

Englewood Public School District
Mathematics
Grade 2
Fourth Marking Period

Unit – Geometry, Fluency and In-depth Review

Overview: During this unit, students will learn about picture graphs, lines and surfaces, shapes and patterns.

Time Frame: Chapter 17 – 10 days, Chapter 18.2 only – 3 days, Chapter 19 – 10 days, Review of Fluency and In-depth Standards – 12 days
(Pacing includes 1 day for Chapter Opener pages if needed.)

Enduring Understandings:

Picture graphs use pictures to show data about things you can count.

Data can be organized in ways to make it easier to interpret the information

Properties of parts of lines, curves and surfaces can be seen and felt.

Plane and solid shapes can be identified

Plane and solid shapes can be separated and combined to make other shapes

The world is made up of plane and solid figures

Essential Questions:

What are some times that it would be helpful to use a graph?

How will you know which type of graph to use?

How do the surfaces of given objects determine what we can do with them?

What plane shapes do you see in the room?

What solid shapes do you see in the room?

Standards	Topics and Objectives	Activities	Resources	Assessments
Chapter 17				
2.MD.D.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare	<p>Topics</p> <p>Using pictures to show data about things that can be counted.</p> <p>Twenty-First Century</p>	<p><u>2.MD.D.10 Favorite Ice Cream Flavor</u></p> <p>Math Playground http://www.mathplayground.com/</p>	<p>SE-2B: 224-142 Workbook 2B: 179-200</p> <p>Common Core Focus Lesson Appendix</p> <p>Think Central: Online</p>	<p>Formative Assessments:</p> <ul style="list-style-type: none"> • Do Now • Exit Ticket • Math Journal Entries (CRP4) • Math notebook (NJSLSA.W2.)

problems using information presented in a bar graph. (See Table 1.)

Mathematical Practices
MP.1, MP.2, MP.6

Themes and Skills include:

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration

Objectives

Students will be able to:

- Read, analyze, and interpret picture graphs.
- Complete picture graphs.
- Make picture graphs.
- Read and interpret picture graphs.
- Make a line plot to show data.
- Solve real-world problems using picture graphs.

Math Coach – Fact Fluency
<http://schoolwires.henry.k12.ga.us/Page/21865>

Math Wire – Basic Facts Link
<http://mathwire.com/numbersense/bfactslinks.html>

Math Fact Practice
<http://www.playkidsgames.com/games/mathfact/mathFact.htm>

Critical Thinking and Problem Solving p.243-244:
Put on Your Thinking Cap!

Picture graphs with pizazz (includes formative and summative assessments):
<http://www.cpalms.org/Public/PreviewResourceLesson/Preview/35891>
(CRP2, CRP4, CRP6, CRP8, 8.1.2.E.1)

Children's books:
<https://www.the-best-childrens-books.org/math-for-kids.html>

More additional texts:

access to all Math in Focus materials listed above and Virtual Manipulatives

Professional Resources:
The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar Modeling Tool by Yeap Ban Har, PhD.

Lesson and Component Walkthrough:
www.hmhelearning.com

Technology Resources

- Math in Focus eBooks
- Math in Focus Teacher Resources CD

North Carolina Dept of Ed. Wikispaces:
<http://maccss.ncdpi.wikispaces.net/Elementary>

Arizona Flip Book
<http://www.azed.gov/azccrs/files/2013/11/2flipbookedited.pdf>

Delaware DOE Common Core Item Bank for Mathematics – Grade 2
http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/111/Math_G

- Calendar skills
- Observations
- Discussions: in groups, have students explain different ways of solving problems (CRP4, 8.2.2.E.1)

Summative Assessments:
Math in Focus Assessments

- Chapter Review/Test – pp 245-247
- Assessments 2 – pp.138-142
- ExamView Assessment Suite – Test and Practice Generator
- Short answer / multiple choice assessments (8.2.2.E.1)
- Performance Task

Benchmark Assessment:

- Exact Path

Alternative Assessments:

- Online assessments:
https://www.opened.com/search?area=mathematics&grade=2&resource_type

www.newsela.com
www.readworks.org
www.commonlit.org

rade 2-Nov.pdf

Worksheets, games, lesson plans:
<https://www.education.com/resources/second-grade/math/>
(8.1.2.E.1)

