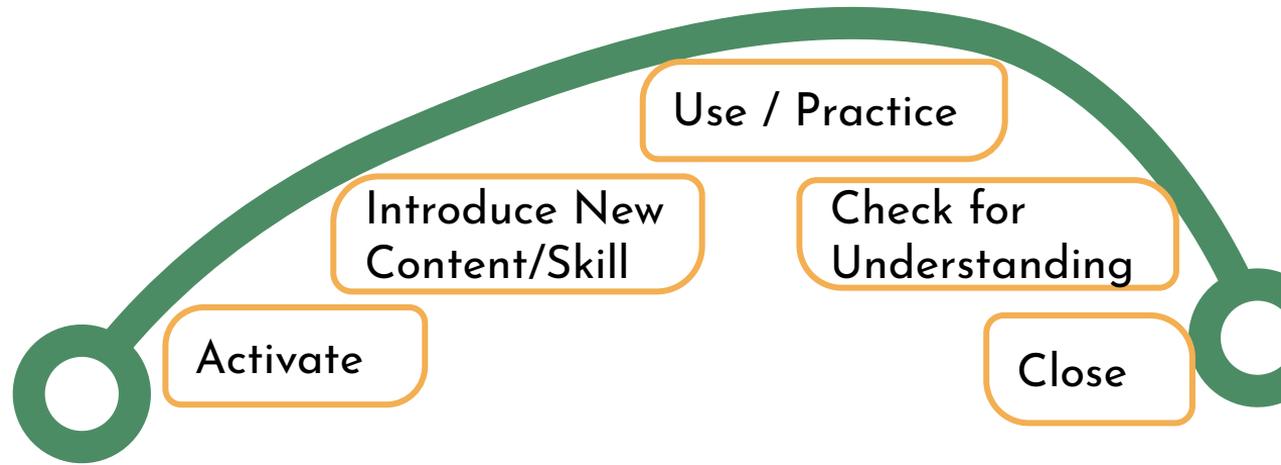
Activities

Checking for Understanding

Differentiation, UDL & Choice



# Lesson Arcs



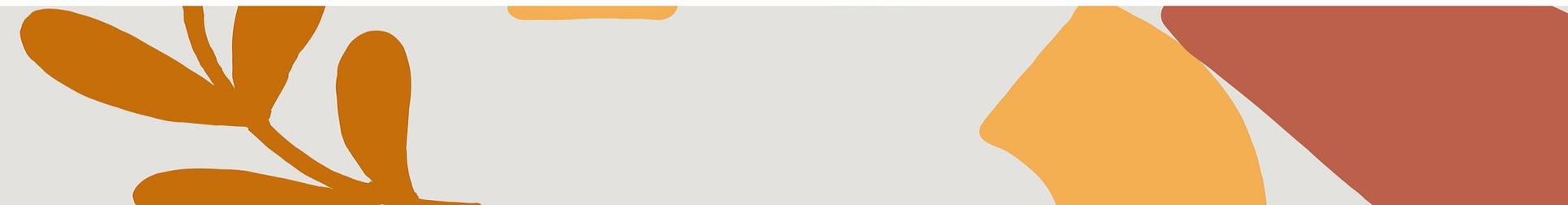


# Objectives





Objectives  $\neq$  Topics  $\neq$  Activities





## Objectives:

Students will be  
able to ...

## Teaching Goals / Process Objectives:

- Build a sense of community
- Use multiple learning modes
- Increase wait time
- Incorporate metacognition
- Connect to current events

# Teaching Goals / Process Objectives:

What experience will students have?

What pedagogies or approaches will you incorporate?

How will you grow as a teacher?



# Activities



Gradual release of  
responsibility

“The person who is  
doing the talking, is  
doing the learning”

I do / we do /  
you do

Three ways to say (more or less) the same thing:  
We have to “get off the stage”

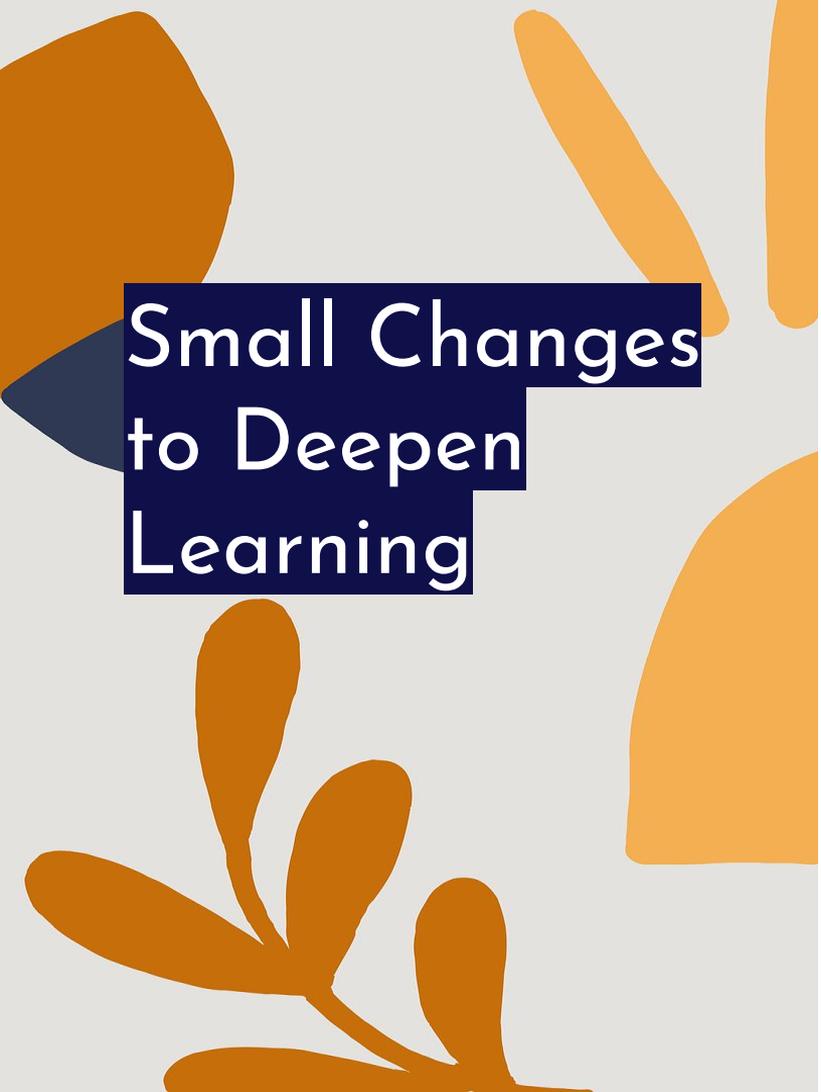
Resource: [Telling you the Answer isn't the Answer](#) | [Whoever is doing the talking](#)



