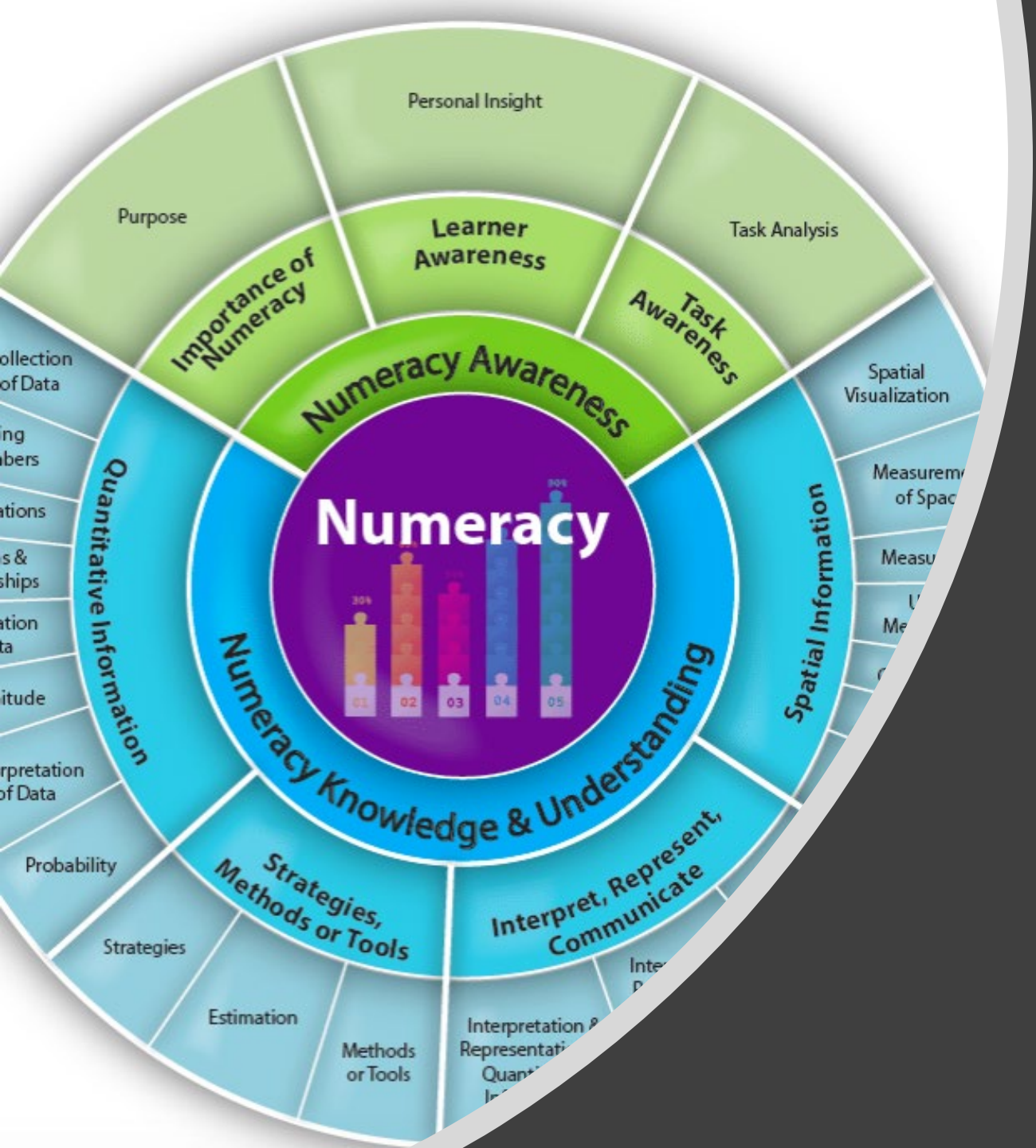


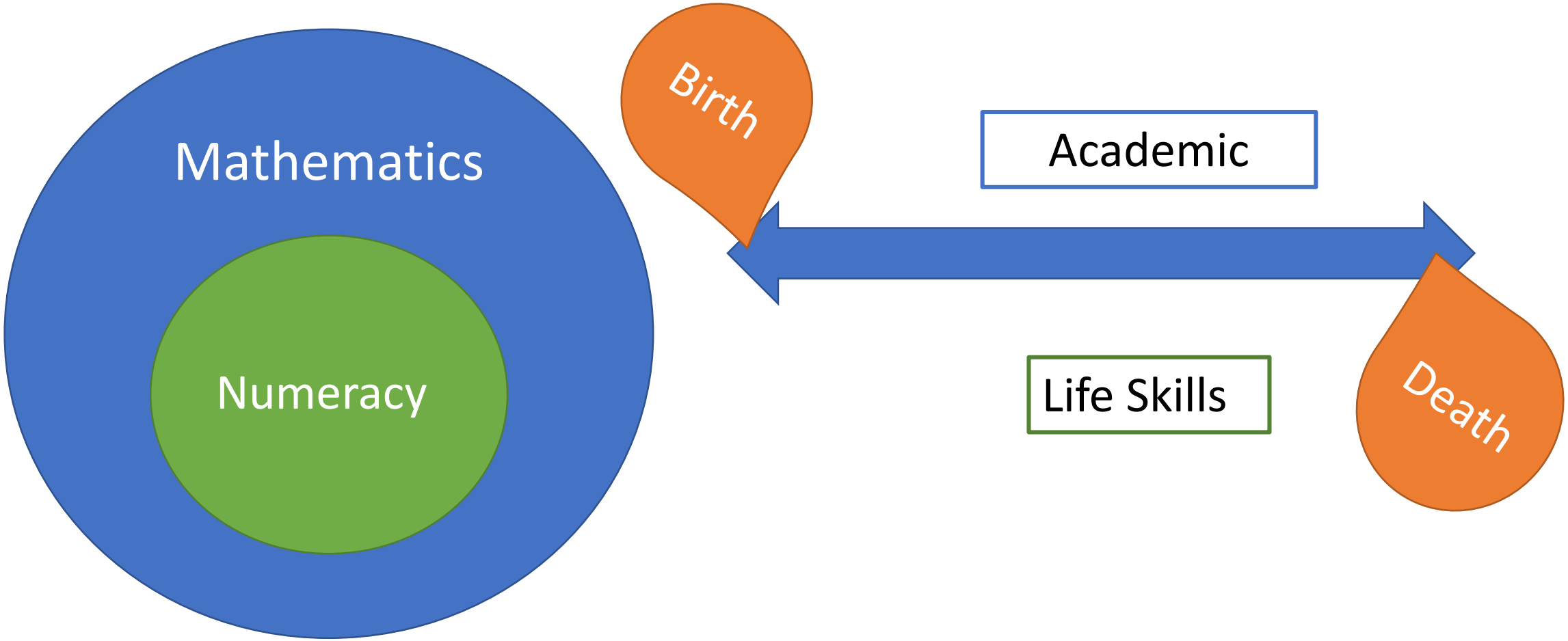
Numeracy

When Students Have Dual Sensory Loss

Concomitant

https://www.tsbvi.edu/deafblindness/203-resources/4250-teaching-strategies-and-content-modifications-for-the-child-with-deaf-blindness

Numeracy is the ability to understand and work with numbers.



5

1 2 3

1 2 3

https://www.youtube.com/watch?v=_jpe0_v2nAc

2 … 4 … 6 … 8

What We Know

- Most children learn numeracy early in life
- More jobs today require numeracy
- Students with disabilities traditionally have fewer opportunities to learn
- Early learning is linked to later success
- Children with significant challenges can & do learn numeracy.

In Early Childhood We Learn About

- Patterns
- Shapes
- Spatial relations
- Comparing size
- Counting objects

(Baroody, 2004; Kilpatrick et al., 2001).

In School We Learn

Identify numbers

Count by rote

One-to-one correspondence

Number conservation

Compose and decompose numbers

Magnitude of numbers

Measure

Add & subtract

Read patterns, graphs and charts

(McIntosh, Reys, & Reys, 1992).

Partnership

- Parents and educators can work together to promote more deafblind learners who can count, compute, and apply these skills across a variety of mathematical problems.
- At each grade level we change the activity while keeping the target skills constant to maintain motivation and promote generalization.

What would learning the number 4 look like?

At age 4

- Tell a story about four familiar items or people.
- Model signs when counting objects.
- Use textures and bright colors to match counting and number symbols.
- Sing songs about the number four.
- Rock in a swing four times while counting.

At age 14

- Tell a story about a familiar events
- Provide assistive technology in the form of graphic organizers and number lines;
- Follow a task analysis to perform the concept (e.g., create a bar graph with 4 blocks).
- Work on identifying "4" while working with a group on division in general education.

An Individualized Approach

Math instruction traditionally has relied heavily on visual information and a great deal of verbal direction and explanation.

Students with Deaf-Blindness require other sensory input, additional time to process information, and directions or explanation adapted to reflect their mode of communication Concepts are acquired slowly.

