

# Teaching Skills for Technical Experts

version 2.0 - now supports Zoom + Skype + Teams + Slack + your anxiety

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# Hi! I'm Tori.

AKA, "Code Mom"

*codemom.net*

...I'm a programming bootcamp instructor &  
junior dev coach...

...a crazy cat lady, and...

I really, really, *really* want you to check your  
kitchen fire extinguisher when you get home.

I'm also on the bird site @not\_unambitious.



# The story thus far...

Q: The guy running this workshop is dropping so many buzzwords, I'm just writing them down to look up later! I'm familiar with the concepts, he's just not putting them together in a coherent way. It's a cross between a lecture and a follow-along and the speaker didn't really commit to either one...

Tori, why don't you give a workshop on how to teach, because a lot of people in tech seem to suck at it?!

A: Challenge accepted.



The art of teaching is the art of assisting  
discovery.”

—Mark van Doren



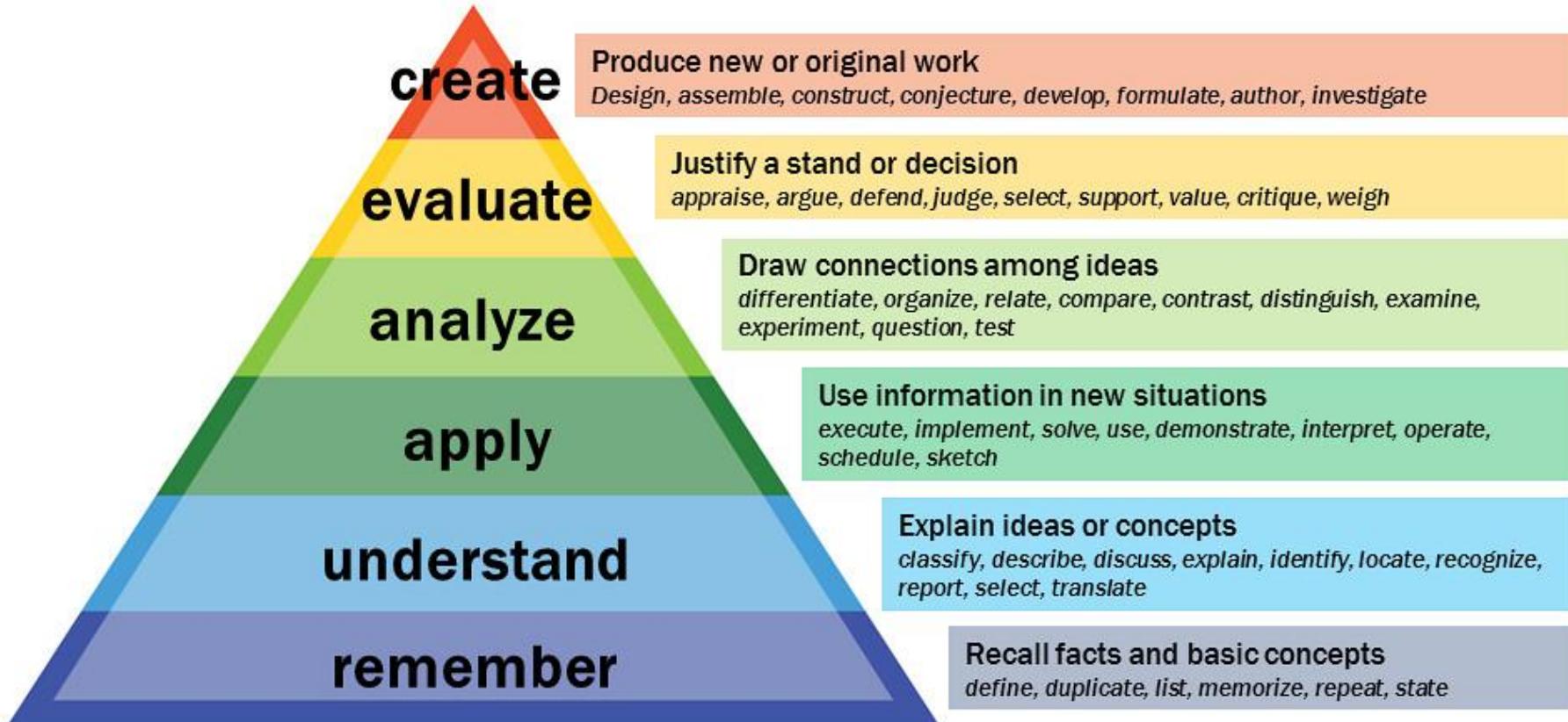
## Student

The one who needs knowledge/experience and is attempting to attain it from/guided by the teacher

## Teacher

The one who has the knowledge/experience and is attempting to impart it to/guide the student

# Bloom's Taxonomy



# Bloom's Taxonomy

## REMEMBERING

What's a haiku?