# Format Changes to Boost Engagement

- Card Sort
- I have / who has
- Gallery walk
- Stations

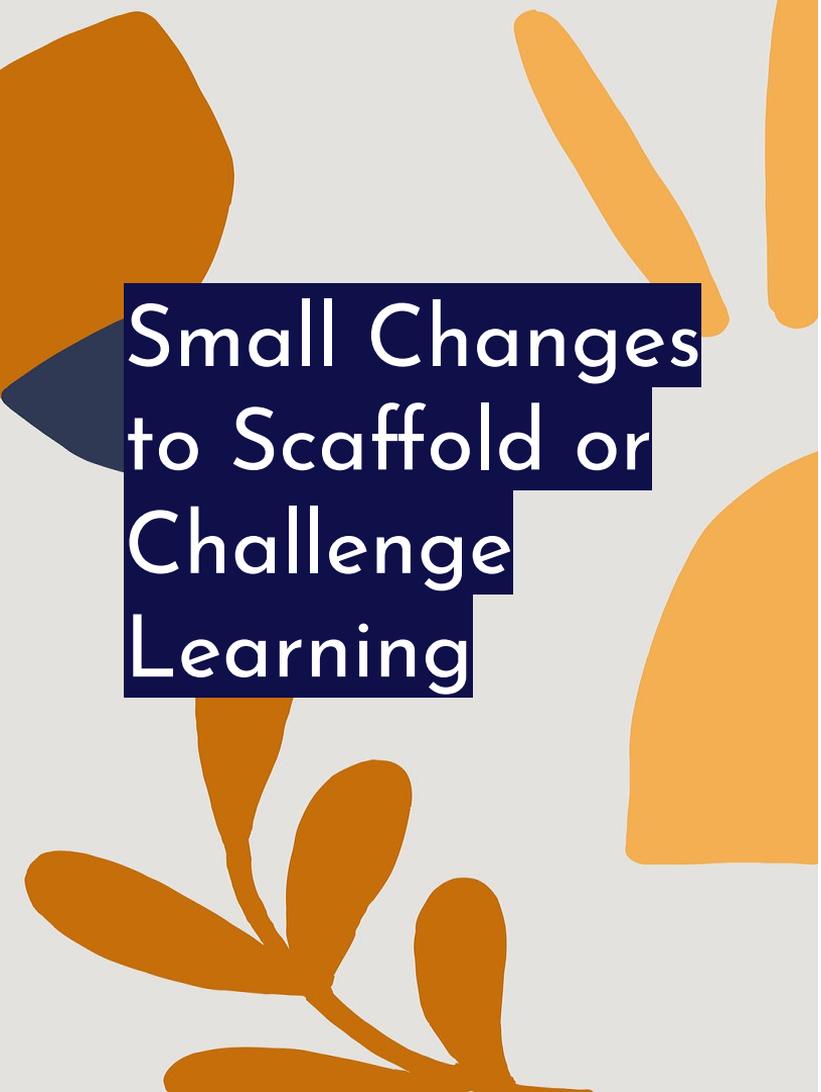
Resource: [15 Ways to Hack a Math Textbook](#)



## Small Changes to Deepen Learning

- Read and recall
- Annotate
- Error correction
- Metacognitive questions

Resource: [15 Ways to Hack a Math Textbook](#)



## Small Changes to Scaffold or Challenge Learning

- Add or remove an answer bank
- Students create examples
- Isolate or interleave skills
- Jigsaw/peer teaching

Resource: [15 Ways to Hack a Math Textbook](#)

Review the standard textbook activity. **What (student) objective** might this activity serve? Write at least one SWBAT- objective statement

**Brainstorm** ways you could transform it into a higher-engagement activity.

**Reflect back on session 1.** What activities might you pick if you focused on the drivers of persistence? On the affective filter? On retrieval and recall?

[ESOL](#)

[ELA](#)

[Math](#)

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[Google Doc](#)

[PDF](#)



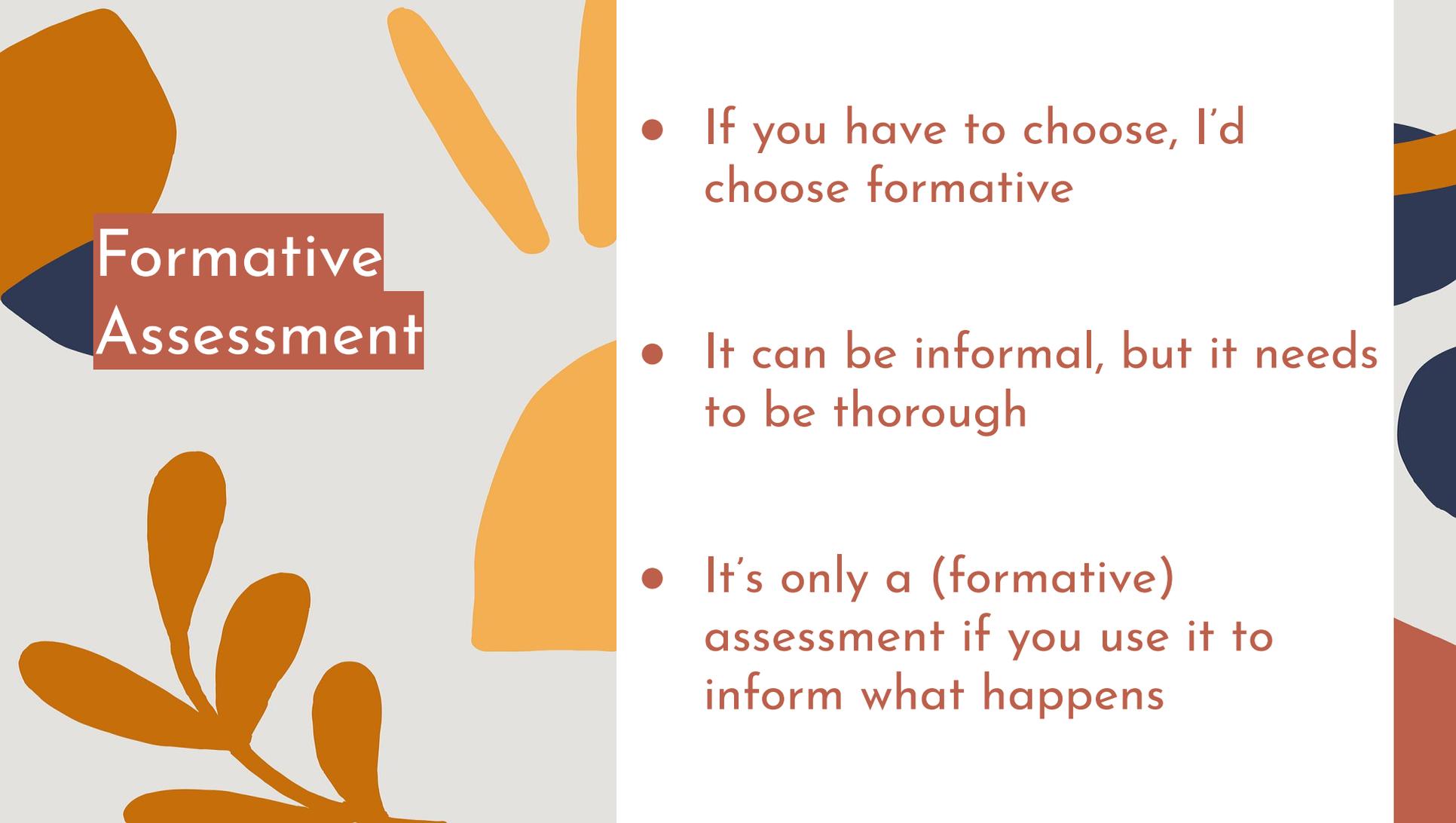
# Checking for Understanding

## Formative Assessment

What do we **need** to learn?

## Summative Assessment

What **have** we learned?



