Teaching Pre-Algebra in PowerPoint

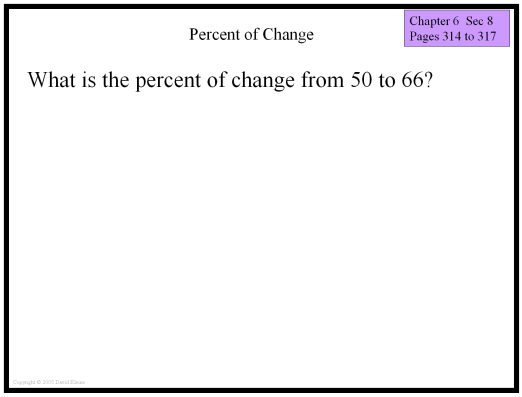
## Finding Percent of Change

Objective: Students will find percent of increase or decrease. Students will apply this skill to solve real-world problems.

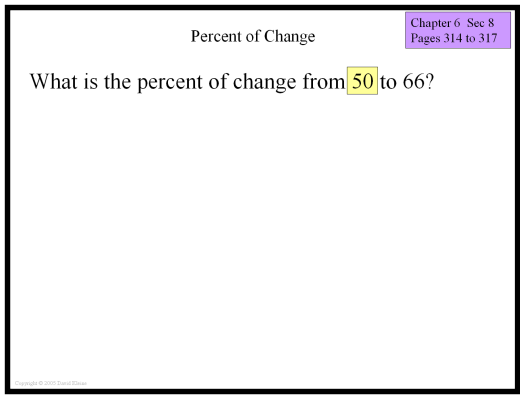
Key Vocabulary: Numerator, Denominator, Ratio

Key Skills: Convert Fractions to Decimals
Long Division
Convert Decimals to Percents
Rounding Percents

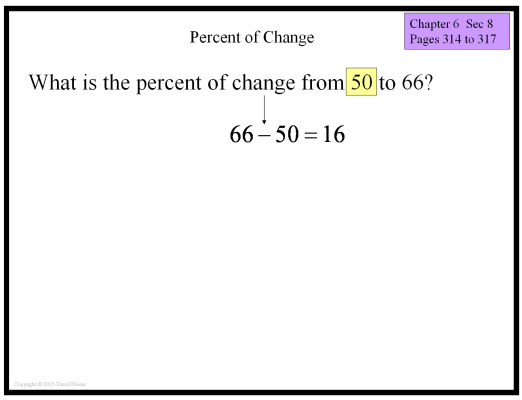
Title




Slide #1: Start the lesson in Presentation Mode (or under View select Slide Show). Discuss with students a real-life situation this might represent. For example, the school basketball team scored 50 points in its first game and 66 points in its second game. How can this change be expressed as a percentage? Why is this useful?




Slide #1/Animation #1: Ask students which number they think is more important, 50 or 66? Explain that the original number (starting number) is the most important. Click the mouse or arrow key and 50 will be highlighted. Have students highlight 50 in their notes.




Slide #1/Animations #2 and #3: Discuss with students how to find the actual change from 50 to 66. Tell students that the change will always be a positive number, so the larger number must come first when we write the subtraction.

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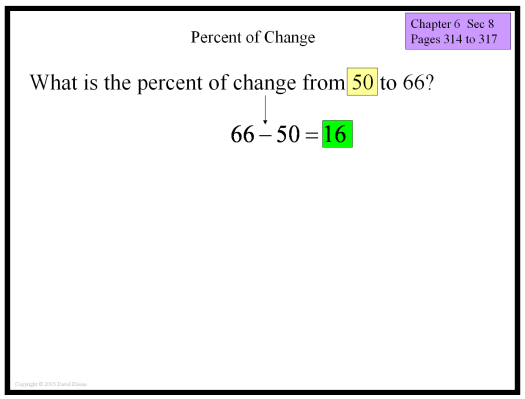
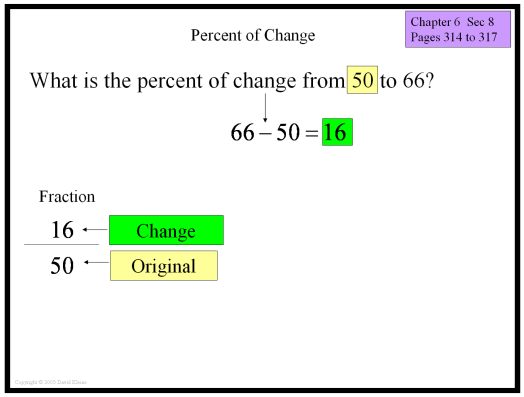


