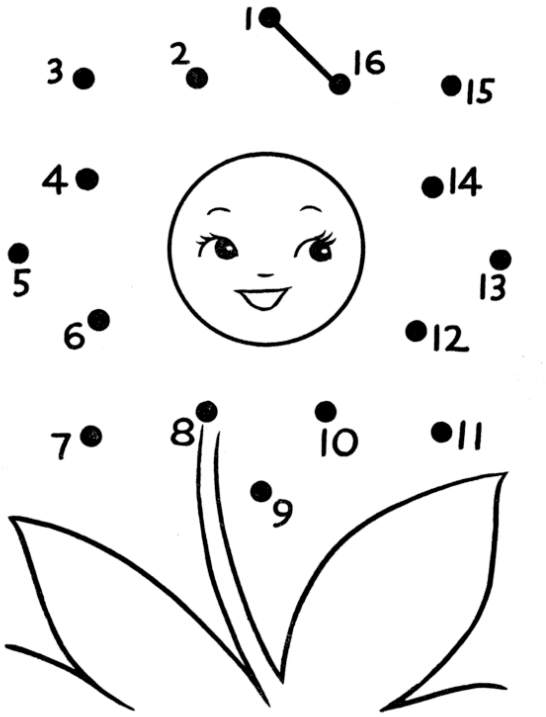
Neuronal Highways

Neuronal Highways

- Pathways to Highways.
- Repetition and Practice.
- Highways improve learning and behavior. “Let’s make this easier.”



I am a Cognitive Scientist

Lesson #5

How My Brain is Built

Your Hand
Your Brain

3 Primary Parts

The THINKER The CAVEMAN and BOOTS

How My Brain is Built

I am a Cognitive Scientist

Lesson #6

My Attention Engine

My Attention Engine

- **Alerting** - Moving to a state of cognitive readiness.
- **Selecting** - Moving one's attention and focus to a specific target stimulus.
- **Attending** - Directing meaningful energy and attention to a specific target stimulus.
- **Sustaining** - Maintaining attention on a specific target stimulus, long enough to take action on it.
- **Monitoring Drift** - Observing the mind becoming off-task.
- **Re-alerting** - Bringing attention back online.
- **Re-Selecting** - Shifting attention from one stimulus to another with purpose or intent.

I am a Cognitive Scientist

Lesson #7

My Memory Window

My Memory Window

My Memory Window

We all have a window in our brains to our memory.

In order to open the window to our memory, we need to turn on our attention engines.

When we rev-up our engines, then focus on our target, we listen to or see what we need to learn.

Our attention engines open the window to our memory so that information may pass through it. As we learn the new information we turn it into knowledge.