# Formative Assessment

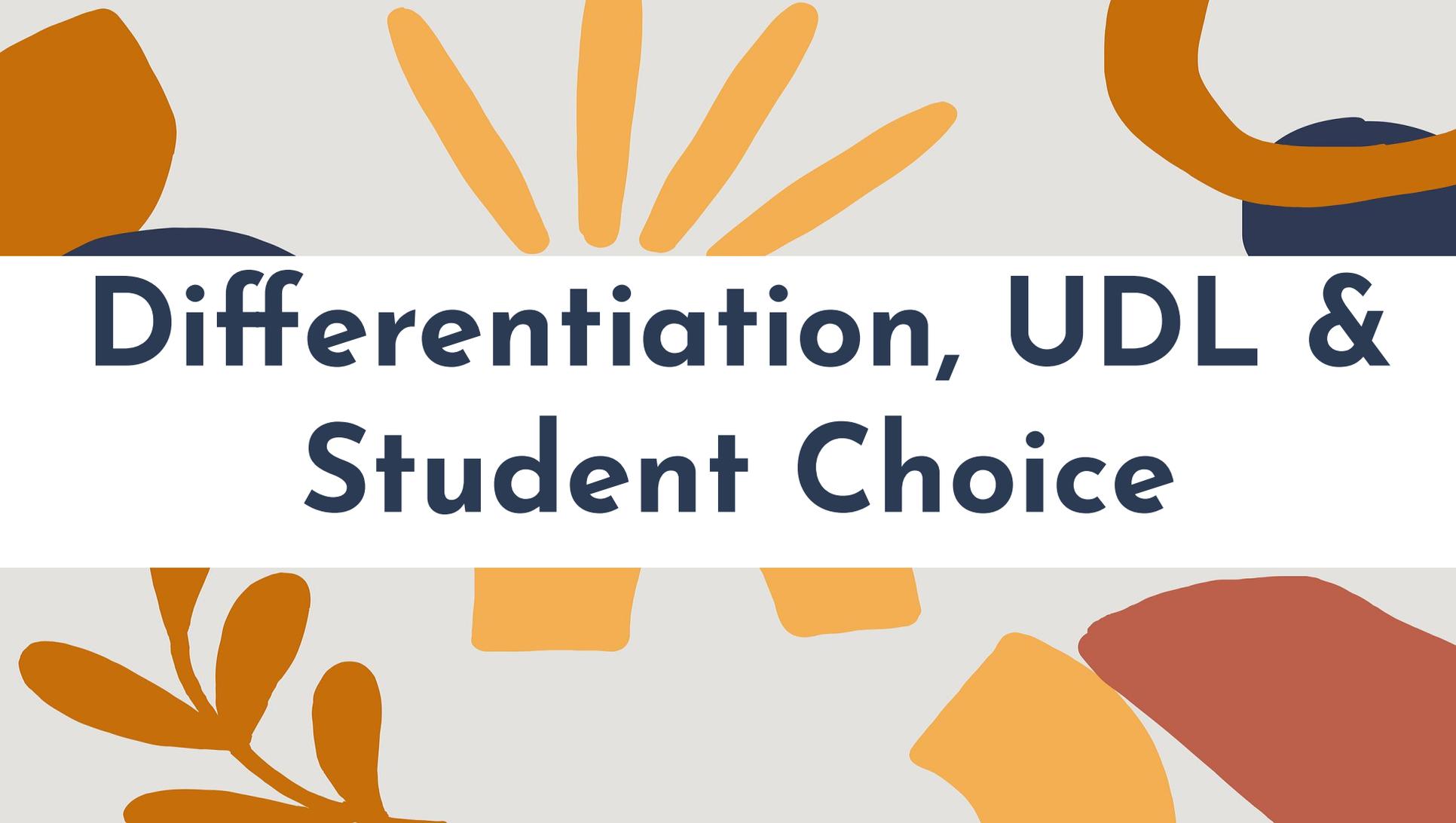
- If you have to choose, I'd choose formative
- It can be informal, but it needs to be thorough
- It's only a (formative) assessment if you use it to inform what happens



## Formative Assessment

“ Most of these actives [sic] can also be thought of as engagement strategies in addition to assessing what students know and can do.”

Resource: [Formative \(Informal\) Assessment Strategies](#)



# **Differentiation, UDL & Student Choice**

# Differentiation

“Differentiated instruction is a teaching approach that tailors instruction to all students’ learning needs. All the students have the same learning goal. But the instruction varies based on students’ interests, preferences, strengths and struggles.

[Resource: What is Differentiated Instruction](#)



Differentiation by...

Content

Process

Product

Environment

# Universal Design for Learning

“The goal of UDL is to use a variety of teaching methods to remove any barriers to learning. It’s about building in flexibility that can be adjusted for every person’s strengths and needs. That’s why UDL benefits all learners.”

[Resource: What is Universal Design for Learning](#)

The Universal Design for Learning Guidelines

Provide multiple means of  
**Engagement**

Affective Networks  
The "WHY" of Learning



Provide multiple means of  
**Representation**

Recognition Networks  
The "WHAT" of Learning



Provide multiple means of  
**Action & Expression**

Strategic Networks  
The "HOW" of Learning



Access

Provide options for  
**Recruiting Interest**

- Optimize individual choice and autonomy
- Optimize relevance, value, and authenticity
- Minimize threats and distractions

Provide options for  
**Perception**

- Offer ways of customizing the display of information
- Offer alternatives for auditory information
- Offer alternatives for visual information

Provide options for  
**Physical Action**

- Vary the methods for response and navigation
- Optimize access to tools and assistive technologies

Build

Provide options for  
**Sustaining Effort & Persistence**

- Heighten salience of goals and objectives
- Vary demands and resources to optimize challenge
- Foster collaboration and community
- Increase mastery-oriented feedback

Provide options for  
**Language & Symbols**

- Clarify vocabulary and symbols
- Clarify syntax and structure
- Support decoding of text, mathematical notation, and symbols
- Promote understanding across languages
- Illustrate through multiple media

Provide options for  
**Expression & Communication**

- Use multiple media for communication
- Use multiple tools for construction and composition
- Build fluencies with graduated levels of support for practice and performance

Internalize

Provide options for  
**Self Regulation**

- Promote expectations and beliefs that optimize motivation
- Facilitate personal coping skills and strategies
- Develop self-assessment and reflection

Provide options for  
**Comprehension**

- Activate or supply background knowledge
- Highlight patterns, critical features, big ideas, and relationships
- Guide information processing and visualization
- Maximize transfer and generalization

Provide options for  
**Executive Functions**

- Guide appropriate goal-setting
- Support planning and strategy development
- Facilitate managing information and resources
- Enhance capacity for monitoring progress

