

# Implementing Technology to Design Engaging Group Instruction for Students with Autism Spectrum Disorders



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# Objectives:



At the end of the session, participants will be able to:

- 1) List at least 5 available technologies to implement during an academic group instruction
- 2) Describe the process of designing an engaging group activity
- 3) Plan a thematic unit including instructional groups for each content area

# Why is Academic Engagement Important?



- Active engagement is critical for academic and social outcomes for students with and without disabilities (Carter, Sisco, Brown, Brickham, & Al-Khabbaz, 2008; Holifield, Goodman, Hazelkom, & Heflin, 2010; Iovanne, Dunlap, Huber, & Kincaid, 2003; Klem & Connell, 2004)
- Federal legislation of No Child Left Behind (2002) and the Individuals with Disabilities Education Act (2004) emphasize **high expectations** and **active engagement** as critical factors for student learning achievement. While other factors influence student outcomes, these two factors are particularly important because supporting students' academic engagement is critical as it is directly related to learning and, therefore, improved academic and post secondary outcomes (Carter et al., 2008; Iovanne et al., 2003).

# How Do I Know That My Student is Engaged?

- A student is:
  - Physically oriented towards the task
  - Cognitively involved by responding to directions, providing answers to questions, and completing academic tasks
  - Emotionally invested shown by motivation, happiness, or otherwise expressed pleasure in task

*Video example*



# Designing Engaging Group Instruction

- Group instruction-
  - Differentiating instruction
  - Structuring
  - Repetition/ routine
  - Interactive
  - Based on Universal Design for Learning (UDL) principles



# Designing Engaging Group Instruction

- When planning, consider the following:
  - ✓ How can I make the idea more concrete?
  - ✓ How can I arrange for participatory learning?
  - ✓ How can I make the lesson more visual?
  - ✓ How can I offer an auditory learning experience?
  - ✓ How can I use community-based learning opportunities? (Mastropieri & Scruggs, 2007)



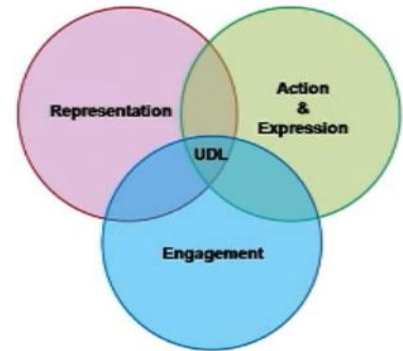
*A video example of an engaging group activity*



Technology solutions are important but need to be implemented through a thoughtful design...



# UDL Framework



UDL Principles

“The term ‘universal design for learning’ means a scientifically valid framework for guiding educational practice that:

- (A) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and
- (B) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient.” (U.S.C. § 1001)



# UDL Framework cont'd

**“Universal Design provides equal access to learning, not simply equal access to information.”**

(Ohio State University Partnership Grants to Improve the Quality of Higher Education for Students with Disabilities, cf. UDL. A Guide for Teachers and Education Professionals (2005), *Council for Exceptional Children*)



# Universal Design for Learning Guidelines

## I. Provide Multiple Means of Representation

### 1. Provide options for perception

- Options that customize the display of information
- Options that provide alternatives for auditory information
- Options that provide alternatives for visual information

### 2. Provide options for language and symbols

- Options that define vocabulary and symbols
- Options that clarify syntax and structure
- Options for decoding text or mathematical notation
- Options that promote cross-linguistic understanding
- Options that illustrate key concepts non-linguistically

### 3. Provide options for comprehension

- Options that provide or activate background knowledge
- Options that highlight critical features, big ideas, and relationships
- Options that guide information processing
- Options that support memory and transfer

## II. Provide Multiple Means of Action and Expression

### 4. Provide options for physical action

- Options in the mode of physical response
- Options in the means of navigation
- Options for accessing tools and assistive technologies

### 5. Provide options for expressive skills and fluency

- Options in the media for communication
- Options in the tools for composition and problem solving
- Options in the scaffolds for practice and performance