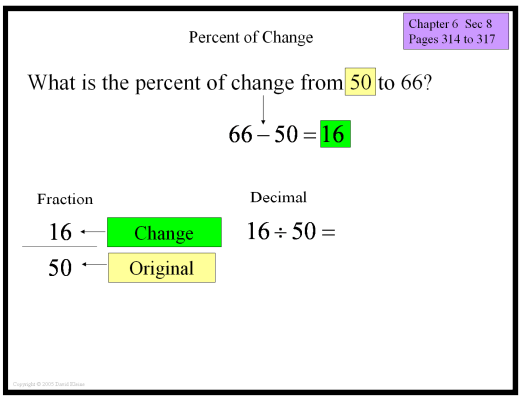

Slide #1/Animation #4: Point out to the class that the other important number is the change. Click the mouse or arrow key and 16 will be highlighted.

*We are done with 66. We use it once, to find the change, but now we no longer need it.*




Slide #1/Animations #5–12: We now begin the process of finding the percent of change. The first and most critical step is to create a fraction. The change value goes in the numerator and the original number goes in the denominator. A common student error is to put 66 in the denominator because it is larger and because it comes first in the subtraction. Do whatever you can to reinforce the idea that percent of change is Change over Original.

*Percent of change is a comparison of the Change to the Original Amount. In math we express comparisons as ratios. In this case the ratio is 16:50.*




Slide #1/Animations #13 and #14: We now need to change the fraction into a percent. Some students will be able to tell you the answer is 32% because 50 goes into 100 twice. This a good time to discuss how this works and for what denominators (2, 4, 5, 10, 20, 25, and 50). Begin the discussion of division by using the division symbol because this is how the numbers would be entered into a calculator or spreadsheet.

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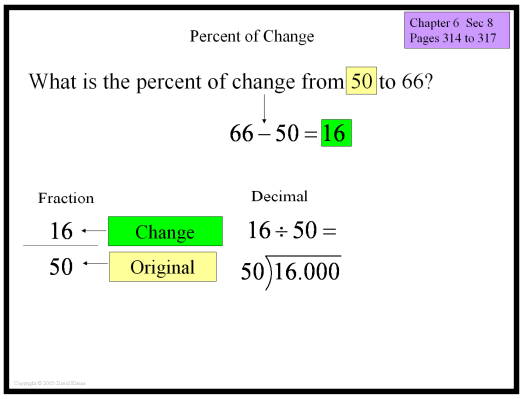
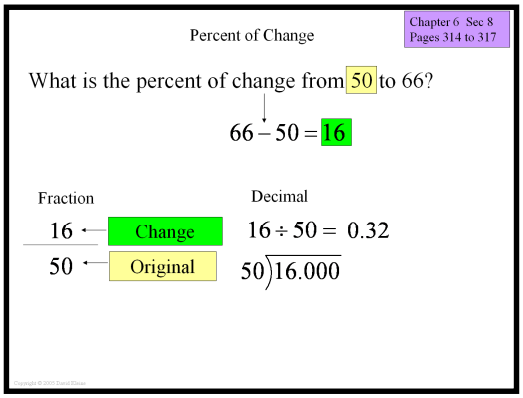
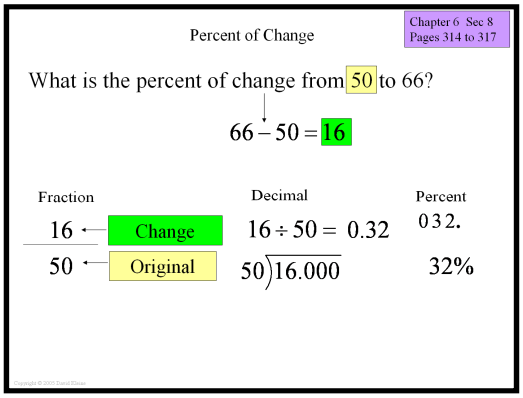



Slide #1/Animation #15: Write the division problem with the denominator outside and the numerator inside. Have students do the division. As a rule of thumb, have students add three zeroes after the decimal point. This will make sure they have enough information to round correctly should this be necessary.




Slide #1/Animation #16: Ask students to give the answer to the division problem. Click the mouse or arrow key and reveal the answer.




Slide #1/Animations #17–21: Convert the decimal into a percentage. The animation sequence gives a visual of moving the decimal point two places to the right. Based on you students' prior knowledge this will be obvious to them or it may require a bit of discussion.

