

Applying Technology to Support Social and Executive Functioning

SHAHV

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Disclosures

- Receive royalties for 5 apps developed with Smarty Ears Apps.
- Contractual relationship with Mindwing Concepts, create blog content related to products such as Story Grammar Marker, receive honoraria.
- Presented for various local and national organizations on tech integration, including Social Thinking®.
- Nonfinancial: creator of blog SpeechTechie, contribute columns for ASHA Leader and SAC Communique.

Part 1: Applying Technology to Support Social Skills and Cognition

Play accesses across language, social and executive functioning:

- Language: Play is within topics, involves categories, sequencing, causal and conditional language (because/so, if-then), storytelling.
- Social: Play with others involves using our bodies and eyes, listening, “sharing imagination,” flexibility, cooperation, adding thoughts and questioning, problem solving.
- Executive Function: Play involves planning, material gathering, development of self-talk, tracking time and transitioning between phases of play, as well as socio-dramatic rehearsal of real life situations.
- Apps, like books, can “pre-load the imagination” for no- or low-tech play.
- See Sean’s article for Social Thinking at bit.ly/narrativeplay, also the work of SLP Tara Roehl (speechykeenslp.com/blog and on Pinterest)

ALIGNING APPS WITH RESEARCH-BASED PRACTICES

- Fisher (1992) conducted a meta-analysis of 46 studies focused on the effects of play behavior in cognitive, linguistic, and affective-social development.
- Studies surveyed a) cognitive development (i.e., creativity, logical problem solving), b) the effects of play on language and literacy development or c) play's role in building social cognition-awareness of social roles, interpersonal skills via make-believe and perspective taking.
- Results suggest that sociodramatic play results in improved performances in both cognitive-linguistic and social affective domains.

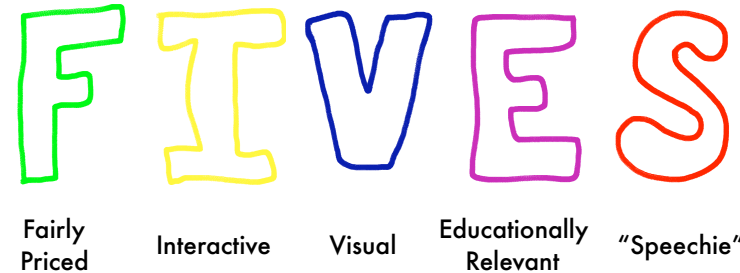
Fisher, E.P. (1992). The impact of play on development: A metaanalysis. *Play and Culture*. 5(2), 159-181.



Language and play activities can be facilitated with apps from Sago Mini, Toca Boca or Dr. Panda

Look for the "sandbox" unconstrained apps such as Toca Life: Farm

Criteria for Selecting "Out of Box" Apps?



A Primer on Social Thinking® concepts:

- Goal is to build and apply "Social Smarts" through core concepts
- Early concepts: The Group Plan, You can change others' thoughts/feelings, Sharing an Imagination
- Expected vs. Unexpected Behaviors (Hidden Rules)
- Social Behavior Mapping
- Listening with Eyes, Body, and Brain (and using "People Files")
- Thinking With your Eyes, Making "Smart Guesses"
- Superflex vs. Unthinkables

Social Thinking is based on the work of Michelle Garcia Winner- see socialthinking.com

Google Images and Getty Images are good sources of engaging visual supports
(this is essentially a social narrative, a research-based practice)



The Group Plan

- Use Alexa to play 20 questions
- Share an imagination about the item
- Answer accurately, brain in the group thinking about the item
- Cause comfortable thoughts in others by answering only when its your turn
- Think with your eyes about the teacher if you need help
- Item: Zebra

bit.ly/alexainclassroom

Making Tech Social

- Tech can be a conduit or context for making any activity more “social” and focusing on building situational awareness, social competencies
- Use visual supports to preview expected behaviors- even just PPT/Google Slides
- Why not make them work together?