### 6. Provide options for executive functions

- Options that guide effective goal-setting
- Options that support planning and strategy development
- Options that facilitate managing information and resources
- Options that enhance capacity for monitoring progress

## III. Provide Multiple Means of Engagement

### 7. Provide options for recruiting interest

- Options that increase individual choice and autonomy
- Options that enhance relevance, value, and authenticity
- Options that reduce threats and distractions

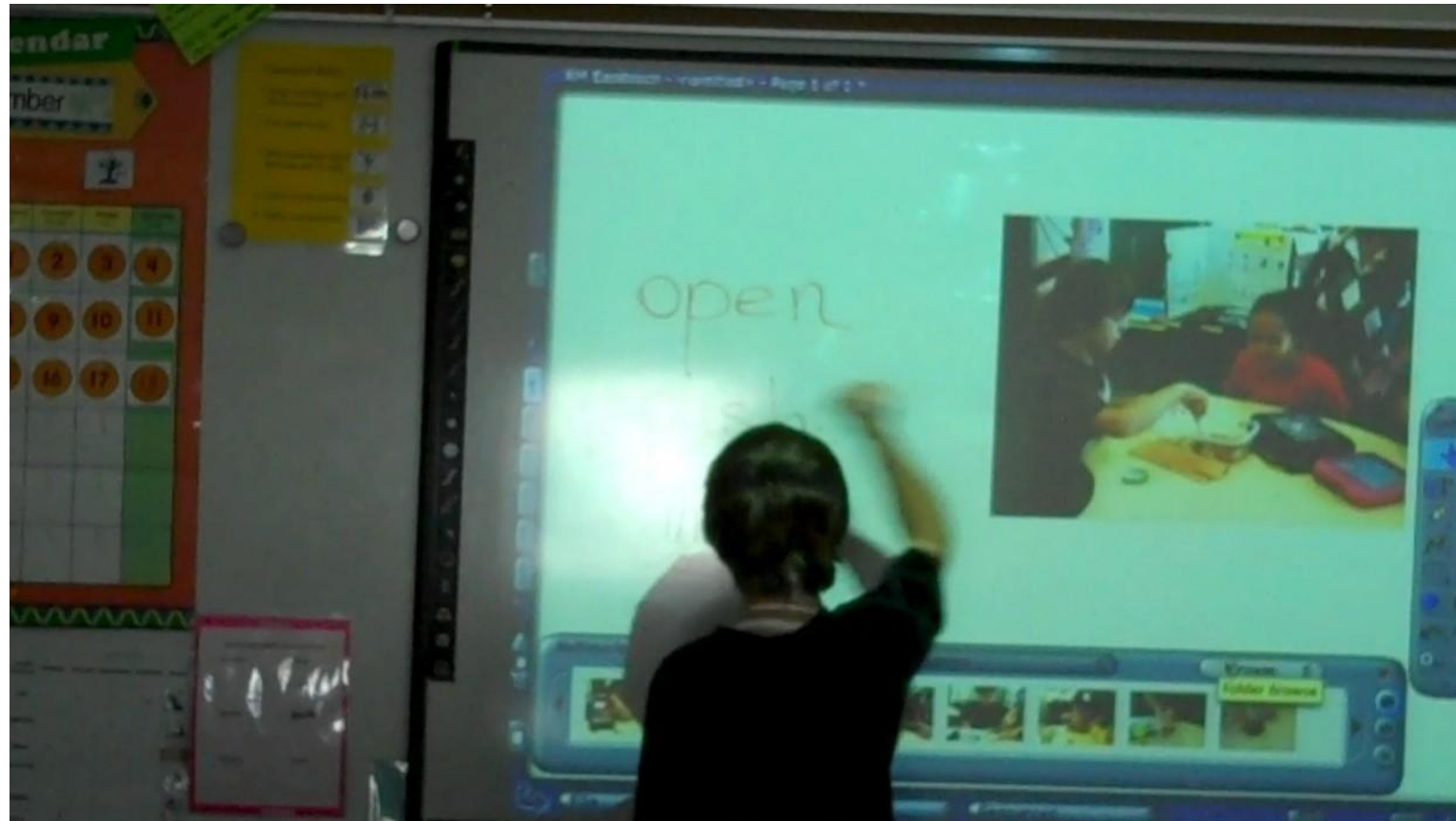
### 8. Provide options for sustaining effort and persistence

