Unit 4: Equations Name Project

Name _____

Big Ideas:

✓ Continuous linear relationships can be identified and represented in many connected ways to identify regularities and make generalizations

Curricular competency being assessed: ***Communicating & Representing***

Content

✓ **Multi-step variable equations**

BEGINNING	DEVELOPING	PROFICIENT	EXTENDING
		I can… ☐ Solve literal equations for one variable ☐ Clearly communicate algebraic skills required to rearrange equations involving variables ☐ Clearly communicate the intention of a project in a professional manner ☐ Explain the usefulness of rearranging formula and relate this skill to real world situations.	

Task

In this project, you are going to rearrange formulas to create a literal equations poster of your name. You must include the original formulas, your work showing the rearrangement of each formula, and the final formulas used to create your name. To conclude, you will reflect on why being able to rearrange formula is an important math skill and how it can be applied to "real world" situations.

Guidelines

- You must have at least 10 letters on your poster that can be solved using 10 equations. You can use a combination of your first, middle and last name.
- You may use a formula more than once if you are solving for a different variable. For example: If your first name is "Beth" you could use V = Bh to solve for the "B" in Beth, and then use the same formula to solve for "h".
- You cannot use the same rearranged formula unless you are not counting it in the 10 required equations. For example: If your name is "Ana", you need to choose two **different** formulas for the letter "a".
- On your poster you also must draw, cutout or print a minimum of two representations (pictures) of who you are.
- Your poster and accompanying work must be **clearly** communicated and professionally presented. Anyone should be able to clearly follow your line of thinking.

Equations

You will have 46 different equations to choose from to create your poster.

Please note the breakdown of letter options when choosing your name:

A:8	B:14	C:6	D:1	E:2	F:1	G:2	H:12	I:3	J:1	K:2	L:5	M:5
N:2	O:0	P:3	Q:1	R:10	S:3	T:5	U:1	V:2	W:5	X:4	Y:1	Z:1

For O: use #20 – Linear equation in one variable (the zero can act as the letter O). *NOTE: As there is no rearrangement, this letter will not count for the 10 required equation.*

For example: If your name is JOSEPH KIDD that name does meet the 10-letter requirement; however, it does NOT meet the 10 different equations requirement. This name contains an O which does not have an equation to be solved and contains two Ds (there is only one equation for D); therefore, it would only count as 8 letters and a middle name would need to be added.

Final Thoughts

- Do not forget to attach your reflection.
- Due date: _____

Literal Equations

1. $A = \ell w$	Area of a rectangle
2. $A = \frac{1}{2}\ bh$	Area of a triangle
3. $A = \pi r^2$	Area of a circle
4. $A = \frac{1}{2} h(b_1 + b_2)$	Area of a trapezoid
5. $C = \pi d$	Circumference of a circle
6. $C = 2\pi r$	Circumference of a circle
7. $V = \ell wh$	Volume of a Rectangular Prism
8. $V = \pi r^2 h$	Volume of a Right Circular Cylinder
9. $V = \frac{1}{3} Bh$	Volume of a Right Square Pyramid
10. $V = \frac{1}{3} \pi r^2 h$	Volume of a Right Circular Cone
11. $I = prt$	Simple Interest
12. $d = rt$	Distance formula
13. $y = mx + b$	Slope Intercept Form
14. $a^2 + b^2 = c^2$	Pythagorean Theorem
15. $P = 4s$	Perimeter of a square
16. $V = Bh$	Volume of a prism
17. $E = IR$	Voltage in an electric circuit
18. $a + b + c = 180$	Measure of angles in a triangle
19. $P = I^2 R$	Power in an electric circuit
20. $ax + b = 0$	Linear equation in one variable
21. $s = \frac{1}{2} gt^2$	Distance
22. $K = \frac{1}{2}\ mv^2$	Energy
23. $P = 2\ell + 2w$	Perimeter of a rectangle

24. $ax + by = c$ — Linear equation in two variables

25. $V = \frac{KT}{P}$ — Volume of a gas

26. $x = \frac{a+b}{2}$ — Average of two numbers

27. $D = \frac{C-s}{n}$ — Depreciation

28. $F = \frac{9}{5}C + 32$ — Celsius/Fahrenheit Conversion

29. $E = VIT$ — Electrical Energy

30. $J = mhg$ — Joules (energy)

31. $180(n - 2) = s$ — Sum of angles formula

32. $q = mc$ — Heat transferred

33. $v^2 = u^2 + 2as$ — Velocity and Acceleration

34. $S = LA + 2B$ — Surface Area of a Rectangular Prism

35. $S = 2bh + 2bw + 2hw$ — Surface Area of a Rectangular Prism

36. $S = 2\pi rh + 2B$ — Surface Area of a Cylinder

37. $S = \frac{1}{2}P\ell + B$ — Surface Area of a Square Pyramid

38. $A = bh$ — Area of a Parallelogram

39. $E = mc^2$ — Energy

40. $v = \frac{w}{q}$ — Potential Difference

41. $C = (F - 32)\frac{5}{9}$ — Celsius/Fahrenheit Conversion

42. $y = a(x - h)^2 + k$ — Vertex Form

43. $S = \frac{E^2}{Z}$ — Apparent Power

44. $I = \frac{E}{R}$ — Direct Current

45. $A = P + Prt$ — Amount at Simple Interest

46. $W = \frac{J}{S}$ — Power