UNIT 3: Covering & Surrounding

Grade 6 - Lessons Outline

(Mid-November to End of 1st Week in January)

Inventory:

- Square Pattern Tiles
- CM Cubes
- Rulers
- Scissors
- Tape
- Glue Sticks
- CM Grid Paper
- CM Grid Paper Transparencies (In Class & For Students to Take Home)
- Calculators
- Mathematical Practices Handouts (for student binders, in class & a poster or two hanging in the room)

On Walls or In Classroom:

- Coordinate Plane
- Vocabulary Word Wall – Interactive
- 3-Dimensional Objects & Nets
- Units vs. Square Units vs. Cubic Units

REQUIREMENTS OUTSIDE OF THE PACING HERE…

1. Need a period for the pre-assessment/readiness test.
2. Need a week, primarily at home, for the unit project – will be assigned at the end of the module.
3. Need ½ periods for 4 Mathematical Reflections/CC Performance Standards Writing Pieces
4. Need an additional ½ period for 3 Check-Ins (One Is a Partner Quiz – 2 Are Independent)
5. Need to weave in SKILLS PRACTICE within this unit, especially multiplying and adding mixed numbers; and, multiplying and adding with decimals.
6. Need to weave in new vocabulary on word wall – and, in notebooks – as it appears in the module.

Investigation CMP2	Title	Guiding Question	Resources Needed	HW I'm Choosing
		CMP3 INVESTIGATION #1 Extending & Building on Area and Perimeter *Covers Investigation 1 & 2 in CMP2* *Use CMP2 Plans for 1.1-1.3 and CMP3 Plans for 2.1 – 2.2*		*May adjust 1.1-1.3 based on student readiness w/ area and perimeter.*
1.1*	Designing Bumper-Car Rides	What are the formulas for finding the area and perimeter of a rectangle? Explain why they work.	Square Pattern Tiles CM Grid Paper ***LAUNCH VIDEO CMP3***	**A** p.10, #7a/b (basic) p.11, #6a/b (med) **C**p.15, #31 a-d (area-factors) **E** p.17, #39 or #40
1.2	Pricing Bumper Car Rides		Square Pattern Tiles CM Grid Paper	**A** p.11, #4 or #5 p.13 #21 **Connect** p. 15 #26 **Extend** p. 17 #41 Extend
1.3	Decoding Designs: Finding Area & Perimeter of Rectangles		Square Pattern Tiles CM Grid Paper	**APP** p.13 #22 (b) or #23 (m) p.14 #25 a-c **Connect** p.15 #27 DistProp Rule p.16 #34 **Extend** p.17 #42
2.1	Building Storm Shelters (CMP3 Problem 1.2)	For a fixed area, what are the shape and perimeter of the rectangles with the greatest and least perimeter?	LABSHEET 1.2B (p.21)	**APP** p. 26 #2a/b p.28 #7 or p.30 #13 **Connect** p.31 #18 p.32 #20 (adv) p.34 #24 (dinner tables)
2.2	Fencing Spaces *(1.3 Constant P, Changing A CMP3)*	For a fixed perimeter, what are the shape and area of the rectangles with the greatest and least area?	LABSHEET 1.3A LABSHEET 1.3B 24 cm Loops of String *(to assist struggling students)* **LAUNCH VIDEO CMP3 1.3**	**APP** p.29 #9a-d **Connect** p.34 #26, #27 a-b p.35 #30 p.35, #32 a-d (mix #s)

	REFLECTIONS DAY 1/2	**Check-Up 1 (1/2 Day)**	**Mathematical Reflections & CC Math Practices** (p.97-98 CMP3)	

