



Math...It is EVERYWHERE!

Kathy Wall
Early Childhood Coach

Marisa Prewitt
Early Childhood Coach

June 9, 2021 Virtual Kindergarten Academy

mdek12.org

MISSISSIPPI DEPARTMENT OF EDUCATION

f t y

1



State Board of Education STRATEGIC PLAN GOALS

1 **ALL** Students Proficient and Showing Growth in All Assessed Areas

2 **EVERY** Student Graduates from High School and is Ready for College and Career

3 **EVERY** Child Has Access to a High-Quality Early Childhood Program

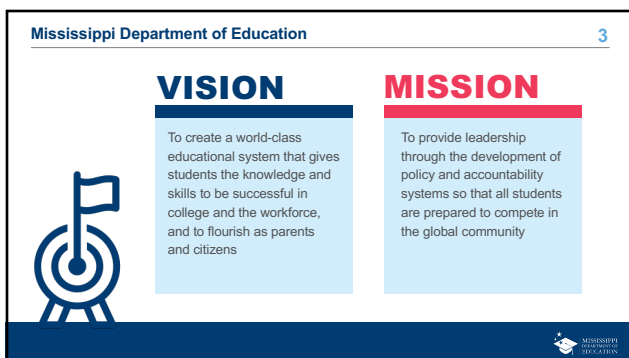
4 **EVERY** School Has Effective Teachers and Leaders

5 **EVERY** Community Effectively Uses a World-Class Data System to Improve Student Outcomes

6 **EVERY** School and District is Rated "C" or Higher

MISSISSIPPI DEPARTMENT OF EDUCATION

2



Mississippi Department of Education

VISION

To create a world-class educational system that gives students the knowledge and skills to be successful in college and the workforce, and to flourish as parents and citizens

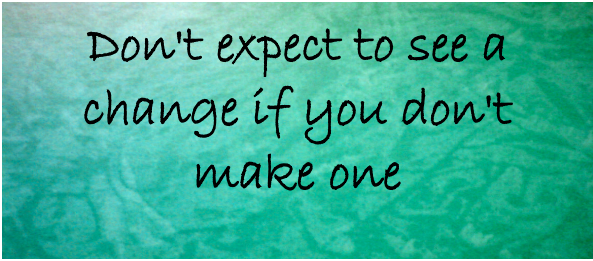
MISSION


To provide leadership through the development of policy and accountability systems so that all students are prepared to compete in the global community

MISSISSIPPI DEPARTMENT OF EDUCATION

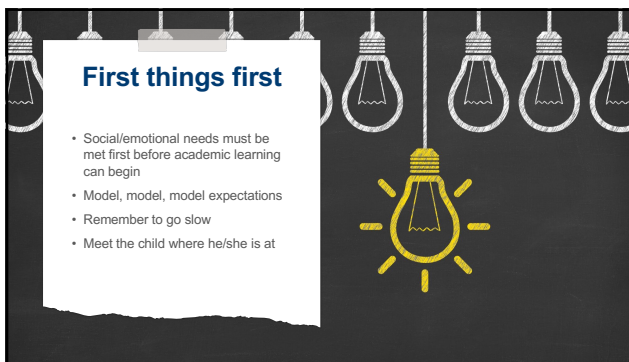
3

4





4



First things first

- Social/emotional needs must be met first before academic learning can begin
- Model, model, model expectations
- Remember to go slow
- Meet the child where he/she is at


5

6

Did you know Mississippi has Kindergarten Guidelines?

<https://mdek12.org/EC/Guidelines-and-Standards>

- p. 15: The curriculum contains thematic units of activities and ideas designed to provide children the opportunities and experiences needed to master the performance standards in the *Mississippi College- and Career Readiness Standards*. Lesson planning documents should reflect *Mississippi College- and Career Readiness Standards* that are targeted through large and small group activities, individual instructional activities, and learning center activities that are used throughout the thematic unit.



6

7

Did you know Mississippi has Kindergarten Guidelines?