Our Memory File Cabinet

Memory

The Marker
The White Board
And Your File Cabinet

I am a Cognitive Scientist

Lesson #8

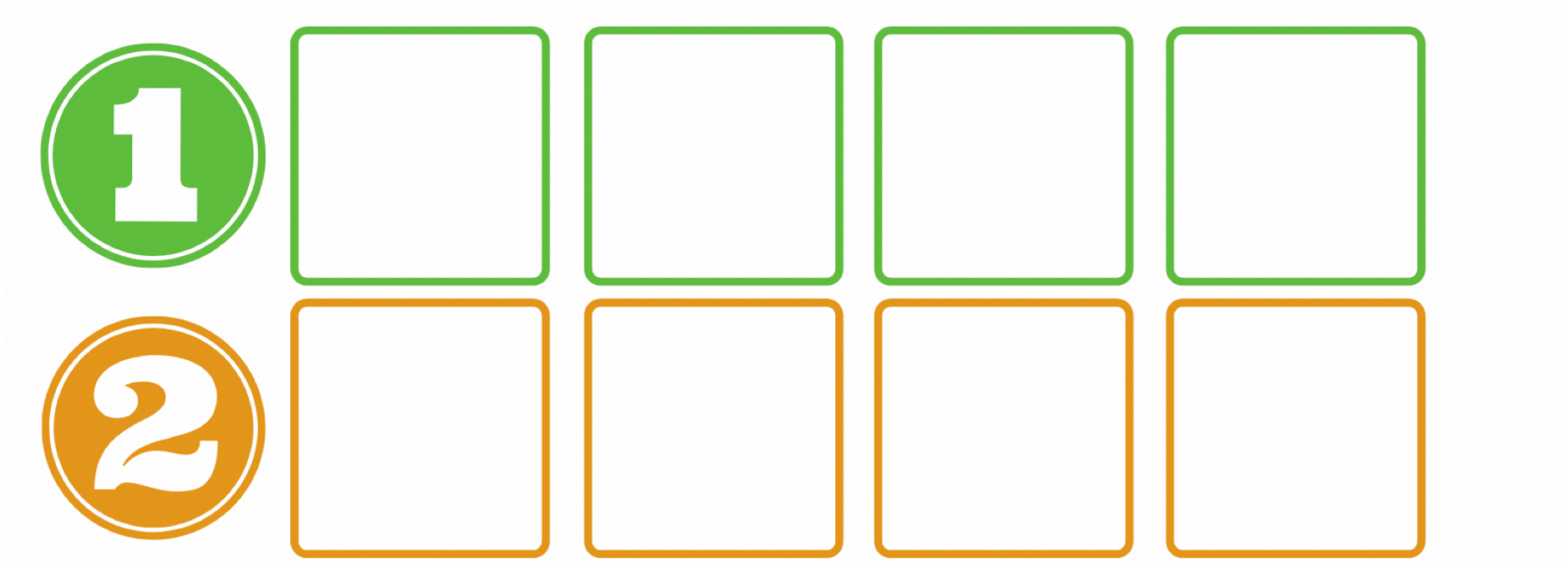
Putting Science + Education Together

Putting Science + Education Together

- I understand that I need practice and repetition to build the connections in my brain
- I understand that my THINKER rests on my Caveman and Boots
- I know that Attention is more than ONE thing
- I know I need to OPEN my memory window to let information in to become knowledge
- I understand that sometimes I need to move to THINK
- I will ask for help when I need it, I have a language now to do that

