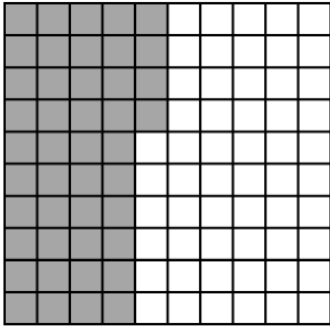




5.NS.4 Model percents as parts of 100 using pictures or diagrams and identify the equivalent fraction.	
Reporting Category: Number Sense	Subdomain: Understanding Percents, Decimals, and Fractions
<u>5.NS.4 Instructional Framework</u>	
Assessed On:	
<input type="checkbox"/> Checkpoint 1 <input checked="" type="checkbox"/> Checkpoint 2 <input type="checkbox"/> Checkpoint 3 <input checked="" type="checkbox"/> Summative	
Content Limits:	
<ul style="list-style-type: none"> Models may include number lines, place value blocks or frames, decimal squares, part of a whole, or part of a group. Limit percent models to those divided into 5ths, 10ths, 20ths, 25ths, and 100ths. 	
Clarifications:	
<ul style="list-style-type: none"> Place a percent sign after the response box for any items that require students to enter a percentage. 	
Calculator Availability: Not Allowed	
Expected Academic Vocabulary: whole, percent	
Examples of Context and Varying Difficulty Levels	
Context: Easy	Fractions with denominators of 100; percents limited to multiples of 10.
Context: Medium	Fractions with denominators of 10; percents given as any number up to 100.
Context: Difficult	Models are varied within the item.
Proficiency Level Descriptors and Example Items	
Looking Back: 4.NS.5 ILEARN Item Specification	Looking Ahead: 6.RP.1 ILEARN Item Specification
Below Proficiency: Match a hundreds grid model and the corresponding percent or equivalent fraction.	
A model is given. The entire square represents one whole.	This is a DOK 1 item because students identify an amount as two different numbers, demonstrating an understanding of the amount.



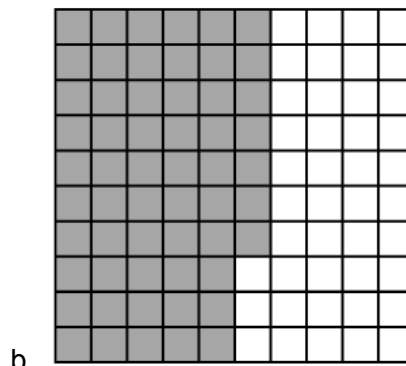
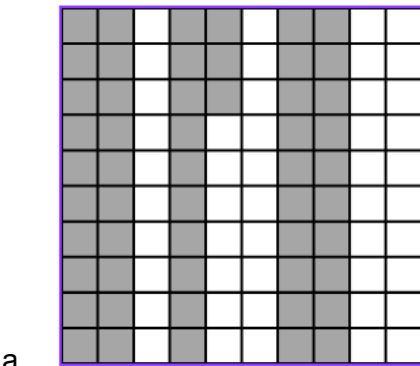
Select the **two** numbers that represent the shaded part of the whole.

- a. $4 \frac{4}{10}$
- b. **44%**
- c. $\frac{4}{10}$
- d. 0.44%
- e. **$\frac{44}{100}$**

Answer: b, e

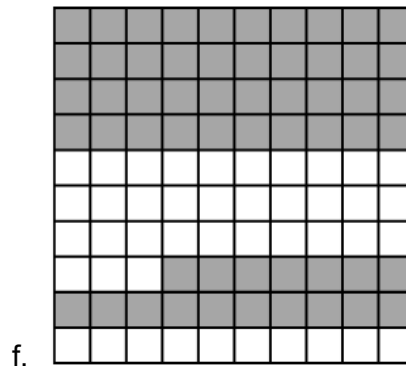
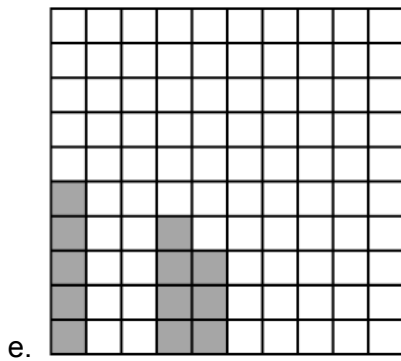
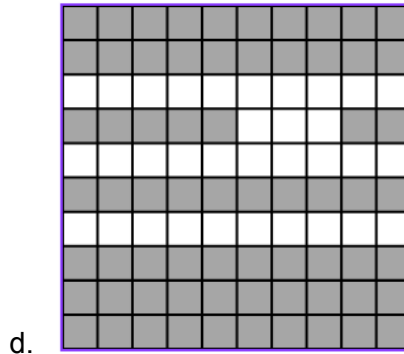
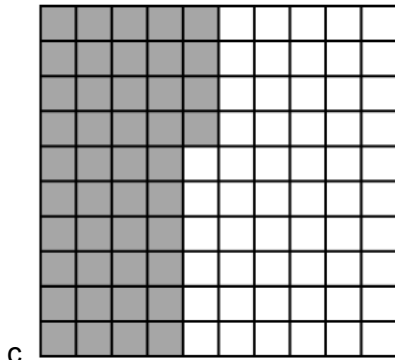
This is medium difficulty because percents given as any number up to 100.

Which **two** models are shaded to represent 57% of the square?



This is a DOK 1 item because students identify the amount as two different pictures, demonstrating an understanding of the amount.