Worksheets, games, videos:
<http://www.mathchimp.com/2nd-grade-math-resources>
(8.1.2.E.1)

www.khanacademy.org
(8.1.2.E.1)

Activities, worksheets, lesson plans, curriculum:
<http://www.jumpstart.com/parents/resources/grade-based-resources/2nd-grade-resources>
(8.1.2.E.1)

Everyday math resources:
<http://www1.center.k12.mo.us/edtech/edm/2.htm>
(8.1.2.E.1)

Explanation of math journals:
<https://thecornerstoneforteachers.com/math-journals/>
(CRP4, NJSLA.W2)

Math journals:

[pe=assessment](#)
(CRP2, CRP4, CRP8)

- Learning centers: each learning center focuses on a different type of problem (8.2.2.E.1)
- Graphs, charts, diagrams

Chapter 18 (18.2 only)

2.G.A.1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (Sizes are compared directly or visually, not compared by measuring.)

Mathematical Practices
MP.1, MP.2, MP.6

Topics	Math Playground http://www.mathplayground.com/	SE-2B: 258-264; 266 Workbook 2B: 209-214; 221	Formative Assessments:
Identifying properties of parts of shapes.			<ul style="list-style-type: none"> Do Now Exit Ticket Math Journal Entries (CRP4) Math notebook (NJSLSA.W2.) Calendar skills Observations Discussions: in groups, have students explain different ways of solving problems (CRP4, 8.2.2.E.1)
Twenty-First Century Themes and Skills include: <ul style="list-style-type: none"> <u>Creativity and Innovation</u> <u>Critical Thinking and Problem Solving</u> <u>Communication and Collaboration</u> 	Math Coach – Fact Fluency http://schoolwires.henry.k12.ga.us/Page/21865	Common Core Focus Lesson Appendix Think Central: Online access to all Math in Focus materials listed above and Virtual Manipulatives	
Objectives	Math Wire – Basic Facts Link http://mathwire.com/numbersense/bfactslinks.html	Professional Resources: The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar Modeling Tool by Yeap Ban Har, PhD.	
Students will be able to: <ul style="list-style-type: none"> Identify, classify, and count flat and curved surfaces. Identify solids that can stack, slide, and/or roll. 	Math Fact Practice http://www.playkidsgames.com/games/mathfact/mathFact.htm	Lesson and Component Walkthrough: www.hmhelearning.com	Summative Assessments: <i>Math in Focus Assessments</i> <ul style="list-style-type: none"> Chapter Review/Test – pp 266 Assessments 2 – pp.145-148 ExamView Assessment Suite
	Critical Thinking and Problem Solving p.: Put on Your Thinking Cap!	Technology Resources <ul style="list-style-type: none"> Math in Focus eBooks Math in Focus 	
	Properties, composing, congruency, area and		

perimeter of 2-D shapes (includes 3-D shapes):
<https://www.k5learning.com/free-math-worksheets/second-grade-2/geometry>
(CRP2, CRP4, CRP6, CRP8, 8.1.2.E.1)

Children's books:
<https://www.the-best-childrens-books.org/math-for-kids.html>

More additional texts:
www.newsela.com
www.readworks.org
www.commonlit.org

Teacher Resources
CD

North Carolina Dept of Ed. Wikispaces:
<http://maccss.ncdpi.wikispaces.net/Elementary>

Arizona Flip Book
<http://www.azed.gov/azccrs/files/2013/11/2flipbookedit ed.pdf>

Delaware DOE Common Core Item Bank for Mathematics – Grade 2
http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/111/Math_Grade_2-Nov.pdf

Worksheets, games, lesson plans:
<https://www.education.com/resources/second-grade/math/>
(8.1.2.E.1)

Worksheets, games, videos:
<http://www.mathchimp.com/2nd-grade-math-resources>
(8.1.2.E.1)

www.khanacademy.org
(8.1.2.E.1)

Activities, worksheets,

– Test and Practice Generator

- Short answer / multiple choice assessments (8.2.2.E.1)
- Performance Task

Alternative Assessments:

- Online assessments:
https://www.opened.com/search?area=mathematics&grade=2&resource_type=assessment
(CRP2, CRP4, CRP8)
- Learning centers: each learning center focuses on a different type of problem (8.2.2.E.1)
- Graphs, charts, diagrams