The Talk Time Scale

- | | |
|----------|------------------------------------|
| 5 | Dominating |
| 4 | Overtalking/Interrupting |
| 3 | A balance of listening and talking |
| 2 | Contributing a Little |
| 1 | Passive/checked out |

PowerPoint,
Google Slides,
Pic Collage
are great
places to
make 5 Point
Scales

The complicated Scale

- | | |
|----------|---------------------|
| 5 | Majorly Complicated |
| 4 | Very Complicated |
| 3 | Complicated |
| 2 | Doable |
| 1 | Simple |

Think
creatively
about how to
spin the
versatile 5
Point Scale as
a tool

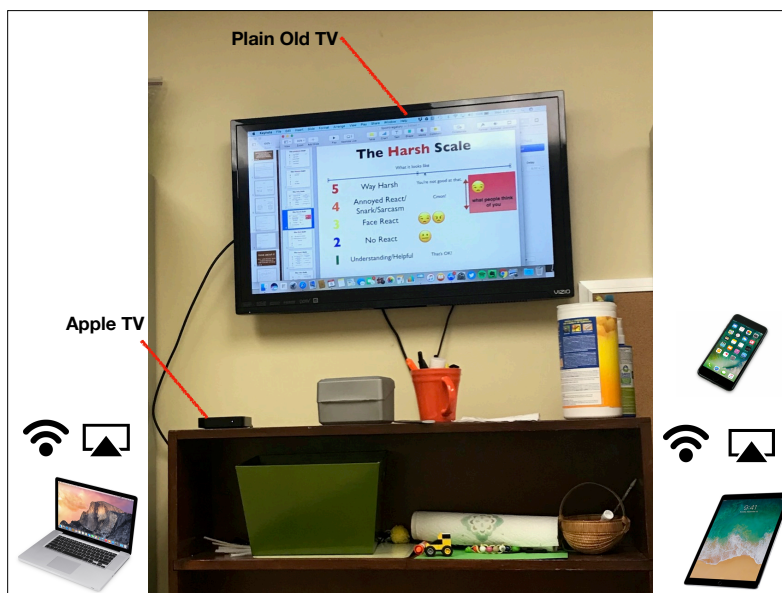
The problems Scale

What it looks like

- | | |
|----------|----------------|
| 5 | Huge Problem |
| 4 | Big Problem |
| 3 | Medium Problem |
| 2 | Little Problem |
| 1 | Tiny Problem |