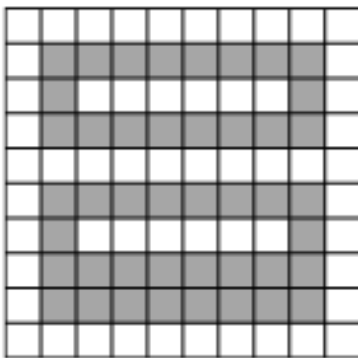
This is medium difficulty because percents given as any number up to 100.



Answer: b, f

Approaching Proficiency: Write the percent or equivalent fraction represented by any given model.

A model is given. The entire square represents one whole.



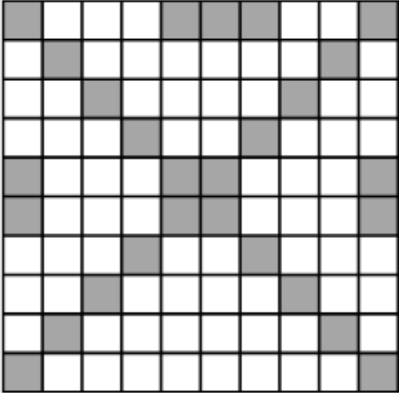
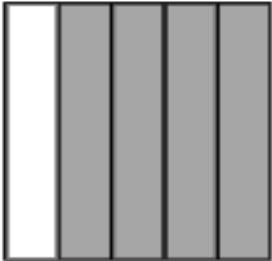
What percent of the model is shaded?

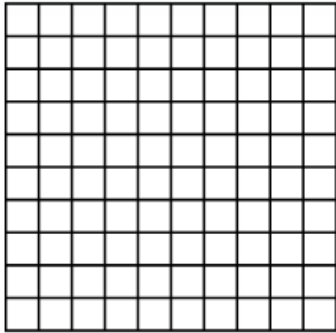
%

This is a DOK 2 item because students use a model to represent a mathematical concept (create the corresponding percent).

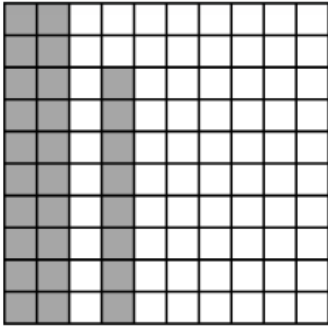
This is medium difficulty because percents given as any number up to 100.



<p>Answer: 44</p> <p>A model is given. The entire square represents one whole.</p>  <p>What fraction of the model is shaded?</p> <input data-bbox="167 858 401 919" type="text"/>	<p>This is a DOK 2 item because students use a model to represent a mathematical concept (create the corresponding fraction).</p> <p>This is medium difficulty because percents given as any number up to 100.</p>
<p>A model is given. The entire square represents one whole.</p>  <p>What percent of the model is shaded?</p> <input data-bbox="167 1457 401 1518" type="text"/> %	<p>This is a DOK 2 item because students use a model to represent a mathematical concept (create the corresponding percent).</p> <p>This is hard because the student must convert fifths into hundredths in order to find the percent.</p>
<p>At Proficiency: Model a given percent using a given model.</p>	
<p>Create a model that represents 28%.</p> <p>Click on an area of the model to shade it. Click on the area again to erase the shading.</p>	<p>This is a DOK 2 item because students construct a model to represent an amount.</p>



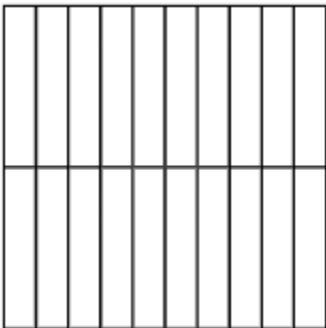
Answer: Student answers will vary; 28 small boxes must be shaded in any pattern.



This is medium difficulty because percents given as any number up to 100.

Create a model that represents 30%.

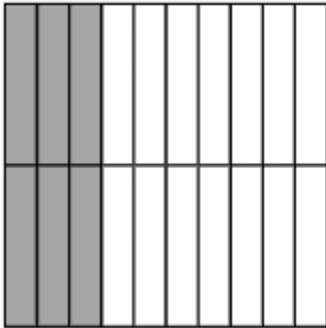
Click on an area of the model to shade it. Click on the area again to erase the shading.



Answer: Student answers will vary; 6 small rectangles must be shaded in any pattern.

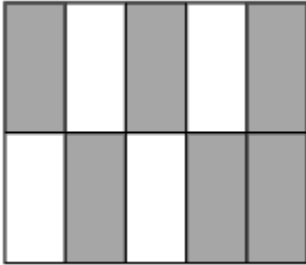
This is a DOK 2 item because students construct a model to represent an amount.

This is hard because the student must convert twentieths into hundredths in order to find the percent.



Above Proficiency: Solve real-world problems about percents up to 100 using models and equivalent fractions. Identify multiple models of a given percent.

A student was working on a puzzle. The shaded model represents the amount of the puzzle he completed.



What percent of the puzzle did the student complete?

 %

Answer: 60

This is a DOK 2 item because students use a model to represent a mathematical concept (create the corresponding percent).

This is medium difficulty because it uses fractions with denominators of 10.

A person cut $\frac{8}{10}$ of the grass in her front lawn.

What percent of the lawn did she cut?

 %

Answer: 80

This is a DOK 2 item because students translate between different symbolic notations.

This is medium difficulty because fractions with denominators of 10.