Slide Around Math Manipulatives

http://slidearoundmath.com/

What Works

- Students need explicit instruction in numeracy
- That should include systematic prompting.
- Be embedded in natural routines
- Be contextually meaningful
- Be taught in smaller chunks
- Get more repetition & practice
- Continued opportunities with age appropriate materials

Concepts

- Routines
- People
- Choice
- Turns
- Full/empty
- More
- Pour
- Refrigerator

For the Planning Team

What Educators Say

- Target early numeracy skills
- Use systematic prompting and feedback to teach skills
- Use story-based lessons throughout the day
- Use number identifiers
- Use embedded instruction.

What That Means

- Skills like more, shapes, sizes
- Show the child one finger. Say one, ask the child to repeat.
- We are going to DQ to get 2 ice-cream cones.
- Show me a 2
- Add amounts 2 times during every subject – related to the topic.

- Concrete manipulatives
- Graphic organizers (Sets)
- A number line
- Number indicators

Accommodations

Paths to Literacy - Math Page

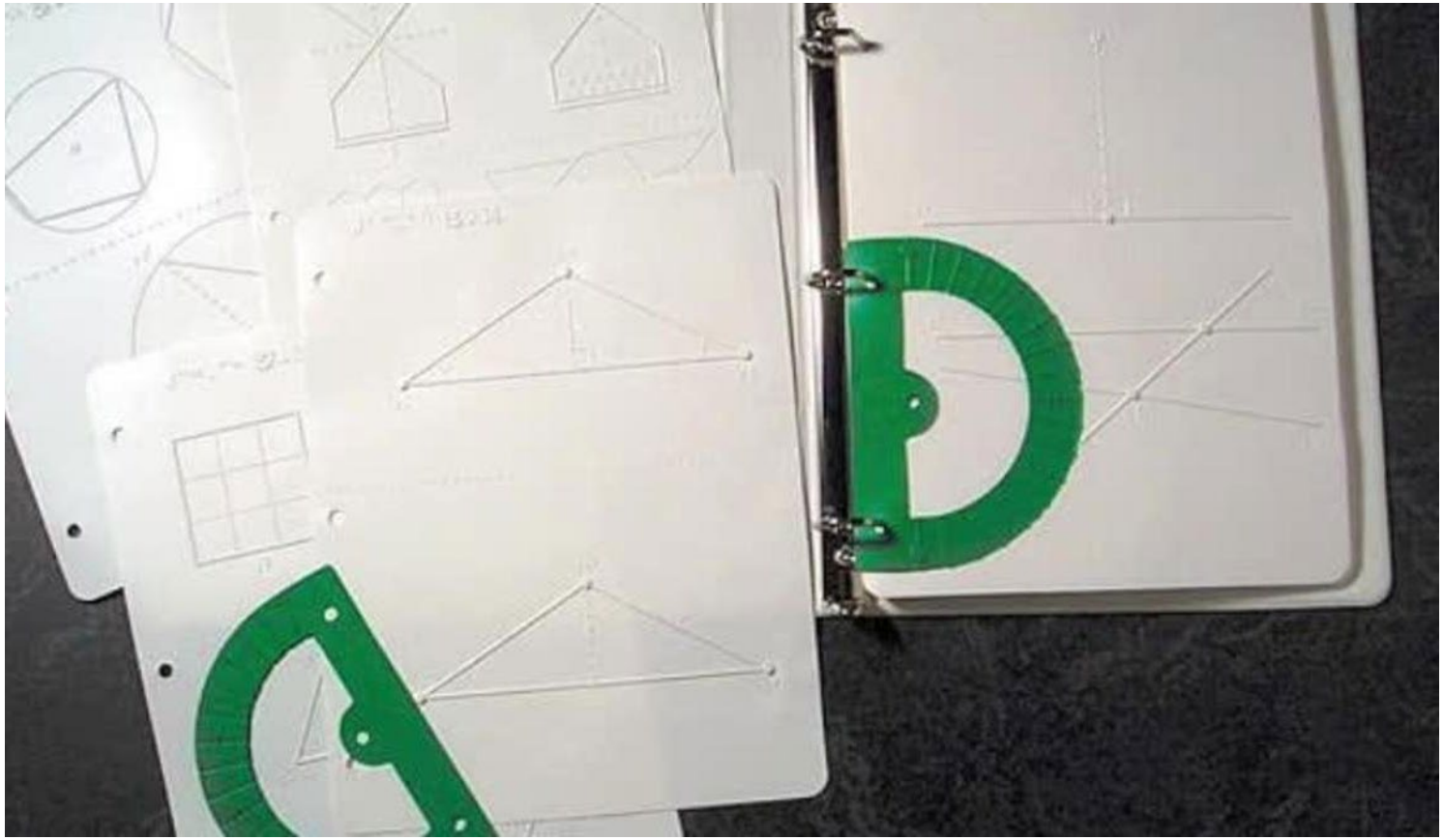
http://www.pathstoliteracy.org/blog/56-tactile-math-ideas-ideas-and-suggestions-development-basic-concepts-early-maths-skills