- Options that heighten salience of goals and objectives
- Options that vary levels of challenge and support
- Options that foster collaboration and communication
- Options that increase mastery-oriented feedback

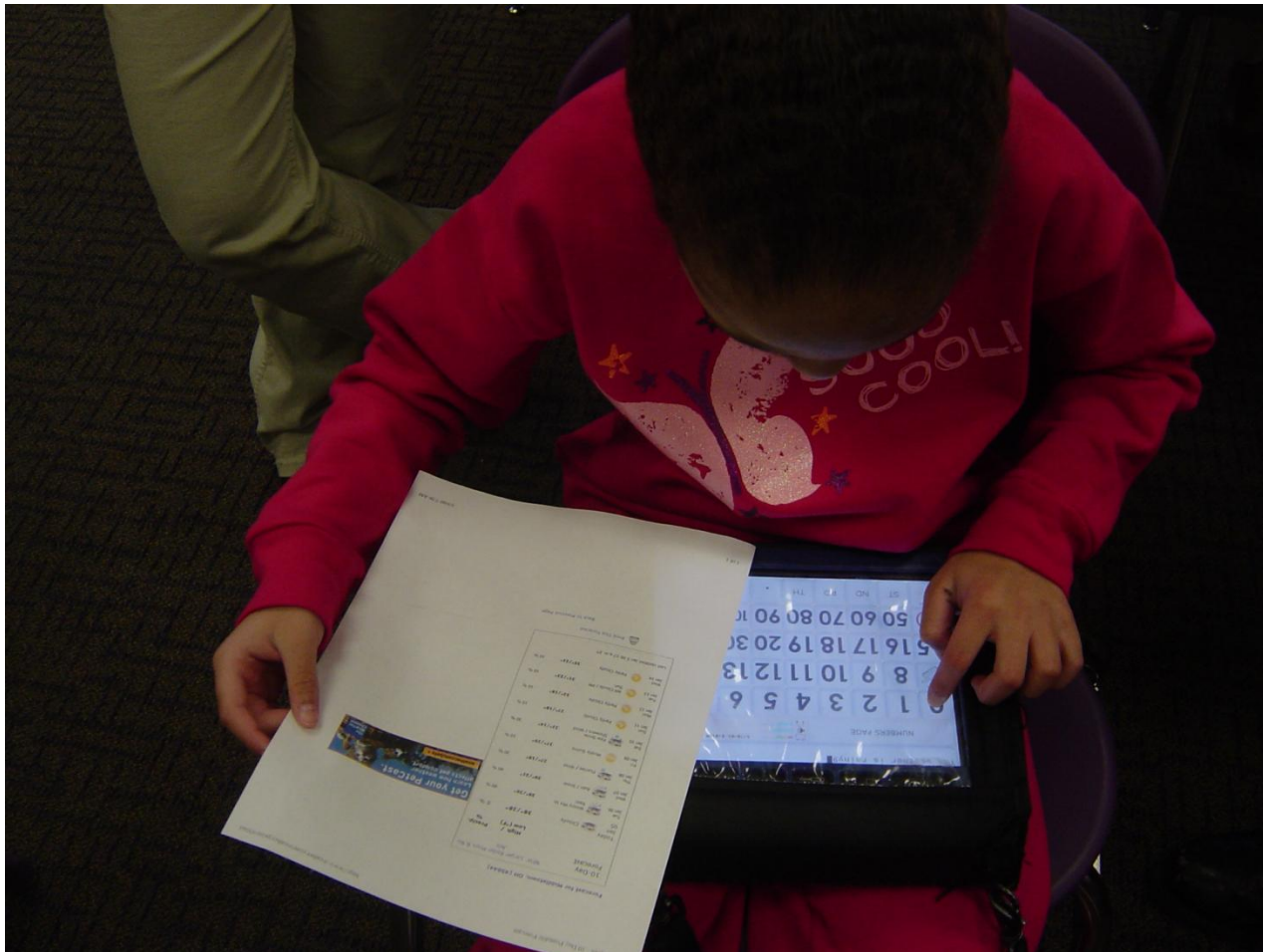
### 9. Provide options for self-regulation