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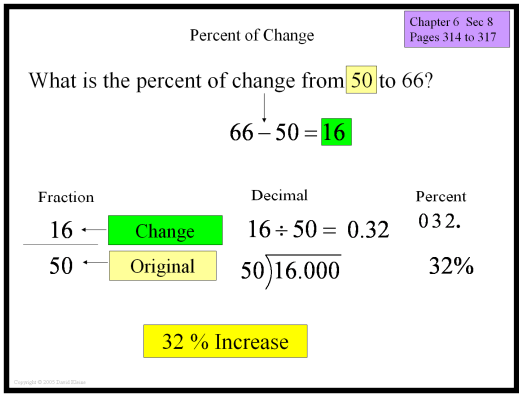
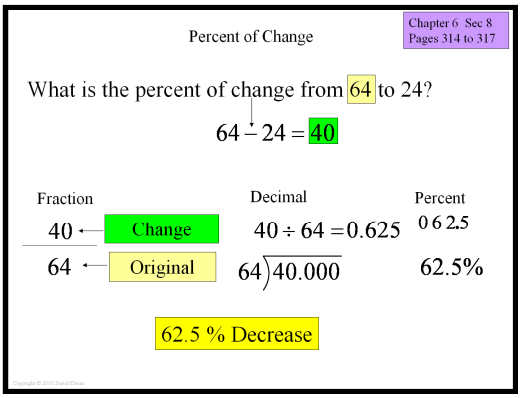
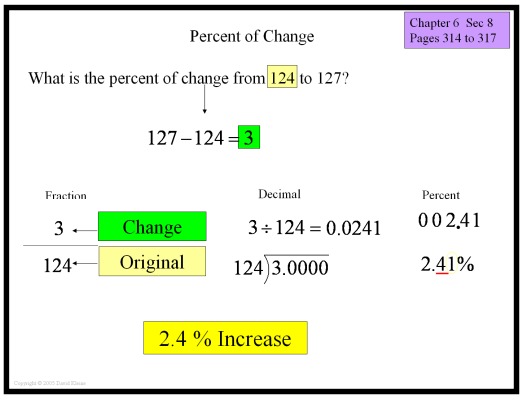



Slide #1/Animation #21: Put up the final answer. Discuss why the answer is an increase. Relate the answer to the real-world example you mentioned at the beginning of the lesson. In this case the basketball team increased its offensive output by 32%.




Slide #2

This is the second example. It is just like the first except the division goes more decimal places and the change is a decrease.




Slide #3

This is the third example. It is just like the second except the division goes more decimal places and requires rounding. This is an opportunity for students to work independently and then get immediate feedback.

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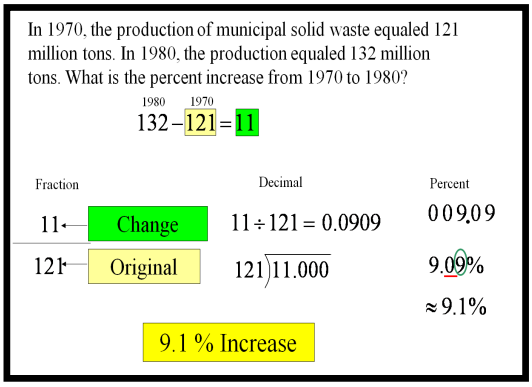
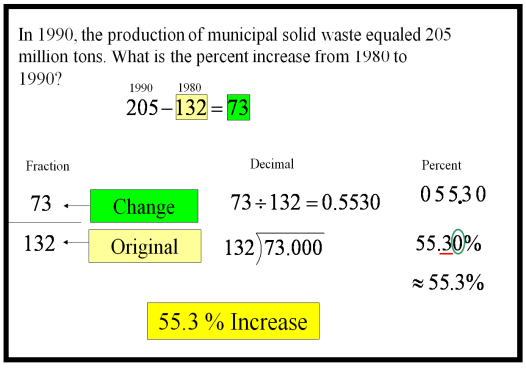



### Slide #4

This example problem is textbook specific. It comes from the *Prentice Hall Pre-Algebra California Edition* Copyright 2001, page 315. It requires students to look at data in a graph and then use the data to find percent of change. If you don't have this textbook, the relevant data is provided on the lesson slide.

A common error is to use the numbers 1,970 and 1,980 instead of the corresponding data entries.




### Slide #5

This example problem is also textbook specific. It comes from the *Prentice Hall Pre-Algebra California Edition* Copyright 2001, page 315. If you don't have this textbook, the relevant data is provided on the lesson slide.

Examples 1, 2, and 4 are teacher guided. Examples 3 and 5 are opportunities for students to work independently.