## UNDERSTANDING

What is the syllabic structure of haiku?

## CREATION

Write a haiku

## ANALYSIS

What are the differences and similarities between a haiku and a sonnet?

# Gardner's Theory of Multiple Intelligences



# Misconception:

There is only one way we learn “best” and  
students need to be taught in their own  
“intelligence”

# Reality:

Teaching a topic in 2-3 different ways makes information more likely to “sink in” and be remembered/applied

# Lesson planning



# Lesson Planning

What do you want the student to learn?

- *Why...? and What is...?*
- Not too broad
- Small, digestible lessons
- Concrete learning objectives

How do you plan on teaching it?

- Learning environment
- Gardner's Theory
- Assessment
- Bloom's Taxonomy



don't make  
objectives too  
broad



provide "real"  
examples



chunk  
information



know what  
students  
*don't*





# Information Chunking

- Cognitive psychology
- Themed “chunks” of info are easier to remember
- The average adult sustained attention span is 10-20 minutes
- Kids? More like 5-10 minutes

*Attention ability drops when tasks are not enjoyable, or when performing new tasks*



**big picture,  
small lessons**



**lessons for  
multiple  
intelligences**



**the learning  
environment**

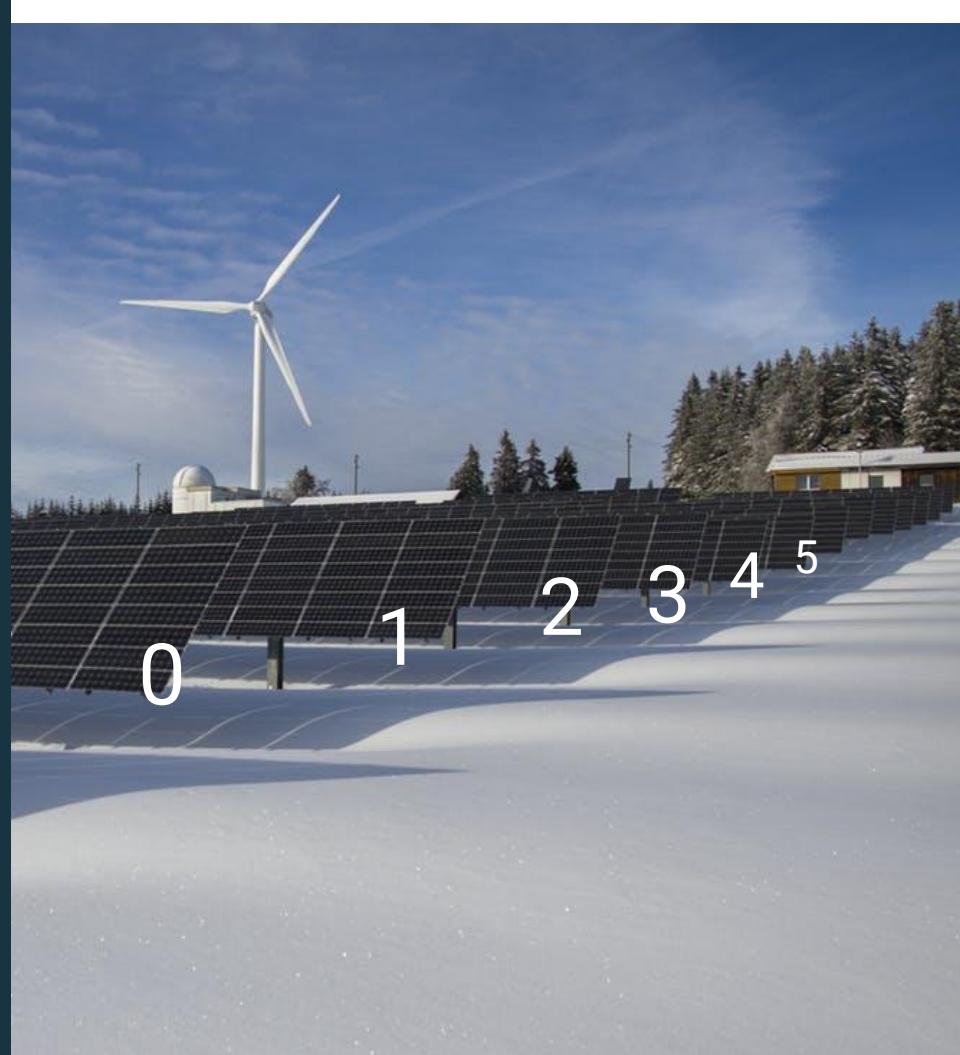


**assessment:  
using vs.  
understanding**



# Arrays

- Data structure
- A collection of things
- Used instead of multiple individual variables
- Each thing has a unique identifier and can be accessed individually
- The unique identifier is an “index” or “key”
  - Starts at 0 instead of 1
- Access an individual thing by the name of the collection and the unique identifier
  - `solar_array[0]`
  - `solar_array[1]`
  - `solar_array[2]`



# EDGE Method



## Explain

- Explain what you will be doing
- Use visual aids
- Gauge student understanding

## Demonstrate

- Show how to do it using actual materials
- Describe as you go

## Guide

- Have students practice the skill
- Observe and coach

## Enable

- Let students practice the skill without intervention

## Explain (Lecture)

- An array is a collection of things