<https://mdek12.org/EC/Guidelines-and-Standards>

- p. 15: A minimum of four (4) different learning centers (**three primary centers and one teacher-led small group) shall be organized, arranged, and labeled so that they are accessible to all children for simultaneous use for a minimum of 120 minutes per day. The MDE recognizes the definition of learning centers as identified in literature as “distinct areas in a classroom that offer various materials and opportunities for hands-on learning at individually appropriate levels”. (Copple & Bredekamp, 2006).

MISSISSIPPI DEPARTMENT OF EDUCATION

7

8



- To provide you with simple materials to rotate in your math center
- To provide you with books to rotate in your math center to match the theme
- To encourage you to utilize math small groups in your classroom throughout the day
- To utilize your calendar time wisely
- To provide you with simple math activities to share with families

MISSISSIPPI DEPARTMENT OF EDUCATION

8

9

Why Is Math So Important?

Problem solving (thought processes involved in finding a solution: forming a circle with friends, making a bridge to connect two block towers, etc.)

High math skills correlates with reading skills

Critical thinking (higher order thinking...explaining the "why" or "how", inferring, etc..)


Linked to high school graduation rates

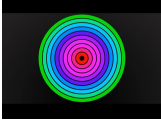
Children who enter kindergarten with poor math skills, typically do not catch up

MISSISSIPPI DEPARTMENT OF EDUCATION


9

Watch and be ready to share one new idea you learned!





10




10


Matching & Sorting

Different ways to sort, categorize, or classify objects (e.g., color, size, length, height, weight, area, temperature). M.MD.PK.4.3

- Children can sort cards by color, number or type of face card.
- Children can sort letters to see which ones are in their name or not in their name.
- Children can sort grocery items if they should be refrigerated or if they are cans, etc.



11



11

Books on Matching and Sorting

- Five Creatures** by Emily Jenkins
- Is Your Mama a Llama?** by Deborah Guarino
- Sam Sorts** by Marthe Jocelyn
- Sorting at the Market** by Tracey Steffora
- The Snowy Day** by Ezra Jack Keats (weather)








12



12

At-Home Math Activities



Sorting Utensils (M.MD.PK4.3)

- Have your child put the clean utensils up! (new vocabulary word too... utensils)
- Conversation starters: How are these items alike or same? Why did you put these items in this pile and not in this other pile?
- Conversation starters: Which utensil is different? How do you know? (you can ask the child to justify the answer, to prove that it is correct)
- It is important to PAUSE after asking a question...this gives the child time to think and respond

13

Theme Ideas




Winter

- Gather different size cotton balls, sort by size (M.MD.PK4.3)
- Write numbers 0-10 on snowmen; the child will add the correct number of buttons by drawing or placing real buttons (M.CC.PK4.4b)
- Write the numbers 0-10 on a blue piece of paper; the child will add the correct number of cotton balls (snow) by drawing or placing real cotton balls on the paper (M.CC.PK4.5)

15

Theme Ideas

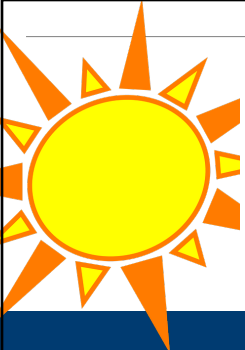


Spring

- Use a di-cut to cut various colors of flowers. Write letters on some flowers and numbers on the remaining flowers. Sort by letter/numbers. (M.MD.PK4.3)
- Sort a variety of seeds by size/color. (M.MD.PK4.3)
- Use a di-cut to cut out rabbits and carrots. Write numbers 0-10 on the rabbits. Draw scattered dots 0-10 on the carrots. Match. (M.CC.PK4.5)

16


17



Theme Ideas

Summer

- Using any manipulatives (counters, cubes, dominos, links, etc.), sort by color, size, or type. (M.MD.PK.3)
- Using yellow construction paper, draw a glass of lemonade. Write a number 0-10 on the glass, the child will use a white crayon to draw ice cubes to match the number. (M.CC.PK.5)



