

Answer Key for Activities Inside

Activity 1, A Roof Over Our Heads: 1. House A has a more valuable roof because it is 8 years younger. 2. Students should calculate the value of the roof based on the years remaining in the life of the roof. The age of House A's roof is 15 years. So, House A's roof is worth approximately \$2,500. Subtract the \$1,000 deductible, and the owners of House A receive approximately \$1,500 to replace their roof. House B has a much less valuable roof (worth approx. \$1,167) but has a replacement policy. So the owners of House B receive \$4,000 (\$5,000 replacement cost - \$1,000 deductible) to replace their roof. 3. The owners of House B paid \$250 more for their premium. 4. The owners of House A paid a \$500 premium, a \$1,000 deductible, and an additional \$2,500 to fix their roof. (\$5,000 for the cost of a roof minus \$1,500 from the insurance agency leaves \$3,500 total to be paid. The insurance company pays \$1,500, because the actual value of the roof is \$2,500 and Family A paid the \$1,000 deductible. This \$3,500 is paid for with the \$1,000 deductible and an extra \$2,500 out-of-pocket.) Out-of-pocket total costs for House A in this year: \$4,000. The owners of House B paid a \$750 premium and a \$1,000 deductible. Total replacement costs for House B: \$1,750. House A paid \$2,250 more. 5. In this case, the higher premium of the Replacement Cost Policy is worth it. This will not always be true. It depends on how long you have paid a higher premium before needing to file a claim. Think About It: The following factors might affect insurance costs for roof replacement: Age of the roof, what the roof is made of, the number of layers of insulation beneath the roof, whether any demolition is needed to remove the old roof, the pay rates for the laborers, etc.

Activity 2, A Map of Claims: 1. Section 2 had the highest amount in claims: more than \$50,000,000. 2. Sections 1, 5, and 8 had the lowest amounts in claims: between 1,000,000 and \$10,000,000 each. 3. As you move from south to north along the coast, the amount of claims increases steadily and then decreases sharply. 4. There are generally lower claim amounts in the western area of the county than there are on the coast. 5. Answers may vary slightly. Insurance companies might collect more premiums in Region 2, larger areas with greater populations, or regions near the coast because they tend to have higher claim amounts. 6. A histogram, because histograms are good for examining a range of data. Think About It: Coastal areas are often appealing to homebuyers because of the access to, and views of, the ocean. It would likely be more expensive to insure because property is worth more and there is a higher rate of insurance claims.

Activity 3, A Bridge to the Future: 1. \$8 million. 2. $\$8 \text{ million} / 5 = \$1,600,000$ per year. $\$1,600,000 / 365 \text{ days} = \text{approx. } \$4,384$ per day. $\$4,384 / 10,000 \text{ crossings} = 44 \text{ cents or } 50 \text{ cents per crossing}$. 3. $\$1 \text{ million} / 365 \text{ days} = \text{approx. } \$2,740$ per day. $\$2,740 / 10,000 \text{ crossings} = 27 \text{ cents or } 30 \text{ cents per crossing}$. 4. Answers will vary. Extra toll money could be invested to offset inflation, set aside for technological improvements, used for beautification or landscaping, etc. 5. Maintenance and salaries will go up. Extra toll money can be invested to offset this, or the possibility of periodic toll increases can be considered. Think About It: Answers will vary. This is a complex question. In addition to the costs of salary and building materials, encourage students to think about "unseen" costs: permits, demolition, landfill and hauling costs, redirection of traffic patterns and signage, etc. Invite a representative from your local office of public works to speak to your class.