

# No Longer Fragile

An education seminar on fragile X syndrome

## Unit 2: Cognition and Curriculum Adaptation

FraXgile



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# Cognition

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- Fragile X children have difficulty with
  - Attention
  - Hyperactivity
  - Impulsivity
  - Initiating a task
  - Making a plan, problem solving & organising
  - Memory
    - Abstract information
    - Sequential information



# Cognition

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- Strengths
  - Good imitators
  - Enjoy success
  - Visual processing
  - Can make sense of the whole rather than the individual parts
  - Special interests
  - Memory for
    - Concrete information
    - High interest information
    - Real events



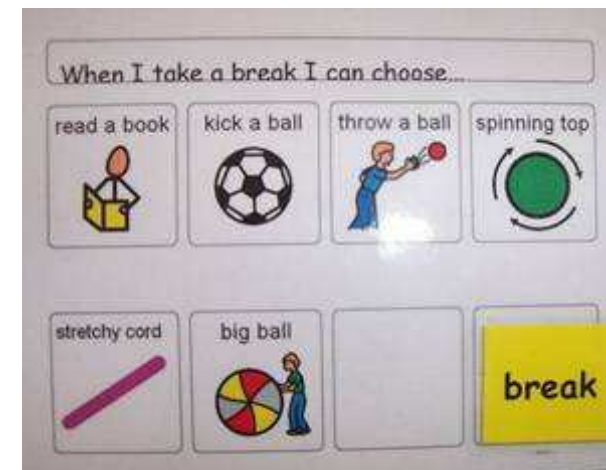
# Attention

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- Use the student's talents & interests
  - Working with one or two favourite peers
  - Imitating others
  - High interest topic
  - Computers & technology

# Attention

- Provide regular breaks
  - Alternate work that requires concentration with refocus time
  - Allow opportunities for movement
  - Use a Swiss ball or adapted chair
  - Provide lots of sensory breaks



# Attention

- Make sure set tasks are
  - Achievable
    - 'Just right' level
    - Child knows what is expected, what to do, how much work is required
      - Work baskets
      - Token boards
      - Routine
  - Purposeful
  - Successful



# Attention

- Provide enough support for the child to feel successful
- In the video Dad supports his son to achieve a goal set by the child, taking one more step on a climbing frame



# Attention

- Use your child's special interests across curriculum areas
- Special interests motivate the student to focus, participate and remember





# Special interests motivate learning

## ■ At Home

- Functional skills
- Outings
- Social interaction
- Emotional regulation



## ■ At School

- Music
- Writing
- Research topic
- Reading topics



# Special interest learning kit



- Put together resources that relate to a special interest
- Use across curriculum areas and for teaching Key Competencies



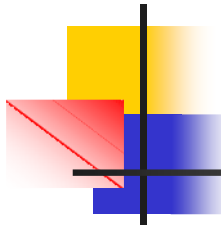
# Special interests

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# Classroom adaptations that support attention

- Provide an organised learning environment
- Seat next to a good role model
- Develop good learning routines
- Avoid clutter
- Provide clear physical boundaries for the task
- Make rules clear and consistent





# Impulsivity

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- Supervise closely
- Remove temptations
- Set non-negotiable rules
- Use positive redirection
- Attend to positive behaviour
- Avoid over-correction – ignore the small stuff



# Use visual strategies

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- Using visuals improves our children's ability to.....
  - Attend
  - Process information
  - Remember
  - Understand

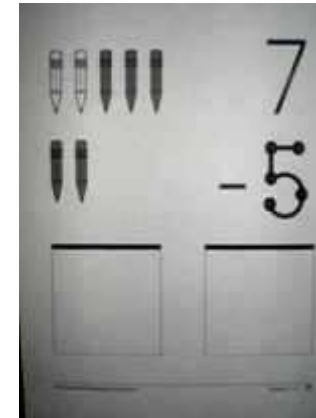
# Visual supports

- Objects, pictures, written words, sign language and gesture communicate information visually



# Visual learning supports

- Use visuals to
  - Support learning across curriculum areas
  - Support problem solving
  - Provide essential information
  - Review learning
  - Model desired behaviour
  - Reduce anxiety
  - Support communication
  - Increase independence







# Successful visual supports

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- Must hold visual information the child can understand
  - Objects, photographs, symbols, written words, gesture, sign language
- Must be presented in a way that suits the child
  - When will the child use the support?
  - How will you make it available to the child?
  - What style of presentation?
  - How many parts of the task will you show?
  - What happens to the visual when the task is completed?
- Must be motivating for the child to use