Time to solve
Hurt factor
Needing help
People involved

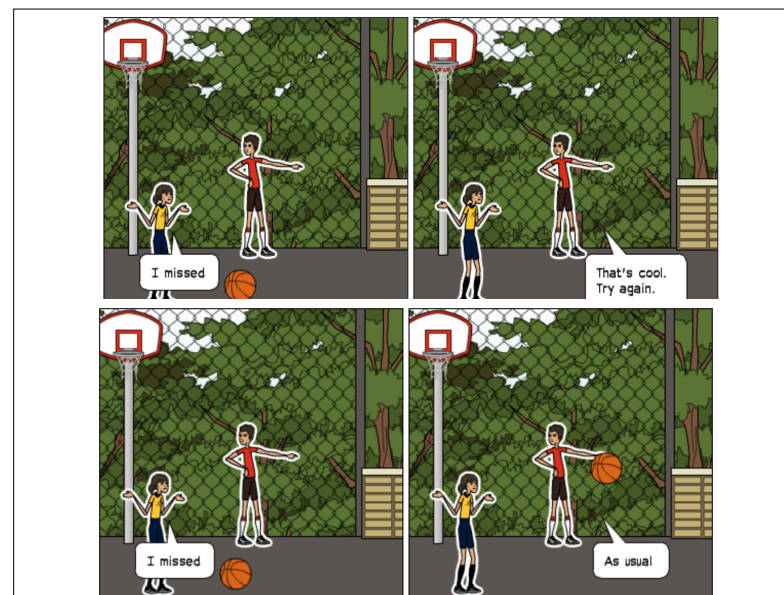
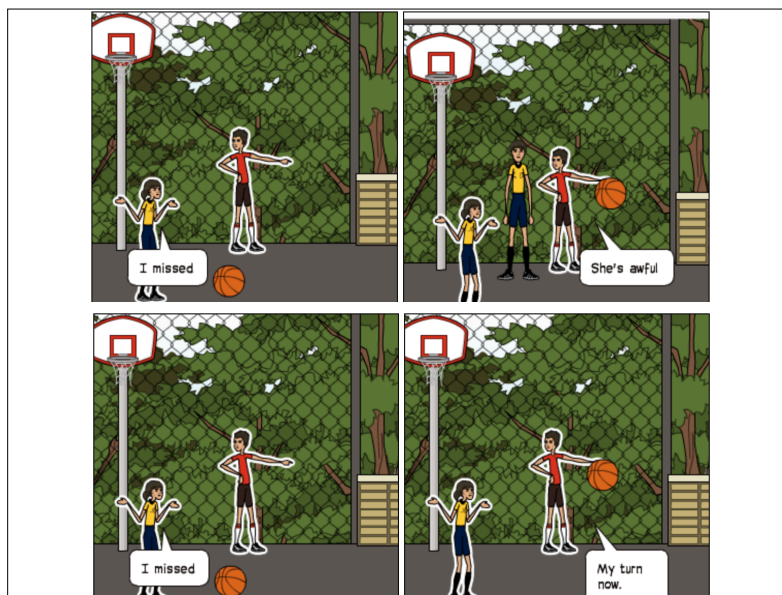
Concepts:
-Size of Problem
should match size
of reaction
-Your reaction can
be another's problem



The Harsh Scale

What it looks like

5	Way Harsh	You're not good at that.	
4	Annoyed React/ Snark/Sarcasm	Cmon!	
3	Face React		
2	No React		
1	Understanding/Helpful	That's OK!	



Let's take a quiz with Kahoot! Comics created with Pixton



Kahoot link if you want to use it: <http://bit.ly/harshscale>

PLOTAGON FEATURES

- Animation, role-play/dialogue style
- Type a script and the characters speak it
- Many settings available for situational instruction
- Facial Expressions/Reactions
- Free



PIC COLLAGE KIDS FEATURES

- Combine pictures together in "collage"
- Trim picture feature results in *gestalt*
- Search pics from web within app- lends itself to quick creations
- Save creations to camera roll for sharing (also social features you can turn off, or use Pic Collage Kids app)
- Free



Social Stories(TM)

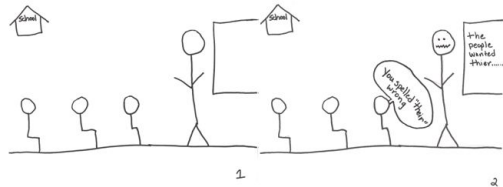
Using the one-arm rule

Sometimes I talk to the other children in my class. The other children don't like when I stand very close to them. When I stand too closely, it makes my friends feel crowded. If I stand too close, other children sometimes get mad at me. I can back up and stand one arm away from my friends when we talk. It makes my friends comfortable when I stand one arm away when we talk.

