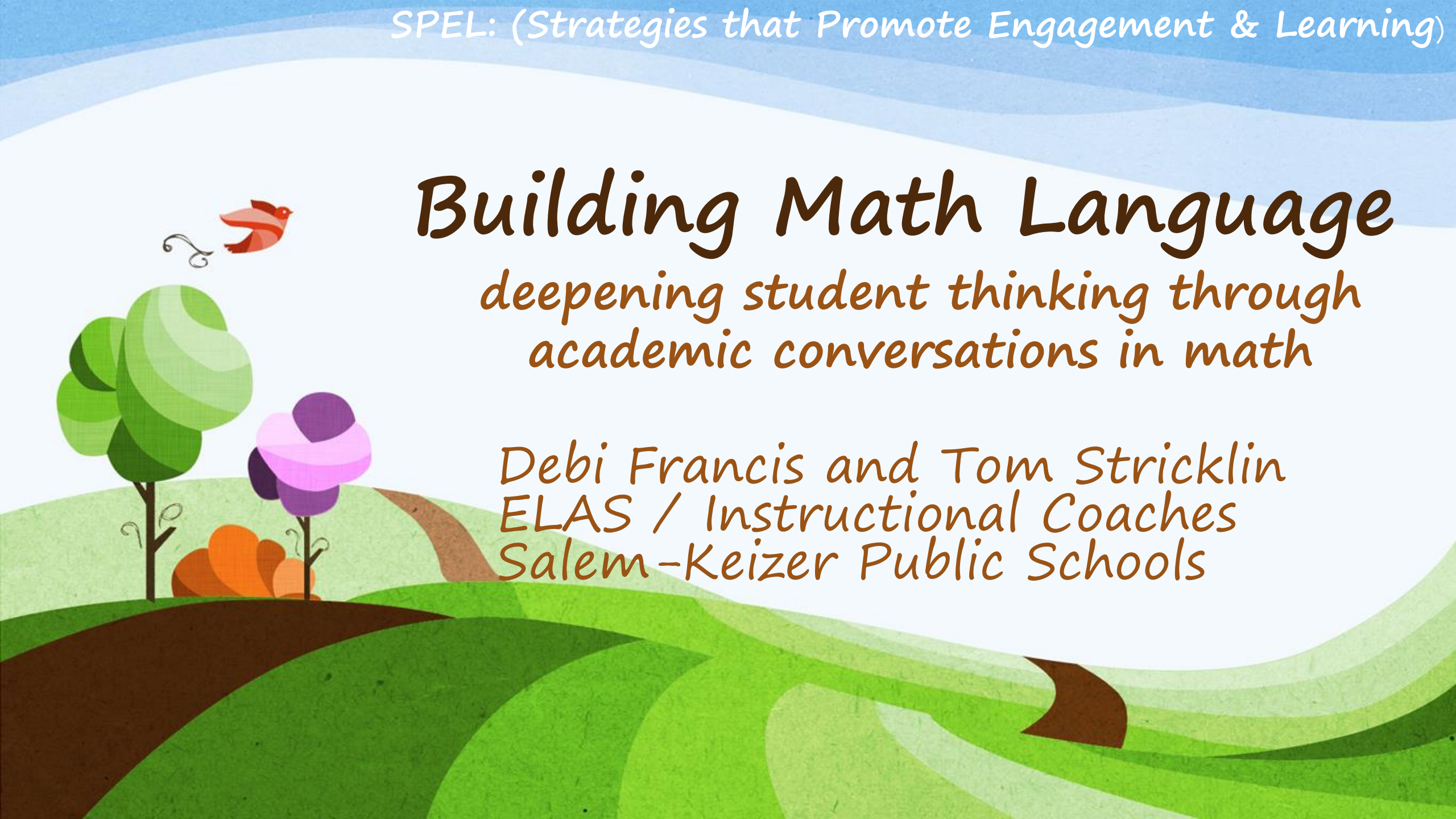


Building Math Language

deepening student thinking through academic conversations in math

Debi Francis and Tom Stricklin
ELAS / Instructional Coaches
Salem-Keizer Public Schools

Outcomes

Participants will be able to

- **Explain** the importance of explicitly teaching the language needed to access the mathematics
- **Describe and implement** routines that foster academic conversations

What is the purpose of speaking in math?

- Write
- Read
- Paraphrase
- Respond

A) I hear you saying…..

B_1) I wonder…

B_2) Would you consider…

Instructional Routine: WRPR -- Modified T-P-S

Our BOOKMARK...