# Extend visual understanding

- Extend your child's ability to understand visual information
  - Reading
    - Link the object to the picture and word
    - Link the symbol to the word
    - Word families
  - Maths
    - Link quantity to numerals
    - Link number pattern to numerals





## For more ideas

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- Ask your child's SEA or SLT for advice on making visuals
- Special Education Service sometimes run workshops on using & making visual supports
- Use a 'how to book' on making and using visual strategies, for example "*Visual Strategies for Improving Communication*" by Linda Hodgdon



# Your students visual needs

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- What information suits your child (object, drawing, photo, symbol, word)
- What presentation style, (horizontal, vertical, story, photograph, letter)
- What type of materials does your child respond best to, laminated photos, white board, paper and pen

# Learn by doing

- Real tasks & play create a low anxiety environment
- Improved attention
  - High interest & purposeful
- Improved memory
  - Links learning to concrete objects & experience

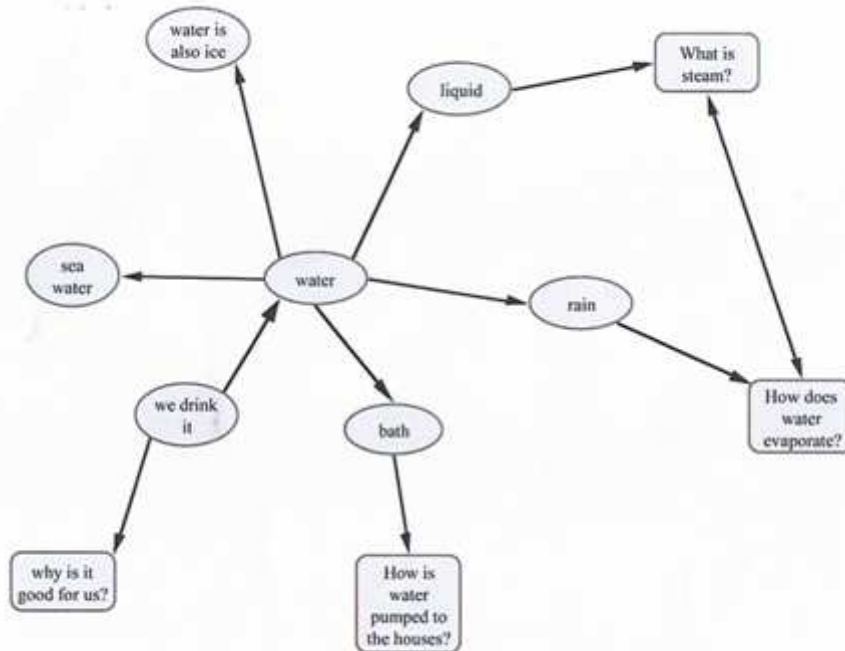


# Build on what is already understood

- Link new learning to what the child already understands
- Information presented in isolation may be forgotten
- Information linked to a place or an event is easier to understand and remember



# Mind maps



- Support understanding & thinking about a topic
- Present ideas visually
- Create links between isolated facts
- Software: Kidspiration

# Mind map



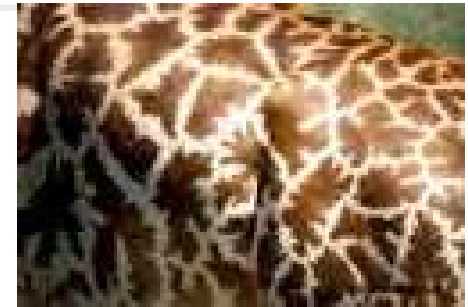
Long necks



Eat leaves with their long tongues



Giraffes



Brown spots



Drink water





# 'Whole' rather than parts

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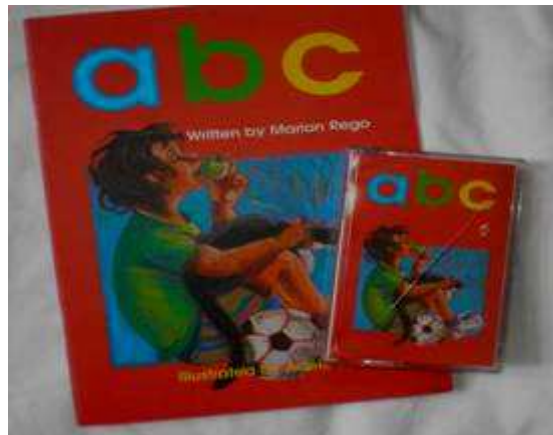
- Students have difficulty with
  - putting the parts together to form the whole.
  - sequences
- Students are able to take in multiple pieces of information to gain an intuitive understanding.