- Options that guide personal goal-setting and expectations
- Options that scaffold coping skills and strategies
- Options that develop self-assessment and reflection

# Multiple Means of Representation and Expression



# Multiple Means of Expression and Representation



# First... come up with your theme

- Think: functional and practical rather than traditional
- Plan for the theme to last a month or a month and a half
- Start making materials a month ahead, so you have everything ready, and save it for the future
- Work collaboratively with your team and regular ed teachers

# Some ideas for the themes:

- **August/ September:** Back to school
- **October:** Sports (soccer, football)
- **November:** Nature
- **December:** Holidays ( Hanukkah, Christmas, Kwanza)
- **January:** Traveling
- **February:** Hearts
- **March:** Community workers/ Careers
- **April:** Plants
- **May:** Ohio



# Let's talk: theme



- **January: Traveling**

- LA group: a book about traveling- self created, based on materials from Unique Learning System

- Math: Subtraction using cars as manipulatives

- Social Studies: a lesson on different types of vehicles

# Social Studies Group on Vehicles (monthly theme: traveling)



- The video to open this group:

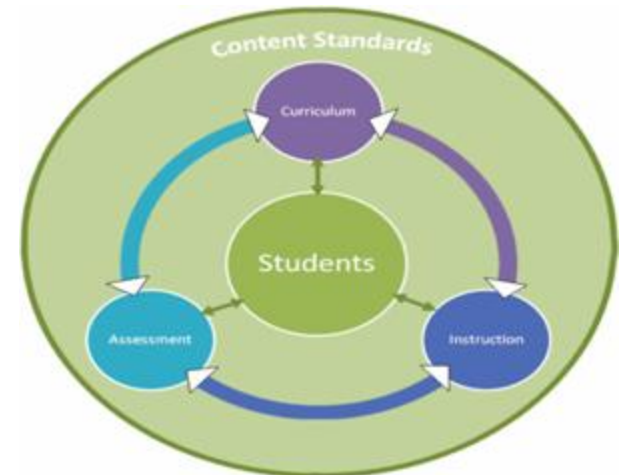
<http://www.youtube.com/watch?v=JwUprWsSd4>

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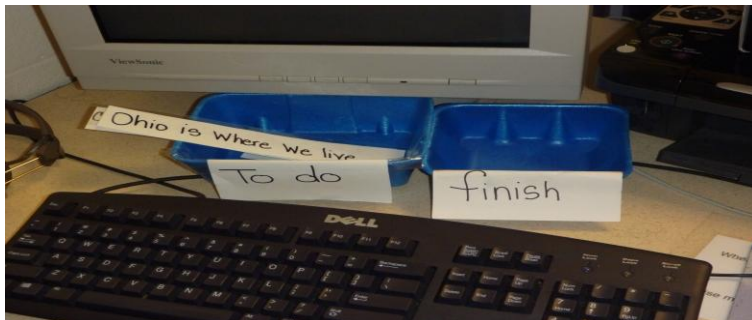
# Now, make your instruction aligned with the IEP objectives, and Common Core Standards

- To assure alignment with the Standards and apply to students' level, use the Ohio's Academic Content Standards Extended
- Take into account individual students' IEP objectives and target them in your instruction