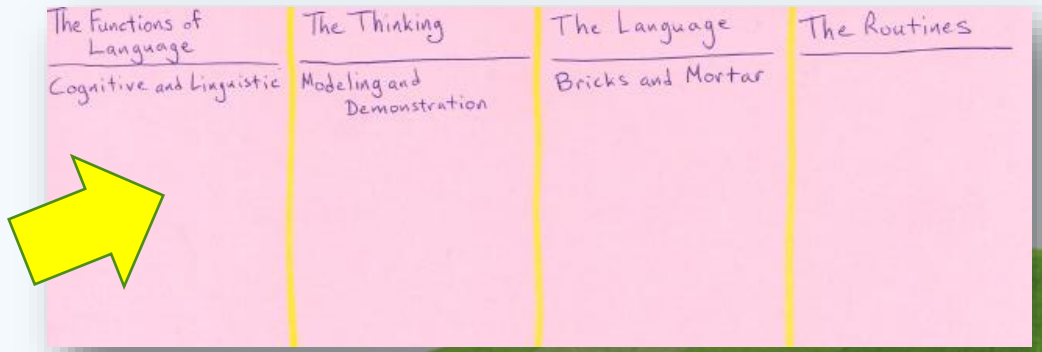
the foldable

The Functions of Language	The Thinking	The Language	The Routines
Cognitive and Linguistic	Modeling and Demonstration	Bricks and Mortar	

The Functions of Language

Cognitive and Linguistic

- Compare and Contrast
- Cause and Effect
- Elaboration/Description
- Sequencing
- Justify



Professional Reading

Common Core Math Standards

Put New Focus on English Learners

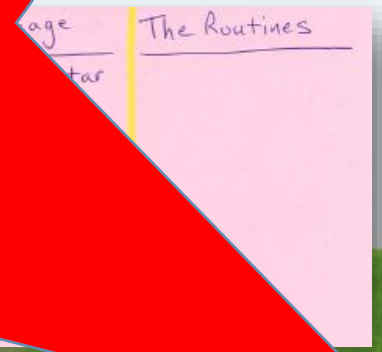
STAND-UP/ HAND-UP/ PAIR-UP

Why is it important to make language visible?

The

M

Good for all students.
Critical for ELs and other struggling learners.



Create a headache where math language is the aspirin!

Dan Meyer - NWMC

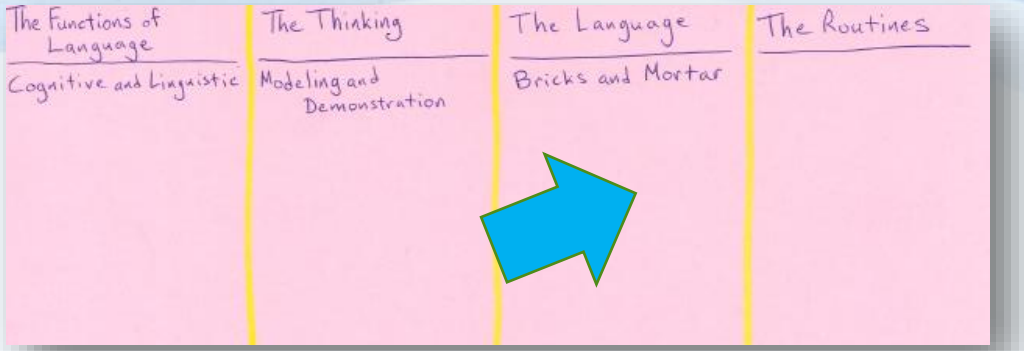
Barrier Activity

You will be working in Quads/Trios

- **Orator** – you will describe what you see with your back towards your team (Image on Folded Paper)
- **Illustrator** – you will illustrate the description (graph paper)
- **Scribe** – record any Vocab Word you hear (lined paper)
- **Chief Justice** – you will make sure no one cheats!