Investigation CMP2	Title	Guiding Question	Resources Needed	HW I'm Choosing
		CMP3 INVESTIGATION #2 Measuring Triangles *USE CMP3 Teacher Plans – Correlated to CMP2 by KL in grid..*		*Corresponds to CMP2 Inv #3*
3.1	Triangles on Grids *(Follow CMP3 2.1, p.105-113 Teacher Plan)*	What is the formula for finding the area of a triangle?	Copy CMP3, Inv.2, p.35 Intro	**Day 1:** p.44 #1-6 (easy) or p.48 #26-31 p.45 #13, #17 p.49 #32A *ship sails* **Day 2:** p.45 #7 - #8 p.46 #11, #16 p.47 #22 p.49 #32 ENRICH p.51, #40
3.2	More Triangles (I.D. Base & Height) *(Follow CMP3 2.2, p.114-121, Teacher Plan)*	Does it make any difference which side is used as the base when finding the area of a triangle?	LABSHEET 2.2A LABSHEET 2.2B LABSHEET 2ACE, #18* *(goes w/#17 CMP2)* **LAUNCH VIDEO 2.2** CM Grid Paper	p.46 #17 * LABACE WS p.47 #18-20 p.49 #33 ** p.50 #34 **
3.3	Making Families of Triangles *(CMP2 – What's the Area?)* *(Follow CMP3 2.3, p.114-121, Teacher Plan)*	What can you say is true and what can you say is not true about triangles that have the same base and height?	CM Grid Paper	p.47 #21 & #22 *(Basic Idea of Lesson)* Perhaps Triangle Fam from C for struggling learners.
3.4	Designing Triangles Under Constraints *(Follow CMP3 2.3, p.114-121, Teacher Plan)*	What conditions for a triangle produce triangles that have the same area? Do they have the same shape? Explain.	CM Grid Paper Poster Paper (1 Sheet/Group) Sticky Note Paper **LAUNCH VIDEO 2.4**	**Quiz Tomorrow**
	REFLECTIONS DAY 1/2	**Check-Up 2**	**Mathematical Reflections & CC Math Practices** (p.151/152 CMP3)	

Investigation CMP2	Title	Guiding Question	Resources Needed	HW I'm Choosing
		CMP3 INVESTIGATION #3 Measuring Parallelograms *USE CMP3 – Substantially Different than CMP2* *Copy CMP3 p.185 (53SM) for students*		
4.1	Parallelograms & Triangles *(Follow CMP3 3.1, p.159-167, Teacher Plan)*	What is a strategy for finding the area of a parallelogram? Explain why the strategy works.	LABSHEET 3.1A LABSHEET 3.1B LABSHEET 3.1C HW LABSHEET 3ACE, Ex. 1-7 ** CM Grid Paper Rulers	**APP** #1-9, pp. 60-61 3ACE #1-7 for above ** **Connect** #39 (ordering skills)
4.2	Making Families of Parallelograms *(Follow CMP3 3.2, p.168-171, Teacher Plan)*	What can you say about two parallelograms that have the same base and height?	LABSHEET 3.2 CM Grid Paper Rulers & Scissors LABSHEET 3ACE, Ex.14-19 **	**APP** 3ACE #14-19; p.63 #20 (TN) p.63 #21 (All 3 Same A) **Connect** p.65, #33 (polystrips?) p.66, #36 (bumper cars) p. 66, #35 (quads in life)
4.3	Designing Parallelograms Under Constraints *(Follow CMP3 3.2, p.159-167, Teacher Plan)*	Under what conditions will two or more parallelograms have the same area? Do these parallelograms have the same shape? Explain.	LABSHEET 3ACE, Ex.32 ** CM Grid Paper	**APP** p.63, #22-27 p. 64, #28A **Connect** p.64, #29 p. 65, #31
4.4 CMP3 ONLY!!!	Polygons on Coordinate Grids *(Follow CMP3 3.2, p.159-167, Teacher Plan)*	How can you find the area of a polygon drawn on a coordinate graph? On grid paper?	Copy Sections of SM from CMP3 TM, pp. 192-195 **LAUNCH VIDEO 3.4 CMP3** LABSHEET 3.4A LABSHEET 3.4B LABSHEET 3ACE ex. 33** LABSHEET 3ACE ex.46**	**APP** COPY TM CMP3, p.202, #34-38 **Connect** COPY TM CMP3, p.204, #43 **Extend** COPY p.205/206 #44-48
	REFLECTIONS ½ DAY	**ASSESSMENT = PARTNER QUIZ ½ Day (Not Same Day)**	**Mathematical Reflections & CC Math Practices** **(**pp.208-209 CMP3 TM)	