McDonalds

M c D o n a l d s

# Whole teaching strategies

- Present the whole through music
- Use teaching programmes that provide multiple sensory stimuli





# Help your child start the task

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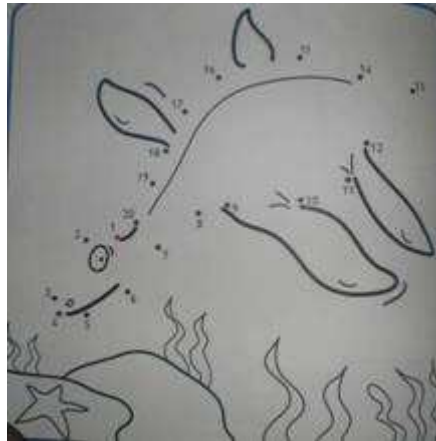
- Verbal expression - adult initiates sentence, child finishes
- Word reading (Adult reads first part of sentence, child completes reading sentence)
- Alternate counting

# Closure activities

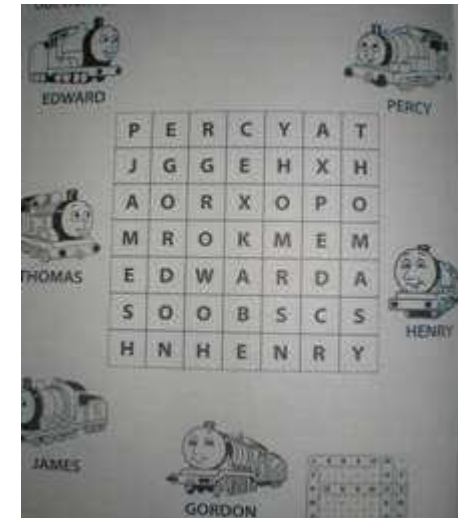
- The child fills in the missing information.



Art - textures



Math: dot to dot,



Literacy - word search



# Backward chaining

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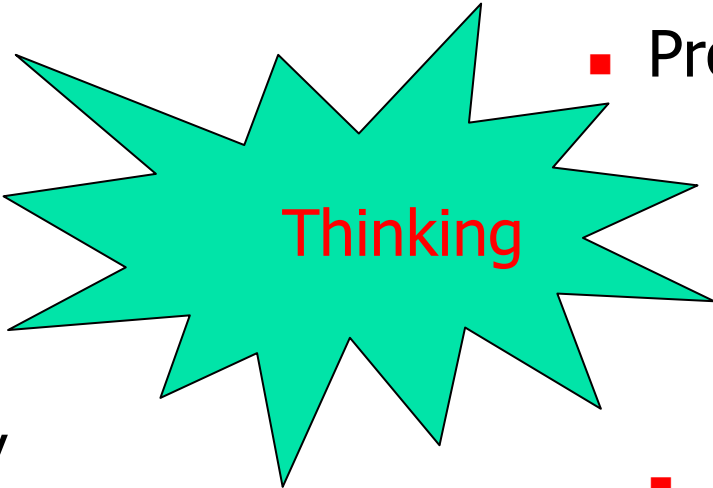
The child completes the last letter, then the last two letters etc.

B e _	H o l l i s
B _ _	H o l l i s
_ _ _	H o l l i s



# Key Competencies

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- Curiosity
  - Ask questions
  - Develop understanding
  - Problem solving
  - Persistence
  - Find the facts
  - Think flexibly
  - Making a plan
  - Initiate
  - Get organised
  - Construct knowledge



# Make a plan

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1. Think about a topic
  - Visual to support choice
  - High interest topic
  - Mind map
  - Review previous recorded experience
2. Find the facts
  - Internet search, books, pamphlets, photos, real objects, visit
  - Library list, checklist, scripted questions