<http://bit.ly/socialstorytips>

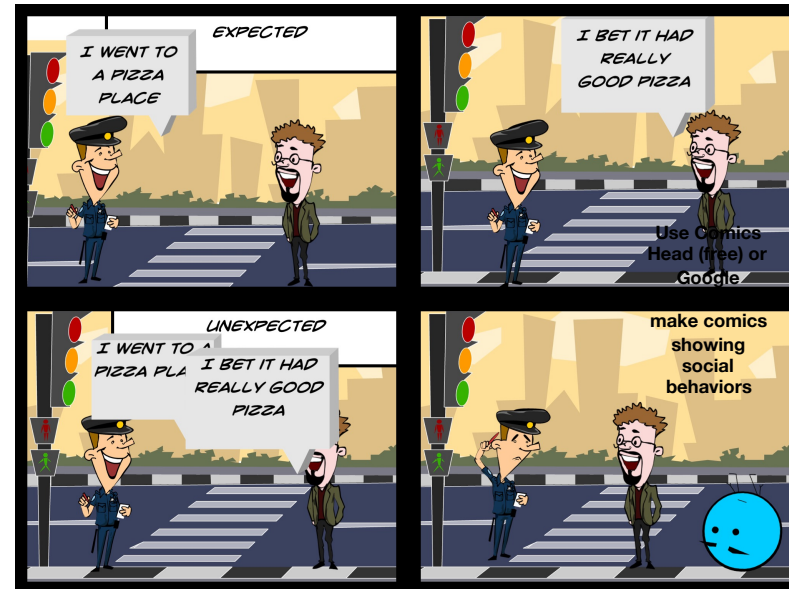
Comic Strip Conversations (another form of social narrative)

<http://bit.ly/comicstripconvo>



Doodle Buddy,
Book Creator
or Paper by 53
are great
places to
make sketch
Comic Strip
Conversations

Example from
<http://special-ism.com/>



The Power Card Strategy

<http://bit.ly/howtowritepowercard>



Curious George is a very curious little monkey! He seems to always be getting himself into trouble, even when he doesn't mean to do anything wrong. And when George starts getting into trouble, he only digs himself deeper!

George has to work with other people a lot, like on the farm, at the fire station, or as a window washer. Sometimes, this is hard for George because he has to listen to what everyone is saying, and share talking time with others. Being patient and waiting for a talking space can be very difficult for a curious monkey!



Sometimes George forgets to wait his turn, and he talks in other people's talk spaces. He interrupts others, and makes noises that bump into other people's words. George works hard to remember to share talking time with others, and wait for his turn. George's monkey and human friends are happy with him when he remembers to share talking time, because it shows them that he cares about them.

When working with a group or talking to other people, Curious George would want you to remember to:

- Think about how everyone shares talk time, and that you too will get your chance to share.
- Other people need a turn to speak, answer, and ask questions.
- Wait for a talk space so your words don't bump into others.
- Keep quiet while waiting for a turn, and listen to what other people are saying.



ALIGNING APPS WITH RESEARCH-BASED PRACTICES

- Autism EBP Review Group of UNC Chapel Hill conducted meta-analysis on procedures effective for individuals with autism.
- Procedure of using "social narratives" or social stories supported as EBP by 17 (single case) studies.
- Defined as interventions that describe social situations and highlight relevant cues.



Wong, C., Odom, S. L., Hume, K. Cox, A. W., Fetting, A., Kucharczyk, S., ... Schultz, T. R. (2014). Evidence-based practices for children, youth, and young adults with Autism Spectrum Disorder. Chapel Hill: The University of North Carolina, Frank Porter Graham Child Development Institute, Autism Evidence-Based Practice Review Group.

Book Creator and other apps provide easy means to create and share multimedia social stories.

BOOK CREATOR FEATURES

- Multimedia Book Creator
- Simple interface for drawing, adding text, images, video, and audio (recently added word and thought balloons)
- Sharable in multiple formats (sets this app apart)
- Free to try, \$4.99 for full features.
- Online: See Little Bird Tales



Video Modeling

- See Everyday Speech video collection and activities (Free for 30 days, \$99/annually).
- POGIL has excellent collection of video models of classroom discussion behaviors, working in small groups: bit.ly/pogilvids
- Make your own video models with/for students or groups.

ALIGNING APPS WITH RESEARCH-BASED PRACTICES

- Meta-analysis of studies of video modeling (VM) and video self-modeling (VSM, includes family, peer, or self): integrates effective learning modality (visually cued instruction) with “well-studied intervention technique” (modeling)
- 23 peer reviewed studies supported the method as evidence-based, promoting learning factors such as attention, motivation, maintenance.
- Comment on the technical expertise required to edit the video footage- not so much a factor anymore?
- Suggestion to use storyboard or script, then record child engaging in desired behavior.
- Video feedforward- category of VSM in which “hidden support” or prompt is edited out.