Investigation CMP2	Title	Guiding Question	Resources Needed	HW I'm Choosing
		The Next Investigation is EXCLUSIVE to CMP3 to meet new CC Standards – We will have to copy materials for kids. It's called investigation 4 AGAIN! We will call it Investigation 5.		
5.1	4.1 Making Rectangular Boxes	What is a strategy for finding the surface area of a rectangular prism? Explain why the strategy works.	LABSHEET 4.1A * LABSHEET 4.1B Box Nets CM Grid Paper Centimeter Cubes Scissors Tape **LAUNCH VIDEO 4.1 CMP3** Copy of Investigation from CMP3	**Copy HW from CMP3** ***** #5 or #6 * #7 (which nets work) ** #9, #14 ** #15-16 (1/2 units) *** EXT p.95 #47-51
5.2	4.2 Filling the Boxes: Finding Volume	What is a strategy for finding the volume of a rectangular prism? Explain why the strategy works.	LABSHEET 4.2: Volume Table Centimeter Cubes Nets from LAB 4.1B (Optional) **LAUNCH VIDEO 4.2 CMP3** Copy of Investigation from CMP3	**Copy HW from CMP3** * #20-23 ** #24 (diff units) * #28-29 (greatest V) *EXT #57-59 (dimensions) ** EXT #63-65 (greater V)
5.3	4.3 Designing Gift Boxes: Finding Surface Area	What is a strategy for finding the surface area of a 3-dimensional object? Explain why the strategy works.	LABSHEET 4.3: Nets (1/group) CM Grid Paper Teaching Aid 4.3: Sub Net Boxes Examples of Prisms & Pyramids	**UNIT TEST REVIEW SHEET SELF-ASSESSMENT** **Copy HW from CMP3** * 4ACE #31 WS ** 4ACE #71 (adv) *** #66-69 ** #53 APP #32 (match nets) #36-39 (sketch a net) #40, 43 SA RecPrisms #41 SA TriPrism #42 SA Sq.Pyramid #46 Visualize 2D→3D
	REFLECTIONS ½ DAY	**START UNIT PROJECT – Give A Week to Complete;** At Home w/ Check-Ins at school; offer after-school time to work on it.	**Mathematical Reflections & CC Math Practices**	**UNIT TEST!!!!**

			(pp.260-261 CMP3 TM)	

THOUGHTS.. In MA, we are required to include area and circumference of circles. Covering and Surrounding in CMP2 offers that mini-unit. It is NOT offered in CMP3 because it is not a CC requirement (except for MA)…

I would like to attach the mini-unit on circles right after this unit test and before beginning the next unit. I suggest sticking to CMPs model and completing it quickly. We can then revisit it throughout the year and in other units with computation in them. ***Part of my interest in completing it now is that we will already have the CMP2 books signed out for our kids. We won't have to come back to it later and sign them out again.***

I've also been told that since we are taking the PARCC Test, circles will not be on it because PARCC's focus is on the national standards only.

Investigation CMP2	Title	Guiding Question	Resources Needed	HW I'm Choosing
		CMP2 ***Measuring Irregular Shapes and Circles***		
6.1	5.1 Measuring Lakes	What strategies can we use to measure the area and perimeter of irregular figures? Explain how these strategies work.		
6.2	5.2 Surrounding a Circle	What strategies can we use to find the circumference of a circle? What is pi and what is it's value? What is a formula for finding the Circumference of a circle. Explain why it works.		
6.3	5.3 Pricing Pizzas	What are some strategies for estimating the area of a circle? Explain how the strategies work.		
6.4	5.4 Squaring a Circle	What is the formula for the area of a circle and where does it come from? Explain why the formula works.		
	REFLECTIONS ½ DAY	**MINI-TEST at the end of this unit. Short quiz/checks after 6.2?**	**Mathematical Reflections & CC Math Practices**	