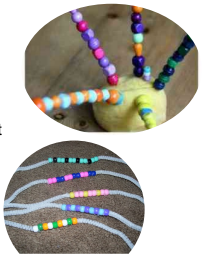
17


18

Patterning

Developmental Sequence of Learning Patterns
(M.OA.PK.4)

- Recognizing patterns (noticing/identifying)
- Copying patterns (duplicating)
- Extending patterns (showing or predicting what comes next)
- Translating patterns (using new materials to represent a pattern)
- Creating patterns (higher-level thinking: making your own original pattern)







18

Patterns

The sequence of life cycles fall under this category such as the life cycle of a butterfly or plant. (M.OA.PK.4)





19

Can you identify a pattern in this story?

20

Patterns can include repetition: In this book, the pattern gives an example of a plus one pattern. (M.OA.PK4.4)

20

Books about Patterning

21

- **Pete the Cat: I Love My White Shoes** by Eric Litwin
- **Brown Bear, Brown Bear What Do You See?** by Bill Martin, Jr.
- **The Tiny Seed** by Eric Carle (sequence)
- **The Napping House** by Audrey Wood (plus one pattern)
- **From Head to Toe** by Eric Carle

21


At Home Math Activities

- Using Legos, create tower patterns (red, blue, red, blue, etc.) Compare the towers (tallest/shortest) (M.MD.PK4.2a)
- Using colored cereal/candy, create a line pattern (green, yellow, green, yellow)

22

23

Theme ideas



Family

- Using an ink pad or paint, create fingerprint patterns. (M.OA.PK.4.4)
- Using people manipulatives; create a pattern (color/size). (M.OA.PK.4.4)

MISSISSIPPI DEPARTMENT OF EDUCATION

23

24

Theme Ideas

Friends

- Using colored cereal, create a pattern and make a friendship necklace. (M.OA.PK.4.4)
- Use pictures of classmates/friends and create a pattern (boy/girl).



MISSISSIPPI DEPARTMENT OF EDUCATION

24

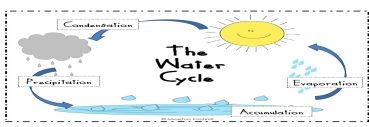
25

Theme Ideas

Wind and water

Create a water cycle diagram.

Using manipulative fish or die-cut fish, create a pattern of fish in the water. (M.OA.PK.4.4).



MISSISSIPPI DEPARTMENT OF EDUCATION

25

Theme Ideas

Shadows and Reflections

- Using black construction paper and die-cut shapes, children can create their own pattern of shadow shapes. (M.OA.PK4.4)
- Head outside, using the shadows of the children's bodies, create a pattern of shadow movements (standing, kneeling, standing, kneeling, etc...). (M.OA.PK4.4)

26

26

It's Break time!!


27

27

Have you experienced this in your classroom before?

28


28



29

Number Sense Terms

- ZERO...don't forget this is a number!
- Rote counting is memorizing and reciting number words in the right order
- One to one correspondence is counting each item once
- Cardinality is knowing that the last number said is the amount that you have
- Subitizing is looking at items and knowing right away how many there are without counting each one



29

Books About Number Sense

30

- **Five Green and Speckled Frogs**- finger play & song
- **10 Black Dots** by Donald Crews
- **One Duck Stuck: A Mucky Ducky Counting Book** by Phyllis Root
- **One is a Snail, Ten is a Crab: A Counting by Feet Book** by April Sayre & Jeff Sayre
- **Baby Goes to Market** by Atinuke











30

At-Home Math Activities



31

Sale Ads (M.CC.PK4.2)

- Materials needed: sale ad, markers or pencils or highlighters
- Sale Ads are a great way to bring in math and/or literacy.
- You can give your child a number or range of numbers to look through, identify & highlight or circle the numbers that are to be identified
- Look for opportunities to count, add & problem solve.
- Ask open-ended questions to sustain your math talk.