Bellini, S, & Akullian, J. (2007). A meta-analysis of video modeling and video self-modeling interventions. *Exceptional Children*, 73 (3), pp. 264-287



IMOVIE FEATURES

- Shoot and edit video easily, via touch!
- Add titles, transitions, music or voiceover
- Ideal for Video Modeling
- Free for devices after 2013, \$4.99 otherwise.
- See also iMovie for Desktop, Andromedia for Android



Looking at YouTube through a FIVES Lens:

- **Look for Series:** Simon's Cat, Angry Birds Toons (also on toons.tv), Cosmic Kids
- **Helpful "Channels":** PBS Kids, movieclips.com, for example
- **Video Catalog apps:** YouTube Kids
- **Tools for Schools:** ViewPure on laptops, apps to download videos, Pinterest

See books by SLP Anna Vagin on using video instructionally in SLP

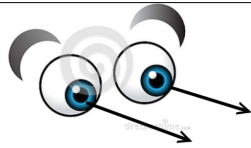
Guided Practice (Make and Take)

- Select one of the suggested apps to practice/create a support related to a student's needs for Social Cognition:
- Create a conceptual visual support or comic with Pic Collage
- Create a video social story with Toontastic 3D
- Create a social story with Book Creator
- Create a video model clip with iMovie
- Discuss Implementation Plan: Who, Where, When, What (logistics, steps, contexts, training)

Part 2: Applying Technology to Support Executive Functioning

What is Executive Functioning? Skills allowing us to:

- Be aware of situations
- Predict outcomes
- Generate a plan (including narrative and expository language use)
- Initiate actions/responses
- Monitor progress
- Modify actions where necessary
- *Based on the work of Sarah Ward and Kristen Jacobsen, Cognitive Connections



THINK WITH YOUR EYES
to read a situation

STOP and consider...



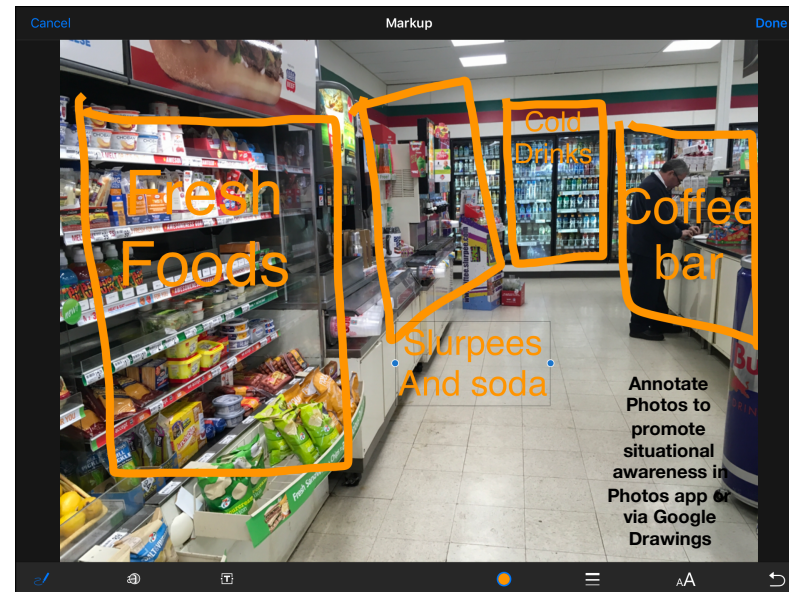
Space: Where am I? What is going on? What is expected/unexpected? How is the space organized?

Time: Time of day (routine vs. non-routine), what is happening at this moment of time? What happened before/after?

Objects: What things are involved? What things do I need?

People: Read the person's face, body, appearance, mood, pace

Based on work of Winner/Ward and Jacobsen



Character



Setting: where and when



Kickoff: Ho-hum day until...