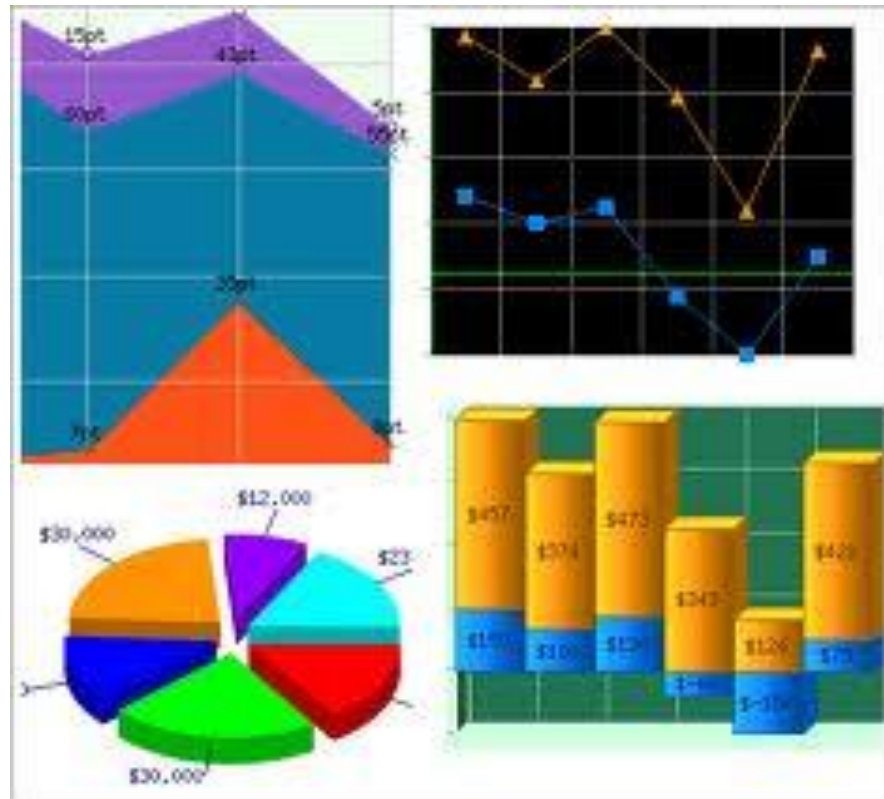


# Apply your theme throughout your school day instruction

- Morning meeting: word wall, sentence building
- Language Arts Group
- Math Group
- Science Group
- Social Studies Group
- Additional activities: typing, classroom decorations, independent work at desk activities, special projects: art etc



# Math group- graphing





# Control for behaviors:

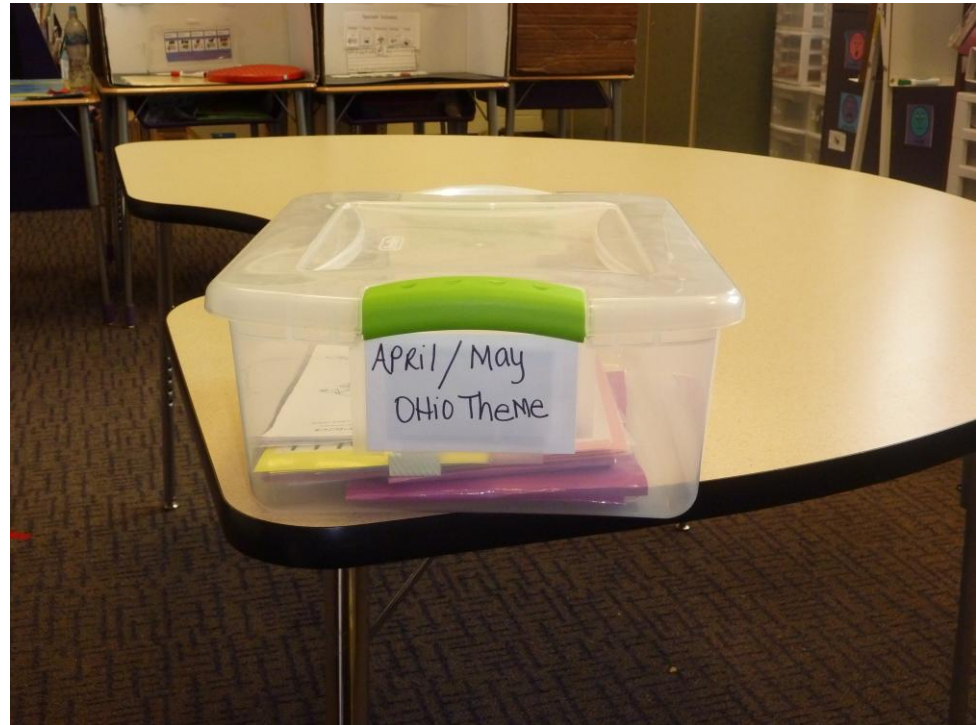
- Reinforcement
- Token system
- Timers
- Expectations to succeed



