



Common Core Connections MATH

Chicago Children's Museum's mission is to improve children's lives by creating a community where play and learning connect.

Math is all around us and recent research has shown that early math success is one of the best predictors of a child's school success across the curriculum. Moreover, the world is continuing to move into an age where many jobs that require strong understanding of mathematics are at the heart of technological advancement (Erikson Institute, 2014). We need to work together to better prepare our youngest learners to excel mathematically!

A visit to CCM helps your students make connections to real world math OUTSIDE the classroom! Early mathematics encompass many BIG IDEAS of learning that CCM supports in and among our exploratory exhibits such as:

Attributes and Sets

At Chicago Children's Museum children discover that attributes can be used to make collections and that sets can be sorted in different ways. They will also compare and order sets during their visit.

Number Sense and Counting

At Chicago Children's Museum children practice counting to find out "how many", while also exploring *quantity* as an attribute to a set of objects.

Number Operations

During their visit children discover that sets are changed by adding or taking away items, while also using sets to find how many more, how many less or equality.

Geometry and Spatial Relationships

Shapes abound at Chicago Children's Museum! Children define and classify shapes (both 2-D and 3-D), and then study the relationships between objects and their experiences with those objects.

Measurement

Children measure various attributes of objects in our exhibits. Through fair comparisons, children will also discover that assigning a quantity to measurements helps us to describe and compare.

This guide is a tool to help you plan for a math experience at Chicago Children's Museum. Each description of the museum's permanent exhibit is followed by the most relevant connections to Common Core State Math Standards and the Math Practices.

Chicago Children's Museum's Student and Educator Programs are part of the Karen Harrison Student Connections Program.

ChicagoChildrensMuseum.org

At Navy Pier • Open daily at 10 am • (312) 527-1000

Permanent Exhibits

Kids Town

In this child-sized cityscape children explore a grocery store, a CTA bus, gas station, and construction site. Designed especially for early learners (age 5 and younger), this space promotes measuring, making sets and counting in a variety of ways.

Prekindergarten

IELS Math

- 6.D.EC Make comparisons of quantities.
- 8.B.ECa Begin to order objects in series or rows.

Kindergarten

CCSS Math

- K.MD.1-2 Describe and compare measurable attributes.
- K.MD.3 Classify objects and count the number of objects in each category.

Standards for Mathematical Practices

Reason abstractly and quantitatively.

Dinosaur Expedition

In this exhibit, children dig for bones in the excavation pit and learn what it's like to be a real paleontologist. They count and quantify the bones and materials they unearth, while also comparing the size of the bones.

Prekindergarten

IELS Math

- 7.A.EC Demonstrate a beginning understanding of measurement, including vocabulary.
- 7.B.EC Show understanding of and use comparative words.

Kindergarten-First

CCSS Math

- K.CC.4 Count and tell the number of the objects.
- K.MD.1-2 Describe and compare measurable attributes.
- 1.OA.5 Relate counting to addition and subtraction (counting on).

Prekindergarten—Second Grade Standards for Mathematical Practices

Reason abstractly and quantitatively.
Make sense of problems and persevere in solving them.

Permanent Exhibits

Skyline

Children collaborate to design and build their own one-of-a-kind structure using wooden struts, real tools, and authentic construction gear. While building, children explore geometry and estimate measurements of objects.

Prekindergarten

IELS Math

- 7.B.EC Show understanding of and use of comparative words.
- 7.C.EC Incorporate estimating and measuring activities into play.
- 9.A.EC Recognize geometric shapes and structures in the environment.

Kindergarten

CCSS Math

- K.MD.1-2 Describe and compare measureable attributes.
- K.G.2 Correctly name shapes regardless of their orientations or overall size.
- K.G.4 Analyze and compare two and three dimensional shapes using informal language to describe similarities and differences.
- K.G.5 Model shapes in the world by building shapes from components.

First Grade

CCSS Math

- 1.MD.1 Order three objects by length; compare the lengths.
- 1.MD.2 Express the length of an object as a whole number of length units.
- 1.G.1 Distinguish between defining/non-defining attributes; build and draw shapes.
- 1.G.2 Compose 2-D or 3-D shapes to create a composite shape, and compose new shapes.

Second Grade

CCSS Math

- 2.MD.3 Estimate lengths using units of inches, feet, centimeters and meters.
- 2.G.1 Recognize and draw shapes having specific attributes, such as angles, faces and identify shapes.

Prekindergarten—Second Grade Standards for Mathematical Practices

Reason abstractly and quantitatively.

Model with mathematics.