Response/Feeling



Plan



Actions/reactions



Conclusion

A Primer on Story Grammar Marker®

Stories are:
Heard
Read
Told
Written
Lived (situational awareness)



Forms a Six-Second Story (kernel of conversation)

Icons used with permission of Mindwing Concepts, Inc.

Stories follow a developmental sequence... (different kinds of stories)

Descriptive



and

Action



and, first then, next

Reaction



but, so, because, when

Abbreviated Episode



Look for opportunities to scaffold, with or without visuals:
• use picture books and model retell
• produce model stories
• emphasize conjunctions
• use for writing

Progressing by end of elementary to Complete Episode, seen on previous slide

Another Take on Narrative- Beyond Beginning, Middle, End

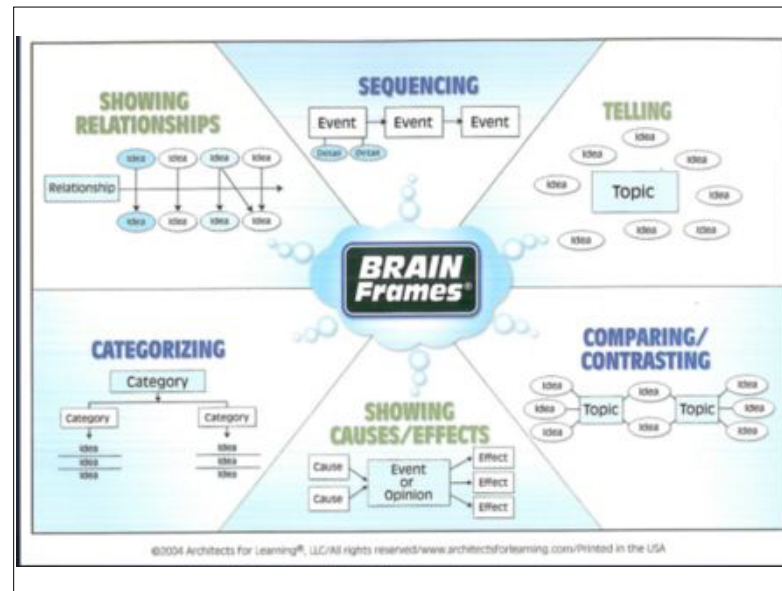
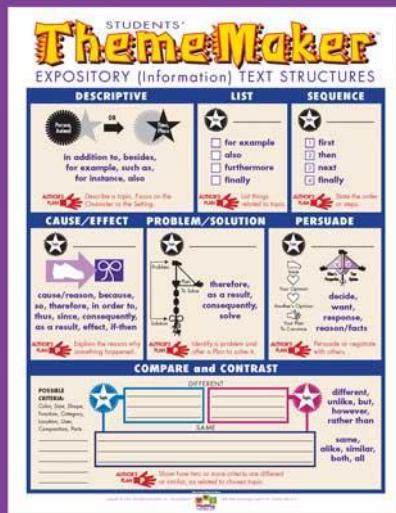
- **Setup- Setting and Characters**
- **Problem/Plot/Plan**
- **Actions**
- **Consequence**
- **End**

(Noel and Westby, 2011)

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TOONTASTIC (3D) FEATURES

- Simple animation creator
- Choose or draw characters and setting.
- Animation created by touchscreen/audio recording
- "Toy Camera" feature allows personalized context
- Sharable to app's website or camera roll
- Free

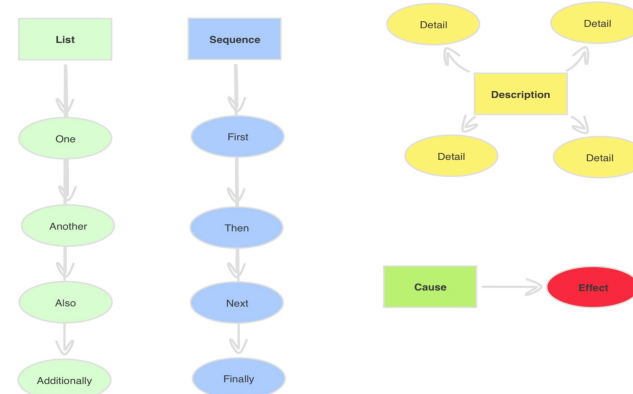


KIDSPIRATION/INSPIRATION FEATURES

- Create language mapping activities (sharable)
- Super Grouper (Kidsp only) mode targets categorization
- Diagram mode creates interactive graphic organizers
- Share in many formats
- Free to try, \$9.99 full
- See also Webspiration (subscription), Google Drawings (only creates an image)



