

Parent
Road Map
Mathematics
Pre-Kindergarten to Grade 5





PARENT ROAD MAP - MATHEMATICS AT NATIONS

At School of the Nations, the mathematics curriculum is based on current research and best practices in mathematics education. Our curriculum is in alignment with the Common Core State Standards for Mathematics and implements and reinforces the use of conceptual teaching to teach concepts in depth and with understanding rather than just asking students to apply rote procedures. In 2013, the National Council of Supervisors of Mathematics (NCSM) issued a position statement on the use of manipulatives in classroom instruction to improve student achievement. "[I]n order to develop every student's mathematical proficiency, leaders and teachers must systematically integrate the use of concrete and virtual manipulatives into classroom instruction at all grade levels." (NCSM, 2013). In our school, instructional strategies use visual models and manipulatives in a Concrete–Representational–Abstract (CRA) approach to help students make connections between concrete manipulatives and abstract mathematical ideas. Students discuss and share ideas while they investigate and learn the standards in the curriculum, focusing on the instruction priorities of the Common Core State Standards.

Helping your child learn outside of school

Research indicates that parents' involvement in their children's schoolwork is of great influence in student's success at school. However, being involved does not mean doing your child's homework for him or her. In mathematics particularly, there are some practices we recommend in giving support at home, and some practices that are best avoided. Here are the DOs and DON'Ts:

The DOs:

- Use opportunities to let them see Math everywhere: Hour, calendar, bigger, smaller, more, less than, change, recipes, classify and measure objects.
- Count forwards and back (rhythm), skip count.
- Play games - especially dice/domino patterns.
- Be patient. Let him/her think!
- Give them a proper place to do the homework.
- When your child asks for help, provide guidance, not answers.
- You may assist/check their homework assignment, but do not feel like it has to come back perfect and all correct. Allow your child to make mistakes and bring doubts back to the classroom.
- Try to be aware of how your child is being taught Math and don't teach strategies or shortcuts that conflict with the approach the teacher is using. Check in with the teacher and ask what you can do to help.
- Ask your child to justify a step in a problem (let them try to find a mistake) or explain their homework to you.

The DON'Ts

- Don't answer for your child. Be patient. Let him/her think!
- Don't teach him something new at the abstract level. If they can't do a challenge, let them bring the question back to class.
- Don't practice operations by repetition, giving more exercises than defined by the school.
- Don't enroll the child in methods which are based on behavioral principles and training.
- Don't show anxiety or frustration with the homework assignment. Reassure your child and send a note to the teacher if necessary.

If your child needs support at home

Don't be afraid to reach out to your child's teacher and ask how you can support your child at home. Make sure the support given is in accordance to what he or she needs support in. The best way to start supporting your child is listening to the teacher's suggestions of activities or games you can play at home with your child that will help him or her develop math skills.



There are also many resources online you might use to support your child. These include video lessons, practice exercises, and games. Ask your child's teacher for some suggestions. The school subscribes to two websites that have many practice problems and activities for your child:

IXL (for grades PreK to 9) – www.ixl.com/signin/nations

Mathletics (Grades 1 to 5) - <http://www.mathletics.com>

If your child wants enrichment at home

Children learn in different ways and at different paces. Our curriculum covers the essential concepts and focal points of the Common Core Math Standards, but there is always room to deepen children's thinking or extend their knowledge if they show they are ready. Make sure to check with your child's teacher to ensure that he or she is ready for enrichment, and ask for resources he or she can use to enrich the curriculum at home.

EARLY CHILDHOOD EDUCATION

Experiences with mathematics in early childhood settings concentrate on numbers (which includes whole numbers, operations, and relations), geometry, spatial relations, and measurement, with more mathematics learning time devoted to number than to other topics. Mathematical process goals should be integrated in these content areas. — Mathematics Learning in Early Childhood, National Research Council, 2009

Kindergarten

In kindergarten, your child will focus primarily on two important areas. The first is learning numbers and what numbers represent. The second is addition and subtraction. Students will also learn to identify and work with shapes. Activities in these areas include:

- Counting how many objects are in a group and comparing the quantities of two groups of objects
- Comparing two numbers to identify which is greater or less than the other
- Understanding addition as putting together and subtraction as taking away from
- Adding and subtracting very small numbers quickly and accurately
- Breaking up numbers less than or equal to 10 in more than one way (for example, $9=6+3$, $9=5+4$)
- For any number from 1 to 9, finding the missing quantity that is needed to reach 10
- Representing addition and subtraction word problems using objects or by drawing pictures
- Solving addition and subtraction word problems involving numbers that add up to 10 or less or by subtracting from a number 10 or less
- Composing and decomposing numbers from 11 to 19 into ten ones and some further ones (e.g., $18 = 10 + 8$)
- Describing objects in the environment using names of shapes

A Sample of What Your Child Will Be Working on in Kindergarten

- Counting objects to tell how many there are
- Comparing two groups of objects to tell which group, if either, has more; comparing two written numbers to tell which is greater
- Acting out addition and subtraction word problems and drawing diagrams to represent them
- Adding with a sum of 10 or less; subtracting from a number 10 or less; and solving addition and subtraction word problems
- Adding and subtracting very small numbers quickly and accurately (e.g., $3 + 1$)
- Correctly naming shapes regardless of orientation or size (e.g., a square oriented as a "diamond" is still a square)