Goal

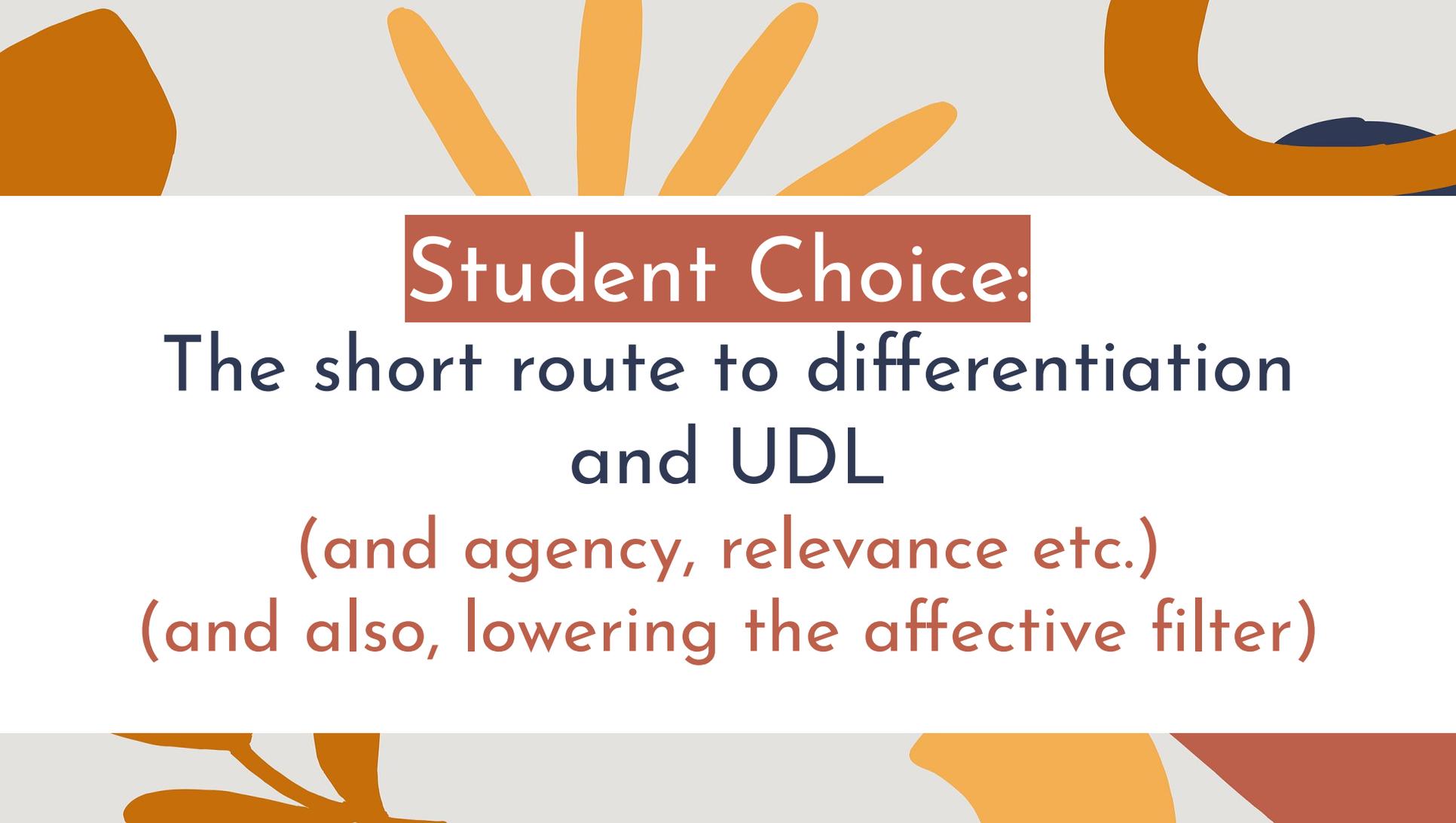
**Expert learners** who are...

**Purposeful & Motivated**

**Resourceful & Knowledgeable**

**Strategic & Goal-Directed**

Resource: [UDL Guidelines](#)

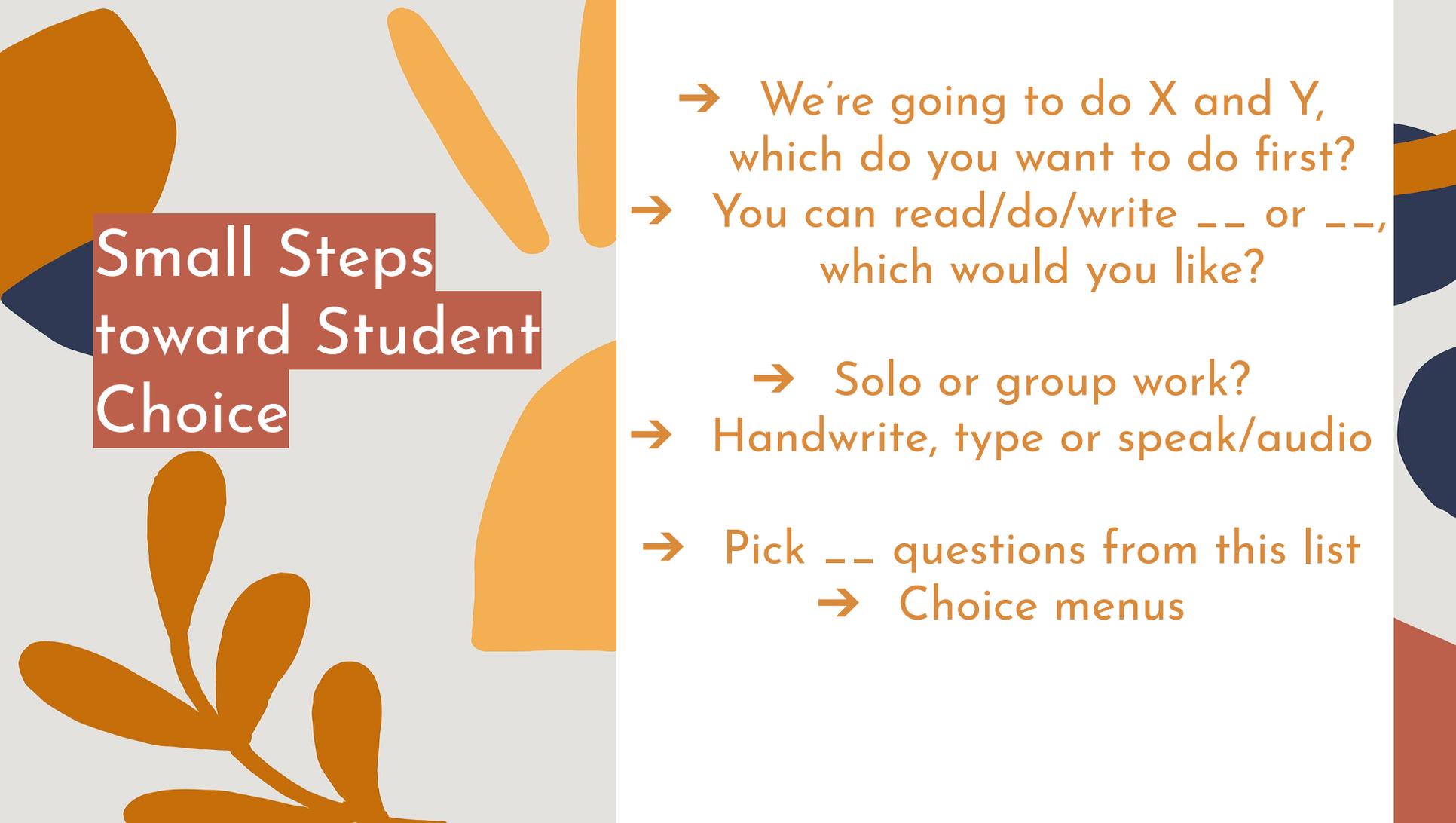


# Student Choice:

The short route to differentiation  
and UDL

(and agency, relevance etc.)

(and also, lowering the affective filter)



## Small Steps toward Student Choice

- We're going to do X and Y, which do you want to do first?
- You can read/do/write \_\_ or \_\_\_, which would you like?
  - Solo or group work?
- Handwrite, type or speak/audio
- Pick \_\_ questions from this list
  - Choice menus



Think about the objective and activities you worked on earlier.

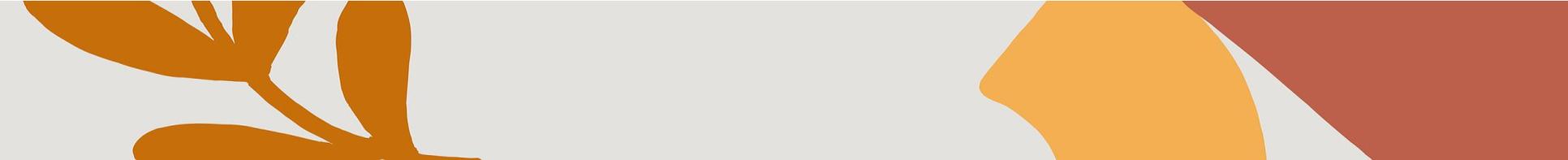
How could you **add a formative assessment** to that lesson? How might you adapt based on the results?

How could you **differentiate** to offer support? To offer challenge? How could you **apply a UDL lens**?