Know and Teach Basic Expository Text Structures for Oral Expression, Reading Comprehension, Writing (Relates to Central Coherence and Executive Function)



EXPLAIN EVERYTHING FEATURES

- Make an engaging animation
- Students can “show what they know”- measure understanding of concepts
- Comic Strip Conversations made dynamic
- Combine photos, drawings, dynamic animations
- Consider using in conjunction with Getty Images (don't republish!)
- \$7.99, Online: also available as Chrome app (subscrip)



Get Ready-Do-Done (Ward and Jacobsen, 2014)

Get Ready	Do	Done
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- An EF intervention fostering independent planning and self-monitoring.
- Rather than a checklist or Step 1, “start with the end in mind”- a “Future Picture” (a sketch or photo of what the task will look like when it is done).
- THEN generate the materials (get ready, in general) and steps (do), along with estimates of time.

Get Ready-Do-Done (Ward and Jacobsen, 2014)

Get Ready

- Plate
- Blue paint
- Green tissue paper
- Paper fish
- Crayons
- Beans
- Glue stick

Do

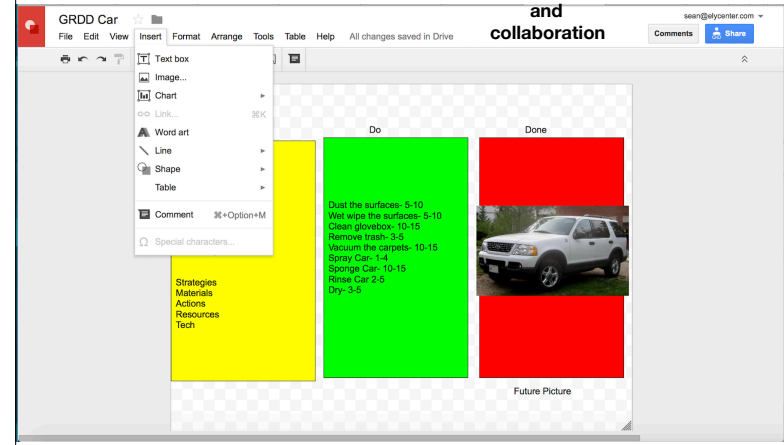
1. Paint- 10 min
2. Color fish- 5 minutes
3. Glue gravel, plant, and fish- 10 minutes

Done

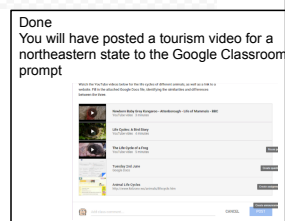
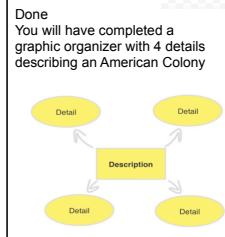
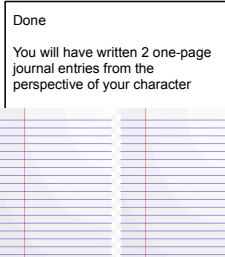
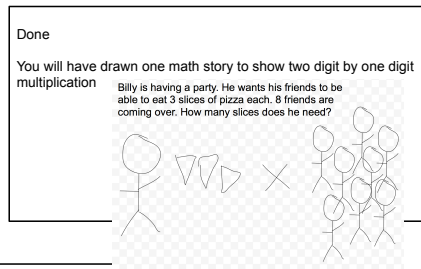


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Google Drawings is an easy resource for GRDD visuals and collaboration

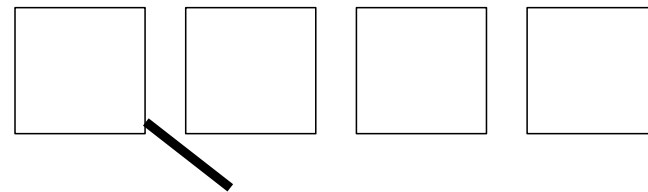


"Future Picture" concept applied to...



