

eTech Math Mess Educator’s Guide

Segment Title: The Downtown Sale

Alignment to Common Core Clusters	<i>6.RP.Connect ratio and rate to whole number multiplication and division and use concepts of ratio and rate to solve problems.</i>
Critical Focus Area(s) and Rationale	<p><i>6.RP.3.b Solve unit rate problems involving unit pricing</i> <i>6.RP.3.c Find a percent of a quantity as a rate per 100.</i></p> <p>Students are expected to use ratio and rate reasoning to solve real-world problems. This video presents a very real everyday scenario in which Carla needs to choose the best way to spend her birthday money on new clothes. Common Core research has shown that these concepts are among the least evident mathematics skills of adults in the U.S.</p>
Focus for Media Interaction / Suggested Classroom Activities	<p>Introduce students to the video by telling them that they are going to see a real-life problem that they all will face at some point when shopping. One key to being a wise consumer is to try to get the best deal for your money. Sale signs appeal to the emotions, but may intentionally be written to cause confusion for the customer so they THINK they are getting a great deal, but struggle to prove it.</p> <p>After viewing, ask students if Carla’s selection technique makes sense, and whether she got the best buy for her money.</p>
Suggested Extension Activities & Resources	<p>Students need opportunities to justify their solutions. Ask students to create their own problem situations in which the differences in cost may be very close, but a certain amount of ratio sense-making is needed to reach a decision. Newspaper ads that claim to have lower prices are good ways for students to approach unit pricing and comparative shopping.</p>
Suggested Formative Assessment Probe	Use the attached Zombie Clearance Sale image as another example of real-life comparative

	<p>shopping. As a classroom exit ticket, ask students to create their own similar problems as evidence of their understanding of ratio and percentage concepts.</p>
<p>One Proposed Solution to the Math Mess</p>	<p>For the sake of argument, let's choose a price that has a lot of easy-to-use factors. Let's say that Carla has her eye on some jackets and jeans that cost \$60 each.</p> <p>Buy 2 – Get 1 Free! Carla will spend \$120 to get \$180 worth of merchandise. \$120 compared to \$180 is two-thirds of the cost. Another way to look at that is one-third, or 33%, off.</p> <p>40% Off Everything! Let's assume, again, that Carla wants to buy 3 articles of clothing at \$60 each. At 40% off she will 60% of the original cost. 40% off is clearly better than 33% off, even though Carla was lured by the idea of FREE.</p> <p>Buy 1 ... Get 1 Half off. Although she would be buying in multiples of two, we can still compare. Let's say that Carla bought one jacket at \$60, and the second at half-off, or \$30. She spent \$90 for \$120 worth of merchandise. $90/120$ is 75%. So her discount was really only 25% off.</p> <p>40% Off Everything is the best way for Carla to spend her money, because she can choose to buy whatever she wants, and will save more money on each dollar spent than in either of the other sales.</p>

6RP – Using fractions as unit price comparisons.



Zombie Clearance Sale

Can you prove, using numbers or diagrams, that 12 Zombie figures for \$2.98 is a better deal than 3 Zombie figures for \$1.18?

Use words, arithmetic and drawings, or diagrams to justify your choice.