Building Your Own Patterns, Sequences & Rhythmic Phrases

Let's Build Some Patterns



Musical Thinking
Rhythmic Movement Cards

Clap

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

Hand Tap

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

Pat

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

Tap

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

Step

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

Stomp

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

Hop

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

Turn

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

Twist

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

Jump

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

Dab

@drlynnekenney

Musical Thinking
Rhythmic Movement Cards

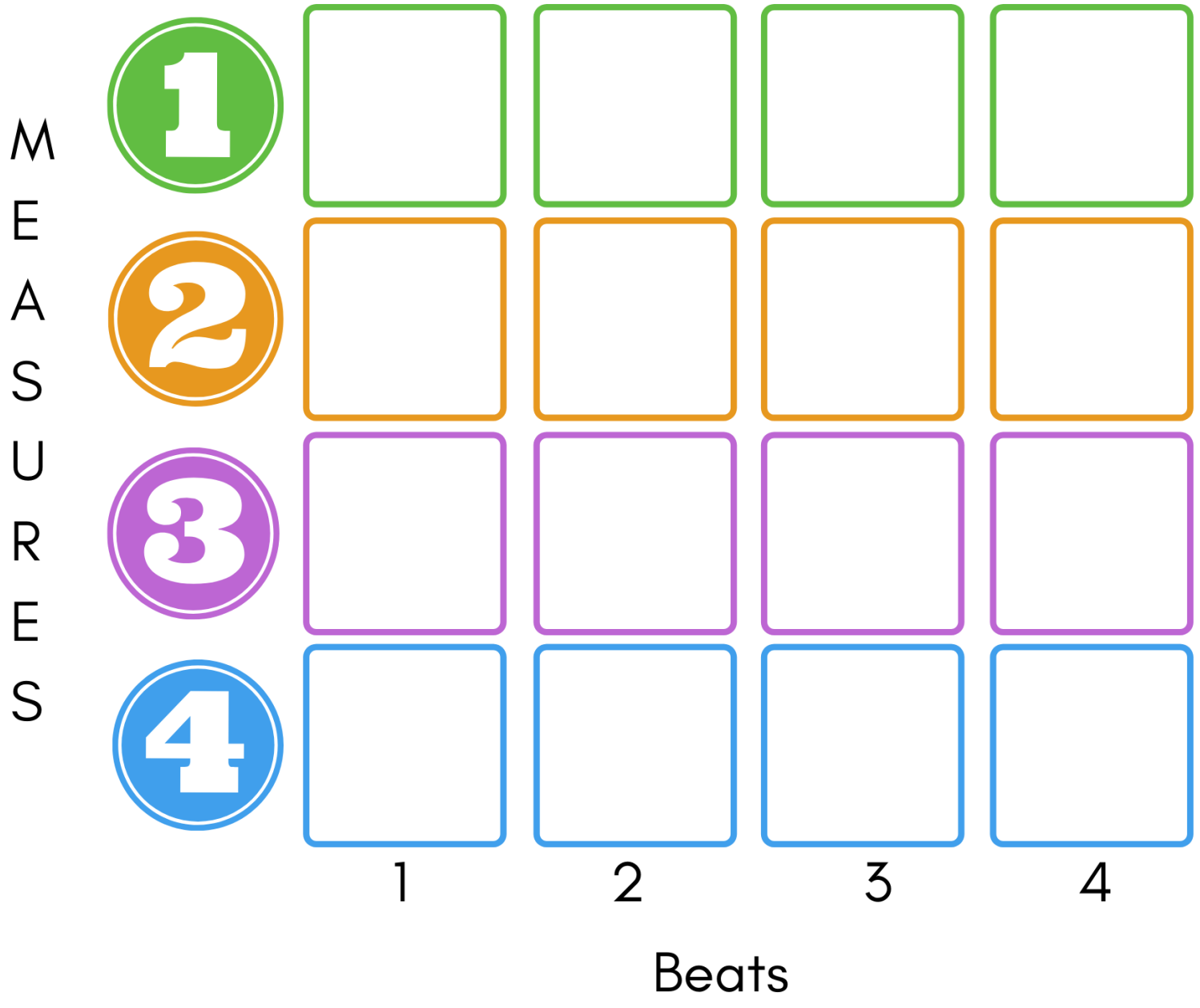
Snap

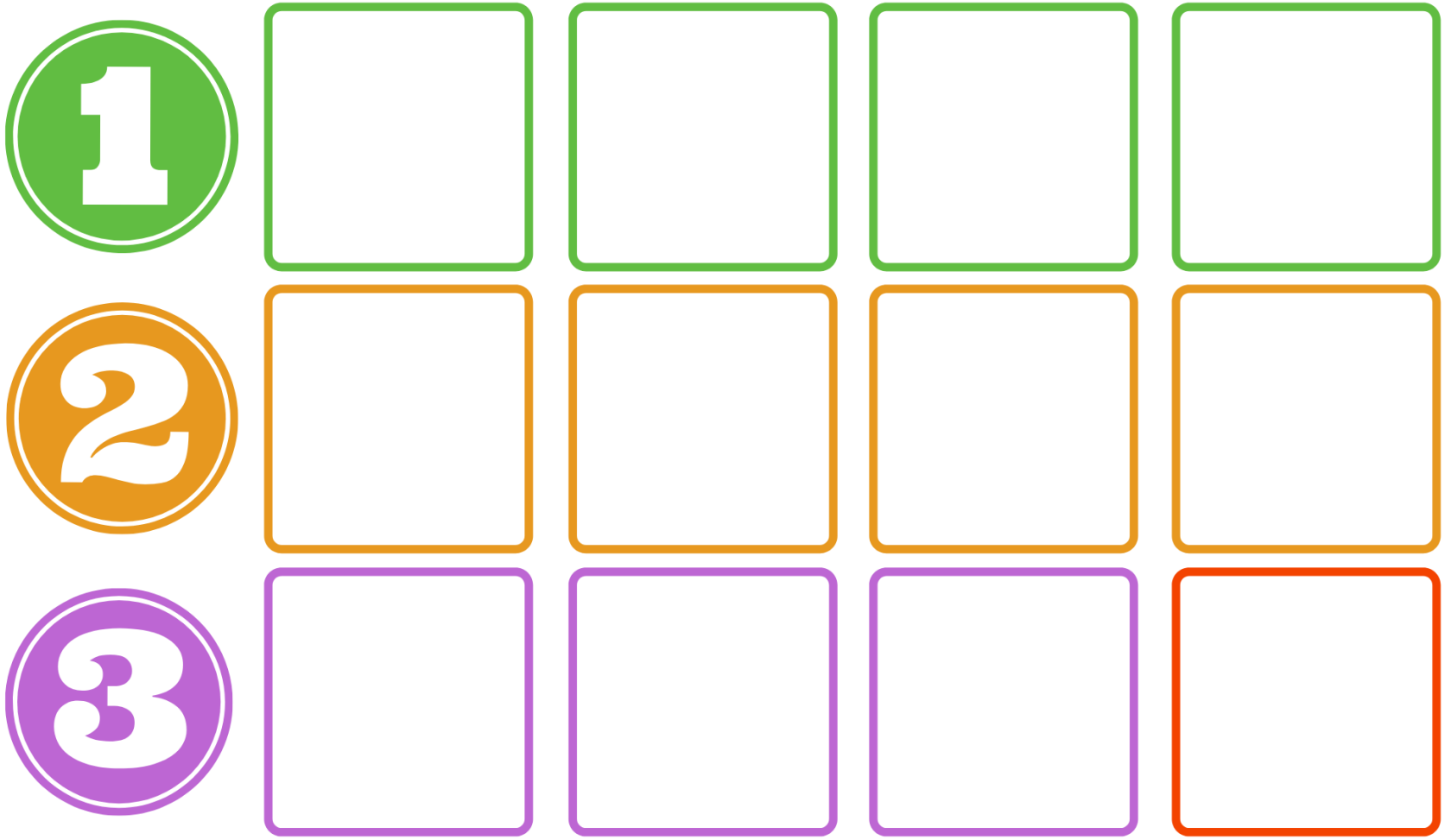
@drlynnekenney

Cueing is Scaffolding

Auditory cueing could also lead to a different type of motor learning process by providing a richer setting for motor learning and stimulating connectivity between auditory and motor areas. Rather than simply speeding up learning, motor activation would result in a different learning process than uncued movement. (Schaefer, 2014).

Counting
Saying what you are do it
Right, Left
1 Clap 3 Bounce
Words in motion – bounce, catch, pass