[Formative \(Informal\) Assessment Strategies](#)

[Formative Assessment Strategies](#) (List on Page 7)

[UDL Guidelines](#)





# Preparing for Implementation

What's one step you want to take in the next month to improve your teaching?

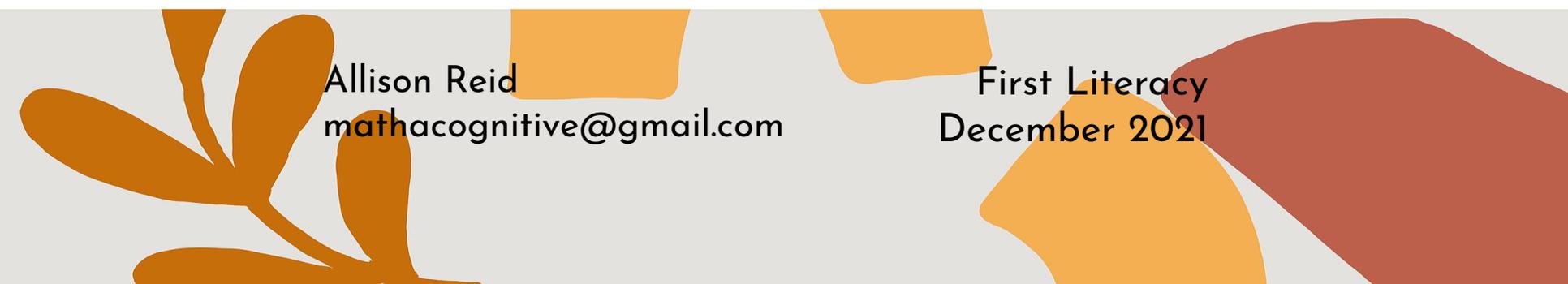
Share your action step and request resources [via this form](#)



# Teaching & Learning

## Key Ideas for New Teachers

Session **3**



Allison Reid  
mathacognitive@gmail.com

First Literacy  
December 2021

# Agenda

Check In / Review

Behavior Change

Reflection

Your Goals / Break Out Groups

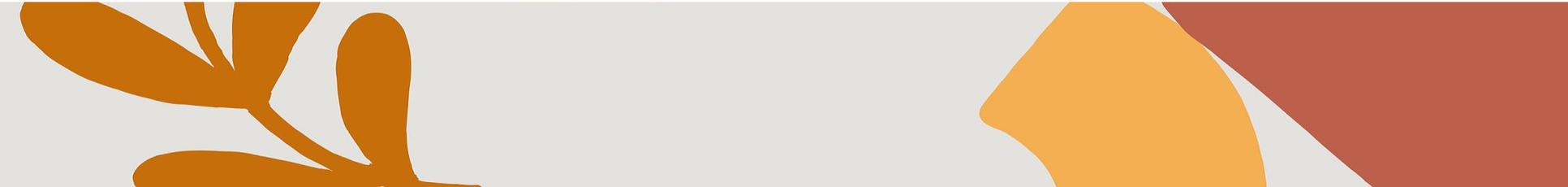
Managing Teaching

Reflective Practices



Objective: P.W.B.A.T.  
Identify at least one  
specific, actionable  
change to their  
teaching practice

Process goal: Less  
facilitator talk, more  
participant dialogue





# Think/Write/Share:

What has stayed with you from  
sessions 1 and 2?

Resource: [What is Think-Pair-Share and How to Use it In Your Classroom](#)

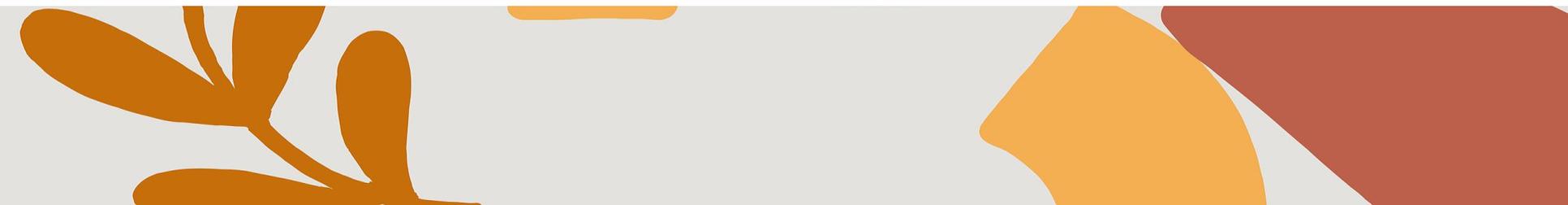


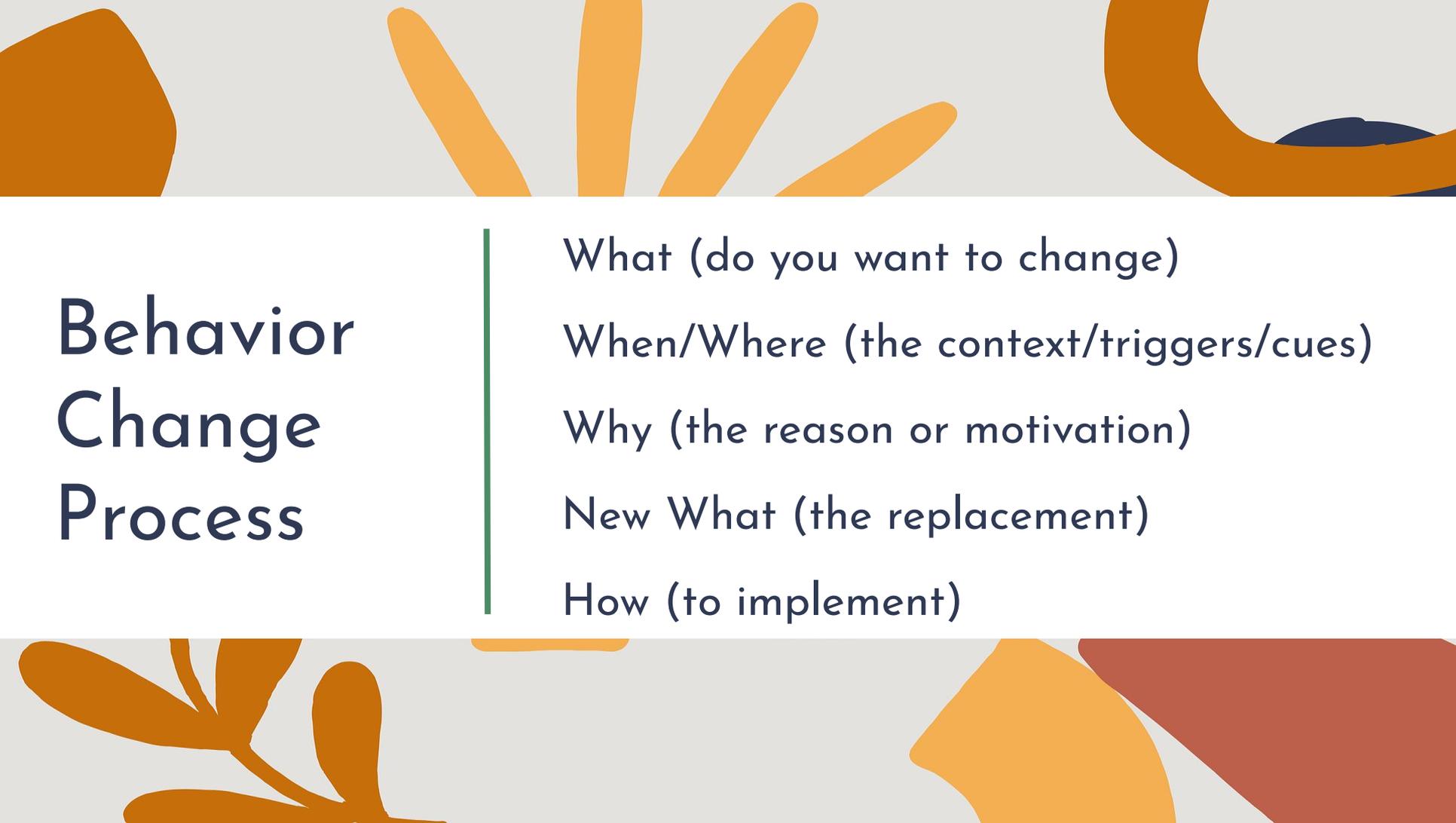


# Behavior Change

It is hard to break a bad habit.