Use Raised Charts

http://www.pathstoliteracy.org/strategies/tactile-hundreds-chart-braille

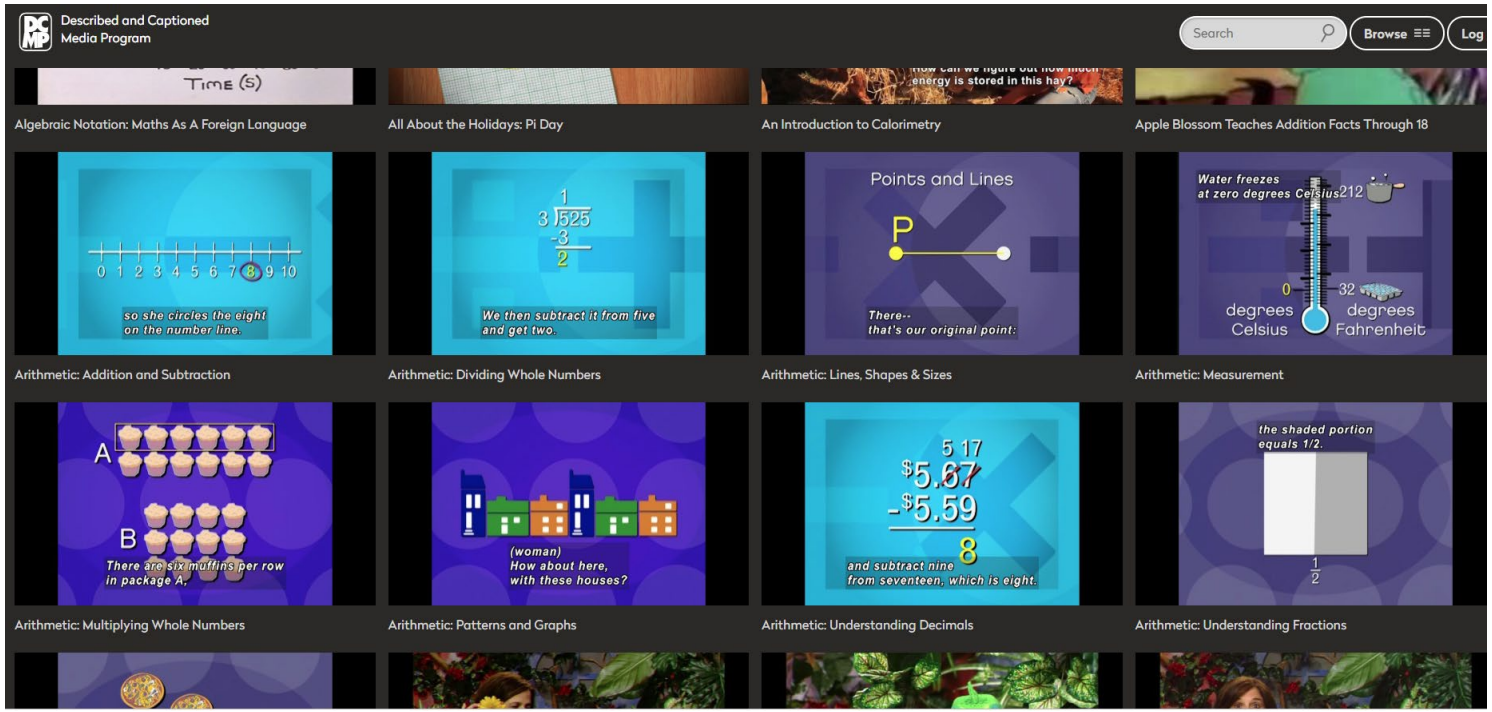
Use an Abacus

http://www.pathstoliteracy.org/strategies/using-abacus-child-who-deafblind



Advanced Math

https://www.perkinselearning.org/videos/webcast/teaching-math-students-who-are-blind-or-visually-impaired



Use Videos in Class

- https://dcmp.org/topics/16-mathematics/subjects/207-mathematics