Grade 1

Unit	Unit Title	Lesson	Day
3.1	Geometry & Measurement	1 of 4	1 - 3

Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.	•Order three objects by length. •Indirectly compare the length of two objects by using a third objects. •Using the transitive principle (if, and then) to measure indirectly. For example, If a string is longer than a straw, and the straw is longer than the pencil, then you know the string is longer than the pencil.	**SMP5** Use appropriate tools strategically. **SMP6** Attend to precision.	•How can you use a third object to compare two objects? •How can you compare lengths of three objects to put them in order? •How do you order three objects by length?

5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
Understand the concept of long(er) and short(er).	Order Longest, shortest	Not lining the same edge of all three objects up at the same starting point. *See the OnCore Lesson 70 & 71 example.*	**OnCore** Lesson 70 & 71 Student pages 139 – 142 **K-5 Math Resources** Which is Longest? Scoop and Order

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students to indirectly compare the length of two objects by using a third object; order three objects by length using the terms shortest and longest. Teachers will help students to line the three objects up at the same starting point (a common misconception) to correctly determine which object is longest/shortest (OnCore Lesson 70 & 71). They will help students understand how to use the transitive principle (without using the name). For example, if a string is longer than a straw, and the straw is longer than the pencil, then they should understand that the string must be longer than the pencil without having to measure them.	Students will order three objects by length (using student pages 139 – 142). These practice pages will help students understand that the objects need to be lined up at the same starting point to correctly view their lengths. They will learn to indirectly compare the length of two objects by using a third objects. Students will use the transitive property without having to be familiar with the term. They will recognize that if a string is longer than a straw, and the straw is longer than a pencil, then the string must be longer than the pencil without having to measure it.

Grade 1

Unit	Unit Title	Lesson	Day
3.1	Geometry & Measurement	2 of 4	4 - 7

Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a **whole number** of length units with no gaps or overlaps.*	•Express the length of an object using nonstandard whole number length units. •Understand that the length measurement of an object is the number of same-size *whole* length units that span it with no gaps or overlaps. •Solve measurement problems using *act it out.* •Some students may notice that the smaller the measuring unit the more units it takes to measure the length of the object.	**SMP5** Use appropriate tools strategically. **SMP6** Attend to precision.	•How can you measure the length of this object? •How many cubes (paper clips, etc) long is this object? •Why is it important not to leave a gap between your measuring units or overlap the measuring unit when measuring the length of something? •How can this be true? My stick measures 10 paper clips long, but only 2 pencils long.
5. Prerequisite Knowledge	**6. Essential Vocabulary**	**7. Possible Misconceptions**	**8. Necessary Materials**
•Understand the concept of length and measurement. •Understand how to use nonstandard units of measurement.		•Difficulty understanding that the length of the object does not change because measurements will differ depending on what measurement unit is being used.	**OnCore** 72 – 74 Student pages 143 – 148 **Investigations** Unit 5 Investigations 1 & 2; focusing more on the concepts in INV 2.

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students to express the length of an object with nonstandard whole number length units. They will model measuring with squares, paper clips, etc. and show students what it means to give an answer that is "about 5" for an object that may be just a little longer than 5 paper clips and that the square/paper clips must not overlap or have a gap between them. *The Oncore examples only show pictures that measure exactly.* Teachers will help students observe that the smaller unit of measurement will result in the greater number of units counted/measured.	Students will express the length of an object using nonstandard whole number length unit. They will understand that some of the objects they measure will not measure exactly "5 paper clips", but that they answers will be about 5. They will understand that when measuring with nonstandard units, the units cannot overlap or have gaps between them to be as precise as possible. Some students will understand that the smaller the unit of measurement, the greater the number of units measured/counted.

Grade 1

Unit	Unit Title	Lesson	Day
3.1	Geometry & Measurement	3 of 4	8 - 10

Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
1.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sides) versus non-defining attributes (e.g., color, orientation, overall size); **build and draw shapes to possess defining attributes.**	Build and draw shapes that possess specified defining attributes.	**SMP5** Use appropriate tools strategically. **SMP6** Attend to precision.	•What attributes are important for you to know so that you can draw a shape? •How do you draw a shape with 3 sides that are the same length? Show me. Etc.

5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
Understand the difference between defining and non-defining attributes.	sides vertices, vertex faces curved Base closed, open-shape	Misuse of vocabulary.	**Investigations** Snap-in Unit 2 Session 2.3 pages C9 –C10 **K-5 Math Resources** Geoboard Squares Shape Patterns If you have access to these books, use these task cards: When a Line Bends a Shape Begins Mouse Shapes

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students to build and draw shapes that possess specific defining attributes. For example, they may ask the student to draw a 3-sided shape with all side lengths equal. Teachers will use student pages C9-C10 along with the K-5 Math Resource pages. Geoboards with teacher directions could also be utilized. They may use the task cards listed under materials if they have access to the books with those titles.	Students will build and draw shapes that possess specified defining attributes. They will draw using student pages C9-C10 or the K-5 Math Resources the teacher prescribes. They may construct shapes using geoboards, with directions from the teacher. Students will develop essential geometry vocabulary in this lesson; sides, vertex, vertices, faces, curved, base, closed or open-shape.

Grade 1

Unit	Unit Title	Lesson	Day
3.1	Geometry & Measurement	4 of 4	11 - 15

Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoid, triangles, half-circles, and quarter-circles) or **three-dimensional** shapes (cubes, right rectangular prism, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from a composite shapes.[4] [4]*Students do not need to learn formal names such as "right rectangular prism" at this time.*	•Use 2-D shapes to compose 3-D shapes. •Compose a new shape (composite) by combining two or more 3-D shapes. •Decompose a composite shape back into 2 or more 3-D shapes.	**SMP5** Use appropriate tools strategically. **SMP6** Attend to precision.	•What will your shape look like if you put a (cylinder) under a (cone)? •What shapes can you use to make a right rectangular prism (teacher will hold up the rectangular prism because students do not have to know them by name)? •What shapes were used to make this (show a picture of a composite shape)?

5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
Compose 2-d shapes into composite shapes and decompose composite shapes into 2-d shapes.	Rectangle, squares, trapezoids, triangles, half-circles, quarter-circles. Composite shape 2-dimensional (2-D)	Some students need a lot of work with visual perception pictures/models to see all the shapes.	**OnCore** Lesson 90 – 92 Student pages 179 – 184 **Investigations** Snap-ins Unit 9 Session 2.3A Student pages C93-94, C103-104 **Investigations** Unit 9 INV 2 Building a Block Town

Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students to use 2-D shapes to compose 3-D shapes, to compose new shape (composite) by combining two or more 3-D shapes, and to decompose a composite shape back into 2 or more 3-D shapes. They will use OnCore Lessons 90 -92 and Investigations Unit 9 Snap-ins. Investigations Unit 9 INV 2 Building a Block Town is a great activity if time allows. Teachers may want to understand what makes the shape a *right* shape. For ex, a right circular cone is formed when a right angle is rotated. Height of a *right* shape forms a right angle to the base. (First graders are not expected to know formal vocabulary.)	Students will use 2-D shapes to compose 3-D shapes, compose a new (composite) by combining two or more 3-D shapes, and decompose a composite shape back into 2 or more 3-D shapes. They will practice using OnCore student pages, Investigations Snap-ins, and if time allows Investigations 9 INV 2 Building a Block Town. Students will learn many essential vocabulary words, but they are not responsible to use the formal "right" for cone and cylinder.

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