MEASURES
1
2
3
4
1
2
3
4
Beats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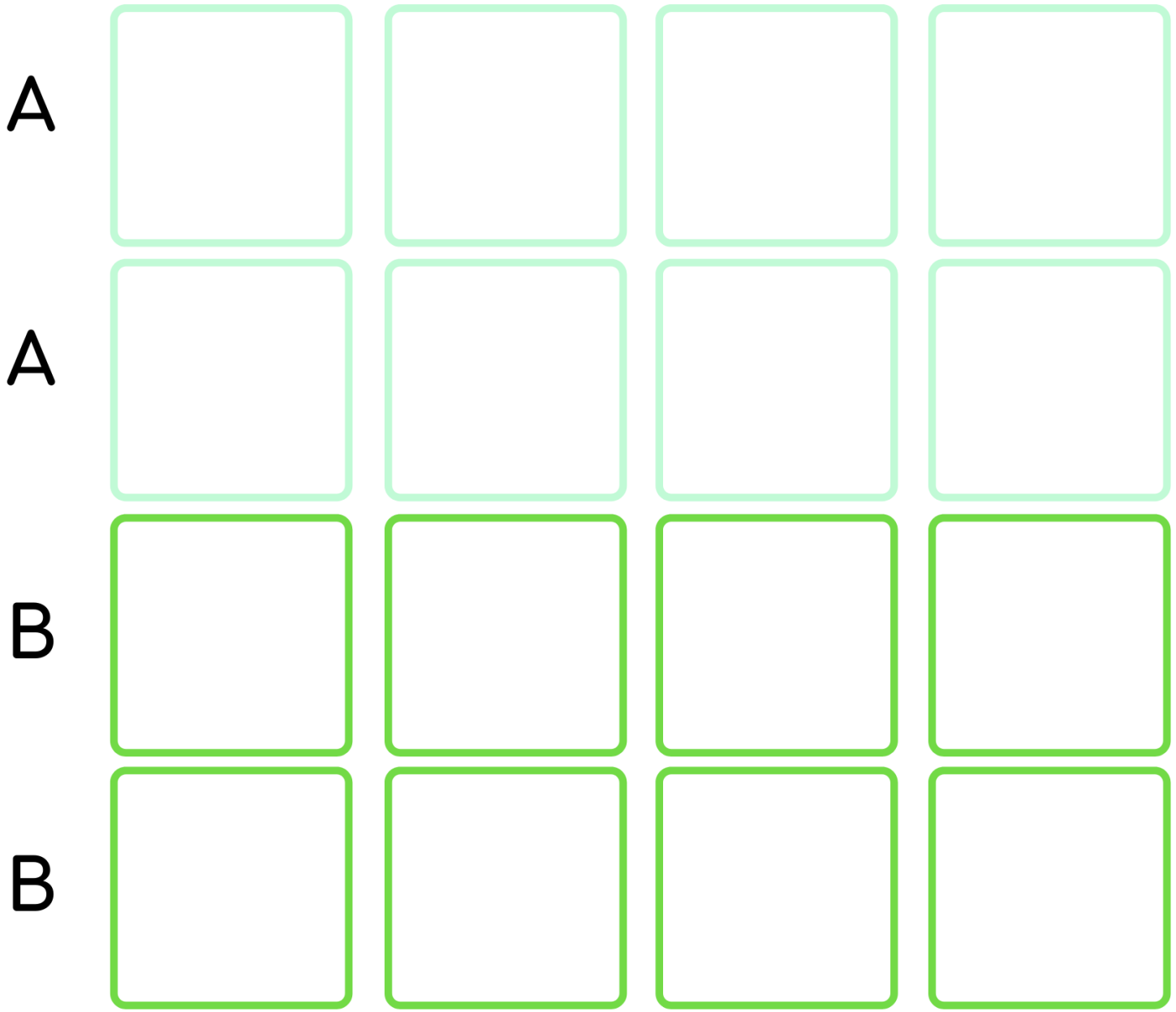
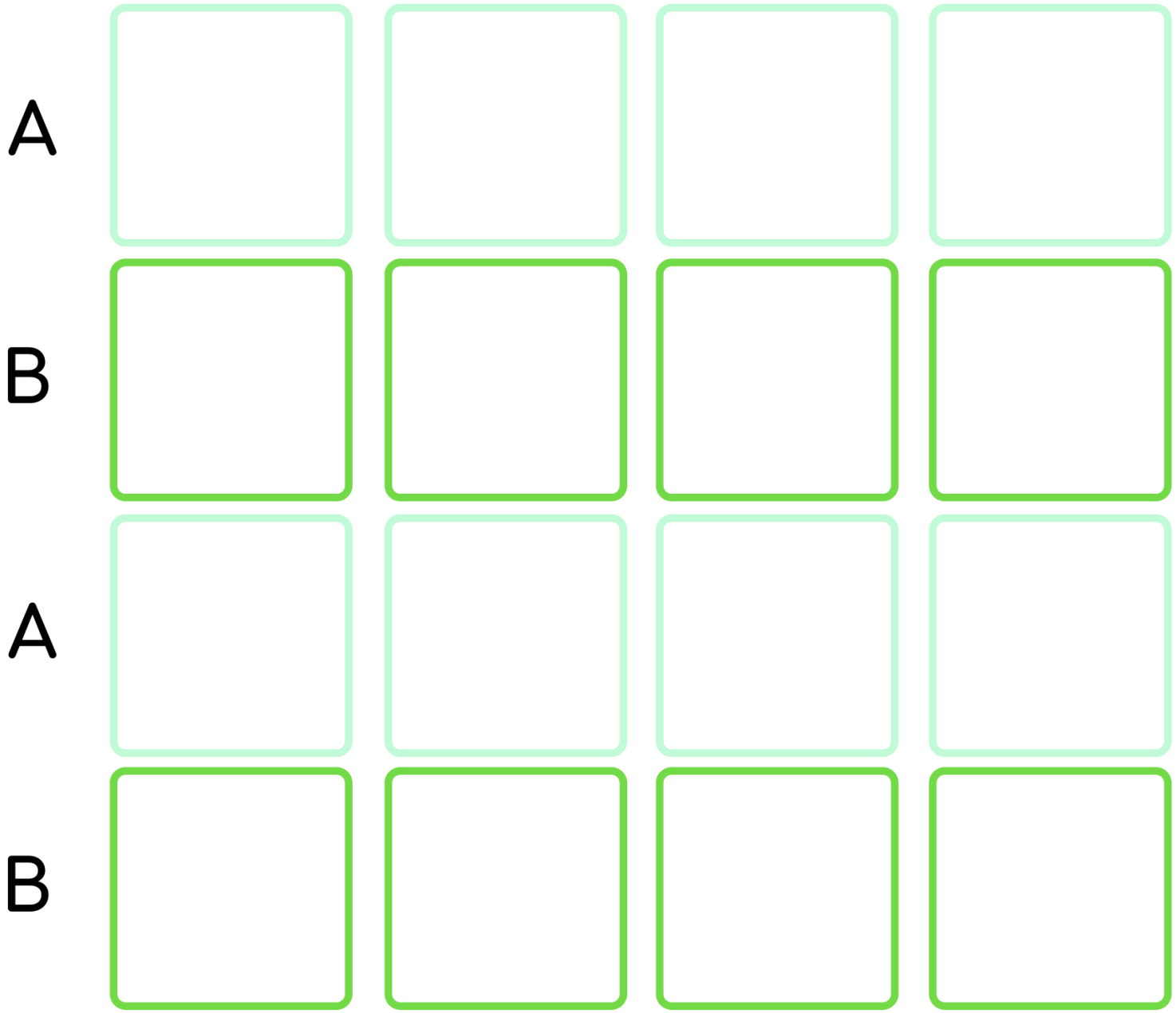
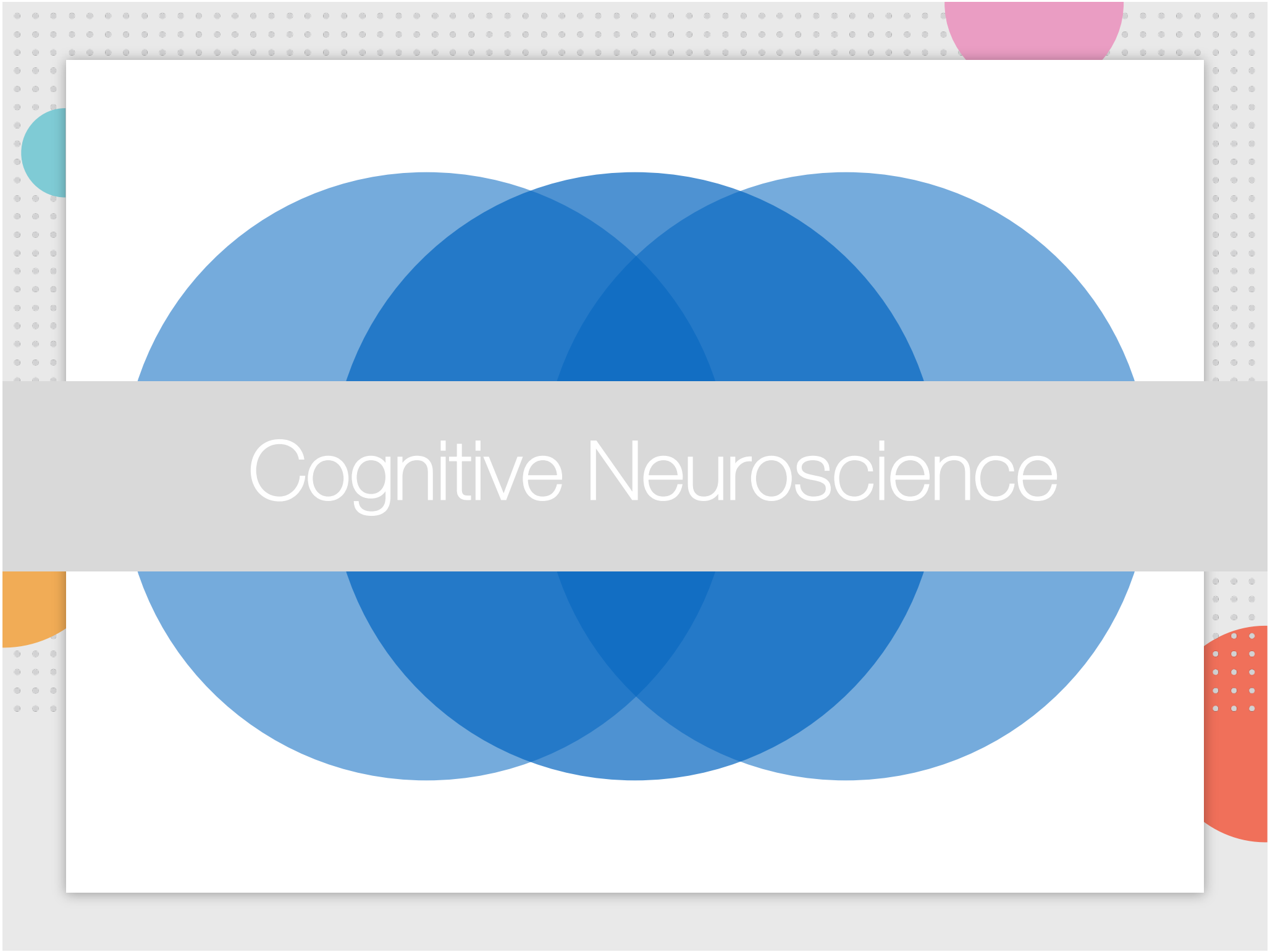

A
A
B
B


A
B
A
B


Cognitive Neuroscience

Q:

How can we use musical notes to help children monitor & modify their behavior?

Self-Regulation and Response Inhibition are about Learning the "Felt-Sense" of Slowing Down

Slow 50-85 BPM Quick 85-120 BPM Fast 120-160 BPM

CALM MEDOWNS

Effective transitioning of students between learning activities occurs when teachers establish routines and expectations of student movement and behavior wherein students stop one activity and quickly and smoothly move to the next activity. Effective student transitions increase learning time and provide daily practice of safe movement (Carter, 2017).

Orderly transitions in school also increase the time that could be committed to classroom teaching and learning. Daniel (2007) identifies that even 10 minutes a day (a conservative estimate) of lost classroom time due to student disruptions and poorly executed transition adds up to a staggering 30 hours of lost class time per school year.

Reducing the transition time before and after activities by just one minute per hour could reclaim 20 hours of lost time-on-task per student, per school year (Carter, 2017).

Improving student time-on-task while transitioning supports more teaching time and imparts important self-regulation and executive function skills to last a lifetime.