		<p>lesson plans, curriculum: http://www.jumpstart.com/parents/resources/grade-based-resources/2nd-grade-resources (8.1.2.E.1)</p> <p>Everyday math resources: http://www1.center.k12.mo.us/edtech/edm/2.htm (8.1.2.E.1)</p> <p>Explanation of math journals: https://thecornerstoneforteachers.com/math-journals/ (CRP4, NJSLSA.W2)</p> <p>Math journals: https://www.k-5mathteachingresources.com/math-journals.html (CRP4, NJSLSA.W2)</p>
--	--	---

Chapter 19 (skip 19.3)				
2.G.A.1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (Sizes are compared directly or visually, not compared by measuring.)	Topics	Math Playground http://www.mathplayground.com/	SE-2B: 271-291; 304-305 Workbook 2B: 225-238; 245-248	Formative Assessments: <ul style="list-style-type: none"> • Do Now • Exit Ticket • Math Journal Entries (CRP4) • Math notebook (NJSLSA.W2.) • Calendar skills • Observations • Discussions: in groups, have students explain
	Identifying, classifying and combining plane and solid shapes. Twenty-First Century Themes and Skills include: <ul style="list-style-type: none"> • <u>Creativity and Innovation</u> • <u>Critical Thinking and Problem Solving</u> 	Math Coach – Fact Fluency http://schoolwires.henry.k12.ga.us/Page/21865 Math Wire – Basic Facts Link http://mathwire.com/nu	Common Core Focus Lesson Appendix Think Central: Online access to all Math in Focus materials listed above and Virtual Manipulatives	

Mathematical Practices
MP.1, MP.2, MP.6

- Communication and Collaboration

Objectives

Students will be able to:

- Recognize and identify plane shapes.
- Combine smaller plane shapes to make larger plane shapes.
- Separate larger plane shapes into smaller plane shapes.
- Combine and separate plane shapes in figures.
- Draw plane shapes and figures on dot paper and square grid paper.
- Recognize and identify solid shapes.
- Build models using solid shapes.
- Combine and separate solid shapes.
- Identify and count equal faces on a cube.

mbersense/bfactslinks.html

Math Fact Practice

<http://www.playkidsgames.com/games/mathfact/mathFact.htm>

Critical Thinking and Problem Solving p.303:

Put on Your Thinking Cap!

Properties, composing, congruency, area and perimeter of 2-D shapes (includes 3-D shapes):

<https://www.k5learning.com/free-math-worksheets/second-grade-2/geometry>
(CRP2, CRP4, CRP6, CRP8, 8.1.2.E.1)

Children's books:

<https://www.the-best-childrens-books.org/math-for-kids.html>

More additional texts:

www.newsela.com
www.readworks.org
www.commonlit.org

Professional Resources:

The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar Modeling Tool by Yeap Ban Har, PhD.

Lesson and Component Walkthrough:

www.hmhelearning.com

Technology Resources

- Math in Focus eBooks
- Math in Focus Teacher Resources CD

North Carolina Dept of Ed.

Wikispaces:

<http://maccss.ncdpi.wikispaces.net/Elementary>

Arizona Flip Book

<http://www.azed.gov/azccrs/files/2013/11/2flipbookedit ed.pdf>

Delaware DOE Common

Core Item Bank for

Mathematics – Grade 2

http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/111/Math_Grade_2-Nov.pdf

Worksheets, games, lesson plans:

different ways of solving problems (CRP4, 8.2.2.E.1)

Summative Assessments:

Math in Focus Assessments

- Chapter Review/Test – pp 304-305
- Assessments 2 – pp.151-155
- ExamView Assessment Suite – Test and Practice Generator
- Short answer / multiple choice assessments (8.2.2.E.1)
- Performance Task

Alternative Assessments:

- Online assessments: https://www.opened.com/search?area=mathematics&grade=2&resource_type=assessment (CRP2, CRP4, CRP8)
- Learning centers: each learning center focuses on a different type of problem

<https://www.education.com/resources/second-grade/math/>
(8.1.2.E.1)

(8.2.2.E.1)

- Graphs, charts, diagrams

Worksheets, games, videos:
<http://www.mathchimp.com/2nd-grade-math-resources>
(8.1.2.E.1)

www.khanacademy.org
(8.1.2.E.1)

Activities, worksheets, lesson plans, curriculum:
<http://www.jumpstart.com/parents/resources/grade-based-resources/2nd-grade-resources>
8.1.2.E.1)

Everyday math resources:
<http://www1.center.k12.mo.us/edtech/edm/2.htm>
(8.1.2.E.1)

Explanation of math journals:
<https://thecornerstoneforteachers.com/math-journals/>
(CRP4, NJSLSA.W2)

Math journals:
<https://www.k-5mathteachingresources.com/math-journals.html>
(CRP4, NJSLSA.W2)

Review of Gr. 2 Standards Fluency and In-Depth Focus

Fluency:
2.OA.B.2 Fluently add and subtract within 20 using mental strategies.17 By end of Grade 2, know from memory all sums of two one-digit numbers.