# Write your lesson plans/ teaching protocols for your groups

- Make sure that everyone is teaching the same way, targeting the same objectives, and using the same interventions
- Rotate your staff so that everyone is capable of running the group, supporting the students, and making materials

# Add organization



# Tie in Available Technology



- Videos
- Music
- i Pad/ i Pod games
- Pictures
- Power point: books, social stories,
- <http://www.scribd.com/doc/24470331/iPhone-iPad-and-iPod-touch-Apps-for-Special-Education>



# Resources to use:

- [http://www.youtube.com/watch?v=Gnst\\_mkCEu4](http://www.youtube.com/watch?v=Gnst_mkCEu4)
- <http://www.youtube.com/watch?v=3icBxO6Wjzo>



- School library- find picture books with easy text to use for Language Arts Group
- Use Boardmaker for your visual supports
- Use website resources:  
[www.uniquelearningsystem.com](http://www.uniquelearningsystem.com)  
[www.edhelper.com](http://www.edhelper.com), [www.abcteach.com](http://www.abcteach.com)
- Take pictures, print images off Google images and make your own books
- Make Power Point Presentations- watch and/or print out for the books
- Find videos to support your instruction: [www.youtube.com](http://www.youtube.com), [www.teachertube.com](http://www.teachertube.com)

# Cool Tools

- A variety of apps:
  - Brain Pop
  - Qwiki
  - Touchy Books
  - NOOK kids
  - MeeGenius
  - Actions
  - Balloons
  - Kids World Mapand many many more..



# iTunes U

- Thousands of FREE videos, audio, podcasts.
- Entire college courses
- Multiple platforms
- Parent controls



Share your content with anyone. Anywhere in the world.

# Wolfram Alpha

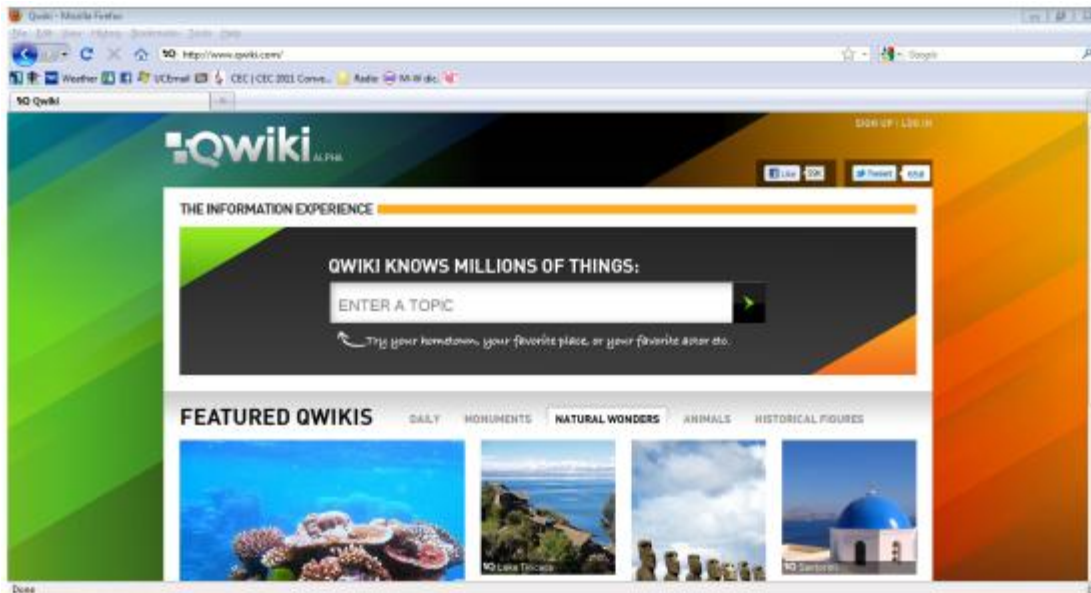
- A free search engine that provides for computation and distribution of any systematic knowledge
- Supports different disciplines