31





Theme ideas

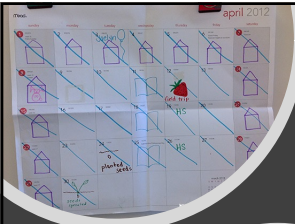

32

Colors

- Create a color number book: 1 red apple, 2 green pears, 3 red plums, 4 blueberries, etc. Children will draw the pictures or cut pictures from magazines to glue in the book. (M.CC.PK4.4b)
- Go on a color hunt: children will roll a colored die, count the colored dots, and find the matching number of the color (e.g., if the child rolls to a 3 red, the child will find 3 red items, if the child rolls 1 blue, the child will find 1 blue item, etc.). (M.CC.PK4.6)



32





Theme Ideas

33

Things that Grow

- Using a blank calendar, sketch the growth of a seed to a plant. (M.OA.PK4.4)
- Using dice and real seeds, the child will roll the dice and use the seeds for adding how many altogether. (M.OA.PK4.2)



33





Theme Ideas

34

Zoo

- Feed the giraffe leaves: the child will roll a die, identify the number and using green playdough, feed the giraffe the leaves. (M.CC.PK4.5a)
- Ask each child which is their favorite zoo animal (zebra, giraffe, elephant, other). Graph zoo animals and count to see which animals that you have more of. (M.CC.PK4.6)



34

Measurement

35

- Children begin to learn:
 - the concepts of *more*, *less*, and *same*.
 - that one object can be measured in different ways, depending on the attribute being considered.
 - the language of measurement.
 - that comparisons require attending to relevant dimensions.
 - the *order* and relative sizes of quantities along some attribute.
 - inferences* can be made from information about order.
- Measurement provides opportunities to strengthen both children's number and measurement understandings at the same time!
- In play, measurement is already very meaningful, particularly around fairness ("He got more than me!" "She got the bigger dinosaur so I should get two little dinosaurs!" "He had it for a longer time than me! It's my turn again!").

35

Measurement

36

- What to measure and why (if a toy will fit in a box?) M.MD.PK4.1
- How to use measurements (to get an accurate answer) M.MD.PK4.2
- What measuring tools to use (using standard or non-standard) M.MD.PK4.2a M.MD.PK4.2b

36

Measurement

37

How many drawings can fit on the wall if we put them end to end?

How long should the butcher paper be to cover the whole table?

How much milk do we need so everyone has a cup?

How can we compare the height of two block towers?

How much food do we put in the aquarium each morning to feed five fish?

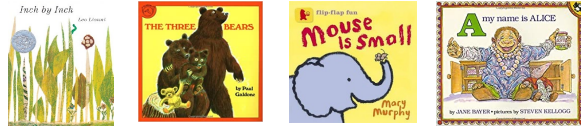
Can we measure the size of the bubbles we blow?

37

Books About Measurement

38

- *Inch by Inch* by Leo Lionni
- *The Three Bears* by Paul Galdone
- *A Mouse is Small* by Mary Murphy
- *A My Name is Alice* by Jane Bayer



38

At Home Measurement Activities

39

- Cook together- have your child help measure out ingredients and pour them in with your assistance. (M.MD.PK4.2b)
- Write out the names of family members. When you place them down, compare and measure the length of each name. (shortest/longest). (M.MD.PK4.2)
- Use a piece of string to measure around an apple or orange then place the string next to a ruler/utensil/foot to see how long it is. (M.MD.PK4.2a)



39



Theme Ideas

Community Helpers

- Create a map of community helpers in your community and measure the distance to get to each location. This can be used in block, dramatic play or outdoors. (M.MD.PK4.2a)
- Save envelopes from the mail, sort the envelopes by size or color. (M.MD.PK4.5)

