

**10-4**

**Study Guide and Intervention**

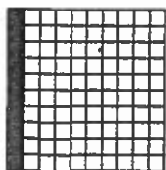
**Modeling Percents**

Ratios like 41 out of 100, 25 out of 100, or 2 out of 100 can be written as percents. A **percent (%)** is a ratio that compares a number to 100. Since the word percent means *out of one hundred*, you can use a  $10 \times 10$  grid to model percents.

**EXAMPLES**

**1 Model 10%.**

10% means 10 out of 100.  
So, shade 10 of the 100 squares.



**2 Model 78%.**

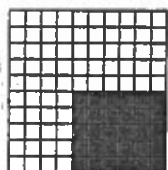
78% means 78 out of 100.  
So, shade 78 of the 100 squares.



You can use what you know about decimal models and percents to identify the percent of a model that is shaded.

**EXAMPLES Identify each percent that is modeled.**

**3**



There are 30 out of 100 squares shaded. So, the model shows 30%.

**4**

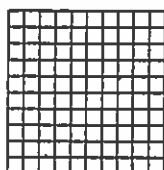


There are 43 out of 100 squares shaded. So, the model shows 43%.

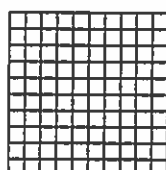
**EXERCISES**

**Model each percent.**

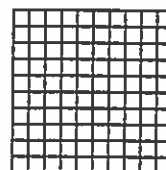
1. 20%



2. 55%

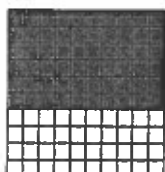


3. 12%

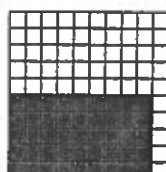


**Identify each percent that is modeled.**

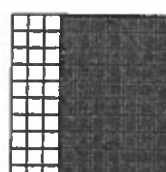
4.

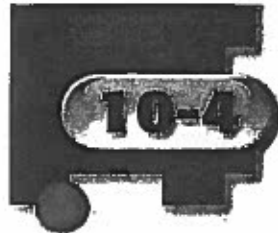


5.



6.

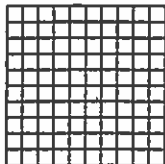




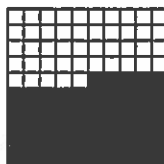
# Practice: Word Problems

## Modeling Percents

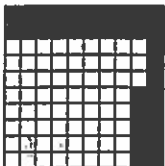
**1. FOOTBALL** In the 2001–2002 season, the Dallas Cowboys football team won 45% of their games. Make a model to show 45%.



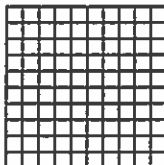
**2. LANDSCAPING** Jacob is making a 10 foot by 10 foot patio in his backyard using paving stones that are 1 foot square. The shaded area of the model indicates the finished part of the patio. What percent of the patio has Jacob finished?



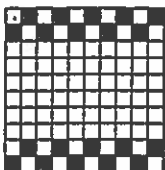
**3. ART** Lydia is making a collage using 100 photographs arranged in a square pattern. The shaded area in the model indicates the part of the collage already covered by photos. What percent of the collage is finished?



**4. ENERGY** In the year 2000, nuclear energy accounted for 8% of the energy used in the U.S. Make a model to show 8%.



**5. GAMES** The figure shows the starting position for a game played on a 10 by 10 board. The shaded squares contain game pieces. What percent of the squares on the board contain game pieces?



**6. MUSIC** In the school chorus, 52% of the girls sing soprano and 44% sing alto. Which of these two sections of the chorus has more girls? Explain using models.