2.NBT.B.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Students can also show their fluency using an efficient, general algorithm.

2.NBT.A.2 Count within 1000; skip-count by 5s, 10s, and 100s.
Fluency here is helpful because skip counting is sometimes a strategy for adding or subtracting.

2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. Students who struggle to read a three-digit number may not grasp place value.

Examples of Opportunities for In-Depth Focus:

2.OA.A.1 Using situations (from word problems, from classroom events or experiences, and from discovered mathematical patterns) as a source of problems can help students make sense of and contextualize the operations they are learning. There is a tremendous variety of basic situation types in addition and subtraction.

2.NBT.B.7 It takes substantial time throughout the year for students to extend addition and subtraction to 1,000, connecting steps in the computation to what they know about place value and properties of operations.

Math Playground

<http://www.mathplayground.com/>

Math Coach – Fact Fluency

<http://schoolwires.henry.k12.ga.us/Page/21865>

Math Wire – Basic Facts Link

<http://mathwire.com/numbersense/bfactslinks.html>

Math Fact Practice

<http://www.playkidsgames.com/games/mathfact/mathFact.htm>

Children’s books:

<https://www.the-best-childrens-books.org/math-for-kids.html>

More additional texts:

www.newsela.com
www.readworks.org
www.commonlit.org

Common Core Focus Lesson Appendix

Think Central: Online access to all Math in Focus materials listed above and Virtual Manipulatives

Professional Resources:

The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar Modeling Tool by Yeap Ban Har, PhD.

Lesson and Component Walkthrough:

www.hmhelearning.com

Technology Resources

- Math in Focus eBooks
- Math in Focus Teacher Resources CD

Arizona Flip Book:

http://www.azed.gov/azcomoncore/files/2012/11/3flipbookedited_2.pdf

North Carolina Dept of Ed. Wikispaces:

<http://maccss.ncdpi.wikispac>

Formative Assessments:

- Do Now
- Exit Ticket
- Math Journal Entries (CRP4)
- Math notebook (NJSLSA.W2.)
- Calendar skills
- Observations
- Discussions: in groups, have students explain different ways of solving problems (CRP4, 8.2.2.E.1)

Summative Assessments:

Math in Focus Assessments

- ExamView Assessment Suite – Test and Practice Generator
- Short answer / multiple choice assessments (8.2.2.E.1)

Alternative Assessments:

- Online assessments: <https://www.opened.com/search?area>

2.NBT.B.8 Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

2.MD.A.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. Sufficient practice is required to measure accurately and reasonably quickly.

In-depth Focus:

2.OA.A.1 Using situations (from word problems, from classroom events or experiences, and from discovered mathematical patterns) as a source of problems can help students make sense of and contextualize the operations they are learning. There is a tremendous variety of basic situation types in addition and subtraction.¹⁹

2.NBT.B.7 It takes substantial time throughout the year for students to extend addition and subtraction to 1,000,

[es.net/Elementary](http://www.doe.k12.de.us/Elementary)

Delaware DOE Common Core Item Bank for Mathematics – Grade 2
http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/111/Math_Grade_2-Nov.pdf

Worksheets, games, lesson plans:
<https://www.education.com/resources/second-grade/math/>
(8.1.2.E.1)

Worksheets, games, videos:
<http://www.mathchimp.com/2nd-grade-math-resources>
(8.1.2.E.1)

www.khanacademy.org
(8.1.2.E.1)

Activities, worksheets, lesson plans, curriculum:
<http://www.jumpstart.com/parents/resources/grade-based-resources/2nd-grade-resources>
(8.1.2.E.1)

Everyday math resources:
<http://www1.center.k12.mo.us/edtech/edm/2.htm>
(8.1.2.E.1)

[=mathematics&grade=2&resource_type=assessment](#)
(CRP2, CRP4, CRP8)

- Learning centers: each learning center focuses on a different type of problem (8.2.2.E.1)

connecting steps in the computation to what they know about place value and properties of operations.

