Name: Hour:

Hands-On Activity: Roll an Expression II

Materials

- one 6-sided die per ~~student~~ table

Directions

- Roll the die to determine a value for *a*, *b*, and *c*. Record the values in the table below.
- Use the values to write an expression in expanded form. The expanded form should not have exponents.
- Simplify the expanded expression. The simplified form should be a single power.
- Record your results in the table.
- Repeat with different numbers.

a	*b*	*c*	$\frac{a^b}{a^c}$	Expanded	Simplified
Ex: 4	3	5	$\frac{4^3}{4^5}$	$\frac{4\cdot4\cdot4}{4\cdot4\cdot4\cdot4\cdot4}$	$\frac{1}{4^2}$

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1. Compare your expression in the column under $\frac{a^b}{a^c}$ to your simplified answer. What can you conclude about dividing powers with like bases?

2. Write a simplified rule for dividing powers.

3. Simplify the expression below. What can you conclude about dividing powers with negative exponents?

$$\frac{6^3}{6^{-5}}$$