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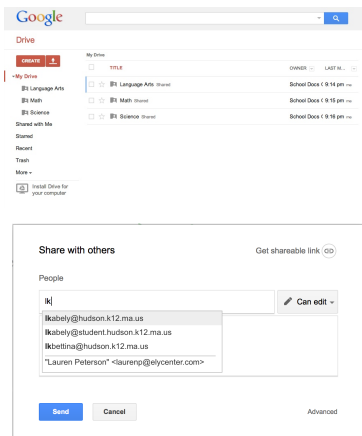
The Zones of Regulation (Kuypers, 2011)



- Zones are "levels of alertness": All are expected in life.
- However, we can use tools (individual and not necessarily objects) to optimize our level: "Get in/stay in the Green"
- Zones align with Feelings
- Events can "trigger" a change of zones

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How can Google Apps Promote Executive Functioning?

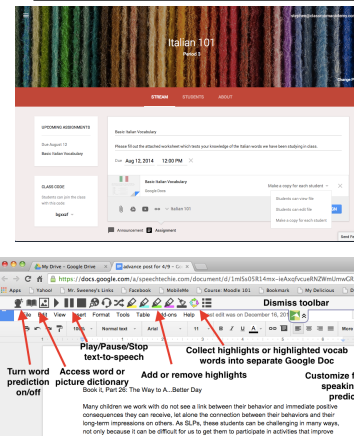


Folders and Shared Folders
Can create "Turn In" folder

Any Document or Work Product (e.g. Slides) can be shared from the file

Opportunities for feedback through commenting

How can Google Apps Promote Executive Functioning?



Teachers using Google Classroom facilitate paperless learning.

Accessibility tools:

Voice Typing and Research (under Tools in Chrome)

Add-ons such as EasyBib

Read and Write for Google (Chrome Extension) has text to speech, highlighting and collection tools

Guided Practice (Make and Take)

- Select one of the suggested free apps to practice/create something related to a student's needs for EF:
- Markup a photo to emphasize situational awareness
- Create a story or expository map with Popplet, Kidspiration or Inspiration
- Create a template for a simplified, visual assignment in Google Docs, Slides, or Drawings
- Discuss Implementation Plan: Who, Where, When, What (logistics, steps, contexts, training)

Resources for EF

- Recently published articles by Ward/Jacobsen:
bit.ly/ashasa
bit.ly/ashaclinica1ef
Sean's article with Sarah Ward: bit.ly/sweeneyward
- Michelle Garcia Winner/Think Social Publishing (Zones of Regulation in particular)
- Dawson and Guare: [Executive Skills in Children and Adolescents](#)
- Activity-Based: [Unstuck and On Target](#)
- Karen Janowski (see her blog, UDL Tech Toolkit (w/Joyce Valenza and #atchat on Twitter))

Use the Education, Kids areas of App Store

Smart Apps For Kids

OTs with Apps

iPad Apps 4 Schools

Teachers with Apps

YappGuru.com (search/vote)

Apps to find apps:

Apps Gone Free

Kindertown

AutismApps

Finding Resources on your own

Summary of Resources mentioned

- Social Thinking®: see SocialThinking.com (start with [Thinking About You, Thinking About Me](#))
- Mindwing Concepts' Story Grammar Marker® (mindwingconcepts.com). See also StoryChamps®.
- The Incredible 5 Point Scale (see theincredible5pointscale.com)
- Social Stories™ and Comic Strip Conversations (see web resources and books by Carol Gray, Power Cards by Gagnon)
- EF resources on previous slide

Thanks for coming!!



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