## Demonstrate (Live Coding)

- Create an array while students watch

## Guide (Practice Tutorial)

- Students create an array in a practice exercise

## Enable (Student Project)

- Assign student a project which implements an array

# EDGE-ing the Array Lesson



# Assessment

“Assess [verb, with object or clause]: Evaluate or estimate the nature, ability, or quality of.”

*-Oxford English Dictionary*

# Types of Assessment

## PRE- ASSESSMENT

- Prior to instruction
- Establishes the student's baseline knowledge

## FORMATIVE ASSESSMENT

- During instruction
- Real-time feedback

## SUMMATIVE ASSESSMENT

- After instruction
- Measures student achievement after learning

# Audience Management

(and how the heck you're supposed to do it over Zoom.)



# Ahead-of-time Considerations



Group size

1-5 students? 20+ students?



Environment resources

Whiteboards, projectors,  
microphones, workstations, etc.



Environmental factors

After lunch food coma? Meeting  
fatigue? Temperature? Lighting?



Attention

Adult focused attention span is  
10-20 minutes



Lesson complexity

KISMIF: Keep It Simple, Make It Fun

# Welcome to PowerPoint Google Slides Hell

itty bitty tiny font for this tagline, so cute so small awwwww



- do you like bullet points
- i do
- try having a lot of them
- so many bullet points
- folks will read all of them
- i promise
- keep going
- put them literally everywhere
- i freaking love bullet points
- and tiny itty bitty font
- lets you put so much info
- all of the info you could ever
- you could even put more over here
- and keep going with so much information
- i think this slide needs more sparkles
- everyone likes sparkles
- and unicorns
- i should put a unicorn on this slide
- rainbows too #pridemonth
- so many bullet points
- i need another coffee
- i wonder how my cats are doing
- i hope they miss me

- THIS IS NOT THE time  
and *place* to show off your  
c r e a t i v e f o n t  
c h o i c e s

- Your audience probably  
ruined their eyesight long  
ago (can you even read  
this?)

how is word art still a thing in 2023?