It is easier and more effective to focus on replacing it with a good alternative.





# Behavior Change Process

What (do you want to change)

When/Where (the context/triggers/cues)

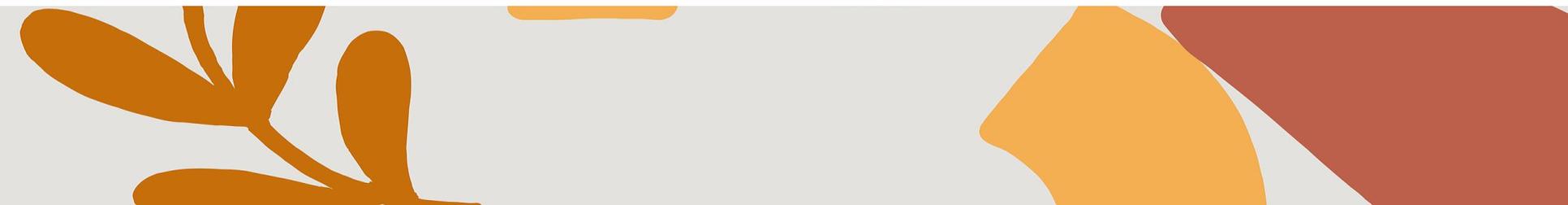
Why (the reason or motivation)

New What (the replacement)

How (to implement)

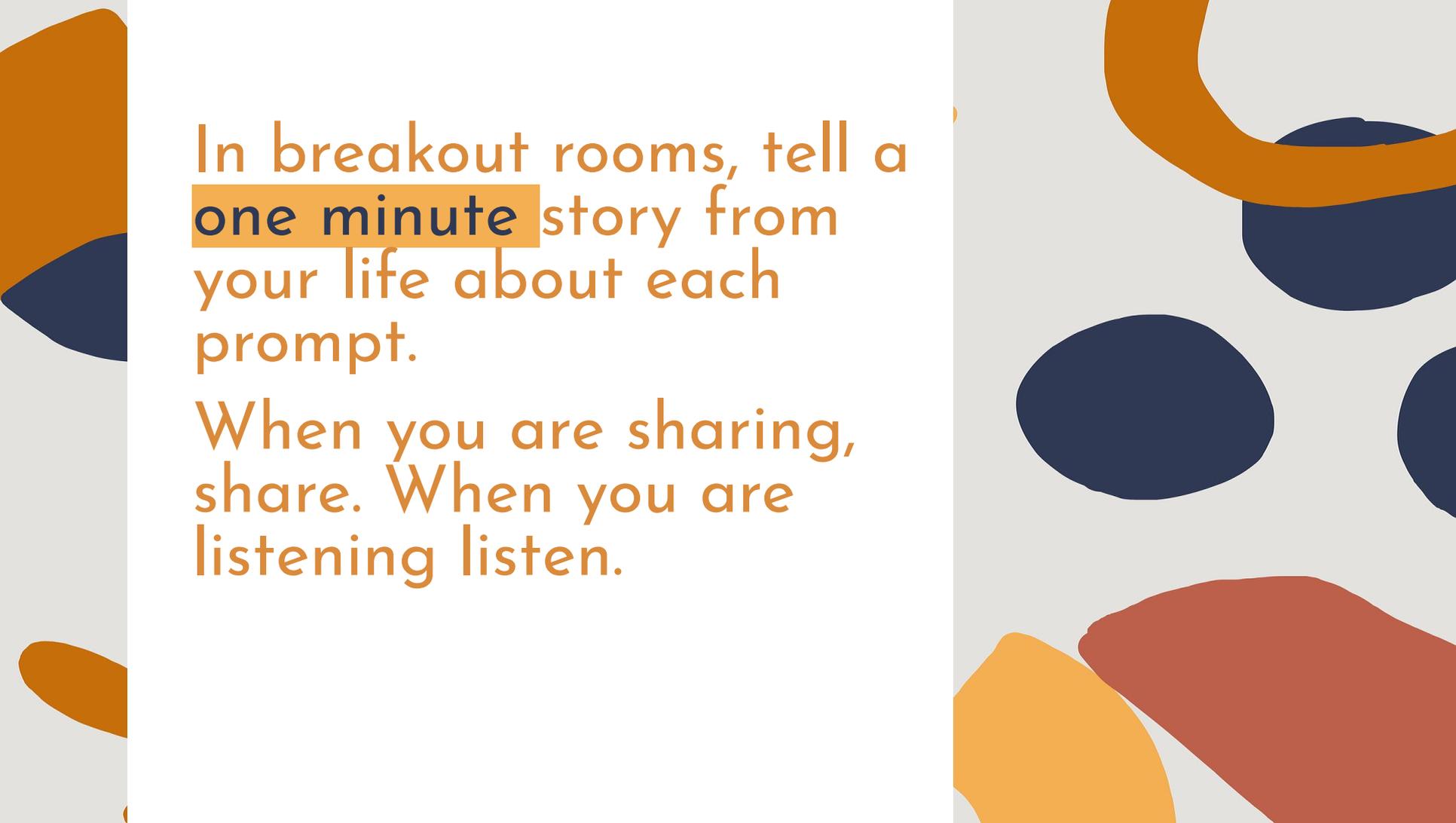


# “New What” Examples: Teacher Talk

- Students read directions
  - T/P/S
  - Video/reading to intro content
  - Wait time
  - Whole class -> Small group work
  - “Good question... who has an idea for \_ \_ \_”
- 



# **Learning Experiences Reflection**



In breakout rooms, tell a **one minute** story from your life about each prompt.

When you are sharing, share. When you are listening listen.



# Tell a story about a time when learning felt easy

Your story might be from yesterday, or when you were a kid; about learning in a classroom, from a book, video or person; to solve an equation, work a cash register or cook a recipe; to dance, speak a language or change a tire.