Explanation of math journals:

<https://thecornerstoneforteachers.com/math-journals/>
(CRP4, NJSLSA.W2)

Math journals:

<https://www.k-5mathteachingresources.com/math-journals.html>
(CRP4, NJSLSA.W2)

Key Vocabulary:

Chapter 17:

Picture graph, key, symbol, record, tally chart

Chapter 18:

flat surface, curved surface, slide, stack, roll

Chapter 19:

Plane shape, hexagon, trapezoid, figure, shape

NJ Learning Standards Vocabulary:

2.MD.D.10

Represent and interpret data.

collect, organize, display, show, data, attribute, sort, line plot, picture graph, bar graph, question, category, chart, table, most, least, more than, less than, about, same, different, measure, inch, foot, yard, centimeter, meter, length

2.G.A.1

Reason with shapes and their attributes.

attribute, feature, angle, side, triangle, quadrilateral, square, rectangle, trapezoid, pentagon, hexagon, cube, face, edge, vertex, surface, figure, shape, closed, open

Accommodations and Modifications:

Students with special needs: Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders. Modifications, alternative assessments, and scaffolding strategies will be used to support this learning. The use of Universal Design for Learning (UDL) will be considered for all students as teaching strategies are considered. Additional staff should be included so all students can fully participate in the standards associated with this curriculum.

ELL/ESL students: Students will be supported according to the recommendations for “can do’s” as outlined by WIDA - https://www.wida.us/standards/CAN_DOs/

Students at risk of school failure: Formative and summative data will be used to monitor student success at first signs of failure. Student work will be reviewed to determine support. This may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations. More time will be made available with a certified instructor to aid students in reaching the standards.

Gifted and Talented Students: Students excelling in mastery of standards will be challenged with complex, high level challenges.

English Language Learners:	Special Education:	At-Risk:	Gifted and Talented:
<ul style="list-style-type: none"> • Teaching modeling • Peer modeling • Word walls • Give directions in small steps and in as few words as possible • Provide visual aids • Group similar problems together • Repeat directions when necessary 	<ul style="list-style-type: none"> • Utilize modifications & accommodations delineated in the students’ IEP • Work with paraprofessional • Work with a partner • Shorten assignments to focus on mastery or key concepts • Maintain adequate space between desks • Keep workspaces clear of unrelated materials • Provide fewer problems to attain passing grades • Tape a number line to the students desk • Create a math journal that they can use during class, on assignments and (if teacher allows) on assessments 	<ul style="list-style-type: none"> • Use visual demonstrations, illustrations and models • Give directions / instructions verbally and in simple written format • Peer support • Increased one – on – one time • Teachers may modify instructions by modeling what the student is expected to do • Instructions may be printed out in large print and hung up for the students to see during the time of the lesson • Review behavior expectations and made adjustments • Create a math journal that 	<ul style="list-style-type: none"> • Inquiry based instruction • Independent study • Higher order thinking skills • Adjusting the pace of the lessons • Real world scenarios • Student driven instruction

	<ul style="list-style-type: none"> • Provide extra time to complete a task when needed • Provide definitions of different graphs / charts with illustrations 	they can use during class, on assignments and (if teacher allows) on assessments	
Interdisciplinary Connections: ELA NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. RI.2.3. Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. RI.2.7. Explain how specific illustrations and images (e.g., a diagram showing how a machine works) contribute to and clarify a text NJSLSA.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content SL.2.3. Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue SL.2.6. Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification NJSLSA.L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking			
Integration of Technology Standards NJSLS: 8.1.2.E.1: Use digital tools and online resources to explore a problem or issue 8.2.2.E.1: List and demonstrate the steps to an everyday task.			
Career Ready Practices: CRP2: Apply appropriate academic and technical skills CRP4: Communicate clearly and effectively and with reason CRP6: Demonstrate creativity and innovation CRP8: Utilize critical thinking to make sense of problems and persevere in solving them			
21st Century Standards 9.1.4.B.5 Identify ways to earn and save. 9.1.4.D.1 Determine various ways to save.			

Major Supporting Additional (Identified by PARCC Model Content Frameworks)