BUSINESS  
AND  
LEARNING

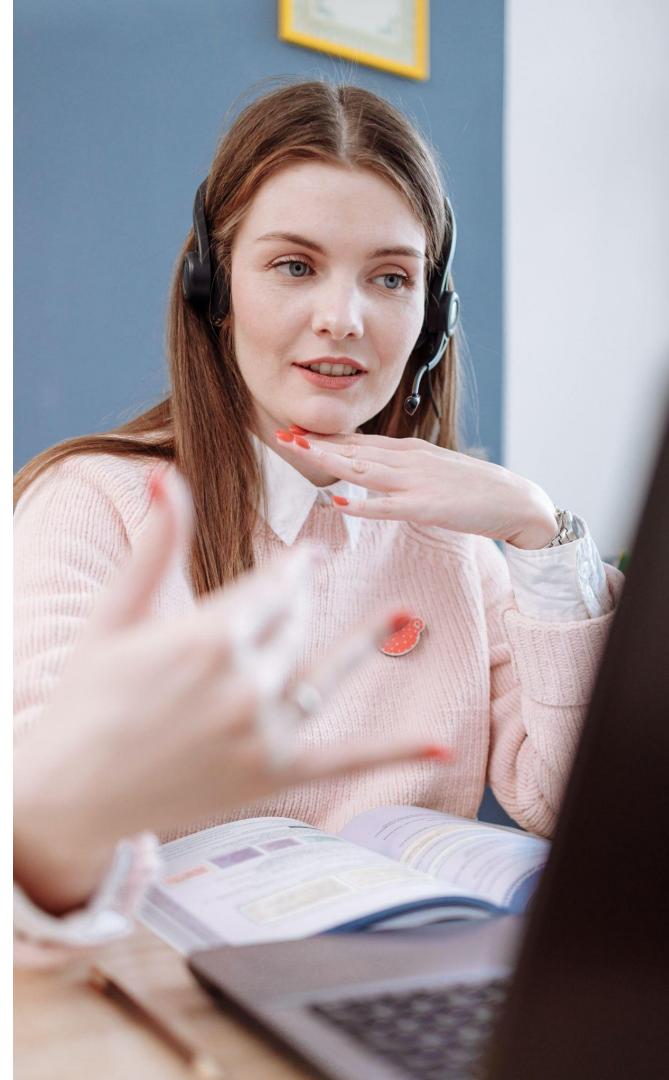
# How To Read A Room

- Set the scene
- Shut up
  - Listen for typing, conversations, etc.
- Pay attention
  - Gauge engagement from middle of the room
- Look around
  - Body language & facial expressions
  - Make eye contact
- Take control
  - Ask open-ended questions
- React (but don't be reactive)
  - Acknowledge the mood
  - Look for positive engagement



# How To Read A Zoom

- Set the scene
- Don't be a mic hog
  - Listen for audio cues from other attendees
- Monitor engagement cues
  - Watch for mute/unmute, typing indicators, etc.
- Act natural
  - Body language & facial expressions
  - Make eye contact with the camera while speaking
- Take control of the situation
  - Nominate a speaker
  - Ask open-ended questions



# Managing Conversations



- Have a plan and/or goal for the conversation
- Active Listening
  - Know when to wait
  - Don't interrupt
  - Ask clarifying questions
- Body Language
  - Yours and theirs
  - Next to, not across from
- Stay solution-oriented

# Managing Conversations



- Facial Expressions & Body Language
  - slouching, defensiveness
  - “eye contact” vs. looking off-camera
- Vocal Tone & Modulation
- Active Listening
- Wait For Replies
- Avoid distractions
- Keep meetings short, focused & efficient

# Learners are people, too.



A photograph showing a group of people in what appears to be a classroom or workshop setting. In the foreground, a person in a pink shirt is seated at a desk. In the background, two people are standing near a whiteboard. One person is writing on the board with a marker, while the other stands beside them. The whiteboard has some handwritten text and colorful sticky notes attached to it. The room has large windows and a generally bright atmosphere.

# Empathy is important.

- Everyone has bad days where they can't focus and are easily frustrated
- You're the teacher?  
Congrats, you're also the leader:
  - BE PATIENT.
  - STAY POSITIVE.
  - NO PASSING THE BUCK.

# You're the leader, so act like one.



## Be Patient

Students can tell when you're frustrated, and will feel as though they're failing you by not learning quickly enough.



## Stay Positive

Rephrase any frustrations as challenges to you, not to the student.  
Tech is problem-solving, and problem-solving requires persistence.



## No Passing The Buck

If you don't know something, find out *alongside your student*.

If you are really frustrated, take a break from the teaching session.

This  
presentation is a  
toolkit.

- Photos from [Pexels](#), a royalty-free stock photography website.
- Wikipedia: [Bloom's Taxonomy](#) and [Gardner's Theory of Multiple Intelligences](#)
- Cherry, Kendra. [Gardner's Theory of Multiple Intelligences](#), 2019.
- Cuncic, Arlin. [What is Active Listening?](#), 2022.
- Zoom: [Tips & Tricks for Teachers Educating on Zoom](#)
- Bell, Bradford. [Best Practices for Virtual Communication and Meetings](#), 2013.

# Further Resources

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# Thank you!

My name is **Tori Brenneison**, and I'm a programming instructor & junior dev coach from Cleveland, Ohio.

I write help articles for new developers at [codemom.net](http://codemom.net).

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