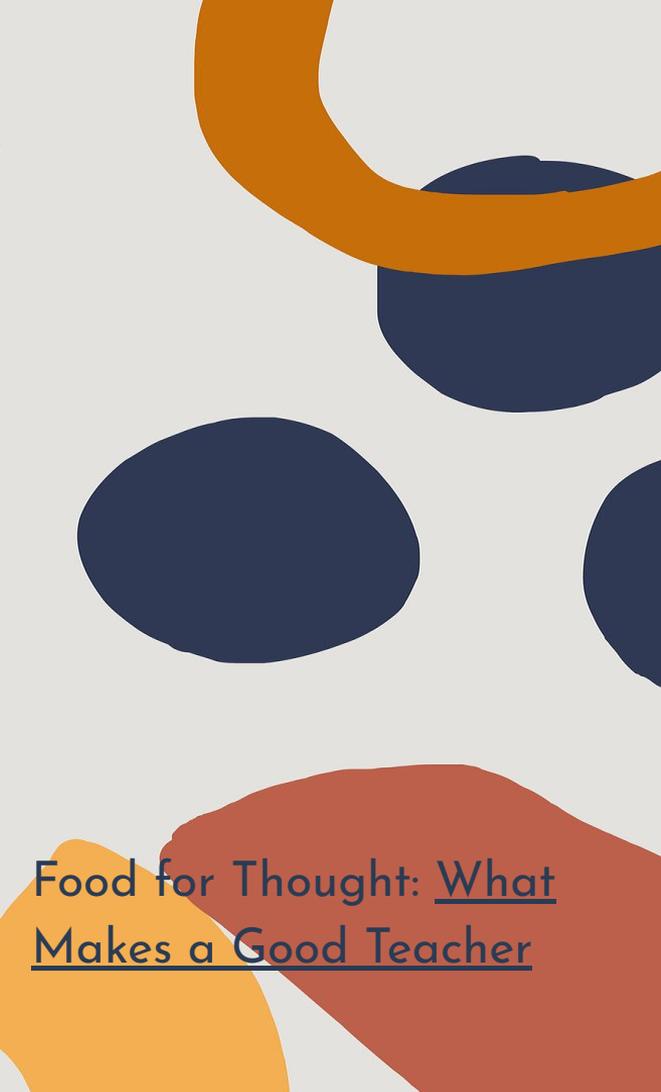
# Tell a story about a time when learning felt hard

Your story might be from yesterday, or when you were a kid; about learning in a classroom, from a book, video or person; to solve an equation, work a cash register or cook a recipe; to dance, paint or change a tire.



# Tell a story about someone who helped you learn

Your story might be from yesterday, or when you were a kid; this person might be a formal teacher, a coach, mentor, friend, colleague or anyone else.



Food for Thought: What  
Makes a Good Teacher



Check In:

Share a **teaching high**  
and something you  
**want to work on.**



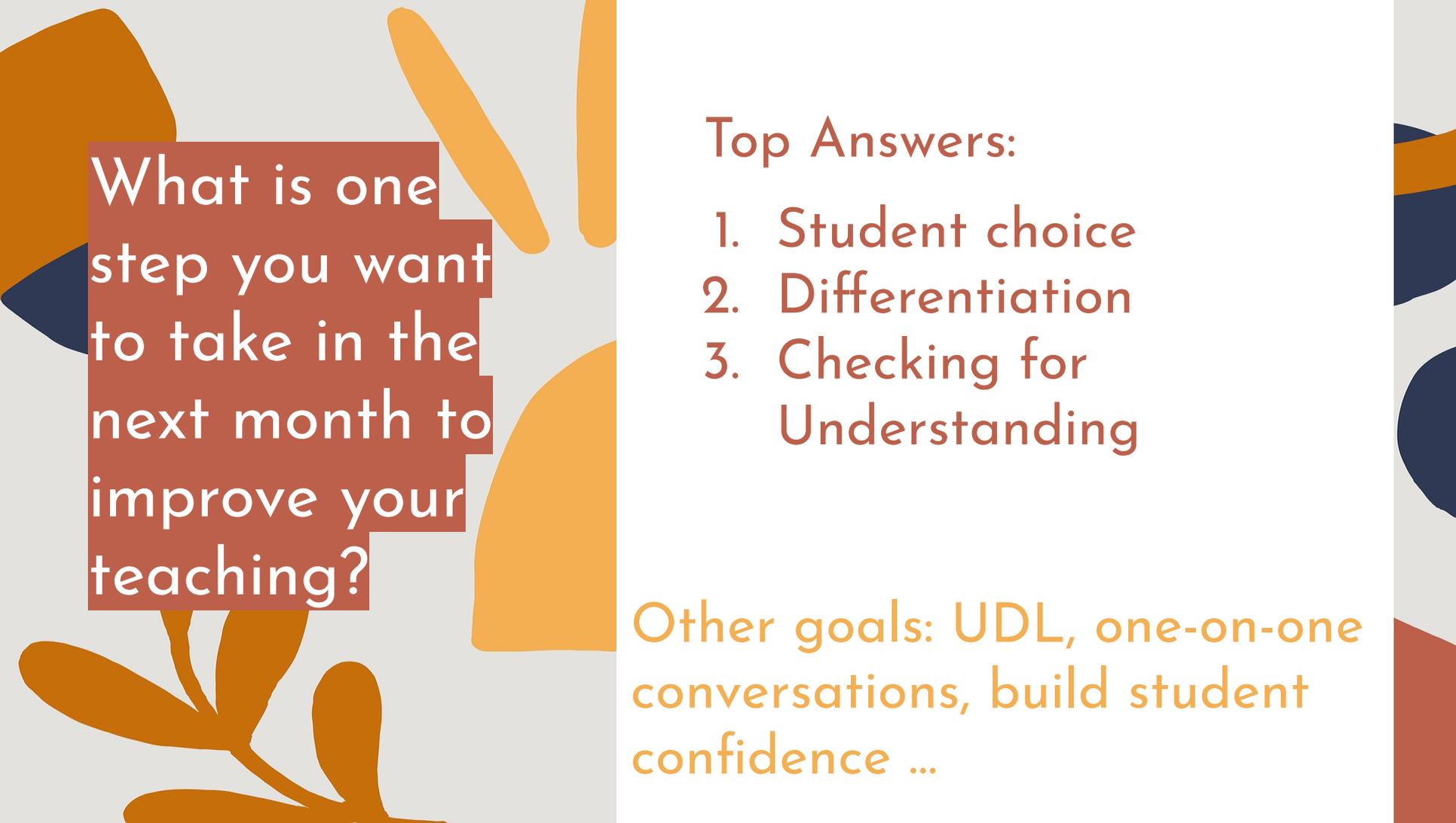
Without  
revealing the  
details of  
another  
person's story ...

- What came up for you as you spoke and listened?
- What themes or commonalities did you hear? What differences in our experiences did you notice?
- What does this show or remind us about learning?



# Your Goals





What is one step you want to take in the next month to improve your teaching?

Top Answers:

1. Student choice
2. Differentiation
3. Checking for Understanding

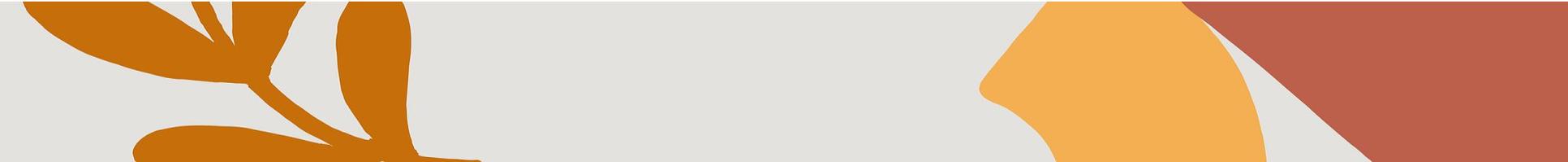
Other goals: UDL, one-on-one conversations, build student confidence ...



# My two best tips ...

**Start small.** But definitely start. It's easy to get overwhelmed if you go too big.

**But, do it repeatedly.** You and students will both need time to get comfortable with a new way of doing class.





# Breakout Groups

1. Choose your group: Choice or Differentiation
2. Open the jamboard for your topic
3. As a group, reflect and record re: goals/benefits; challenges and solutions/responses
4. Prepare to share out



# Differentiation



# Why?

Take a few minutes to reflect on your or other teachers goals in incorporating differentiation or choice. What benefits or opportunities does it offer?

**Record your ideas on the next slide**

# Why not?

Please take a few minutes to brainstorm the challenges that keep you and/or other teachers from offering (more) student choice or differentiation.

These may be logistical, resource issues, mindset issues or something else entirely.

**Record your ideas on the next slide**

# Now what?

Choose a few of these challenges and work together to identify some steps you or other teachers could take to address them.