Construct viable arguments and critique the reasoning of others.

Permanent Exhibits

Michael's Museum

Children observe nearly 100 collections of tiny objects, use magnifiers and rulers to gain new perspectives, sort and organize hundreds of tiny treasures. Lastly, children explore early computation by combining and separating sets/collections they see.

Prekindergarten

IELS Math

- 6.A.ECa-b Use concepts that include counting and one-to-one correspondence, while understanding “how many” in a set.
- 8.A.EC Sort and classify objects by a variety of properties.
- 8.C.EC Participate in situations that involve addition and subtraction using manipulatives.

Kindergarten

CCSS Math

- K.CC.4-5 Count to tell the number of objects.
- K.CC.6-7 Compare numbers in a set.
- K.OA.1 Understand addition as putting together and subtraction as taking apart/from.

First Grade

CCSS Math

- 1.OA.1 Represent and solve problems involving addition and subtraction.
- 1.MD.1 Order three objects by length; compare the lengths.
- 1.MD.4 Organize , represent and interpret data in up to three categories, including how many in each category and how many more or less are in one than the other.

Second Grade

CCSS Math

- 2.OA.3 Determine whether a group of objects has an odd or even number of members using various strategies.
- 2.NBT.7 Add and subtract within 1000, using concrete models or drawings and various strategies.

Prekindergarten—Second Grade Standards for Mathematical Practices

- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.

Permanent Exhibits

The Allstate Foundation presents Play It Safe

In this exhibit, developed in partnership with the Chicago Fire Department, children measure and explore spatial relationships as they climb on our fire truck, slide down the fire station pole, and practice escaping from a smoke-filled bedroom.

Prekindergarten

IELS Math

- 7.B.EC Show understanding of and use of comparative words.
- 7.C.EC Incorporate estimating and measuring activities into play.
- 9.B.EC Find and name locations with simple words such as “near, far, on, off”.

Kindergarten

CCSS Math

- K.G.1 Describe objects in the environment using names of shapes and/or describing the position of these objects.
- K.MD.1 Describe measurable attributes of objects such as length or weight.

First Grade

CCSS Math

- 1.MD.1 Measure lengths indirectly by iterating length units.

Second Grade

CCSS Math

- 2.MD.3 Estimate lengths using units of inches, feet, centimeters and meters.

Prekindergarten—Second Grade Standards for Mathematical Practices

Reason abstractly and quantitatively.

Model with mathematics.

Construct viable arguments and critique the reasoning of others.

Permanent Exhibits

Treehouse Trails

Young children (ages 5 and younger) camp, climb, burrow, and pretend in this enchanted forest setting. They identify patterns and sort objects while composing and decomposing quantities of objects they find.

Prekindergarten

IELS Math

- 6.A.ECa-b Use concepts that include counting and one-to-one correspondence, while understanding “how many” in a set.
- 6.C.ECa Explore quantity and number.
- 8.A.EC Sort and classify objects by a variety of properties.

Kindergarten

CCSS Math

- K.CC.6 Identify whether the number of objects in one group is greater than, less than or equal to the number of objects in another group.
- K.OA.1 Represent addition and subtraction with objects and act-out situations.

Standards for Mathematical Practices

Reason abstractly and quantitatively.
Model with mathematics.

Tinkering Lab

Upon entering Chicago’s first DIY maker-space, families will have the ultimate workshop experience. You’ll find all the space and freedom you need to create. We provide real tools and real materials so students can delve into any and all of the CCSS Mathematical Practices.

Prekindergarten-Second Grade Standards for Mathematical Practices

Reason abstractly and quantitatively.
Model with mathematics.
Construct viable arguments and critique the reasoning of others.
Use appropriate tools strategically.
Attend to precision.
Make sense of problems and persevere in solving them.
Look for and make use of structure.
Look for and express regularity in repeated reasoning.

Permanent Exhibits

WaterWays

Children explore the power of water using an interactive system of pulleys, wheels, and pipes to navigate their boat through the mighty river. In this exhibit children measure and compare to answer, “What has more or less?”

Prekindergarten

IELS Math

- 7.B.EC Show understanding of and use of comparative words.
- 7.C.EC Incorporate estimating and measuring activities into play.

Kindergarten

CCSS Math

- K.MD.1-2 Describe and compare measureable attributes.

Prekindergarten—Second Grade Standards for Mathematical Practices

- Reason abstractly and quantitatively.
- Model with mathematics.
- Construct viable arguments and critique the reasoning of others.
- Use appropriate tools strategically.
- Attend to precision.
- Make sense of problems and persevere in solving them.