

Title/Location: Radical Math (Afterschool) / Pasco, WA

Grades 6-8 Audience Tchrs/ParaPros (gr6) Date/Time: Aug 11 / 9:00-12:00

Game/Activity (Manipulatives)	Overhead Concepts & Washington Standards Code	Notes  Page 1 of 2
Based On WASH. Gr 6 Standards		Use numerous brain parts, see, touch, talk, move, process, etc.
Roll On.... Decimals © 0-9 x 2	Roll On..Dec. Compare&Order <b>6.1.A</b> <b>6.1.H</b>	P26 Rad add all 5 rolls, can use extra 0,closest to 1.0
Brainy Fractions © cards, Reg x 2	Compare&Order <b>6.1.A</b> <b>6.1.H</b>	P178 Rad #ofRolls, 2 die/roll=fraction, crds=target fraction
Order In The Court © dbl die x 2	OrderInCourt Compare&Order <b>6.1.A</b> <b>6.1.H</b>	P15 DbIDareU roll2die&simplify,place / 1 <sup>st</sup> to 4-in-row
Fraction Freeze © 1-12 die x 2	Compare&Order <b>6.1.A</b> <b>6.1.H</b>	P107 DiceWrks both dice upto 3 rolls, freeze optn, closest to 1.0 not over EXAMPLE Player One 6/11, 2/11 freezes (doesn't take 3 <sup>rd</sup> roll) = 8/ Player Two 1/5, 4/10, 6/10 = 11/10 loses (went over 1.0)
A Target Round © Cards 0-9, 2to3 00-90	A Target Rnd comparing rounding <b>6.1.A</b> <b>6.1.H</b>	P29 Rad roll decax2 to make target, 4crds arranged to make #, round #, closest rounded # to target. wins.
Dicey Decimals © Cards 1-9, Reg die	PV ordering Decimals <b>6.1.A</b> <b>6.1.H</b>	P25 Rad 6 crds make #, roll die to place decimal point from right, roll die to determine digit from right. Value of digit is compared. Greates value wins.
Converting Decimals © Cards 0-9	Converting Decimals comparing ordering <b>6.1.A</b> <b>6.1.H</b>	P95 Piece It.. 2 cards make percent, name as decimal = 1 pt, name as reduced fraction = 1 pt. EXAMPLE 2,5 25%, player says "0.25" (for 1 pt), player says "25/100 = ¼" (for 1 pt)
Fraction X © cards	Estimate Products Quotients <b>6.1.C</b>	P175 Rad 4 crds into 2 fractions, mult, greatest product wins
Fraction Production © cards, 1-12 die x 1	Mult and Div Fractions	P177 Rad roll target, 4 crds into 2 fractions, mult, closest to target wins
Batter UP (decimal version)© PV system die, cards 0-9	multiply div whole #s by 0.01 - 1000 <b>6.1.E</b>	Player 1 flips a 7, Player 2 flips a 3, Roll PVsysdie = 10 000, use as denominator to make 1/10 000, Player 1 score=0.00007, Player 2 score = 0.0003. Go for 9 innings and add for final score.
Operation Decimal © Cards 1-10, 0-9die x 1	mult & div non- neg decimals <b>6.1.F</b>	P18 Rad 4 crds to make 2#s (2cards=# blk=whole, red=dec), roll die and multiply=score for round. Add scores from 10 rounds for final score. Greatest final score wins game
4F operation die, 0-9 die, cards 0-10	equations with 1 variable, tables <b>6.2.A</b>	Roll 4F op die, Roll 0-9 die, make equation (rolls x, rolls 6, makes equation N x 6 =Y) Flip cards to complete the equation. Make chart N=2 Y=12, N=5 Y=30, etc. Graph table.