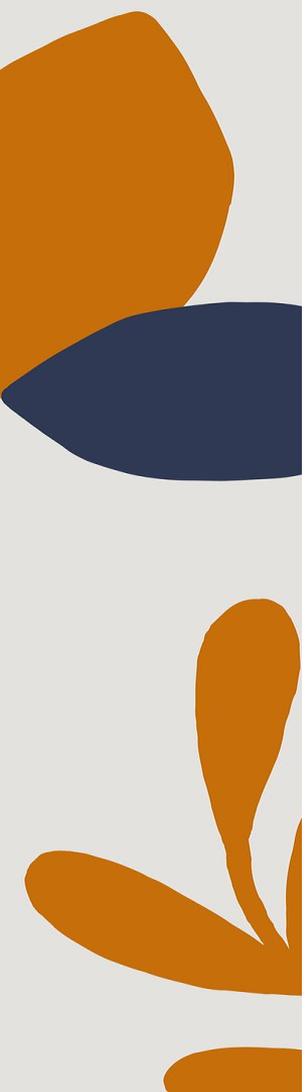
**Record your ideas on the next slide**

# Sharing 3-2-1

Please pick three goals or benefits to share

Pick two challenges to share your responses

Pick one challenge that you would like more input from the other group and/or Allison





# Managing Teaching

(or, things I learned the hard way)





I wish someone  
had told me...

- Good teachers have different styles/ approaches/ voices.
- You don't have to be like the teacher you admire.



I wish someone  
had told me...

- You can't do everything; prioritize (also, it will be ok)
- It's worth prioritizing systems that will help you in the future



I wish someone  
had told me...

- Don't reinvent the wheel if you don't have to
- You're less likely to have to if you save and organize your wheels (lessons, activities, sources)



I wish someone  
had told me...

- It's easier to plan the lesson if you've already outlined the month/term/unit
- Leave a margin/flex time... you'll need it for something



I wish someone  
had told me...

- Develop a set of 'go-to' activities.
- Post the list where you'll see it when you're stressing about a lesson



# Reflective Practice(s)





Setting process goals

Personal reflections /  
lesson notes

Video yourself

Read/listen/follow

Student feedback

Observations (peer or  
supervisor)

Community of practice /  
peer learning (formal or  
informal)



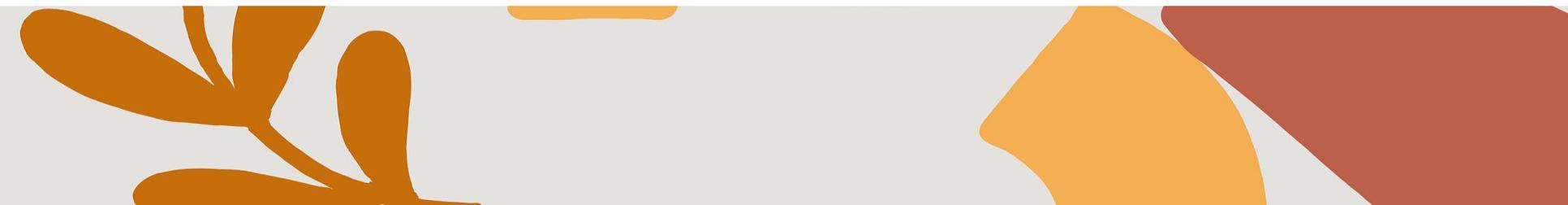
# Behavior Change Process

What (do you want to change)

When/Where (the context/triggers/cues)

Why (the reason or motivation)

New What (the replacement)

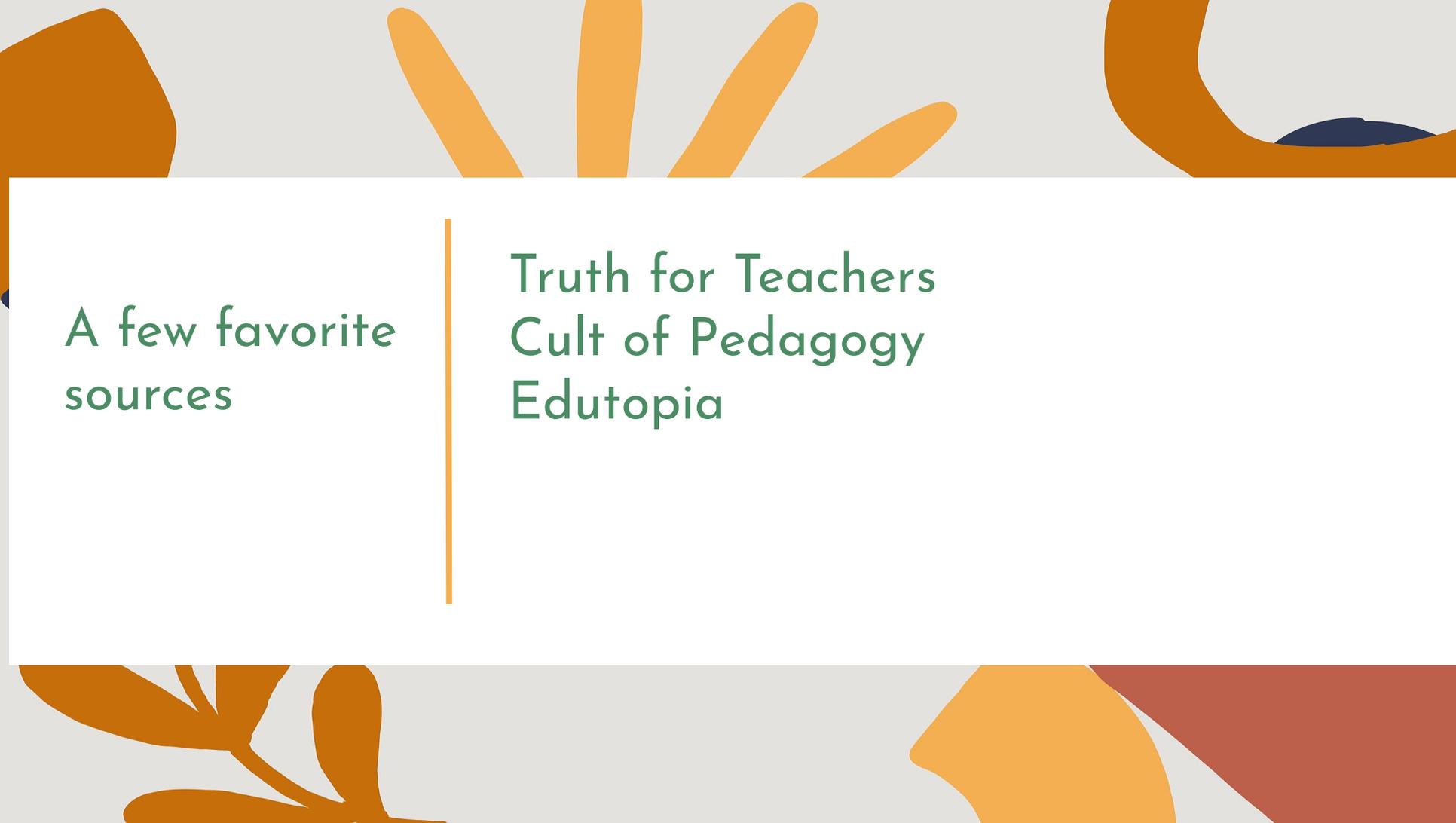




# Preparing for Implementation

What's one step you want to take in the next month to improve your teaching?

Share your action step and



A few favorite  
sources

Truth for Teachers  
Cult of Pedagogy  
Edutopia

# Thanks & Stay in Touch

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# Image Sources

Background:

<https://pixabay.com/illustrations/abstract-shapes-pattern-pastel-5540113/>