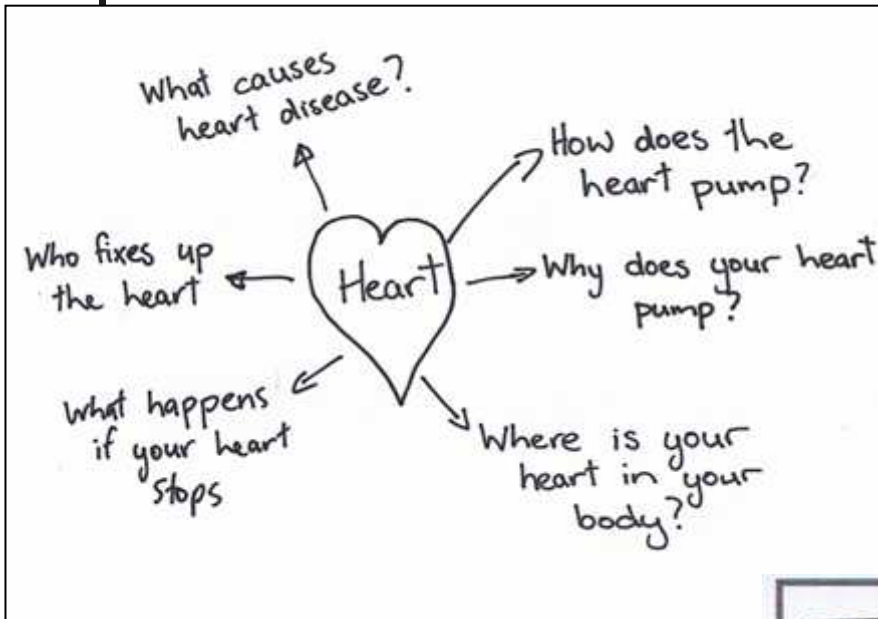
# Make a plan

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3. Ask questions
  - Write a script, closure strategies
4. Get organised
  - Visual instructions, checklists, colour coding

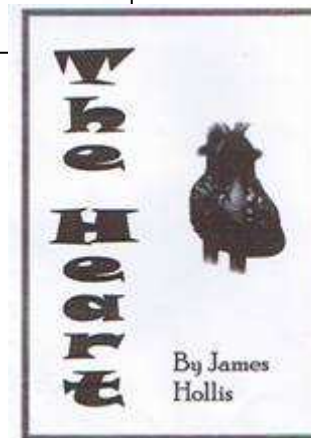


# Research a high interest topic



## Information search

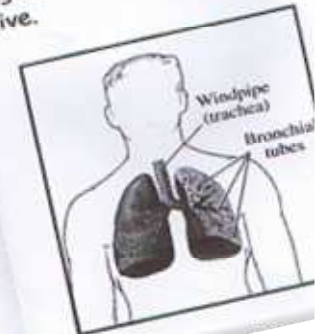
- Museum visit
- Books
- Internet search



The heart pumps the blood around the body. The blood squeeze thro the arteries. The oxygen is in the blood to feed our body. The veins take the blood with on oxygen back to the heart.



The lungs breath oxygen. The oxygen goes into the blood. The lungs a behind the rip cage. The lags keep you alive.

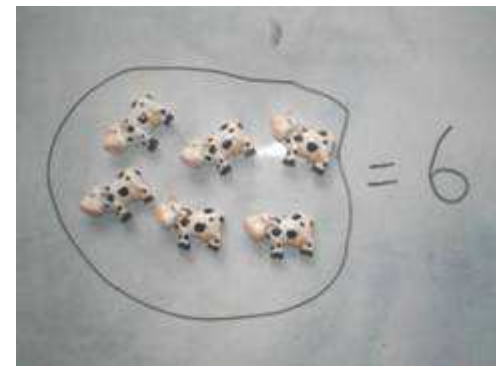


# Math

- Present the whole problem visually
  - Use number lines
  - Concrete, high interest materials
  - Dice patterns
- Closure activities
  - Dot to dot
  - Fill in the missing number or amount

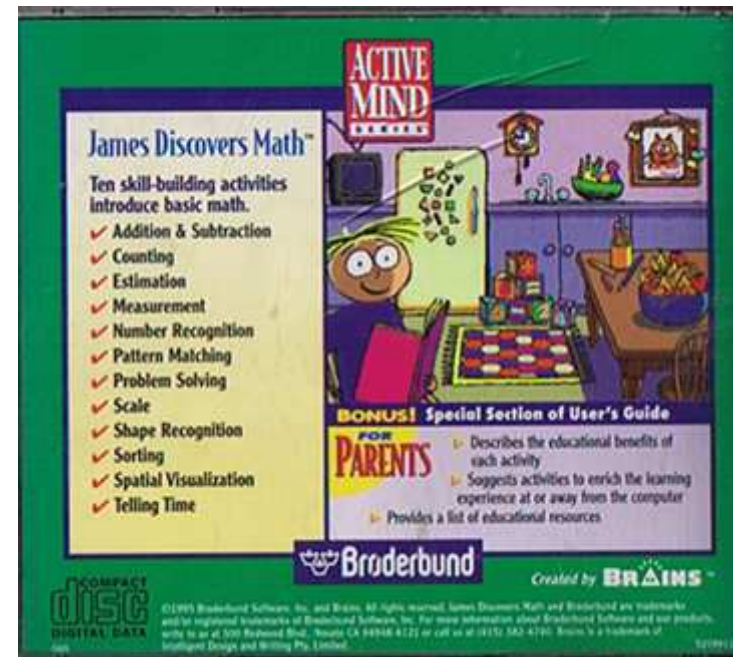


[www.touchmath.com](http://www.touchmath.com)