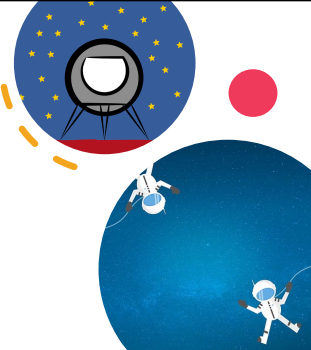


40

Theme Ideas

Space

- Using different colored 2x2 squares, create a name rocket and discuss who has the longest/shortest name. (M.MD.PK4.2)
- Using aluminum foil, the child will make different sized space rocks and compare (bigger/smaller, heavier/lighter, etc.). (M.MD.PK4.2)



41

Theme Ideas

Farm

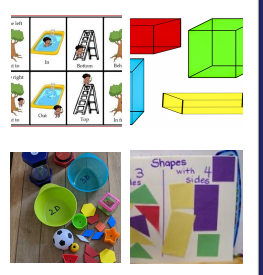
- Using farm animal manipulatives or pictures, the child will use a non-standard method to measure. (M.MD.PK4.2a)
- Sort farm/ocean animals. (M.MD.PK4.5)
- Using real vegetables or pretend pictures, the child will use standard measuring tool to measure. (M.MD.PK4.2b)



42

Spatial Relations

- Correctly name shapes in the environment (M.G.PK4.1)
- Explore the differences between two-dimensional and three- dimensional shapes (M.G.PK4.3)
- Learn about positional words.



43

Spatial relations

Create


- You can create 3D shapes using uncooked spaghetti and mini marshmallows M.G.PK4.4

Make

- Make 2D shapes using pipe cleaners and then use them as bubble wands M.G.PK4.4

Have



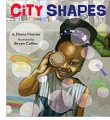
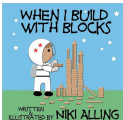
- Have the students create a bridge in the block center and use figures or people to demonstrate their knowledge of positional words



44

Books about Spatial Relations

- Rosie's Walk* by Pat Hutchins
- Last Stop on Market Street* by Matt de la Pena
- City Shapes* by Dianna Murray
- When I Build with Blocks* by Niki Alling

45

At Home Spatial Relations Activities




- Make a 3D animal out of empty cereal boxes and paper towel tubes. (M.G.PK4.4)
- Have your child help set the table. While they are doing it use positional words- place the napkin under the fork, place the spoon beside the plate, place the cup above the spoon
- Use empty boxes to create a bridge for toy cars and have your child use positional words while playing with you to tell where to put the car. (M.G.PK4.4)

46

Theme Ideas

Transportation

- Use pattern blocks of various shapes to recreate different forms of transportation. (M.G.PK4.5)

47

Theme Ideas

Nursery Rhymes

- Humpty Dumpty: using blocks/Legos the child can re-create the wall for Humpty Dumpty to fall off. (M.G.PK4.5)
- Little Bo Peep: using pipe cleaners and beads, the child can create a mini staff (M.G.PK4.4)

48

Theme Ideas

Bugs

- Practice positional words using bug manipulatives/drawings (the ladybug is above the fence, the ladybug is below the fence, etc.)
- Using a variety of colored pipe cleaners, the child can create their own bug/insect with 6 legs. (M.G.PK4.4)

49

It's break time!!

50



50

It's Calendar Time!!!

51

- In the chat box...please type how much time you spend teaching calendar concepts daily?
- If you spend 5-10 minutes a day every day with 180 instructional days...you spend 900-1,800 minutes per year just on the calendar
- If you spend 30 minutes a day every day with 180 instructional days...you spend 5,400 minutes per year just on the calendar
- **Calendar mastery is not a Pre-K standard**



51

Calendar in the classroom

52

- The best way to use the calendar!! (M.OA.PK4.4)
- Make it meaningful to **THEM**. (things that have already happened or will happen)
 - Count-down to special days (Could also create a countdown chain)
 - Conversation starters: today starts with a /w/ sound...which day could that be?, can you count how many days until church, or the weekend?
 - Before bed, talk with your child about their plans for tomorrow. What will they do when they wake up? What do they need to do to get ready?
 - Graph the weather, ask your child to think about what they should wear...if it is rainy tomorrow like today, how should you dress?