<http://www.wolframalpha.com/>



# Qwiki

- Additional search tool that provides auditory support
- <http://www.qwiki.com/>



# Google earth

- Satellite images from anywhere on Earth.
- Create tours
- Go under seas

<http://earth.google.com/>



# Cast Bookbuilder

- A tool to quickly develop accessible books.
- Provides for scaffolding
- Book sharing
- <http://bookbuilder.cast.org/>



The screenshot displays the Cast Bookbuilder interface within a Mozilla Firefox browser window. The page title is "Finding the Jaguars" and the URL is "bookbuilder.cast.org". The main content area features a colorful illustration of two children, Collette and Jimmy, standing in a park-like setting with trees and a house in the background. Below the illustration, the text reads: "On a bright spring morning, Collette and Jimmy went to the zoo." To the right of the illustration is a "Terry's Tips" section with a cartoon character and text explaining the purpose of the tool: "We want children to learn the difference between text (the words) and illustrations (the pictures). When we read the story, we read the words. Point to each word as you read the story. Then ask children to talk about what they see in the picture." Below this is an "Extension Activity" section: "There are printed words and pictures everywhere in our world. Ask children to point to words and pictures on signs or labels as you go about your everyday routines." At the bottom of the interface, there is a navigation bar with icons for "Pedro", "Hall", and "Monty", a "Hide" button, and a page indicator showing "2 of 10". The footer text reads "Created with CAST's UDL Book Builder".

# Visual dictionary

- Visual/contextualized references
- Audio pronunciation
- Multilingual
- <http://visual.merriam-webster.com/>

The screenshot displays the 'Visual Dictionary Online' interface. At the top, the Merriam-Webster logo is on the left, and the title 'VISUAL DICTIONARY ONLINE' is in large white letters on a dark blue background. Below the title is a navigation menu with links: ABOUT THE VISUAL, GAMES, TOOLS, BOOKS, SOFTWARE, DOWNLOADS, and ABOUT US. A search bar is present with the text 'Google Custom Search' and a 'Search' button. Below the search bar, there are breadcrumb links: HOME >> SOCIETY >> EDUCATION >> SCHOOL >> SCHOOL. The main content area features a 3D architectural rendering of a school building with various rooms labeled with red text and lines pointing to the corresponding parts of the structure. The labels include: equipment storage room, music room, art room, podium, cafeteria, students' lockers, science room, kitchen, courtyard, dressing room, movable stands, gymnasium office, gymnasium, storeroom, computer science room, library, bathroom, classroom, supervisor's office, students' room, teachers' room, administration, parking area, staff entrance, meeting room, secretaries' office, principal's office, main entrance, bicycle parking, and classroom for students with learning disabilities. On the left side of the page, there is a vertical sidebar with a 'Merriam-Webster' logo, an 'App Store' badge, and a 'VISUEL MOBILE' logo. Below these, there is a search input field with the text 'or a word' and a 'GO TO' button. At the bottom of the sidebar, there is a 'names' section with a list of words: astronomy, earth, plants & gardening, animal kingdom, human being, food & kitchen, house, clothing & articles, sports & architecture, communications, transport & machinery, and energy. On the right side of the page, there is a vertical banner with the text 'EXPLORE 10 SYSTEMS OF THE HUMAN BODY' and an image of a human body. Below this, there is another banner with the text 'Fall' and 'PRILOSEC OF FREQUENTLY BY BLOCKING ACID THAT SO YOU DO GET HEART IN THE FIRS'.



# Putting it all together:



- Plan for group instruction having each individual student's needs and skills in mind
- Implement IEP objectives and Standards-aligned teaching
- Utilize technology
- Keep high expectations and always measure for students' engagement
- Provide multiple means of expression, representation, and engagement

# Social Studies group- US map/ hearts theme



# Questions?