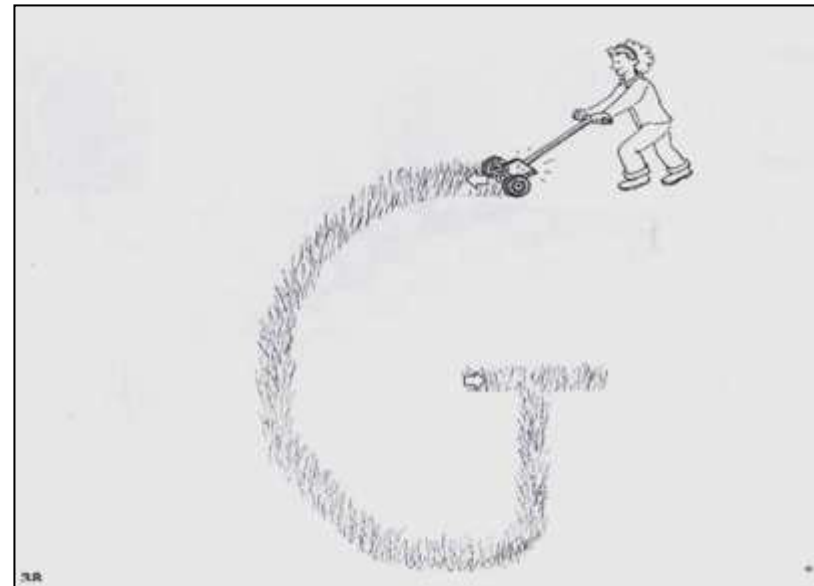
# Math

- Computer games
- Special interests
- Music & number rhymes
- Functional math
  - Cooking, shopping
  - Card games, board games



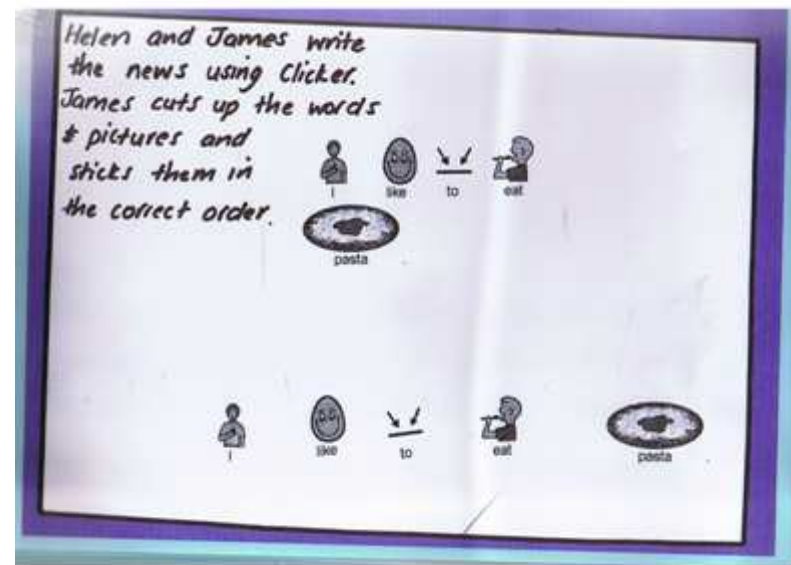
# Writing

- Frequent error-free practice builds motor memory
  - Name templates
  - Closure or backward chaining
  - Link letter shape to a concrete idea
- Use visual or verbal cues for letter formation
  - Handwriting Without Tears (multi-sensory program)
  - Magic Caterpillar (verbal cues so suitable for children with good receptive language)



# Writing

- Support the child in forming or recording the sentence sequence
- High interest ideas for story writing
  - Topic box of favorite postcards, photos, pamphlets or small toys
- Use computers for writing
  - Clicker





# Literacy

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- Whole word focus rather than phonics
  - Marcia Braden's Logo Reading program
- Link objects or images to words
- Read high interest story topics
- Word families
- Matching activities
- Closure activities
- Initiate when necessary



# Summary

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- Support learning by
  - Using concrete high interest materials
  - Making tasks purposeful
  - Providing a structured organised environment
  - Modelling what is required, use peer support
  - Using visuals to support understanding
- Setting achievable tasks appropriate to the child's ability to stay focused
- Linking abstract ideas to concrete ideas the child already understands
- Making the whole concept visible
- Doing real tasks and through play
- Indirect teaching methods



# Cognition profile

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- What strategies will help this student learn





## For more information:

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