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4F operation die, 0-9 x 2, cards 0-10	equations with 2 variable, tables, order of operations <b>6.2.C</b> <b>6.2.D</b>	Roll 4F op die 3 times, Roll each 0-9 die, make equation (roll + , x and x, roll 6 and 3 makes equation $N + 6 \times Y \times 3 = \text{Answer}$ Solve using BEDMAS $\{Y \times 3, x6, +N=\}$ & Parenthesis $(N+6) \times (Y \times 3)=$
Balancing Act © 30-sided die	solving 1-step equations, Order Ops <b>6.1.H</b>	P85 Rad Goal to make a balanced equation. Roll 4 times, record 4#s, pause to see if equation can be made, continue roll, pause until team says stop and presents an equation (don't have to use all numbers rolled, both teams use same #s) EXAMPLE 8,30,8,19,20 $8+8 = 20-19$
Get It / Closest To © 2 x reg dice, 2 x 00-90 dice, 2 x 0-9 dice	mixed ops, order ops, exponents, equations <b>6.2.E</b>	P81 Rad Roll all 5 dice. Teams may not move dice. Use 4 dice to make equation that targets the 00-90 die. EXAMPLE 60 on 00-90 die, $8^2 - 1 - 1 = 62$ Team closest to target wins 5 pts, 10pts for bullseyes
Rock N Ratios © 30-sided die, calculator (optional)	Ratios, percents, fractions, decimals <b>6.2.E</b> <b>6.3.C</b>	P180 Rad Roll 3 times, 1 <sup>st</sup> # rolled is compared to sum of the 3. Then express as fraction, %, decimal. Player One rolled 5, 18, 11 $5:34=5/34=0.15=15\%$ Player Two rolled 3, 11, 29 $3:43=3/43=0.07=7\%$ Player One has greatest percent earns a point Can alternate rounds between > wins point and < wins point.
Pocket Savings © Cards 0-9, mixed coins, 00-90 die, calculator optional	percents, discounts, change <b>6.3.D</b>	P196 Rad flip 1 <sup>st</sup> card=dollars, 2 <sup>nd</sup> card= dimes, 3 <sup>rd</sup> card = pennies / Player. Roll 00-90 die/player to get discount. Player who pays least amount after discount wins point. Player One 4.55 - 20% discount = 3.64 Player Two 7.35. - 70% discount = 2.21 (wins point)
Sixty Something © 30-sided dice x 2	order ops, experiment probability <b>6.3.F</b>	P138 Rad Goal to get 60 in 3 rolls. Roll both, + - x ÷. May "freeze" after 2 <sup>nd</sup> or 3 <sup>rd</sup> roll. Closest to 60 gets 1 pt. Exactly 60 gets 2 pts. First to 20 wins
What's Your Number © 0-9 die x 1	What's UR # theoretical probability <b>6.3.G</b>	P20 Rad Goal create largest #. Roll die, players place #, roll die, place # etc. Player with greatest at end of Rnd=1pt Graph rolls after 10 rounds, compare Exp vs Theor Prob
Integer Addition War © Cards 1-10 (Blk + , Red -)	mental math, compare integers <b>6.5.B</b> <b>6.5.C</b>	P133 All Hands... deal 2 cards/player. Add cards, player with highest sum wins pt.
Integer Subtraction War © Cards 1-10 (Blk + , Red -)	mental math, compare integers <b>6.5.B</b> <b>6.5.C</b>	P134 All Hands... deal 2 cards/player. Subtract cards, player with lowest sum wins pt.
Integer Multiplication War © Cards 1-10 (Blk + , Red -)	mental math, compare integers <b>6.5.B</b> <b>6.5.C</b>	P134 All Hands... deal 2 cards/player. Multiply cards, player with greatest product wins pt. (pos x pos = pos, pos x neg = neg , neg x pos = neg , neg x neg = pos)
Big Sums © Stratedice Trays	Big Sums mental math strategies <b>6.5.A</b>	Spill Tray, place dice into groups of sums = 30 , 20, 10s. Then add groups together finishing off with leftovers. $1234=10$ $2468=20$ $6789=30$