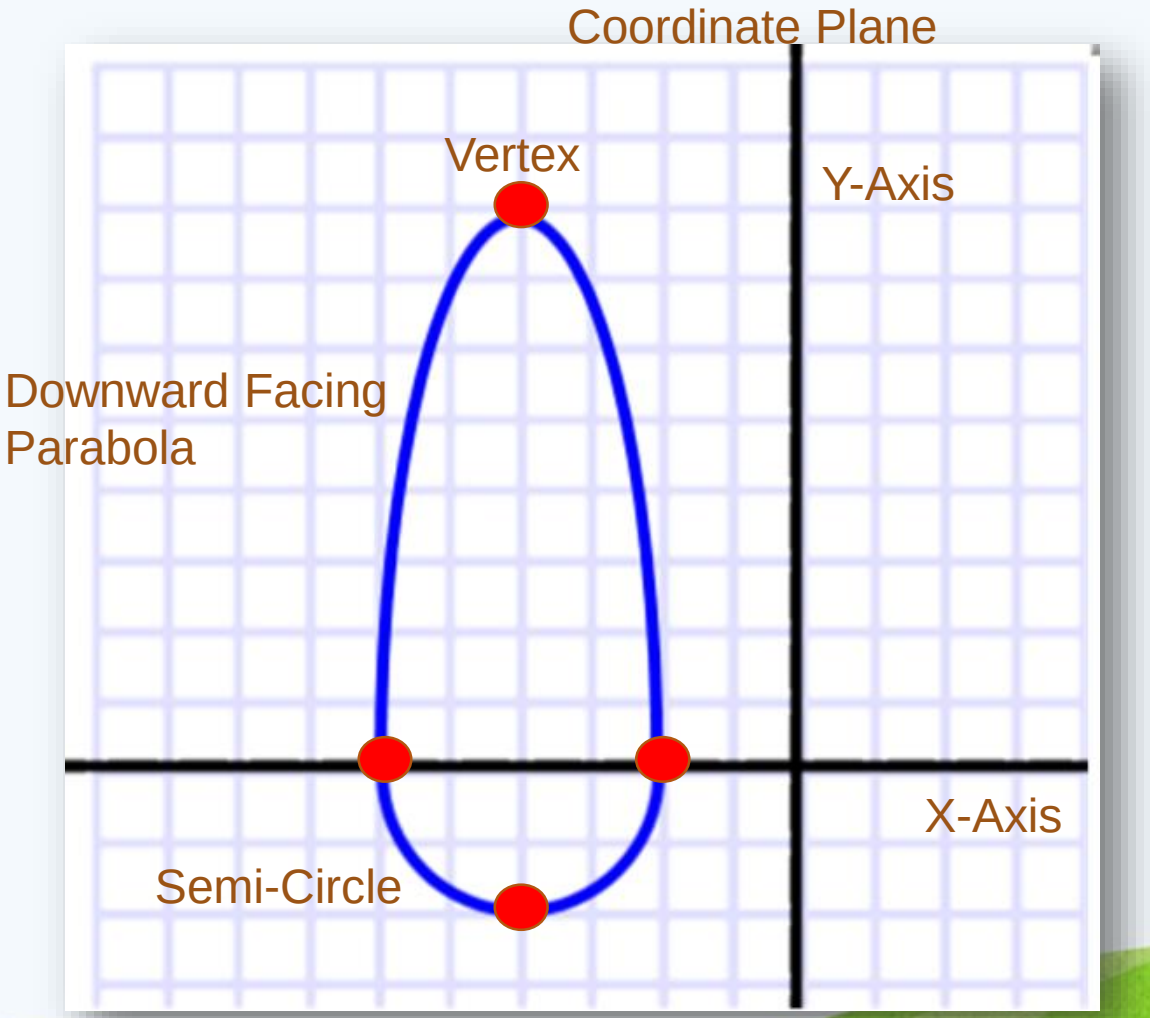
Orator must not look at the Illustrators work!

The Language
Bricks and Mortar



- Word Banks
- Sentence Frames
- Frayer Model
- Writing Templates

Barrier – Think-a-Loud

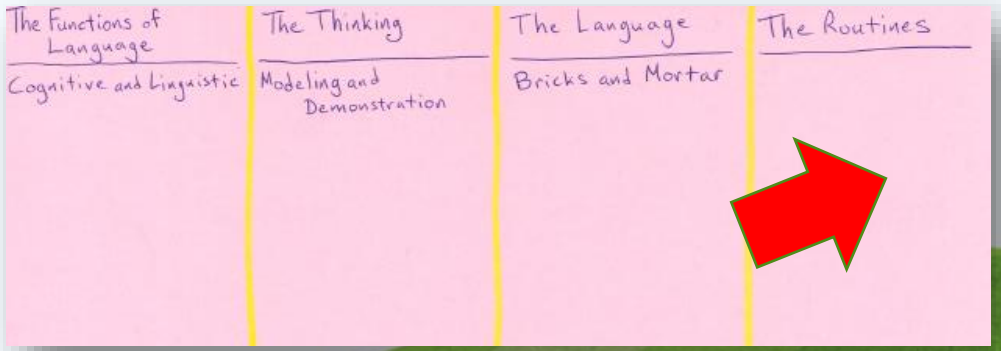


2nd Round – Barrier Activity With Language Supports

- Switch Roles
- Scribe – List any new vocabulary words used.
- Orator
  - ✓Use the Word Bank
  - ✓ Consider the Sentence Frames

Routines

- Write/Read/Paraphrase Respond - WRPR
- Foldable – 3D Graphic Organizer
- Lift a line/Popcorn Share
- Graphic Organizer: T-Chart
- Barrier Activity
- Others?



Outcomes

Participants will be able to

- **Explain** the importance of explicitly teaching the language needed to access the mathematics
- **Describe and implement** routines that foster academic conversations

Closure/Reflection:

- What is one new idea you learned today?
- What is one question you have from today?
- How can you apply today's work in the coming month with your staff/colleagues?
- What is one suggestion you have for our presentation?

Thank you!

Debi Francis
francis_debi@salkeiz.k12.or.us

Tom Stricklin
stricklin_thomas@salkeiz.k12.or.us