52

Open-Ended Questions for the Math Center

What is the difference between closed questions and open-ended questions?

- How did you sort these?
- Why did you sort by color/size/shape?
- How many do you have?
- How did you get the answer of 5?
- What shape did you make?
- Can you tell me how you created this circle?
- What pattern is this?
- Can you think of a new way to make a pattern?

53

Math Small group

- Do you utilize math small groups in addition to literacy small groups?
- Don't spend all of your time focusing on literacy work in that math.
- You don't have to meet with everyone every day.
- Make sure your small groups are a small manageable size.
- Make it fun for you and the students. Don't think of it as something else added to your plate.

54

54

SAMPLE OF HOW SMALL GROUPS CAN WORK

Monday:
 Group 1 with teacher – math
 Group 2 with assistant – art
 Group 3 independent – literacy

Tuesday and Wednesday: switch groups

Thursday:
 Group 1 with teacher – science
 Group 2 with assistant – literacy
 Group 3 independent – fine motor


Friday and Monday: switch groups

55

App resources for parents


56

App resources for parents



Download the Vroom

- <https://www.vroom.org/>





- Follow @DREMEmath on Twitter (at home learning tips)

Download Ready4K

<https://ready4k.parentpowered.com/>

Ready4K





56

[illegible]

EPIC Mississippi
Text the code you want to 33222!

[illegible]

57

<https://www.mdek12.org/EC>

58

<https://www.mdek12.org/EC> 58

Early Childhood

The Office of Early Childhood is committed to accelerating student achievement for every child in Mississippi who completes the goal by meeting school districts and families improve the readiness and reading achievement of Mississippi students entering preschool.

Back-to-School Resources

- Guidance to Support Students Entering Early Childhood Classrooms
- Teacher Certification and Supervision of Plans for Early Childhood
- Best Developing Strategies in the Classroom
- Back-to-School Family Guide
- Virtue Teaching and Learning Strategies for Early Childhood
- Early Assessment/Guidebook
- Family Engagement Activities
- MPS Classroom TV Episodes

Program Administration and Evaluation

- Guidelines and Standards
- Best Practices Checklists and Observational Evaluation
- Tech and Supports

Elementary Education and Reading

401-979-2960
 @ MDEK
 @ EAD

Servises ▾

- Academic Standards
- Any Device, Media Kits, Music, Theatre, Visual Arts
- Balanced Literacy (Students)
- Cover and Technical Education
- Diver Education
- Early Childhood
- English Language Arts
- Health
- Mathematics
- Physical Education
- Science

MISSISSIPPI
DEPARTMENT OF
EDUCATION

58

[illegible]

Other
Developmentally
Appropriate
Resources

59

<https://www.naeyc.org/resources/topics/math>
(playful math, how children learn and understand math, math ideas for families)

<http://youngmathematicians.edu.org/games/>
(games for home and school)

<http://prek-math-te-stage.gse.stanford.edu/>
(free research-based materials for pre-k teachers)

59

Helpful
Links

60

- This is a link that shows some suggested books to place in a math center. <https://www.precipages.com/math-center-books-for-preschool/>
- Link to Free printable pattern block mats <https://www.prekinders.com/pattern-blocks/>
- Link to Free Printable Math Play Doh Mats <https://www.prekinders.com/category/play-dough-math/>
- [Support Math with Materials in Your Home I NAEYC](#)
- [5 Ways to Build Math into Your Child's Day I NAEYC](#)

60

Thoughts or Questions

61




61

62



Kathy Wall
Early Childhood Coach
kwall@mdek12.org

Marisa Prewitt
Early Childhood Coach
mprewitt@mdek12.org

mdek12.org



MISSISSIPPI
DEPARTMENT OF
EDUCATION



62